



# Fly Legacy

**DECEMBER 2025**  
Newsletter by  
Gene Nicolo

*This photo was taken by one of our instructors, Patrick Williams, at Atlantic City Airport.*



## PHOTO OF THE MONTH

# Boeing C-17A Globemaster III

**The C-17 made its maiden flight on September 15, 1991 and the production model was delivered to Charleston Air Force Base in June of 1993. It is operated by the Air Mobility Command from Travis Air Force Base and other bases in the country.**

It is considered most flexible and enabled to airlift troops and material throughout the world. It is operated by a crew of three: pilot, copilot and loadmaster.

It has a payload capacity of over 85 tons and the maximum gross weight of over 290 tons. The Globemaster has a service ceiling of 45,000 feet and unrefueled can fly approximately 2,400 nautical miles at 450 knots. The Globemaster is also able to land on difficult fields and can take off and land on runways as short as 3,500 feet.

There are 157 in active duty with additional numbers allocated to the Air National Guard and Air Force reserve.

## DID YOU KNOW?

# Global Wind Patterns and Jet Streams

The wind patterns on Earth are created by the uneven heating of the surface. This is caused by the tilt of the Earth on its rotational axis of  $23\frac{1}{2}^{\circ}$ . The distance from the Earth to the Sun is averaged at 93,000,000 miles, however it is not an orbit of a circle, it orbits as an ellipse. That means that the Earth is closer to the Sun sometimes and farther away than other times and averages out at 93,000,000 miles. Actually, the Earth is closer to the Sun in Winter than in Summer, but since the Northern Hemisphere is tilted away from the Sun in Winter, we get colder weather, and the Southern Hemisphere gets warmer weather.

Most of the Sun's energy is concentrated at the equator. As a result, hot air rises from the latitudes around the equator and then travels upward. As it rises it cools and then begins to descend, in the Northern Hemisphere at approximately  $60^{\circ}$  N latitude. It then warms again, rises, then descends at approximately  $30^{\circ}$  N latitude. These are called convective cells. The cell from the equator to  $60^{\circ}$  N is called a Hadley Cell, the cell from  $60^{\circ}$  to  $30^{\circ}$  N is called a Ferrel Cell and finally the cell from  $30^{\circ}$  N towards the North Pole is called the Polar Cell.

As the Earth spins it creates the Coriolis effect which diverts winds on the downward patterns from these cells. In the Hadley cell, the winds are deflected from the East to the West. In the Ferrel Cell, the winds are flowing from the West to East and in the Polar Cell, they flow from the East to the West. These flow patterns have been given names. The Hadley Cell pattern is called the Trade Winds, the Ferrel Cell pattern is called the Westerlies, and the Polar Cell flow is called the Polar Easterlies.

At the equator, since the rising air has no differential in pressure, there are little winds. As a result, they have been called the Doldrums or the Horse Latitudes. The Horse Latitudes come from the notion that trade sailors coming from Europe to the Americas would follow these winds and, if caught in the Doldrums, would throw their horses overboard to lighten the weight, hopefully getting some speed and thus the name stuck.

When the air mixes from the Hadley Cell with the Ferrel Cell spinning patterns are created and that develops into a jet stream, additionally when the Ferrel Cell mixes with the Polar Cell another jet stream is created. The southernmost jet stream is called the Subtropical Jet, and the northernmost jet stream is called the Polar Jet.

In Summer, the Subtropical Jet is prominent over the Northern Hemisphere, and the Polar Jet recedes North in the Winter, the reverse occurs. In Spring and Fall, the two jet streams vacillate up and down thus creating times of warm weather when the Subtropical Jet rises a bit and, in the Spring, cooler weather when the Polar Jet dips towards the Equator.

These jets eventually settle, in the Winter and Summer, and create the corresponding weather patterns of colder or warmer weather. The velocity of the jet streams can be significant, ranging from 80 miles an hour to 275 miles an hour in the core, they are less strong at their perimeters.

The jet streams vary in height from about 20,000 to 45,000 feet depending on the latitude

## GENE'S AVIATION QUIZ

- 1 What conditions must be present for an airplane to spin?
- 2 What makes an aircraft turn?
- 3 What is the difference between service ceiling and absolute ceiling?
- 4 What are some types of drag on an aircraft?
- 5 What is leakage drag?
- 6 What is pressure drag?

# Check Rides



**Brian Heffernan**

CFI

**Instructor:** Cheryl Benish



**Max Minkovsky**

Private Pilot

**Instructor:** N. Danylyshyn



**Guillaume Nelessen**

CFI

**Instructor:** Cheryl Benish



**David Mauretzen**

Multiengine

**Instructor:** Ramon Rodriguez

**Brooks Maxedon**

Multiengine

**Instructor:** Kornel Pesti

**Zac Kane**

Multiengine

**Instructor:** Kornel Pesti

**Jessan Groenendyk**

CFI

**Instructor:** Jim Zararis

**Zeeshan Pandejee**

CFI

**Instructor:** Jim Zararis

# First Solo



**Rimas Moursi**

**Instructor:**

Wael Abdo

**Luke Slaven**

**Instructor:**

Nazariy Danylyshyn



**Pedro Tapia**

**Instructor:**

Thomas Ringe

## Learn to Fly Program

Learn more about our day camp and weekend programs for kids and adults at [flylegacyaviation.com/camp](https://flylegacyaviation.com/camp)

Registrations are now open for Young Pilot Winter Camp, held December 29, 2025 – January 2, 2026, for kids ages 6–14.

# Our Trusted Partner: Stratus Financial

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financing](http://flylegacyaviation.com/financing)



## QUOTE OF THE MONTH

*"Always try to  
keep the number  
of landings you  
make equal to  
the number of  
take-offs you  
have made."*

## GENE'S QUIZ ANSWERS

- ① It must be stalled and be yawing.
- ② The horizontal component of lift.
- ③ Service ceiling, the aircraft cannot climb greater than 100 feet per minute. Absolute ceiling, no excess power is available and thus has a zero rate of climb.
- ④ Cooling drag, form drag, leakage drag, pressure drag are some examples.
- ⑤ When air flows in and out areas not intended. Ex. When high pressure air leaks out of the cabin.
- ⑥ When a shock wave forms around an object moving at or near the speed of sound. Ex. The tips of a spinning propeller blade.

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