



*The difficult, we do immediately! The impossible takes a little longer...*

[www.coosbayhops.com](http://www.coosbayhops.com)

## It's Tougher in Alaska

### It's all about Gauges...



**1** - Altimeter Altitude above Mean Sea Level (MSL) in feet (all aircraft) The Altimeter indicates at what height the airplane flies compared to sea level. It can be adjusted for changes in barometric pressure.

**2** - Slip Indicator or skid is indicated by the ball - apply rudder to center e.g. if ball is to the right, apply right rudder

**3** - Remote Indicating Compass Indicates heading with compensation for compass variances

**4** - Compass

**5** - Artificial Horizon

**6** - Airspeed Indicator in mph (all aircraft)

Pointer is indicated Airspeed (IAS), red marker is True Airspeed (TAS)

**7** - Vertical Speed Indicator (VSI) x 1,000 feet per minute

**8** - Turn and Bank Indicator

**9** - Manifold Pressure Gauge Controlled by throttle

US: direct indication in inches of mercury (in. Hg)  
Standard Atmosphere = 29.92 in. Hg

UK: "boost" in psi above Standard Atmosphere (14.7 psi)

German: relative multiplier. One standard atmosphere = 1.0 ata (atmospheres absolute)

Japanese: direct indication in mm Hg x 10 differential from Standard Atmosphere (760 mm Hg)

**10** - RPM Gauge Propeller-RPM (Controlled by Numpad + and - keys)

**11** - Landing Gear Indicator (Operated with g key)

Green: down

Gray: retracted

Yellow: in transit

Some include a flap position indicator

- 12 - Clock Shows current server time if online, adjusted time if set offline
- 13 - Oil Pressure Gauge
- 14 - Carburetor Air Temperature Gauge
- 15 - Combat Trim
- 16 - Surface Trim Indicators Position of control surface trim tabs
- 17 - Auto-pilot Indicator
- 18 - Beacon Connection status to server (host)
- 19 - Ordnance Display Ordnance and ammunition count (Cycle secondary ordnance with Backspace key)
- 20 - Fuel Quantity and Tank Selection Gauge Shows quantity in currently selected tank
- 21 - Accelerometer Force of gravity (G's) on aircraft
- 22 - Flaps Position Indicator



### Climb/Decent Gauge

- Calibrated in 1,000ft/minute
- The needle indicates when altitude is being maintained, gained, or lost.
- Few are capable of sustained climb rates in excess of 4,000ft/minute
- Diving can easily cause the needle to pass 4,000ft/minute in decent.
- The example given shows level flight, with the needle pointed directly at 0.

### Speedometer



- All speeds in mph
- Speedometer shows two different markings
- White needle is Indicated Air Speed (IAS) which is affected by pressure differences between altitudes.
- Red Mark indicates True Air Speed (TAS), adjusted for changes in altitude.
- The example shows an IAS of 290mph, and a TAS of 360mph

### Artificial Horizon



- Very small, not easily readable while maneuvering
- Horizon reference (i.e., looking out of the cockpit) is typically more useful
- Low visibility (lack of horizon) flight is limited to flight through cloud cover, and the very brief time when the night is at the darkest.

### Heading Indicator



- This is a gyroscopic instrument that is used like a compass, only more precise and more stable during climbs, descents and turns. It is also called a directional gyro.

### NOTE:

The cockpit layout of each aircraft in is slightly different, but the basic tools available in the cockpit are the same in almost every aircraft (with a few exceptions).

The key is to understand what the gauges are telling you. It's like when you drive a car, you don't want to have to look down and study the gauges while your attention should be in looking around outside the vehicle. Thus, you develop a process of scanning the gauges and quickly identifying what is important at a glance.

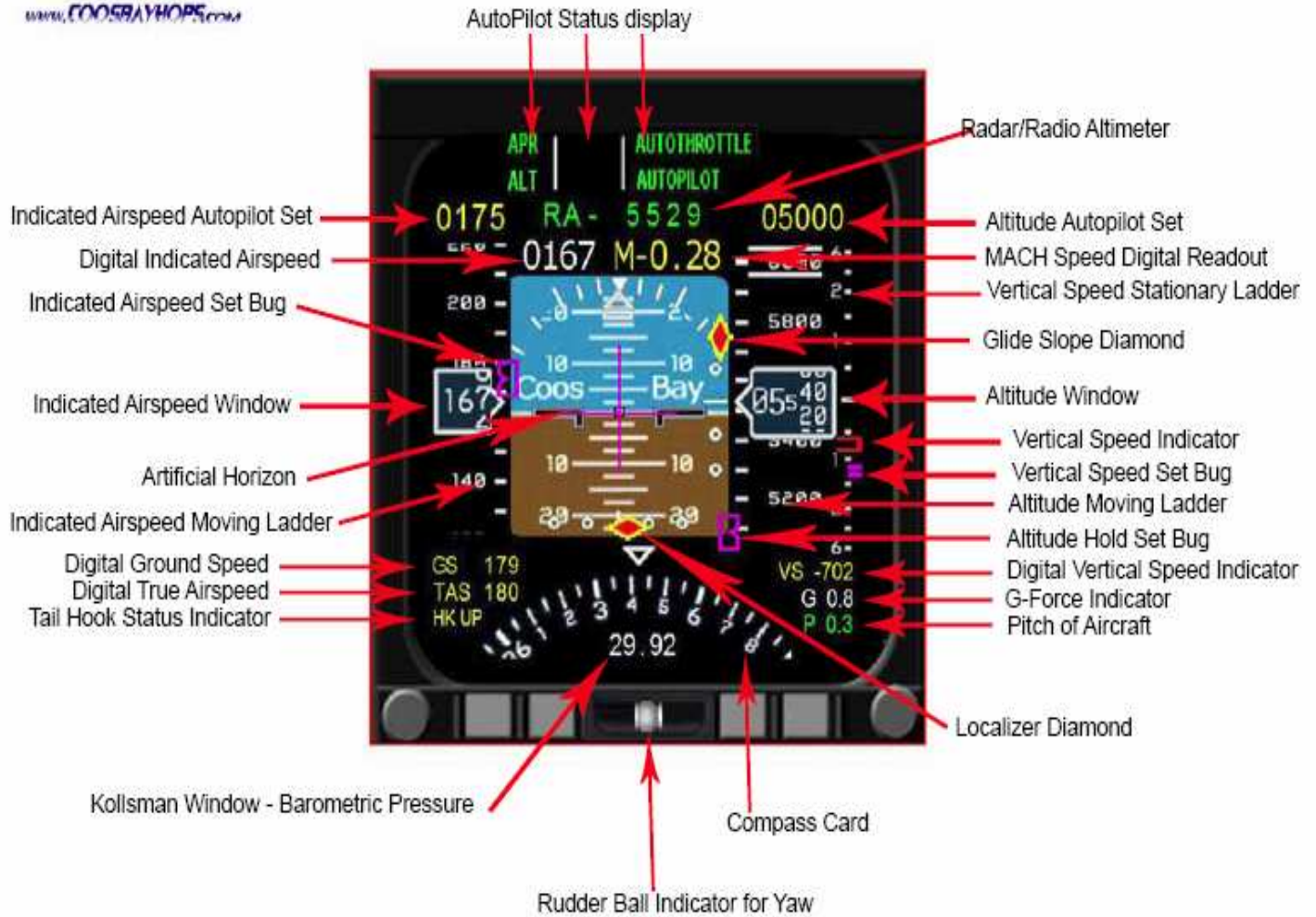
1. Each cockpit layout is slightly different, so that gauges may not be in the same position, although most aircraft will have an equivalent gauge.
2. The most important gauges tend to be positioned towards the center of the dash for easier reference

*As the age old saying goes, you need to walk before you can run, and sometimes learning to walk can be a challenge all by itself.*

# Take a look at the Coosbay Hops Primary Display features *all in one!*



## PFD - Primary Flight Display



COOS BAY SKUNKWORKS DESIGN TEAM

Refer to coosbayhops website for a true-size landscape version.

## How does the ILS (Instrument Landing System) work?

The localizer is a set of antennas on the ground that send out two directional-frequency ranges to the plane, one aimed slightly to the left of the runway and one aimed slightly to the right. The aircraft receives these two frequencies and adjust its position to line-up with the runway. The localizer diamond (bottom red) indicates left / right deviations and when this diamond is in the center, the plane is "on course" for the localizer.

The glide slope sends two different frequencies to the plane, up and down. Controlled speed and altitude is needed to allow the plane intercept the glide slope frequencies. While the localizer diamond holds steady (bottom red), the glide slope diamond (vertical red) continues to move towards the horizon as the plane makes its approach. A perfect ILS approach will automatically controls the plane's decent and alignment for landing. For details regarding ILS aircraft landing mode and features shown in the Coosbay's primary flight display, contact the members at the end of this newsletter for a quick tutorial session.

# We've got the answers...How did you do?

## ■ Concorde was built as collaboration between which two countries?

**U.K. and France.** Supersonic airline research in Europe began in 1956, and for once the 'entente cordiale' worked.

## ■ Where did the first flight of Concorde take place?

**Toulouse.** This test flight took place in 1969, it would be another seven years before the maiden flight.

## ■ The first commercial flight of the Concorde was in which year?

**1976.** Concorde flew from London to Bahrain.

## ■ Concorde takes off at which speed?

**250 mph.** Once in flight it cruises at twice the speed of sound.

## ■ Who was the first member of the royal family to take a flight on Concorde?

**Prince Phillip.** This happened in 1972 on a test flight. The Queen flew Concorde during her silver jubilee in 1977.

## ■ In 1996 Concorde set a record for the fastest crossing on the Atlantic. How long did it take?

**2hrs 52mins 59 sec.** The average crossing time is 3hrs 20mins. The subsonic speed is about 8 hours.

## ■ In 1985 Concorde helped which singer to appear live at two concerts either side on the Atlantic on the same day?

**Phil Collins.** This of course was for the Live Aid concert which took place in London and Philadelphia.

## ■ Concorde's first around the world flight took 29hrs 59mins. How many miles did it travel?

**28,238 miles.** This took place in 1986.

## ■ If a British Concorde had a full passenger list, how many people were aboard?

**109.** 100 passengers + 3 flight crew + 6 cabin crew.

## ■ How long is Concorde (to the nearest 10 feet)?

**200 feet (61.6 metres).** When in flight it can expand up to 10 inches due to the heating up of the air-frame.