FlyLegacy

**OCTOBER 2025**
Newsletter by
Gene Nicolo

# PHOTO OF THE MONTH

# Ercoupe

Ercoupe is a low-wing, single-engine, two-seat, aircraft created for the civil aviation market prior to World War 2. It cannot spin and is nearly impossible to stall. It has an elevator design that allows for only about 13° of travel, and an automatic yaw correction which permits the aircraft to fly out of a spin.

Only 112 Ercoupe were delivered before the start of World War 2. Ercoupes were widely used for pilot training and by the Civil Air Patrol. Production of the Ercoupe was resumed after the war with the last model being produced in 1970.

**Crew:** 1
**Capacity:** 1 passenger
**Length:** 20 ft 9 in
**Height:** 5 ft 11 in
**Wing area:** 142.6 ft2
**Empty weight:** 749 lbs
**Useful load:** 511 lbs
**Max takeoff weight:** 1,260 lbs

## DID YOU KNOW?

# Horsepower: Not What You Think

The unit of horsepower was first developed in the late 18th century by James Watt, the inventor of the steam engine. He found that an English workhorse could work at a rate of 550 pound-feet per second or 33,000 pound-feet per minute, for a reasonable length of time. From these observations the unit of horsepower we use today was developed.

Horsepower is a measure of work. Work is defined as force times the distance an object is moved. For example, if you lift a 1-pound object 1 foot off the floor, you have done 1 foot-pound of work.

In an internal combustion engine work is done by the distance the piston moves times the area of the cylinder's displacement.

## GENE'S AVIATION QUIZ

1. What is a common route?
2. What is a pointer NOTAM?
3. What is the center of pressure (sometimes called center of lift)?
4. What happens to the center of pressure when the AOA increases?
5. What happens to the CG when the AOA increases?
6. Why do pilots report their altitude to ATC after take-off when flying IFR?

The fuel air mixture in the engine must be compressed and ignited and it is in many ways like a coil spring. The more spring is compressed, the more work it has the potential for doing.

There are various definitions of horsepower.

**Indicated horsepower** is the power developed in a combustion chamber without reference to friction loss within the engine.

**Brake horsepower** is the difference between the indicated horsepower and the horsepower when taking into account friction. Which is the power required to overcome mechanical losses such as pumping actions of the piston, friction of the pistons and the friction of all moving parts.

**Friction horsepower** is the power loss through friction and may be as high as 10 to 15 percent of the indicated horsepower.

**Thrust horsepower** is the result of the engine and the propeller working together. If the propeller could be 100% efficient, the thrust and the brake horsepower would be the same; however, the efficiency of a propeller varies with engine speed, altitude temperature and airspeed. Therefore, the ratio of thrust horsepower and brake horsepower delivered to the propeller will never be equal. In a mechanical system, the energy into the system can never be equal to the output energy.

Of the four types of horsepower, it is thrust horsepower that determines the performance of an engine propeller combination.

**On a side note.** Did you ever wonder why your electric bill is charged in kilowatts (1000 watts)? Not in the units of electricity like volts and amps. That is because you are not buying electricity from the electric company, you are buying power. Power is work divided by the time you do the work. So, your hair dryer or vacuum cleaner is measured in Watts, named after our old friend from the steam engine. You are buying the work that the electricity does for you. And that's why they are called power plants and power lines.

# Philadelphia, PA

**Garrett Saxonhouse**
Private Pilot
**Instructor:** Josh Fredette

**Emil Agaev**
Private Pilot
**Instructor:** Jim Zararis

**Thomas Alexander**
Commercial Pilot
**Instructor:** Jackson Combe

**Jessan Groenenolyk**
Commercial Pilot
**Instructor:** Kiran Shazadi

**Nick Pocceschi**
Instrument Rating
**Instructor:** Erica Carter

**Rob Reed**
First Solo
**Instructor:** Aleksey Goncharov

**Reggie Wallace**
First Solo
**Instructor:** Thomas Ringe

# Pompano Beach, FL

**Levi Cole**
First Solo
**Instructor:** Ibat Ahmadov

## GENE'S QUIZ ANSWERS

1. A segment of a North American route between an inland navigation facility and a costal fix or a segment of a SID or STAR.
2. A NOTAM that directs you to a more detailed NOTAM on the subject.
3. Point at which all lift forces are considered to act on a wing.
4. Moves forward.
5. Stays the same.
6. ATC must verify the plane's Mode C transponder's altitude when proceeding on an IFR flight.

# Our Trusted Partner: Stratus Financial

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## QUOTE OF THE MONTH

*"Stay out of clouds. The silver lining everyone keeps talking about might be another airplane going in the opposite direction."*

# Learn to Fly Program

Learn more about our day camp and weekend programs for kids and adults at **flylegacyaviation.com/camp**

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