

### Anemometer– Wind speed measurement

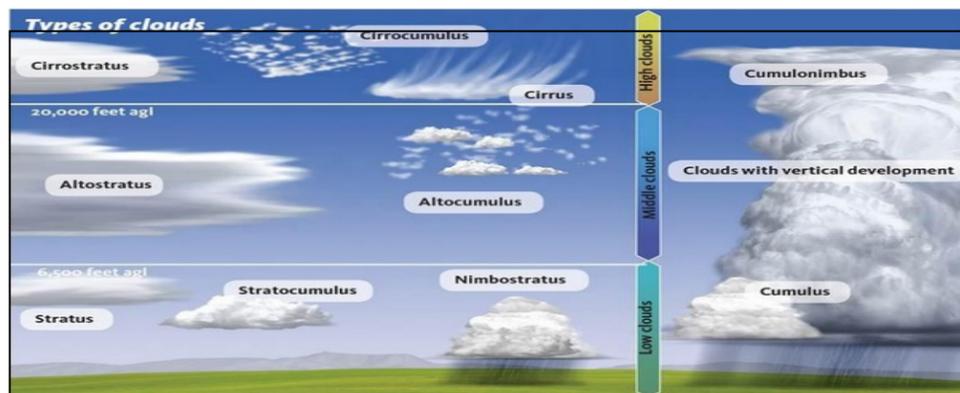
Wind is one of many weather factors that impact aircraft performance. Anemometers are used to gauge wind speed.

Materials needed: 2 straws, 5 small paper cups, paper punch, stapler, pencil with eraser, push pin, recycled plastic container with lid (frosting, yogurt, etc), heavy weight to put in plastic container.

Punch a whole in 4 of the paper cups 1 centimeter from the rim. In the 5th cup punch 4 evenly spaced holes a centimeter from the rim and also a small hole in the center of the bottom. Make a small hole in the center of the plastic lid.

Push a pencil through the center hole of the cup and also through the plastic lid. Add weight to the container to keep it upright. Slide one the straws through the hold in one of the 4 cups. Bend the end of the straw that is inside the cup and staple to inside of cup. Place the other end of the straw through 2 of the holes in the 5th cup then through the hole in one of the other cups. Staple the end of the straw to the inside of the cup.

Repeat these steps on the remaining 2 cups. Make certain the 4 cups are facing in the same direction around the center cup. Push the push pin through the 2 straws where they overlap and then into the pencil eraser. Mark 1 of the cups with a marker to use as your starting point when measuring wind speed.



Which of these clouds should cause concern? What do clouds tell you about your flight?

Now that I've earned this badge, I can give service by:

- Volunteering with an organization that uses aviation in it's mission.
- Organizing an aviation exploration event for younger scouts.

Written by Kentucky Bluegrass Ninety-Nines 2017  
The Ninety-Nines are an international organization of women pilots that promotes advancement of aviation through education, scholarships and mutual support while honoring our unique history and sharing our passion for flight.  
To order this badge contact: tgsanders@att.net



# Ambassador Aviation Badge

**“And to prove that a flyer can be a girl, who can soar as high as any man. I’m showing women around the world that we can fly, we surely can!” \***

Katherine Stinson was the first person to fly at night in 1912. Is flying your passion also?

\*From “Where No Man Can Touch” by Pat Valdata

- Steps:**
- Preflight
  - Taxi
  - Takeoff
  - Flight
  - Landing

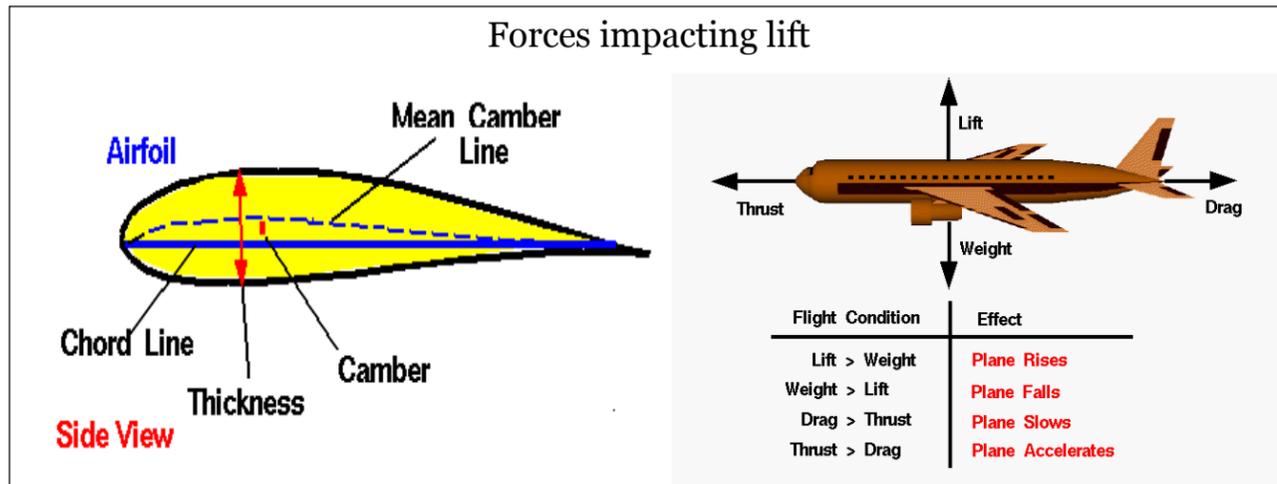
Purpose: This badge will open opportunities for my future careers (maybe in aviation).

**Preflight:** Choices—Do one

- Demonstrate how an airfoil generates lift, how the ailerons, elevators and rudder affect the aircraft’s attitude and how the propeller produces thrust.
- Find out what service organizations in your community use aviation in their mission. Find out about their needs and if you can help. Volunteer for one in your community.
- Many women have made an impact on aviation through history. Who has made the most impact on your aviation passion and why? Find a creative way to share your enthusiasm with others.
- Obtain the FAA Airplane Flying Handbook (or Glider Flying/Helicopter Flying). Start your engines. Begin reading.

**Taxi:** Choices—Do one

- Demonstrate the importance of the control surfaces (ailerons, elevators and rudder) during take off, climbs, turns, descent and landing.
- Explain the purpose of each of these single engine aircraft instruments: attitude indicator, heading indicator, altimeter, airspeed indicator, turn and bank indicator, vertical speed indicator, compass, navigation via GPS or VOR, communication radios, tachometer, oil pressure gauge and oil temperature gauge.
- Visit Civil Air Patrol squadron in your community and find out about it's mission and requirements for membership.



**Takeoff:** Choices—Do one

- Start your path toward private pilot certificate. Sign up for ground school.
- Learn to identify clouds and what they tell you about flight conditions. What other weather conditions affect aircraft and how? Explore the NOAA Aviation Weather center online.
- Build a high quality model of a flying aircraft or design your own wings that can carry you.

**Innovative women in aviation:** On June 15, 1921, **Bessie Coleman** received the first pilot's license issued to an African American, male or female, from the Federation Aeronautique Internationale. Coleman was a bravely independent and determined woman, who decided that learning to fly provided an exciting challenge. However, in the early years of the 20th century she had two strikes against her: her race and her gender. Unable to secure flight training in the United States, she went to France and earned her license. She returned to the United States in September of 1921, and began to perform in the Chicago area, doing aerobatic loops and figure eights.

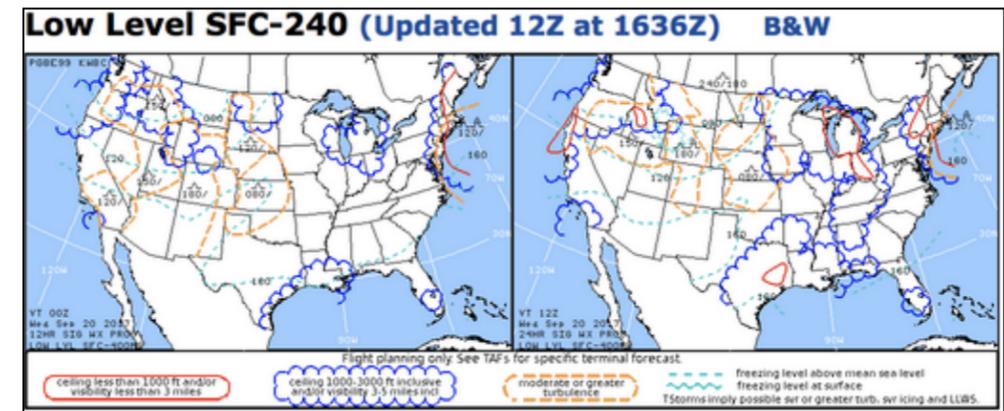
Much knowledge has been achieved by using animals in aviation projects. What information can you find about animals in aviation?

**Flight:** Choices—Do one

- Flying in small private planes, helicopters, blimps or hot air balloons are not approved as Girl Scout Program activities.
- Under supervision, perform a preflight inspection of an aircraft. Explain the need for each task.
- Visit a control tower facility. Report on the operation and how it benefits pilots. Interview the staff about their job.
- Spend time in a simulator. These are available through an aviation school, general aviation airport, online or software. Plan a course and fly the headings to that destination. Keep a log. How many hours can you log?

**Landing:** Choices—Do one

- Subscribe to AOPA Flight training magazine. Report on a relevant article that interests you. (You get 6 free issues with subscription)
- Connect with an aviation mentor who can answer your aviation questions. Meet regularly to discuss your progress.
- Pick a destination. Research ticket options and if you can, choose your route. Pack your bags and go.



**Innovative women in aviation: Amelia Earhart Record Setter**

- 1922 — Feminine altitude record of 4,267 meters (14,000 feet).
- 1928 — First woman to fly across the Atlantic as a passenger in the Fokker F.VII Friendship.
- 1929 — Feminine speed record.
- 1930 — Feminine speed record.
- 1931 — First woman to fly an autogiro.
- 1931 — Autogiro altitude record of 5,612 meters (18,415 feet).
- 1932 — First woman (and only the second person) to fly solo and nonstop across the Atlantic. Also first person to cross the Atlantic twice by air.
- 1932 — First woman to fly solo and nonstop across the United States.
- 1933 — Reset her transcontinental record.
- 1935 — First person to fly solo from Honolulu, Hawaii, to the U.S. mainland (Oakland, California).
- 1935 — Speed record between Mexico City and Washington, D.C.
- 1935 — First person to fly solo from Mexico City to Newark, New Jersey