

The Wright Brothers: Paving the Runway for Modern-Day Aeronautics

by Flying Through the Frontier of Air Travel

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Senior Division

Group Performance

Process Paper: 500 Words

Process Paper

How did we choose our topic?

We grew up as very good friends and are with each other nearly every day. Knowing this, we knew that we could easily meet together, but it might be difficult to focus together. We came to the conclusion that doing something hands-on, like a performance, was a way for us to work on NHD and still "hang out" at the same time. From this, we decided that we'd like to research a topic that involved two main male characters and also fit the theme of frontiers in history. We came up with either Lewis and Clark or the Wright brothers. We were overwhelmed by the vast amount of information surrounding Lewis and Clark, and felt that would make it quite difficult to narrow the topic down into a performance. The Wright Brothers, however, seemed more manageable with a more specific impact.

How did we conduct our research?

Large amounts of easily accessible online sources allowed for our research. However, we felt that in order to fully understand our topic, physical research was necessary. In October, we took a trip to the Iowa State University Library. We were able to find multiple beneficial sources ranging from biographies to newspaper articles. We benefited most from online databases like the Library of Congress and Wright State University, which provided us with a large amount of primary and secondary sources.

How did we create our project?

Through research, we uncovered the persistent demeanor and creative personality of the brothers and how to portray these characteristics in our performance. We used our research to draft an outline of all the topics we would present in our project. We thought it would be

important to include Glenn Curtiss' impact on the history of aircrafts and how he furthered the competitive nature of the race for flight. We included sections about the process of the brothers obtaining a patent for the airplane and how the challenge of this process affected them.

What is our historical argument?

Wilbur and Orville Wright envisioned and created the world's first controllable aircraft and attained sustainable flight. Their development in air travel changed transportation forever and paved the way for modern-day aeronautics. Their work impacted the modern economic system of the world, transportation, and warfare in a way that could not have been replicated had the Wright brothers not done what they had. They overcame the challenge of putting a vehicle into the air, thus opening the frontier of air travel for the future.

In what ways is our topic significant in history?

The Wright brothers' historical significance is found throughout the twentieth century in the development of public air travel and the use of airplanes in battle. The aircraft created in the early twentieth century led to the planes now used for transportation of civilians, goods, and troops all across the world. The brothers have forever changed history through their remarkable creativity, innovative minds, and how they opened the frontier of air travel.

Bibliography

Primary Sources

"Airship Falls; Lieut. Selfridge Killed, Wright Hurt." *The Washington Post*, 18 Sept. 1908. *Library of Congress*, www.loc.gov/resource/mss46706.05001/?sp=166&r=-0.004,0.157,1.043,0.641,0. Accessed 5 May 2023.

Published one day after the Wright brothers' fatal plane crash with Thomas Selfridge, this article provides intricate details about what went wrong and what happened after. We used this information to better understand the cause of this event, along with its significance. We then included this information in the narrative portion of our performance due to its relevance with rival Glenn Curtiss.

Crumpled Glider Wrecked by the Wind on Hill of the Wreck. 10 Oct. 1900. *Library of Congress*, www.loc.gov/resource/ppprs.00544/. Accessed 5 Jan. 2023.

This photograph depicted a plane crash in the desert, demonstrating to us how much the Wright brothers progressed despite their setbacks. The model of the crashed plane was different from the appearance of their successful planes, proving the evolution and improvement of their work as they experimented and gained knowledge. This photograph

inspired us to mention the evolution of their models following the failures that occurred along the way.

Daniels, John T. *First Flight of Wright Brothers in Kitty Hawk, North Carolina, December 17, 1903*. 17 Dec. 1903. *First Flight of Wright Brothers in Kitty Hawk, North Carolina, December 17, 1903*, State Historical Society of Iowa, 2022, iowaculture.gov/history/education/educator-resources/primary-source-sets/industrial-revolution/first-flight-wright. Accessed 1 Feb. 2023.

This photograph, taken by John T. Daniels, displays the first manned flight and the reaction of Wilbur as he runs alongside the machine as it glides through the air. Being a photograph of the first successful flight taken over one hundred years ago, this source provided us with tremendous insight into the exciting execution of the brothers' innovative invention.

Gillett, Corinne Frazier. "I Saw Orville Wright Fly at Fort Myer." *The Star* [Washington D.C.], 31 Aug. 1958. *Library of Congress*, chroniclingamerica.loc.gov/lccn/sn83045462/1958-08-31/ed-1/seq-88/#date1=1770&index=0&rows=20&words=Orville+Wright&searchType=basic&sequence=0&state=&date2=1963&proxtext=Orville+Wright&y=9&x=11&dateFilterType=yearRange&page=1. Accessed 6 Feb. 2023.

This newspaper article is written by a firsthand witness of one of the Wright brothers' public demonstrations, who describes the large crowd and energetic atmosphere of the event. A photograph of the flight is also present, showing us what the plane looked like

and where the demonstration took place. As indicated by the surrounding buildings, the brothers were no longer isolated to the desert and had constructed a much more trustworthy model of the airplane to be flown in Fort Myer.

Glenn Curtiss Aeroplane. 26 Feb. 1911. *U of Wisconsin-Madison Digital Library*, U of

Wisconsin-Madison, 26 Feb. 1911,

search.library.wisc.edu/digital/AUD5KCGKCMNPVL8K. Accessed 7 Oct. 2022.

This up-close photograph of Curtiss' flier provided us with knowledge and understanding of how different his flier was from the planes of today. We can also see the engine that he had included in his design, a feature he was particularly passionate about given his profession working with motorcycle engines.

Kelly, Fred C. *The Wright Brothers: A Biography*. Dover Publications, 1989.

Fred Kelly was a good friend of the Wright brothers and used his personal experiences and knowledge to write a highly credible biography. Having been written by a close personal friend of the Wrights, this book provides insight on the personal and emotional lives of the brothers and their family.

Lahm, Frank P. "How Teddy Saved the Air Force." *Evening Star* [Washington D.C.], 6 Sept.

1953. *Library of Congress*,

chroniclingamerica.loc.gov/lccn/sn83045462/1953-09-06/ed-1/seq-75/#date1=1770&index=8&rows=20&words=Orville+Wright&searchType=basic&sequence=0&state=&date2=

1963&proxtext=Orville+Wright&y=9&x=11&dateFilterType=yearRange&page=1.

Accessed 28 Dec. 2023.

This newspaper article describes Theodore Roosevelt's decision to purchase airplanes for the air force and walks us through the process. In 1909, Roosevelt rode in the flier piloted by Orville and confirmed that all of his criteria was met and surpassed, leading to the United States military using the Wright flier as its very first airplane. This source helped us to indicate the impact that the Wright brothers had in the Air Force in the conclusion of our script.

Letters from Orville and Wilbur Wright. 8 Jan. 1904,

www.shapell.org/manuscript/wright-brothers-first-flight/#transcripts. Accessed 1 Feb.

2023.

This letter written by Orville Wright describes the development and progress of one their earliest fliers, along with the intended direction of the project's future. The brothers are able to recognize the potential of the progress, speaking on how the flier is nowhere near its "maximum speed". Being a letter written by one of the brothers, this is a very valuable primary source.

Montgomery, Frank A., Jr. "Conquerors of Air Are Honored Again." *The Sunday Star*

[Washington D.C.], 3 July 1932. *Library of Congress*,

chroniclingamerica.loc.gov/lccn/sn83045462/1932-07-03/ed-1/seq-43/#date1=1770&index=17&rows=20&words=Orville+Wright&searchType=basic&sequence=0&state=&date2

=1963&proxtext=Orville+Wright&y=9&x=11&dateFilterType=yearRange&page=1.
Accessed 16 Jan. 2023.

This article introduced the Wright Memorial, a 150-foot-high monument that stands at the location of their very first flight. The source honored the Wright brothers and described their significant impact. It also told their life stories and included a simplified summary that we utilized to better understand the major events of their journey.

"Mr. Orville Wright's Machine Falls, Badly Injuring Two Men." *The Illustrated*

London News, 18 Sept. 1908. *Library of Congress*, www.loc.gov/resource/mss46706.05001/?sp=164&r=-0.606,0.168,2.211,1.359,0. Accessed 4 May 2023.

Published immediately following the Wright brothers' major plane crash, this newspaper article provided insightful information regarding the condition of the fallen plane and its passengers. We used this information to compose factual narration regarding the incident and how it would influence the rivalry with Glenn Curtiss.

"Orville Wright 'Back' with a New One." *The Day Book* [Chicago, IL], 15 May 1913. *Library of Congress*,

chroniclingamerica.loc.gov/lccn/sn83045487/1913-05-15/ed-1/seq-23/#date1=1770&index=4&rows=20&words=ORVILLE+Orville+WRIGHT+Wright&searchType=basic&sequence=0&state=&date2=1963&proxtext=Orville+Wright&y=9&x=11&dateFilterType=yearRange&page=1. Accessed 2 Feb. 2023.

This newspaper article regarding Orville Wright's "return to aviation" taught us that Orville had temporarily suspended his involvement with aeronautics following the death

of his brother Wilbur. The article was about Orville coming out of retirement and showing off a new plane model that could travel both on water and in the air.

Subject File: Chanute, Octave--Photographs, Kitty Hawk, North Carolina, Originals, 1901.

1901. *Library of Congress*, www.loc.gov/resource/mss46706.04003/?sp=3&st=image. Accessed 3 Jan. 2023.

We used this close-up view of one of the Wright brothers' test flights to better understand how their airplane functioned and see it in action for one of the first times in history. We noticed that the pilot of the airplane was laid down in the plane's center, a position that is likely both uncomfortable and dangerous. The limited technology of the time was an extreme obstacle to be overcome and this image depicts the beginning of their journey to open the frontier of flight.

Subject File: Chanute, Octave--Photographs, Kitty Hawk, North Carolina, Originals, 1901.

1901. *Library of Congress*, www.loc.gov/resource/mss46706.04003/?sp=4&st=image&r=-0.268,-0.023,1.597,0.981,0. Accessed 3 Jan. 2023.

This photograph depicts a pilot lying down on one of the Wright brothers' gliders and mimicking the stance of an airborne pilot. The plane is lying still on the sand and, due to its stillness, a very clear photograph of the plane was able to be taken. We used this photo to gain a clearer understanding of the model of the airplane they used and further understand the process of attaining the first sustained and controlled flight.

Subject File: Chanute, Octave--Photographs, Kitty Hawk, North Carolina, Originals, 1901.

1901. *Library of Congress,*

www.loc.gov/resource/mss46706.04003/?sp=30&r=-0.155,-0.025,1.299,0.825,0.

Accessed 8 Feb. 2023.

This image shows two men pushing one of the Wright brothers aircrafts after what appears to be a running start in order to give the plane sufficient momentum to take off. A thick layer of sand was present, providing them with a cushioned fall in the event of a crash landing, which turned out to be a necessary measure. We used this source to better understand the process of their early flights and visually see the location in which their first flights were performed.

"When Aviation Was Young." *The Washington Star Pictorial Magazine* [Washington D.C.], 13

Dec. 1953. *Library of Congress,*

chroniclingamerica.loc.gov/lccn/sn83045462/1953-12-13/ed-1/seq-181/#date1=1770&index=1&rows=20&words=Orville+Wright&searchType=basic&sequence=0&state=&date2=1963&proxtext=Orville+Wright&y=9&x=11&dateFilterType=yearRange&page=1.

Accessed 25 Feb. 2023.

"When Aviation Was Young" is an article published in The Washington Star Pictorial Magazine in 1953 providing six photos relating to the Wright brothers and their journey of flight. The main benefit that we received from this source was the visual aspect of the planes' appearance, and more importantly, the people's appearances. This source greatly helped in the development of our costumes and set for our performance.

Wilbur Wright and Orville Wright Seated on Steps of Rear Porch, 7 Hawthorne St., Dayton, Ohio. 1909. *Library of Congress*, www.loc.gov/resource/cph.3b13001/. Accessed 28 Nov. 2022.

This image of the Wright brothers seated on their porch provides a clear representation of the appearance of the brothers and the clothing they used. Many of the pictures involving costuming that we had previously seen were of the brothers hard at work. The attire for work and comfort were relatively different and this image demonstrated that difference.

Wilbur Wright Working in the Bicycle Shop. 1897. *Library of Congress*, www.loc.gov/resource/ppprs.00540/. Accessed 19 Dec. 2022.

This photo of Wilbur Wright working in his bicycle shop depicts a clear example of the clothing they wore. This image illustrated traditional attire for the time period and inspired the costuming for our performance. Wilbur is seen wearing a vest-like coat, which we replicated using the jackets we wear on stage.

Wright, Orville. *How We Invented the Airplane: An Illustrated History*. Dover Publications, 1988.

The book, written by Orville, mentions that before constructing planes, the brothers studied kites and gliders to gain a sense of how flight, or rather gliding, is achieved. Their inspiration for planes was Otto Lilienthal, a German engineer from the 19th century. This was a detail we made sure to include in our script, as we believe his work sparked their interest and prompted their expedition.

---. "Orville Wright to Bishop Milton Wright Announcing the First Successful Powered Flight, 17 December [1903]." Letter to Bishop Milton Wright, 17 Dec. 1903. *Library of Congress*, www.loc.gov/resource/mcc.061/?r=-0.013,-0.055,1.145,0.728,0. Accessed 26 Jan. 2023.

In the year 1903, the Wright brothers' longest flight lasted 57 seconds and their runs were an average of 31 miles per hour. This information was included in this letter written by Orville to his father, Bishop Milton Wright. The facts in this letter helped us understand what stage the brothers were at in 1903 and fully grasp how much their planes improved throughout the following decade.

---. *The Papers of Wilbur and Orville Wright including the Chanute-Wright Letters*. Edited by Marvin W. McFarland, McGraw-Hill Professional, 2000.

The Papers of Wilbur and Orville Wright included personal manuscripts, including the brothers' correspondence with inventor Octave Chanute, which proved to be among the most trustworthy sources accessible. The papers provided nearly all of the information that we could have hoped for. While many other sources helped us see into the minds of the brothers, these papers provided a literal view into their thoughts and how they processed the situations that they were placed in.

Wright, Orville, and Wilbur Wright. "Family Papers: Correspondence--Wright, Wilbur, 1900-1901." 1900. *Library of Congress*, www.loc.gov/item/wright002317/. Accessed 2 Feb. 2023.

The family correspondence collection consists of many letters to and from various people in Orville and Wilbur's life. This source helped us further understand the roles that their

family played in the success of their inventions, specifically the role of Katharine, their sister. After Wilbur's early death, Katharine was the one who spoke to clients and the public, as Orville was very introverted.

Primary Source Nexus. "Today in History: Wright Brothers' First Flight." Edited by Primary Source Nexus. *Primary Source Nexus*, 17 Dec. 2012, primarysourcenus.org/2012/12/today-in-history-wright-brothers-first-flight/. Accessed 1 Feb. 2023.

This article from Primary Source Nexus contains a photograph of Wright brothers' first flight. The photograph included in the article demonstrates the extreme complexity of their project and the plane's design. The photograph's caption includes information about the duration and distance of their flight, which we mention in our performance.

---. Letter. *The Published Writings of Wilbur and Orville Wright*, edited by Peter L. Jakab and Rick Young, Smithsonian Books, 2004.

This collection of letters from the Wright brothers walked us through the timeline and the significance of each of the major events the brothers experienced. The language in these letters was different from modern communication, motivating us to adapt the dialogue in our performance to fit the time period. The letters in this collection provided us with the resources needed to have an accurate representation of the time period through thoughtful dialogue and meaningful interactions.

Wright, Wilbur, and Orville Wright. "Kate Carew Interviews the Wright Brothers." Interview by Kate Carew. *Wright Brothers Aeroplane Company*, 1910, www.wright-brothers.org/History_Wing/Aviations_Attic/Carew_Interview/Carew_Interview.htm. Accessed 24 Jan. 2023.

Kate Carew's interview with the Wright brothers was one of their first public interviews. Before this interview, most people, including us, thought the brothers to be strictly business, but their humor and lightheartedness displayed in the interview proved otherwise. This source helped us recognize the adjustments that we needed to make to our dialogue to account for the brothers' newfound sense of humor.

---. *Miracle at Kitty Hawk: The Letters of Wilbur and Orville Wright*. Edited by Fred C. Kelly, Da Capo Press, 2002.

"Miracle at Kitty Hawk" is a collection of the unpublished papers of Orville and Wilbur Wright. It allows for an in depth look into the business that they were involved in and how they managed to succeed despite their disadvantages. The fact that they were educated so little yet opened the frontier of flight shows us just how remarkable their story is.

Wright Brothers. *Subject File: Patents--By Wright Brothers--USA--filed 23 March 1903, Patented 22 May 1906*. 23 Mar. 1903. *Library of Congress*, www.loc.gov/resource/mss46706.04135/?st=gallery. Accessed 5 Feb. 2023.

Being able to look at the original patents filed by the Wright brothers helped us understand the process that the brothers had to go through to secure their invention as

their own. Additionally, we learned that their first patents guaranteed that the brothers would receive a twenty percent royalty on any flying machine built from then on. If that royalty would have held, the Wright family would be the wealthiest family in history given the success of their invention.

Secondary Sources

Air Force Historical Support Division. "1908 -- First Fatality in a Powered Aircraft." *1908 -- First Fatality in a Powered Aircraft*, Air Force Historical Support Division, www.afhistory.af.mil/FAQs/Fact-Sheets/Article/459014/1908-first-fatality-in-a-powered-aircraft/. Accessed 1 Feb. 2023.

The Air Force Historical Support Division provided information regarding the crash of Orville Wright and Lt. Thomas Selfridge, who was a very good friend of Glenn Curtiss. Orville Wright survived the crash, but Lt. Thomas Selfridge sadly made history as the first death involving a plane crash. Curtiss blamed the Wright brothers for the death of his friend Selfridge, ultimately creating the rivalry between Curtiss and the brothers, which we made sure to include in our performance.

"Biography of the Wright Brothers for Children: Orville and Wilbur Wright for Kids - FreeSchool." *YouTube*, uploaded by Free School, 6 Aug. 2018, www.youtube.com/watch?v=Qt3pry6cWJM. Accessed 5 Jan. 2023.

This video offered tremendous insight as to what inspired the Wright brothers to begin researching aeronautics. Otto Lilienthal conducted a test of his glider prior to the Wright

brothers' test, but his poor design resulted in a fatal crash for Otto. These tests inspired the Wright brothers and their design, ultimately helping them become successful as the first men to fly an airplane.

Bradsher, Greg. "The United States Army Buys Its First Aeroplane, 1909." *National Archives*, United States Government, 19 Mar. 2019, text-message.blogs.archives.gov/2019/03/19/the-united-states-army-buys-its-first-aeroplane-1909/. Accessed 4 Jan. 2023.

This blog article from the United States National Archives gave us an inside look as to how the military was processing the brothers' invention and how they worked with one another. The Wright brothers sold their first aircraft for \$25,000 with \$2,500 extra for every mile per hour over 40 miles per hour. This information helped us comprehend how large of a scale the brothers began doing business on, as well as how large their impact was.

Burton, Walt, and Owen Findsen. *The Wright Brothers Legacy*. New York, New York, Harry N. Abrams, 2003.

This book served to inform us of what came after the Wright brothers took flight. We learned about what happened to their original aircrafts, how flight continued to evolve afterwards, and most importantly, how they created an everlasting impact on air travel. This information was used in the conclusion of our performance to summarize how the Wright brothers paved the way for modern aviation and opened the frontier of air transportation.

Crouch, Tom. *The Bishop's Boys: A Life of Wilbur and Orville Wright*. W. W. Norton and Company, 2003.

Tom D. Crouch's "The Bishop's Boys" is a brilliantly crafted book that goes deeper into the background of the Wright brothers and explains why they succeeded in a field where no one else had. The brothers were willing to push aside leading a "normal" life so that they could excel the success of their work to the highest standard. Crouch uses his extensive knowledge on the topic to dramatize the lives of the brothers so that the reader can form a personal connection with them.

Crouch, Tom D. *First Flight: The Wright Brothers and the Invention of the Airplane*. Forgotten Books, 2018.

In his book "First Flight", Tom Crouch writes about the brothers' childhood and their early lives in Dayton, Ohio. The book described the economic and ethnic background of their parents and how their family values were passed down to the brothers. It also speaks greatly on the beneficial impact that the Wright sister Katharine had on the progress of the flying machine.

---. "Wright Brothers: American Aviators." Edited by The Editors of Encyclopedia Britannica.

Wright Brothers, Encyclopedia Britannica, 26 Aug. 2022,

www.britannica.com/biography/Wright-brothers. Accessed 1 Feb. 2023.

We utilized this article early on in our research process and especially appreciated the insightful information regarding Wilbur and Orville's childhood. We learned from this article that the brothers frequently moved homes as kids. Because of this, they didn't have

much time to make friends, but they grew their chemistry and nourished their creativity during this time.

Crouch, Tom D., and Peter L. Jakab. *The Wright Brothers and the Invention of the Aerial Age*. National Geography Society, 2003.

Crouch and Jakab's "The Wright Brothers and the Invention of the Aerial Age" explains that despite the Wright brothers not being the sole aircraft creators of the time, the modern age of aeronautic travel would not be possible if it had not have been for the work of the brothers. The book contains many photographs that relate to the first flights conducted by the brothers, which we utilized as props to display in our performance.

Garrigus, David, director. *Kitty Hawk: The Wright Brothers' Journey of Invention*. Performance by Neil Armstrong and John Glenn, screenplay by David Garrigus, 2003. *Wright Bro*, wrightbro.com/. Accessed 1 Feb. 2023.

This film provided a visual depiction of the expedition of the Wright brothers and helped us to truly comprehend the timeline by seeing it visually reenacted. This film is set in the time period of the Wright brothers, thus the costuming of the characters conform to the typical clothing of the time. This inspired our costumes and made for a more realistic visual representation of our topic throughout the performance.

Gibbs-Smith, Charles H. *Leonardo da Vinci's Aeronautics*. London, England, Crown, 1967.

Leonardo da Vinci is widely known to have done research for a flying machine, and though he never found flight, he was the first to study it. The Wright brothers found inspiration in his work, but created a unique model, similar to our modern day airplane,

following their research. We were curious as to how much of their project was due to Leonardo da Vinci's work, and it is evident that he was merely inspiration.

Glenn H. Curtiss Museum. "Who Was Glenn Curtiss?" *Who Was Glenn Curtiss?*, Glenn H. Curtiss Museum, 2022, glennhcurtissmuseum.org/education/who-was-glenn-curtiss/. Accessed 6 Mar. 2023.

The Glenn H. Curtiss museum helped us gain more knowledge about the role that motorcycle engineer Glenn Curtiss played in the race to flight. Curtiss, who is now mostly unknown, knew far more about engines than the Wright brothers did, which prompted him to offer to work with the brothers. The Wright brothers declined this offer, showing us how to incorporate their pride into our performance.

Hazelgrove, William. *Wright Brothers, Wrong Story: How Wilbur Wright Solved the Problem of Manned Flight*. Prometheus, 2018.

The main idea of William Hazelgrove's "Wright Brothers, Wrong Story: How Wilbur Wright Solved the Problem of Manned Flight" is that the myth that the Wright brothers provided equal benefit in the area of flight is completely wrong. Hazelgrove makes the argument that without Orville, Wilbur could have found another mechanic to build his ideas, but that without Wilbur, there would be no ideas to build. This source helped us really understand and mold our characters into what they are in our performance.

History, Art, and Archives: United States House of Representatives. "A Flight Demonstration by the Wright Brothers." Edited by History, Art, and Archives: United States House of Representatives. *Historical Highlights: A Flight Demonstration by the Wright Brothers*,

History, Art, and Archives: United States House of Representatives,
history.house.gov/HistoricalHighlight/Detail/36319. Accessed 7 Jan. 2023.

The July 1906 meeting with US officials was one of the first looks that a government had on the Wright brothers' flying machine. The US House of Representative Archives allowed for us to receive a further look at the influential gathering. We gained a better understanding of the relationship that the brothers shared with the United States government, and how they used influence to fly their project to a status higher than just that of a backyard project.

Jakab, Peter L. "Visions of a Flying Machine: The Wright Brothers and the Process of Invention.

Peter L. Jakab." *History of Science Society*, vol. 83, no. 1, Mar. 1992, pp. 165-66,
<https://doi.org/10.1086/356089>. Accessed 1 Feb. 2023.

The main focus of Jakab's publication was to show how others had failed before the Wright Brothers succeeded. This was important to understand how the impact that the brothers had was truly a brand new frontier, something that had never been done.

Library of Congress. "America at the Turn of the Century: A Look at the Historical Context."

America at the Turn of the Century: A Look at the Historical Context, Library of Congress. *Library of Congress*,

www.loc.gov/collections/early-films-of-new-york-1898-to-1906/articles-and-essays/america-at-the-turn-of-the-century-a-look-at-the-historical-context/. Accessed 4 Apr. 2023.

The Library of Congress' article "America at the Turn of the Century: A Look at the Historical Context" found in their "The Life of a City: Early Films of New York, 1898 to

1906" collection allowed for us to gather more information about the events occurring in the world at the time of the Wright brother's discoveries. Through this article, we were able to further understand how big a leap the US was making towards the forefront of world economics, and how much competition there was for new industries. This competition is what motivated the Wright brothers to create their own economic industry.

Maurer, Richard. *The Wright Sister*. Connecticut, Roaring Brook Press, 2003.

"The Wright Sister" was extremely helpful to gain insight as to the role of Katharine Wright. This book explained her role in the creation of the flying machine and walked us through the Wright siblings' childhood. There were also a large number of photographs taken throughout their journey, which helped us visualize how the world's flying machine came into existence.

McCullough, David. *The Wright Brothers*. New York, NY, Simon & Schuster, 2015.

This selection was particularly valuable in assessing the personalities of Orville and Wilbur. Orville was naturally timid to his fame and the press, and was very sensitive to what they said about him, whereas Wilbur welcomed the press. These descriptions of their personalities allowed us to produce a more accurate representation of the Wright brothers' journey, focusing all the way from their love of transportation to the finest of details all throughout the script.

The National Aeronautics and Space Administration. "Overview of the Wright Brothers Invention Process." Edited by Kelly Sands and Nancy Hall. *Overview of the Wright*

Brothers Invention Process, National Aeronautics and Space Administration, 10 May 2021, wright.grc.nasa.gov/overview.htm. Accessed 1 Feb. 2023.

NASA is a trustworthy organization dedicated to the progression of aeronautics. This article in specific, speaks upon the effects that the Wright brothers had on space travel, as well as civilian transportation.

National Air and Space Museum. "1903 Wright Flyer" ["1903 Wright Flyer"]. *National Air and Space Museum: 1903 Wright Flyer*, National Air and Space Museum, airandspace.si.edu/collection-objects/1903-wright-flyer/nasm_A19610048000. Accessed 11 Apr. 2023.

The National Air and Space Museum contains a vast collection of high quality photos, articles, and 3D models of the Wright brothers' work. This 3D model of the Wright flier included a summary that provided us with direct information regarding the four years that Orville and Wilbur spent creating the flier. We used this information to expand our understanding of the topic, which has helped us add more historical context to our performance.

National Air and Space Museum. "Glenn Curtiss Motorcycle." Edited by National Air and Space Museum. *National Air and Space Museum: Glenn Curtiss Motorcycle*, National Air and Space Museum, 22 May 2015, airandspace.si.edu/stories/editorial/glenn-curtiss-motorcycle. Accessed 3 Jan. 2023.

The National Air and Space Museum provided background information about the involvement and role that Glenn Curtiss played in the invention of the airplane. Curtiss

started off, like the Wright brothers, as a bike mechanic, only Curtiss's bikes were motorized. This means that Curtiss had knowledge about motors, knowledge that the brothers didn't have, giving him an upper hand in the beginning of the "race to flight".

---. "The Wright Brothers." *National Air and Space Museum*, Smithsonian,

airandspace.si.edu/explore/stories/wright-brothers. Accessed 1 Feb. 2023.

The National Air and Space Museum provided multiple 3D examples of each glider produced by the Wright Brothers throughout their production. It allowed us to visualize the complexity of their designs and almost view into their minds. This was greatly beneficial to when creating our performance, we were able to understand the physics aspect of the project.

National Museum of the United States Air Force. "Glenn Hammond Curtiss: Aviation Pioneer"

["Glenn Hammond Curtiss: Aviation Pioneer"]. Edited by National Museum of the

United States Air Force. *National Museum of the United States Air Force: Glenn*

Hammond Curtiss, National Museum of the United States Air Force,

www.nationalmuseum.af.mil/Visit/Museum-Exhibits/Fact-Sheets/Display/Article/197532

[/glenn-hammond-curtiss-aviation-pioneer/](http://www.nationalmuseum.af.mil/Visit/Museum-Exhibits/Fact-Sheets/Display/Article/197532/glenn-hammond-curtiss-aviation-pioneer/). Accessed 2 Feb. 2023.

The National Museum of the United States Air Force advanced and expanded our knowledge of Glenn Curtiss and his own, lesser known, path to the air, and how his path to the air began his intense rivalry with the Wright brothers. Curtiss is known to have been funded by close friend Alexander Graham Bell, the inventor of the telephone, to

create the first aircraft. Bell provided Curtiss with large amounts of funds that the Wright brothers did not have access to.

National Oceanic and Atmospheric Administration Search. "Are we cleared to land? How the Wright Brothers influenced NOAA's mission." *National Ocean Service National Oceanic and Atmospheric Administration*, oceanservice.noaa.gov/news/dec16/wright-brothers.html. Accessed 1 Feb. 2023.

The National Oceanic and Atmospheric Administration provides a distinct example of how the work of the Wright Brothers influenced the missions using air navigation to provide geographical surveys. Using this source, we were able to comprehend the expansive repercussions brought forth by the works of the brothers.

National Park Service. "Katharine Wright" ["Katharine Wright"]. *National Park Service: Katharine Wright*, National Park Service, 30 Oct. 2019, www.nps.gov/people/katharine-wright.htm. Accessed 3 Apr. 2023.

The National Park Service provided us with great resources regarding the life of Katharine Wright, and the impact she had on the brothers. The relationship that Katharine had with Orville and Wilbur was one that provided motivation, and assistance to their journey to flight. We used this knowledge to mention in our script, the impacts that Katharine had in carving the passage through the frontier of flight.

National Parks Service. "The Road to the First Flight." *Wright Brothers National Memorial North Carolina*, National Parks Service, 2 Apr. 2022,

www.nps.gov/wrbr/learn/historyculture/theroadtothefirstflight.htm. Accessed 1 Feb. 2023.

While being a short overview, this article provided in depth information regarding the first flight achieved by the Wright Brothers. "The Road to the First Flight" provided us with valuable information regarding the brothers role in the economic rise of the United States in the early twentieth century. We used this information to better understand how they have left their mark on history.

Ohio History Channel. "Wright Brothers." Edited by Ohio History Channel. *Ohio History Connection*, Ohio History Channel, 1996, ohiohistorycentral.org/w/Wright_Brothers. Accessed 1 Feb. 2023.

This website contained a great deal of information about many aspects of the Wright brothers' lives and how their childhood passion for aeronautics allowed them to succeed when no one else could.. Their extreme work ethic was also described by this website, which helped us develop the script in an informative and accurate manner.

Porter, Nancy, director. *The Wright Stuff*. Narrated by Garrison Keillor, produced by Judy Crichton, adapted by Jeanne Jordan, Public Broadcasting Service, 1996. *Public Broadcasting Service*, www.pbs.org/wgbh/americanexperience/films/wright/. Accessed 5 Jan. 2023.

PBS' "The Wright Stuff" is a film that provided us with general information about the impact and lives of Wilbur and Orville Wright. It does a fantastic job of heightening the emotional and intense aspect of the lives and relationships that brothers had with each

other, and the people in their lives. PBS shows how the world would be different if the Wright brothers were to not have existed.

Public Broadcasting System. "Wright brothers fly first motorized plane 1903." *Wright Brothers Fly First Motorized Plane 1903*, Public Broadcasting System, 1998, www.pbs.org/wgbh/aso/databank/entries/dt03wr.html. Accessed 1 Feb. 2023.

PBS provides information about the brutal crash of Otto Lilienthal, a German inventor. They speak on how the Wright brothers knew about the dangers ahead of them, but how they also knew that their invention could break through into a new frontier in the science of transportation. We are able to use this information to better understand the resilience and hard working attitude that were instilled within the brothers which we portrayed in our performance.

Renstrom, Arthur George. *Wilbur and Orville Wright: A Reissue of a Chronology Commemorating the Hundredth Anniversary of the Birth of Orville Wright, August 19, 1871*. BiblioGov, 2013.

Arthur George Renstrom's "The Wright Brothers: A Chronology" serves more to the purpose of educating about the lives of the brothers, rather than their work. It overviews what situation the brothers were placed in when they were young, and how they overcame their challenges. We used this to understand not just what their childhood was like, but how it affected them throughout their lives.

Rickey, Lisa. "This Day in 1914: U.S. Circuit Court of Appeals Decided Wright Vs. Curtiss."

This Day in 1914: U.S. Circuit Court of Appeals Decided Wright Vs. Curtiss, Wright

State University, 13 Jan. 2014,

blogs.libraries.wright.edu/news/outofthebox/2014/01/13/this-day-in-1914-u-s-circuit-court-of-appeals-decided-wright-vs-curtiss/. Accessed 3 Feb. 2023.

The article released by Wright State University gave information about the lawsuit filed by the Wright brothers against Glenn Curtiss regarding his violation of their 1906 patent.

The five year case stretched on as the frustrated brothers continued their work with their air crafts. This case only further heightened the intensity of the rivalry between the brothers and Glenn Curtiss.

Wright Brothers Aeroplane Co. "The Wright Story." *THE WRIGHT STORY*, Wright Brothers

Aeroplane Company/Aviation History Wing,

www.wright-brothers.org/History_Wing/Wright_Story/Wright_Story_Intro/Wright_Story_Intro.htm. Accessed 1 Feb. 2023.

This website describes the first test conducted by the Wright Brothers and explains what went wrong. This information was included in our script to describe the setbacks of the first flight and what needed to be modified. Their journey was not a complete success at the beginning but through trial and error, the Wright brothers achieved something that nobody before them could.

"Wright Brothers Documentary: A Documentary on Wright Brothers." *YouTube*, uploaded by Aviation World, Google, 9 Aug. 2015, www.youtube.com/watch?v=QQn5bH7zUWk. Accessed 22 Dec. 2022.

This two hour documentary was used quite early on in our project to gather information. While lengthy, it added great depth to the topic and helped us further visualize the true impact that the brothers had on the world. We realized just how new of a thing this was to the world to follow and how unbelievable it must have been for civilian onlookers and for all the people involved.

"The Wright Brothers, First Successful Airplane (1903)." *YouTube*, uploaded by Simple History, 29 June 2017, www.youtube.com/watch?v=YDlk4Ky_ahs. Accessed 8 Jan. 2023.

This video depicted the Wright brothers' revolutionary mission to achieve flight. Along with key concepts and important dates, this video included a timeline of significant events on their road to success. This timeline provided inspiration to what should be included in our script and prompted us to include additional information we otherwise would have overlooked.

Wright Brothers Organization, editor. "Katharine Wright." *Wright Brothers Organization*:

Katharine Wright, Wright Brothers Organization,

www.wright-brothers.org/Information_Desk/Just_the_Facts/Wright_Family/Katharine_Wright/Katharine_Wright.htm. Accessed 2 Jan. 2023.

This article about Katharine Wright provided us with the backstory for her life and how she overcame the challenge of losing her mother at age fourteen, making it necessary for

her to develop and mature much sooner than girls her age. This found maturity allowed her to be the spokesperson for her brothers after Wilbur passed away. From this source, we gathered that the hardships in their family are the very thing that allowed for them to be so driven and successful in their business.

Wright State University. "The Wright Brothers Collection Guide." Edited by Wright State University. *Wright State University: University Libraries*, Wright State University, libraries.wright.edu/special-collections-and-archives/wright-brothers-collection. Accessed 1 Feb. 2023.

Wright State University provides a full collection of the brothers' manuscripts and film which we used to gain intel on every aspect of our project. This is one of the best sources we encountered as it provided quotes, information, film, and personal manuscripts.