Compose a Digital Magazine Article: Flying Machines to Machines of War

Warming Up

Close your eyes for a moment and image a modern aircraft. Then, write down a few notes on what features you imagined. Here are a few details you may have written down:

- Smooth, sleek sides and wings
- Jet engines
- A large cockpit for multiple pilots
- A large cabin for dozens or even hundreds of passengers
- Large wheels for smooth ground landings

Consult other students and come up with a long list of these features.

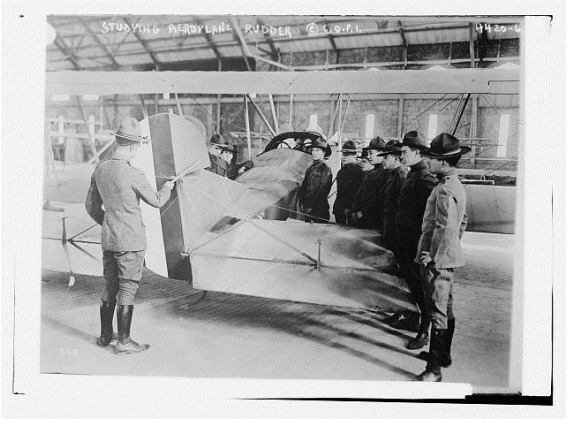
Now, go to the following Smithsonian link to take a close look at the 1903 Wright Flyer. This website allows for a three-dimensional exploration of this aircraft. Use your cursor to manipulate the aircraft and to zoom in. Look closely and write down the features you notice.

Smithsonian X 3D Explorer of the 1903 Wright Flyer created by Chief Curator Peter Jakab

Discuss the features you see. Make a list of these features beside the list you created for a modern aircraft. Now compare the two lists. You will likely notice that these two lists are very different. This should not surprise you. But it should cause you to think about how the modern aircraft emerged and evolved from the 1903 Wright Flyer.

Getting Started

From the moment the Wright brothers achieved success with their airplane, they began looking to profit from it. In 1905, they approached the U.S. War Department, thinking that the military would be interested in purchasing their machine. Surprisingly, the War Department flatly turned down their offer. But the Wrights were persistent. Within a few years, they had secured contracts with the U.S. Signal Corps and with a French company to build airplanes for both.



Studying aeroplane rudder, c. 1918. LOC Prints and Photographs; http://www.loc.gov/pictures/item/2014705946/

Over the next several years, the Wrights developed new designs and further exposed the world to the magic of flight. When war came to Europe in 1914, both sides of the conflict raced to put this new technology into the field. By the end of World War I in 1918, aircraft had become faster and more powerful, although it was still largely useless as a tool of war. But as each decade passed, inventors and engineers used constantly changing technology to devise aircraft that had once only been in the realm of fantasy. When war came to Europe again in 1939, aircraft had become indispensable for any military.

As a new writer for a digital magazine publisher, you have been tasked with writing an article about the evolution of aircraft from the Wright brothers' first efforts to the use of aircraft as machines of war. To prepare, you will read selections from Nancy Robinson Master's *Airplanes* and R. G. Grant's *Flight: The Complete History*. Beyond this, you will also conduct your own research into the evolution of aircraft, from the Wright brothers' designs to the high-technology aircraft of today. After collecting the information you need, you will develop a draft of your article

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using Google Slideshow. The editor of the digital magazine will review your slideshow before putting your article in the online magazine.

Readings

The following list of readings and sources should be used to complete the activity. Use the Research Note Taker to record bibliographical information about each source and important notes from each reading.

Books:

- Nancy Robinson Masters, *Bombers of World War II* (Minnesota: Capstone Press, 1998)
- Nancy Robinson Masters, *Fighter Planes of World War II* (Minnesota: Capstone Press, 1998)
- R. G. Grant, *Flight: The Complete History of Aviation* (New York: DK Publishing, 2017).

Archival Sources:

- Scrapbooks: January 1902-December 1908
- Scrapbooks: January-December 1909
- Scrapbooks: July-December 1910
- Scrapbooks: January 1910-December 1913

Glossary

- **aeronautics:** the science of air travel
- **agile:** quick moving; able to easily and smoothly change direction
- **horsepower:** engines designed to have the same pushing or pulling power that is related to the power of a horse to do the same job. A 12-horsepower engine is said to be as strong as 12 horses doing the task.
- **jet engine:** an engine that produces forward motion by the use of the rearward exhaust of fluids, heated air, or gases
- **propeller:** a revolving hub with attached blades. An engine moves the blades fast enough that it can propel (move forward) an aircraft.
- **propulsion:** a force that moves an object, like an airplane, forward

Building Background

View the slideshow to gain a better understanding of how changing technology affected aircraft design:

Taking to the Sky

Activity: Develop a Digital Magazine Article on the Evolution of Aircraft

Your editor at *Just Planes Magazine*, a digital publication specializing in aeronautics news and information, has just tasked you with drafting a digital article on the evolution of aircraft from 1903 to the 1950s. The editor wants an explanation of how aircraft designs changed to suit specific needs. He wants you to focus on the evolution of aircraft as weapons of war.

To complete this project, you will need to conduct both primary and secondary research into the history of the airplane. To start, you will want to dive into Wilbur and Orville Wright's scrapbooks, and look for evidence of how

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the brothers transformed their designs and how the world grew more receptive of air travel during these years. As you search, look for evidence of military interest in these machines.

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There are several scrapbooks collecting items from the years 1902 and 1913.

- Scrapbooks: January 1902-December 1908
- Scrapbooks: January-December 1909
- Scrapbooks: July-December 1910
- Scrapbooks: January 1910-December 1913

Be sure to keep careful notes of what you find in the Research Note Taker.

After researching the early history of airplane development in these scrapbooks, you should then delve into the secondary works on the history of military aviation. There are a number of great resources online. Here are a few links to get you started. Please use these links to inform your research methods and adjust your search terms to find additional resources.

- Rebecca Maksel, "The World's First Warplane," *Air & Space*, October 21, 2011.
- The Editors, "100 Years of Naval Aviation," *Air & Space*, March 2011.
- History of Flight: U.S. Centennial of Flight Commission
- Michael A. Clarke, "The Evolution of Military Aviation," *The Bridge*, December 3, 2008.
- Tom D. Crouch, Walter James Boyne, Roger E. Bilstein, "History of flight," *Encyclopaedia Britannica*.
- "The Dream of Flight," *Library of Congress*
- Richard P. Hallion, "Airplanes that Transformed Aviation: Sixteen historic designs that changed the game," Air and Space Magazine, July 2008.
- "Viewpoint: How WW1 changed aviation forever," October 20, 2014, BBC News.

Again, be sure to keep careful notes of what you find in your secondary research in the Research Note Taker.

Finally, search through the images and information in the following published histories:

- Nancy Robinson Masters, *Airplanes* (Michigan: Cherry Lake Publishing, 2009).
- R. G. Grant, *Flight: The Complete History* (New York: DK Publishing, 2007).

The draft for your magazine article will be built in Google Slides and must include the following:

- Two slides describing the decade-long attempt at developing an airplane useful for military goals. The Wright brothers' scrapbooks should be the main source of information for these slides.
- Four more slides documenting the evolution of aircraft. Begin with an aircraft that emerged during or just before World War I. Each subsequent slide will demonstrate the evolution of airplanes used for military purposes through the ages. These slides will include an image of the aircraft and text that describes the most important technological features of the aircraft. You may wish to include labels or text boxes to point out features of the images.

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Finding Images:

You will need to populate your digital article with several images of aircraft or aviation technology. In addition to using general Internet image searches, you should also consider consulting online historical image databases such as:

- The Library of Congress Prints & Photographs Online Catalog
- Wikimedia Commons
- Internet Archive

Building Your Slides:

Watch the Quick Tutorial for New Google Slides Presentation. This video will take you through the necessary steps to create a strong, attractive, and convincing presentation. Then build your slides using Google Slides.

Each page of your article will have text and images. For each image, be sure to include both a caption and source line. Example:

Caption: A photograph of Orville flying near Dayton, Ohio, in 1905.

Source: Wright Brothers 1905 powered airplane. LOC Prints and Photographs Division Washington, D.C. 20540; http://www.loc.gov/rr/frd/wright_bros/268-B_00658r.html

Reflect

Consider the following reflection prompts, and submit your answers in the form of a short essay or through class discussion:

> How did the use of primary documents help you better understand the significance of the accomplishments of the Wright brothers? How did reading about technological developments following the Wright brothers' designs help you understand that technology builds upon previous successes and failures? How can a failure in design or production possibly contribute to future success in technological development?

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