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# Aircraft Instruments

**P**ERHAPS THE MOST FORGOTTEN ITEMS IN AN AIRCRAFT WHEN IT comes to preflight and preventive maintenance, aircraft instruments are the windows on another world. They allow the pilot to “look into” various systems to control them and make judgments about their health, and find a location on the ground when they can’t see more than a few feet outside the aircraft. Aircraft instruments are the eyes of the airplane.

### **PITOT-STATIC SYSTEM**

Of the five primary flight instruments (airspeed, altimeter, vertical velocity, compass, and turn indicator), the first three use the pitot-static system. These instruments interpret aircraft performance within an air mass.

#### **Airspeed Indicator**

Regardless of the level of sophistication, all airspeed indicators share one thing in common. Airspeed indicators compute dynamic pressure by measuring the difference between air pressure resulting from airplane movement through the air (ram) and ambient air pressure (static). A good example of ram air can be felt when you put your hand out the window of a car traveling at 50 mph. Static air pressure is the ambient atmospheric air pressure that surrounds the aircraft at any given moment.