

# Central Illinois Teaching with Primary Sources Newsletter

EASTERN ILLINOIS UNIVERSITY  
SOUTHERN ILLINOIS UNIVERSITY  
EDWARDSVILLE

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## READY FOR TAKE OFF: AVIATION



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## READY FOR TAKE OFF: AVIATION

Welcome to the 29th issue of the **Central Illinois Teaching with Primary Sources Newsletter** a collaborative project of Teaching with Primary Sources Programs at Eastern Illinois University and Southern Illinois University Edwardsville. This school year we want to bring you topics that connect to the Illinois Learning Standards as well as provide you with amazing items from the Library of Congress.

Aviation is not specifically mentioned within the ISBE Learning Standards. However, items pertaining to aviation such as invention are mentioned for the following Illinois Learning Standards (found within goal, standard, benchmark, or performance descriptors). 13.B - Know and apply concepts that describe the interaction between science, technology and society. 16.E - Understand Illinois, United States and World history. 11.B - Know and apply the concepts, principles and processes of technical design.

For centuries people looked to the sky in amazement as they watched birds fly and wondered when and how man could ever accomplish this feat. Leonardo de Vinci was the first to study flight in the 1480's. He designed the ornithopter, which has the basis for today's helicopter. Leonardo's ornithopter was never created but did show the concept of how man could fly.

A first attempt by man to reach the sky was by balloon. Using smoke from a fire to blow heated air into a silk bag, Joseph and Jacques Montgolfier created the first hot air balloon in 1783. The first passengers to test their balloon were a sheep, rooster and a duck. The balloon traveled more than one mile and rose to heights of about 6,000 feet.

In the nineteenth century gliders became the focus of our obsession with flying. Otto Lilienthal, a German engineer, was the first to design a glider that could fly a person and travel long distances. Lilienthal manned over 2,500 flights but was killed when he lost control of his glider and crashed to the ground.

Orville and Wilbur Wright were obsessed with the notion of flight. In a letter to Octave Chanute, an aeronautical

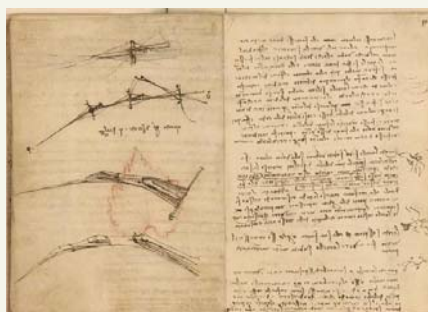
authority, Wilbur writes, *"For some years I have been afflicted with the belief that flight is possible to man."*

The Wright brothers spent many years researching the early studies of flight such as balloons, kites and gliders. They designed a wind tunnel generating almost 12 horsepower to test the shape of gliders. Based on their research, the Wright brothers constructed their first plane called the "Flyer" which weighed 605 pounds. On December 17, 1903, Orville Wright piloted the first heavier-than-air flight. The flight lasted 12 seconds and flew 120 feet. These early flights by the Wright brothers are the foundation for flight as we know it today.

NASA. Accessed 1.25.10 <http://www.ueet.nasa.gov/StudentSite/historyofflight.html>

Library of Congress, American Memory, Wilbur and Orville Wright Papers. Accessed 1.25.10 <http://memory.loc.gov/ammem/wrighthtml/wrightchan.html>

Library of Congress, Today in History, Accessed 1.25.10 <http://memory.loc.gov/ammem/today/dec17.html>



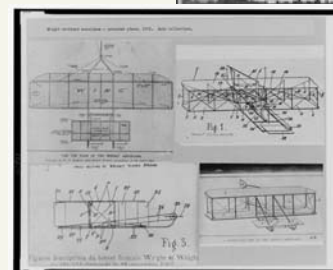
Manoscritti de  
Leonardo da Vinci  
Sul Volo degli  
Uccelli e Varie Altre  
Materie  
Library of Congress  
Exhibitions

Ayres' new aerial machine  
Library of Congress  
Prints and Photographs



Wright brothers  
aeroplane-patented plans,  
1908

Library of Congress  
Prints and Photographs



CONNECTING TO ILLINOIS

Less than seven years after the first flight at Kitty Hawk, Charles F. Willard piloted the first downstate Illinois airplane from Decatur, Illinois on July 14, 1910. His Curtiss Model D-4 flew for six miles at an altitude of 600 feet. This wasn't the first flight in Illinois, that honor goes to Glenn Curtiss who flew over Hawthorne Race Track in Cicero, Illinois. His plane flew to a height of about 60 feet and landed after 40 seconds. Curtiss's flight was not considered as successful with Willard's flight recorded as best in the state.

Illinois does have a connection to the first flight by the Wright brothers through Octave Chanute. Chanute was an immigrant from France who settled in Chicago. He was an engineer and designed the Union Stockyards. In the mid 1890's, Chanute wrote "Progress in Flying Machines" which served as a research guide for pioneers of flight. On May 13, 1900, Wilbur Wright wrote a letter to Octave Chanute expressing his desire to see man fly. Chanute, intrigued with this letter began to mentor the Wright brothers offering advice to help them achieve their dream of flight.

The airplane has been used for many different purposes. The United States Postal Service created the nation's airmail service in 1918. The USPS was responsible for training pilots and establishing routes until 1927, when private companies took over airmail. In 1928, Charles Lindbergh broke the record for volume of airmail flown in one-trip. His historic flight started in St. Louis and ended in Chicago carrying more than 250,000 pieces of mail weighing in at 4,278 pounds and 12 ounces. Dr. Cindy Rich, TPS Director at Eastern Illinois University, is lucky enough to have a family heirloom from this flight, a letter written from her Grandfather, Clarence to his sweetheart Bobby (her Grandmother). The envelope has the stamp "Lindbergh Again Flies the Airmail". In the letter Clarence tells how he is in a hurry to mail his letter because he wants "Col. Lindy" to carry it down to her.

Decatur Airport, Accessed 1.25.10 [http://www.decatur-airport.org/history\\_detail.htm](http://www.decatur-airport.org/history_detail.htm)

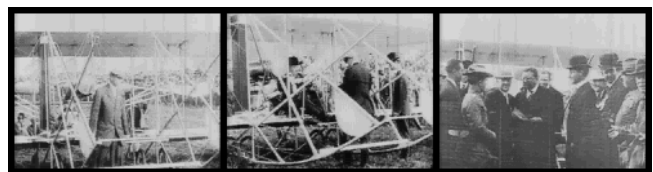
Chicago Public Radio WBEZ, Accessed 1.25.10 <http://www.chicagopublicradio.org/Content.aspx?audioid=37461>

PBS, Accessed 1.25.10 <http://www.pbs.org/wgbh/amex/lindbergh/sfeature/airmail.html>

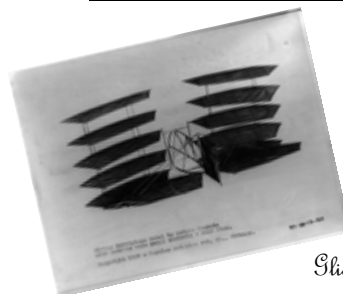
Smithsonian National Postal Museum, Accessed 1.25.10 [http://www.postalmuseum.si.edu/exhibits/2c2\\_airmailinamerica.html](http://www.postalmuseum.si.edu/exhibits/2c2_airmailinamerica.html)



Waldman Airmail Letter  
Cindy Rich



Colonel Roosevelt is invited to fly in Arch Hoxsey's plane at St. Louis, Mo., . 1910  
Library of Congress  
American Memory



Slider multiplane model by Octave Chanute, with moveable main panel controls-rear view.  
Library of Congress  
Prints and Photographs

LEARN MORE WITH  
AMERICAN MEMORY COLLECTIONS

**Words and Deeds in American History** <http://memory.loc.gov/ammem/mcchtml/corhome.html>

This collection contains some of the most interesting and significant holdings from the Library of Congress. The overwhelming majority of the Manuscript Division's collections comprise the personal papers of individuals and families. Although interesting as artifacts, the real worth of the manuscripts in the Library of Congress lies in their evidentiary value. They are the primary sources upon which the writing of history is based. Some of the great primary sources from personal papers include: a letter from Wilbur Wright to Octave Chanute, a telegraph from Orville Wright to Bishop Milton Wright and Amelia Earhart's palm print and analysis of her character by Nellie Simmons Meier.

Library of Congress, American Memory, Accessed 1.25.10

**Photographs from the Chicago Daily News 1902-1933** <http://memory.loc.gov/ammem/ndlpcoop/ichihtml/cdnhome.html>

Over 500 images in this collection document the evolution of aviation technology in the early twentieth century. Research the exploits of early pilots such as Walter Brookins, who in July 1910, became the first person to pilot an airplane to an altitude of one mile, Charles F. Williard, who made the first flight over Los Angeles five months later, and Charles A. Lindbergh, who made the first solo, non-stop flight across the Atlantic Ocean in 1927.

Library of Congress, Collection Connection, Accessed 1.25.10

**The Wilbur and Orville Wright Papers at the Library of Congress** <http://memory.loc.gov/ammem/wrighthtml/wrighthome.html>

The Wilbur and Orville Wright papers consist mostly of correspondence but also include diaries, notebooks, scrapbooks and drawings. The diaries and notebooks series are among the most significant of the papers because they record many of their glides and powered flights at Kitty Hawk and elsewhere as well as their scientific experiments and data.

Library of Congress, American Memory, Accessed 1.25.10

**America from the Great Depression to World War II, Photographs from the FSA-OWI, 1935-1945** <http://memory.loc.gov/ammem/fsowhome.html>

This collection goes from the assembly line to the hanger. Images showing the assembly line where the bombers were built that would be used in World War II. Parachutes, flight students and trained mechanics are subjects of both black and white and color photographs from this collection.

Library of Congress, American Memory, Accessed 1.25.09



Charles A. Lindbergh wearing flight gear, standing in the cockpit of a U.S. Mail plane  
Library of Congress  
American Memory



The pilot. H. De Marsan, 60 Chatham Street, N.Y.  
Library of Congress  
American Memory

Cockpit of Amelia Earhart's plane showing the transmitter key from which she transmitted an urgent SOS

Library of Congress  
Print and Photographs



## IN THE CLASSROOM: LESSON PLANS ACTIVITIES AND RESOURCES

### Wiseguide

<http://www.loc.gov/wiseguide>

**July 2009: Who was "Lady Lindy"**  
<http://www.loc.gov/wiseguide/jul09/earhart.html>

**September 2006: First in Flight**  
<http://www.loc.gov/wiseguide/sept06/flight.html>

**April 2009: Get to the Choppa!**  
<http://www.loc.gov/wiseguide/apr09/helicopter.html>

### Today in History

<http://memory.loc.gov/ammem/today/index.html>

**December 17, 1903: First Flight**  
<http://memory.loc.gov/ammem/today/dec17.html>

**June 11, 1927: Lindbergh Honored**  
<http://memory.loc.gov/ammem/today/jun11.html>

### Webcasts

<http://www.loc.gov/today/cyberlc/index.php>

**Aeronautics at the Library of Congress**  
[http://www.loc.gov/today/cyberlc/feature\\_wdesc.php?rec=4217](http://www.loc.gov/today/cyberlc/feature_wdesc.php?rec=4217)

### Science Reference Service

<http://www.loc.gov/rr/scitech/>

**Balloons and Airships** <http://www.loc.gov/rr/scitech/tracer-bullets/balloonstb.html>

**Aerodynamics (Mechanics of Flight)**  
<http://www.loc.gov/rr/scitech/tracer-bullets/aerodynamicstb.html>

### Prints and Photographs

<http://www.loc.gov/rr/print/catalog.html>

**Tissandier Collection** <http://lcweb2.loc.gov/pp/tischtml/tiscabt.html>

**Photographs Taken by the Wright Brothers of Aviation Experiments, Home and Family** [http://www.loc.gov/rr/print/coll/236\\_wright.html](http://www.loc.gov/rr/print/coll/236_wright.html)

### Teacher's Page

<http://www.loc.gov/teachers/>

#### Presentations:

**From Fantasy to Flight** <http://www.loc.gov/teachers/classroommaterials/presentationsandactivities/presentations/fantasy-flight/>

#### Primary Source Set:

**The Inventive Wright Brothers** <http://www.loc.gov/teachers/classroommaterials/primarysourcesets/flight/>

#### Themed Resources:

**Flight and Early Aviators** <http://www.loc.gov/teachers/classroommaterials/themes/flight/>

#### Collection Connection:

**Photographs from the Chicago Daily News 1902-1933** <http://www.loc.gov/teachers/classroommaterials/connections/photos-chicago/thinking.html>

**The Wilbur and Orville Wright Papers at the Library of Congress** <http://www.loc.gov/teachers/classroommaterials/connections/wright/>

#### Exhibitions

<http://www.loc.gov/exhibits/>

**Igor Sikorsky's Helicopters** <http://www.loc.gov/exhibits/treasures/trr081.html>

**First Flight** <http://www.loc.gov/exhibits/treasures/trr019.html>

**The Dream of Flight** <http://www.loc.gov/exhibits/treasures/wb-achieve.html>

**S-42 Flying Clipper Seaplane** <http://www.loc.gov/exhibits/treasures/trr120.html>

**Bell's Ring Kite** <http://www.loc.gov/exhibits/treasures/trr049.html>

**Lindbergh on the Future of Airliners**  
<http://www.loc.gov/exhibits/treasures/trr119.html>

### America's Library

<http://www.americaslibrary.gov/>

#### Meet Amazing Americans:

**Amelia Earhart Learns to Fly** [http://www.americaslibrary.gov/aa/earhart/aa\\_earhart\\_learns\\_1.html](http://www.americaslibrary.gov/aa/earhart/aa_earhart_learns_1.html)

**Amelia Earhart Flies Across the Atlantic** [http://www.americaslibrary.gov/aa/earhart/aa\\_earhart\\_atlantic\\_1.html](http://www.americaslibrary.gov/aa/earhart/aa_earhart_atlantic_1.html)

**Amelia Earhart's Last Flight** [http://www.americaslibrary.gov/aa/earhart/aa\\_earhart\\_last\\_1.html](http://www.americaslibrary.gov/aa/earhart/aa_earhart_last_1.html)

#### Jump Back in Time:

**December 17, 1903: Wilbur and Orville Wright's First Flight** [http://www.americaslibrary.gov/jb/progress/jb\\_progress\\_flight\\_1.html](http://www.americaslibrary.gov/jb/progress/jb_progress_flight_1.html)

**June 11, 1927: Lindbergh Received the Distinguished Flying Cross** [http://www.americaslibrary.gov/jb/jazz/jb\\_jazz\\_lindbergh\\_1.html](http://www.americaslibrary.gov/jb/jazz/jb_jazz_lindbergh_1.html)

#### Explore the States:

**Kitty Hawk, North Carolina** [http://www.americaslibrary.gov/es/nc/es\\_nc\\_ktthywk\\_1.html](http://www.americaslibrary.gov/es/nc/es_nc_ktthywk_1.html)



Amelia Earhart,  
1897-1937  
Library of Congress  
Prints and  
Photographs



Charles Lindbergh, wearing helmet with goggles up, in open cockpit of airplane at Lambert Field, St. Louis, Mo.

Library of Congress  
Prints and Photographs

## TEST YOUR KNOWLEDGE

**Aviation Scavenger Hunt:** Use the information from this newsletter to answer the questions.

1. What was the first heavier-than-air plane named?
2. Who created the first hot air balloon?
3. Who made the first solo non-stop flight across the Atlantic?
4. Who piloted the first flight in Illinois?
5. The ornithopter was the basis for what mode of aviation used today?
6. He designed the first glider that could fly a person long distances.
7. He was the first to study flight in the 1480's.
8. They piloted the first heavier-than-air plane on December 17, 1903.
9. He was an aeronautical authority who mentored the Wright brothers.
10. Charles F. Willard piloted the first downstate Illinois airplane from where?



*Howard Hughes emerging  
from an airplane cockpit.*

*Library of Congress  
Print and Photographs*

*Charles Lindbergh, 1902-  
1974, three-quarter length  
portrait, standing, left  
profile, working on engine of  
"The Spirit of St. Louis"*

*Library of Congress  
Print and Photographs*



*Wilbur Wright in Europe  
postcards, ca. 1908-1909*

*Library of Congress  
Exhibitions*

IMAGE SOURCES



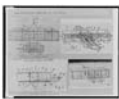
Library of Congress  
Three-quarter left rear view of glider in flight at Kitty Hawk, North Carolina  
Prints and Photographs



Library of Congress  
Manoscritti dei Leonardo da Vinci Sul Volo deql. Uccelli e Varie Altre Meterie Paris: E Rouveyre, 1893  
Exhibitions/The Dream of Flight



Library of Congress  
Ayres' new aerial machine  
Prints and Photographs



Library of Congress  
Wright brothers aeroplane - patented plans, 1908  
Prints and Photographs



Library of Congress  
Colonel Roosevelt is invited to fly in Arch Hoxsey's plane at St. Louis, Mo., 1910 / [production company unknown].  
American Memory/Early Motion Pictures, 1897-1920



Library of Congress  
Glider multiplane model by Octave Chanute, with movable main panel controls - rear view  
Prints and Photographs



Library of Congress  
Charles A. Lindbergh wearing flight gear, standing in the cockpit of a U.S. Mail airplane  
American Memory/Photographs from the Chicago Daily News, 1902-1933



Library of Congress  
The pilot. H. De Marsan, Publisher, 60 Chatham Street, N. Y. [n. d.]  
American Memory/America Singing:Nineteenth Century Song Sheets



Library of Congress  
Cockpit of Amelia Earhart's plane showing the transmitter key from which she transmitted an urgent SOS  
Prints and Photographs



Library of Congress  
Amelia Earhart, 1897-1937  
Prints and Photographs



Library of Congress  
Charles Lindbergh, wearing helmet with goggles up, in open cockpit of airplane at Lambert Field, St. Louis, Missouri  
Prints and Photographs



Library of Congress  
Howard Hughes emerging from an airplane cockpit  
Prints and Photographs



Library of Congress  
Charles Lindbergh, 1902-1974, three-quarter length portrait, standing, left profile, working on engine of "The Spirit of St. Louis"  
Prints and Photographs



Library of Congress  
Wilbur Wright in Europe, Postcards ca. 1908-1909  
Exhibitions/The Dream of Flight

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[WWW.EIU.EDU/~EIUTPS](http://WWW.EIU.EDU/~EIUTPS)

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