The Non-Pilot's Guide to an Airplane Cockpit

by David Pugh

This guide will give you a brief introduction to some of the things you'll find on the instrument panel of a small airplane. There's no quiz, and you don't need to know any of it. I'm providing this for those of you that I take flying that want to know what every little thing does. If you're one of those people, you may want to print this out and bring it with you on your flight. Or just read it over before your flight and ask me any questions during the flight. I love explaining this stuff too.


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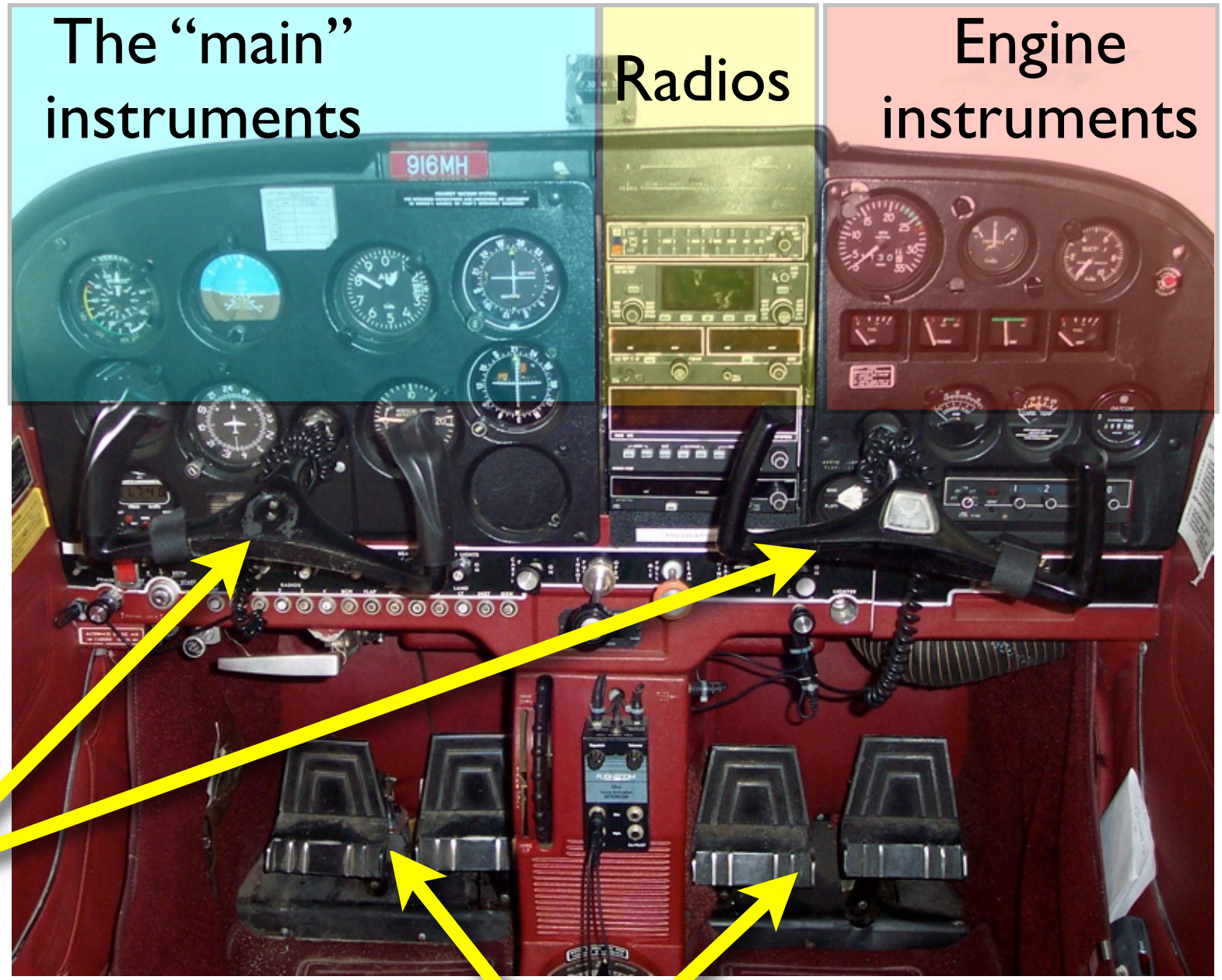


Yoke
(steers the plane)

Rudder pedals
(changes which way the nose points)

Airspeed

Artificial Horizon

Altitude

VOR Navigational Indicators

Turn Indicator

Clock

Direction Indicator

Vertical Speed Indicator

Airspeed

This shows how fast we're traveling through the air. There are two scales on the gauge: one is nautical MPH (knots), and one is statute MPH (the same you use in your car)

Artificial Horizon

This shows the angle of climbs and descents and the angle of bank during turns. This gauge should look like the view out the front window - blue corresponds to sky, brown corresponds to ground.

Altimeter

This shows how high we are. The long needle measures hundreds of feet, while the shorter needle measures thousands of feet. This gauge is reading 835 feet.

You'll also notice me dial in the current barometric pressure before and during the flight. This helps calibrate the altimeter to current air pressure.

Vertical Speed Indicator

This shows how fast we're ascending or descending. If the needle is pointing at the 5 on the top half, we're ascending at 500 feet per minute. If the needle points to 7 on the bottom half, we're descending at 700 feet per minute

Direction Indicator

This is similar to a compass, but instead of using a magnet to determine direction, it uses a gyroscope. Because the gyro drifts a bit, I'll be resetting it to match the magnetic compass periodically.

ILS
Marker
Beacons

Radio
Selector

GPS

Communications
Radio

Navigational
Radio

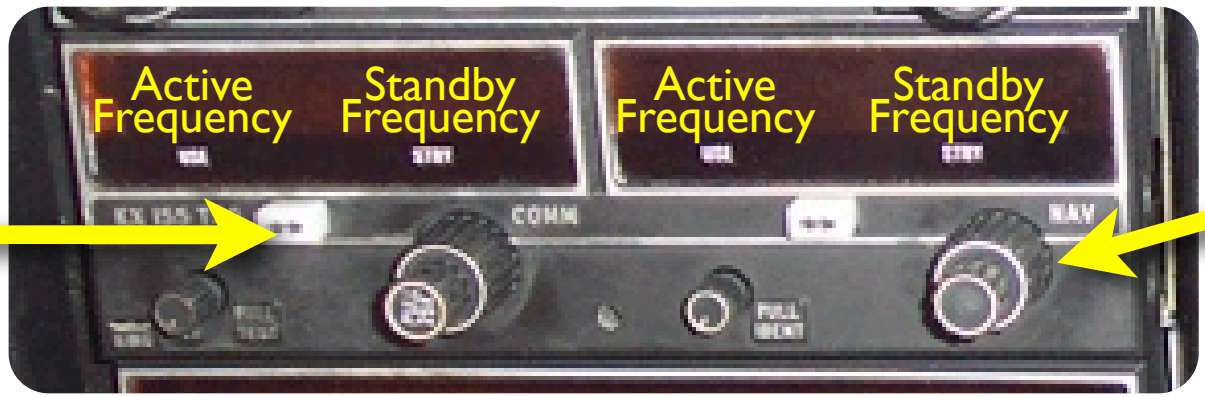
Transponder

Radios

There are two radios in one box here. The left side sets the frequency for talking to air traffic control (ATC), while the right side sets the frequency of a ground-based navigational beacon.

It's easy to change the frequency. If you want to help out with the flight, this is one things I'd be happy to show you how to do. Just ask...

Communications Navigation



This button swaps the current Active and Standby frequencies

These knobs changes the Standby frequency

The ILS Marker Beacon lights tell an instrument pilot where they're at on final approach. Even though we won't be doing an instrument landing, don't be surprised if you see these flash during a landing.

These buttons determine which radio(s) we hear through the headset

This knob determines which radio we transmit on when we press the push-to-talk button on the yoke

Transponder

This box sends the dialed in 4-digit number to the RADAR facility to identify our airplane. It will normally be set to 1200 if we're not getting any RADAR services from ATC. The light will flash every time we send the number.

We may also be asked to press the IDENT button, which will highlight our blip on the RADAR screen momentarily.

In the event of an emergency, set this to 7700.

Engine RPM
(just like your car)

Suction
(the vacuum is used to power the gyroscopes in the other instruments)

Fuel
(left tank)

Fuel
(right tank)

Oil Pressure &
Oil Temperature

Hobbs Meter
(An airplane's version of the odometer in your car. This tracks how many hours this engine has been used for)

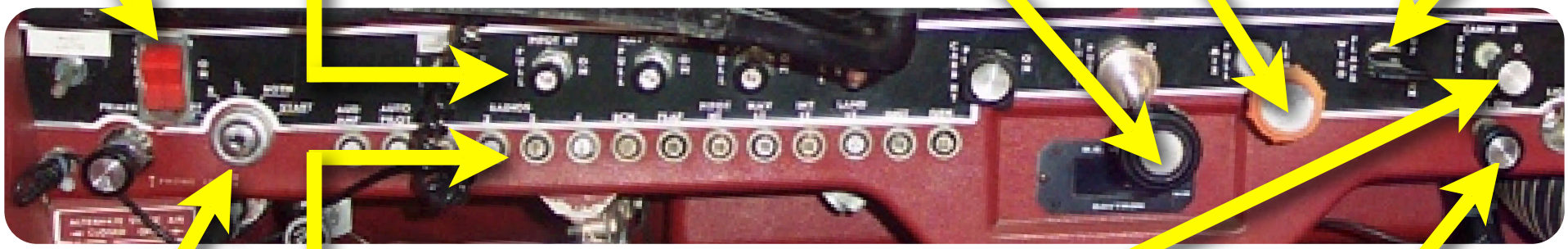
Master electrical switch

Lights

Throttle
(the plane's gas pedal)

Fuel to Air Mixture
(pull it out to turn off the engine)

Wing flaps



Ignition
(just like the key in your car)

Circuit Breakers

Vent
(Sorry, no air conditioning. Pull to activate)

Heater
(Pull to activate)