

INSIDE THE COCKPIT OF AN AIRPLANE

PATH TO AVIATION

Pilot and Teacher Handbook

*Click on this box and edit text to
add pilot or teacher name*



The flight controls and instrument panel are in the front of the **cockpit**.



AIRCRA

Flight controls and instrument panels vary, but have the same basic functions.



FLIGHT CONTROLS

The **control wheel or yoke** is used to steer the airplane in different directions.



Turning Left



Straight and Level



Turning Right

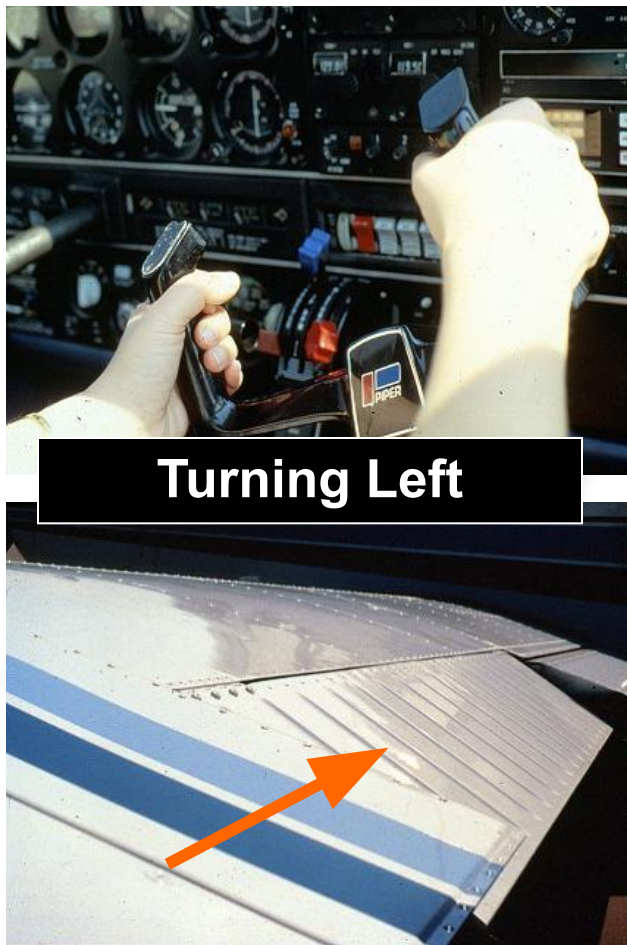


Side Stick

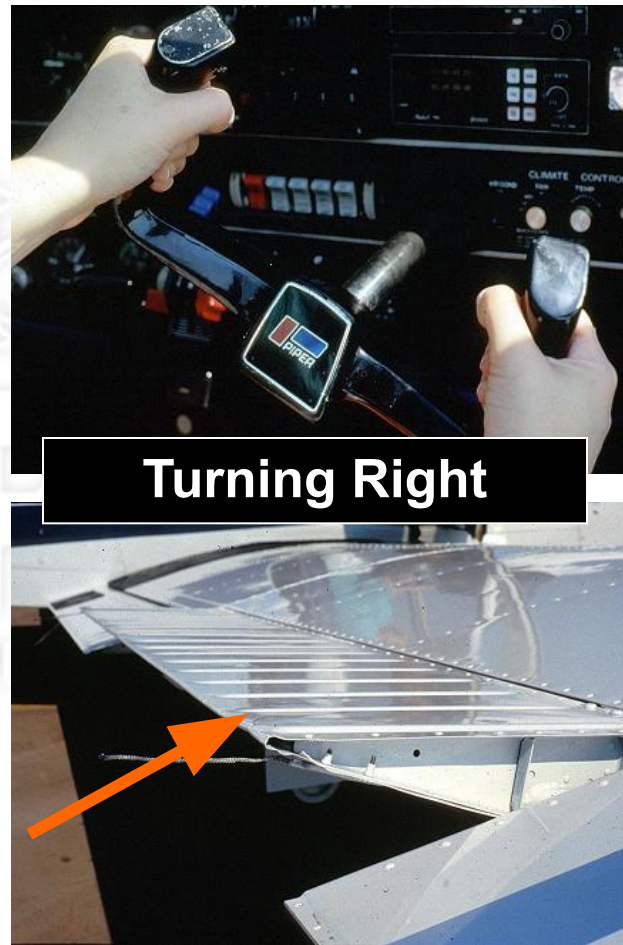
Some airplanes have a **stick** rather than a wheel but it works the same.

FLIGHT CONTROLS

Moving the yoke LEFT or RIGHT moves the **ailerons** on the wings in opposite directions. One moves UP as the other goes DOWN.



Turning Left



Turning Right

FLIGHT CONTROLS

Pulling back on the yoke moves the **elevator** on the tail **UP**, moving the airplane nose **UP** to climb.



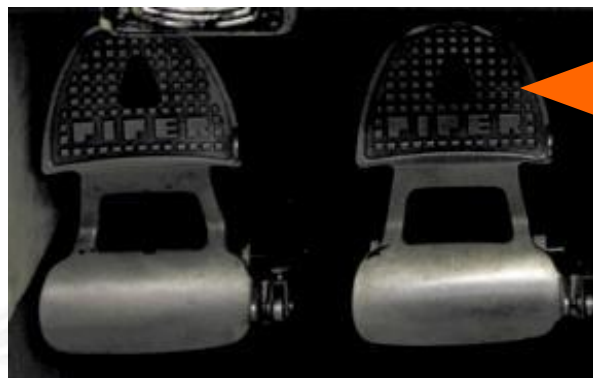
FLIGHT CONTROLS

Pushing forward moves the **elevator** DOWN, moves the nose DOWN to descend.

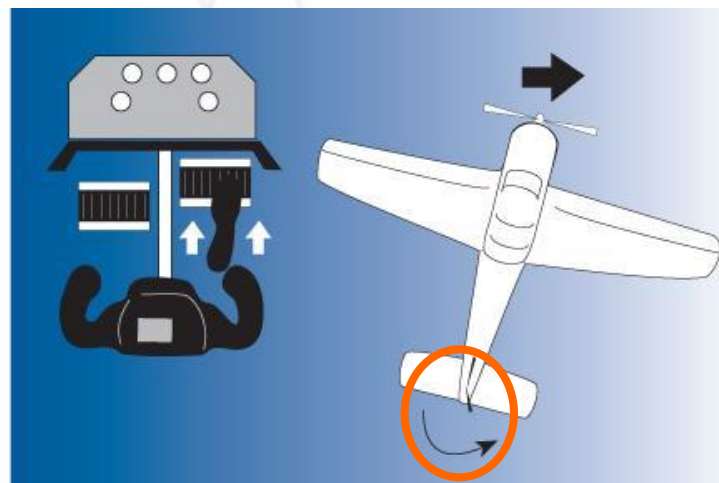
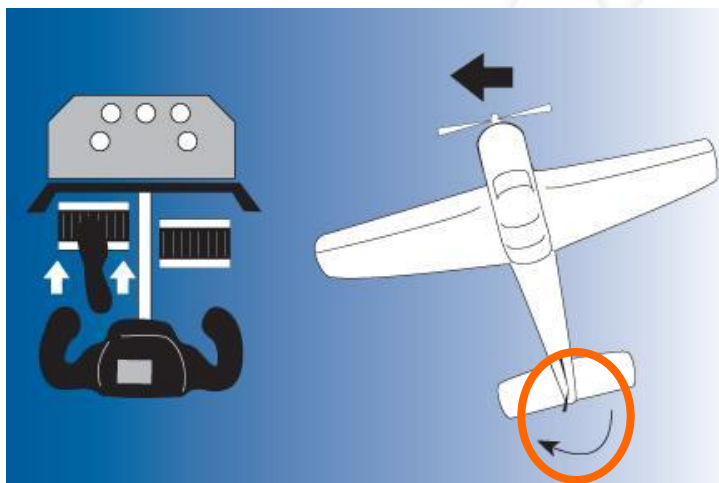


FLIGHT CONTROLS

Pilots use **rudder pedals** on the floor to move the rudder LEFT or RIGHT to help the airplane turn.



Brakes are located at the top or “toe” of the pedal



FLIGHT CONTROLS

The **airspeed indicator** shows speed *through the air* --- not over the ground.



The **static port** measures static or still air – air that is not affected by the airplane's speed through the air



The **pitot tube** on the wing catches on-rushing air. This “ram air” is compared to “static” air to determine air speed.

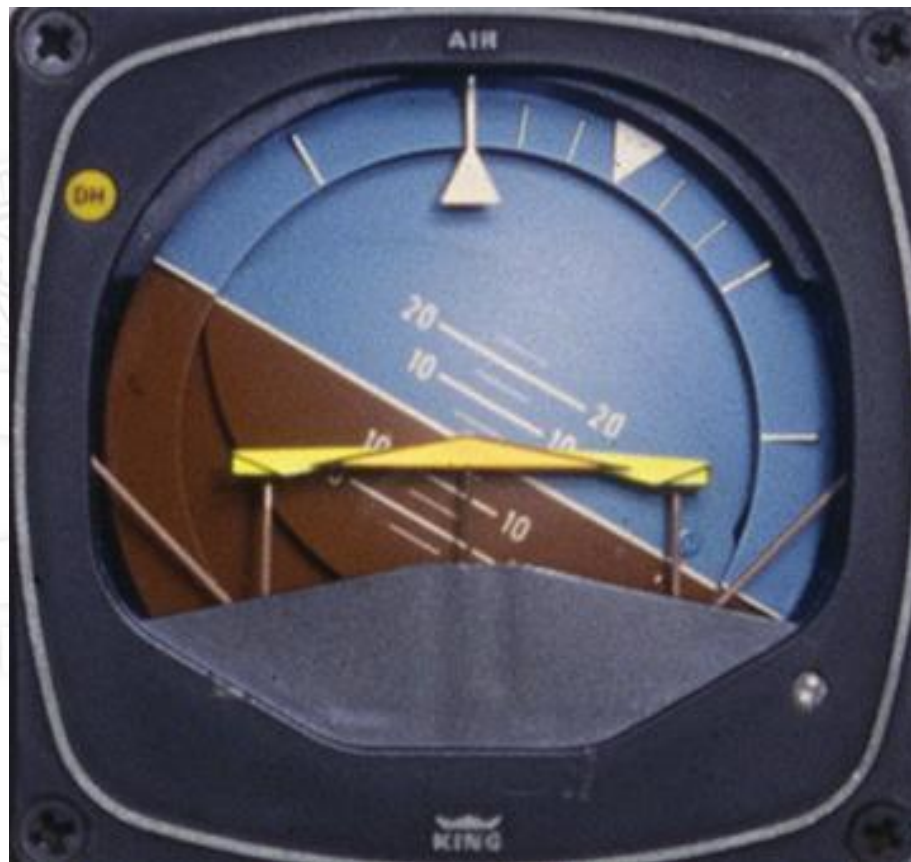


BASIC INSTRUMENTS

The **attitude indicator** provides an artificial horizon to show the pilot the airplane's position in relation to the ground.



Here, the airplane is banking left with its nose on the horizon —where brown “ground” meets blue “sky.”



BASIC INSTRUMENTS

The **altimeter** measures air pressure outside the airplane and compares it to air pressure at sea level to determine altitude.



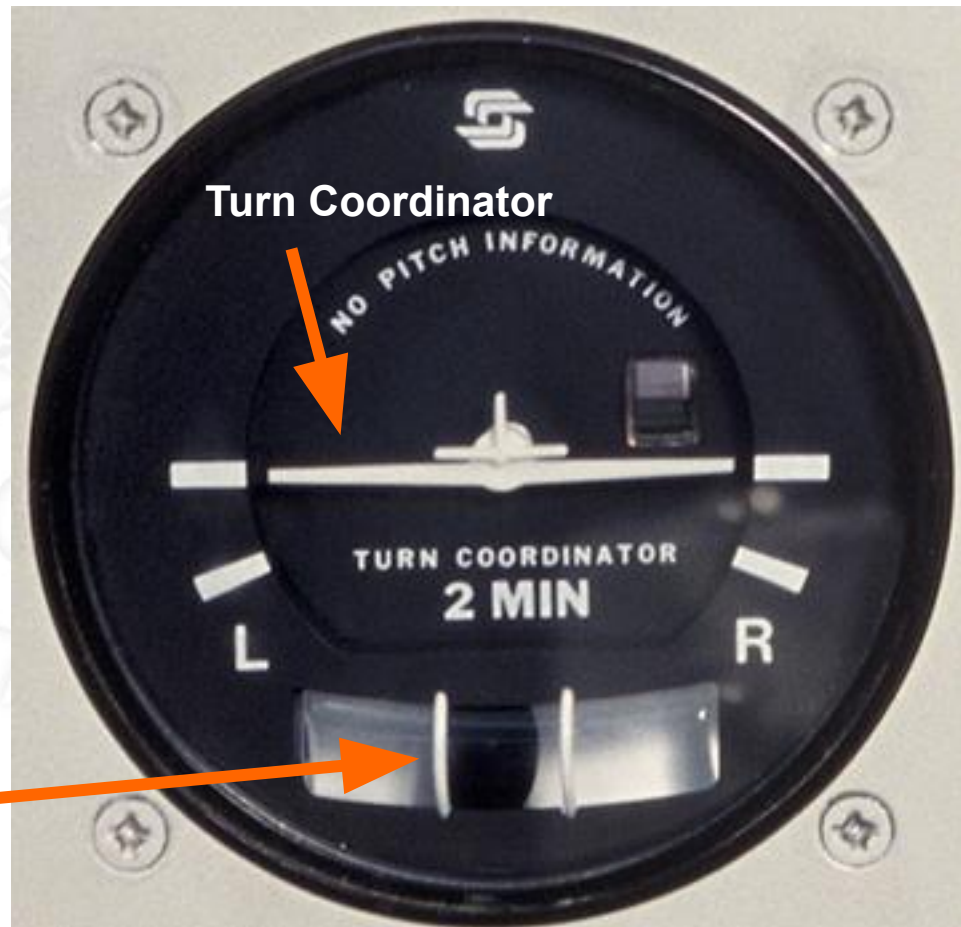
Like the hands of a clock, the long hand shows smaller increments (100s of feet) while the shorter hand shows larger increments (1,000s of feet).

This altimeter is reading 1720 feet.



BASIC INSTRUMENTS

The **turn coordinator** shows if the wings are level or banked. The position of the ball indicates if the airplane is turning properly.



The **ball** is centered when the turn is balanced by rudder

BASIC INSTRUMENTS

The **heading indicator** displays the direction of flight.



This airplane is heading south at 175 degrees.



BASIC INSTRUMENTS

The **vertical speed indicator** uses changes in air pressure to indicate rate of climb or descent.



Airplane is descending at 190 feet per minute



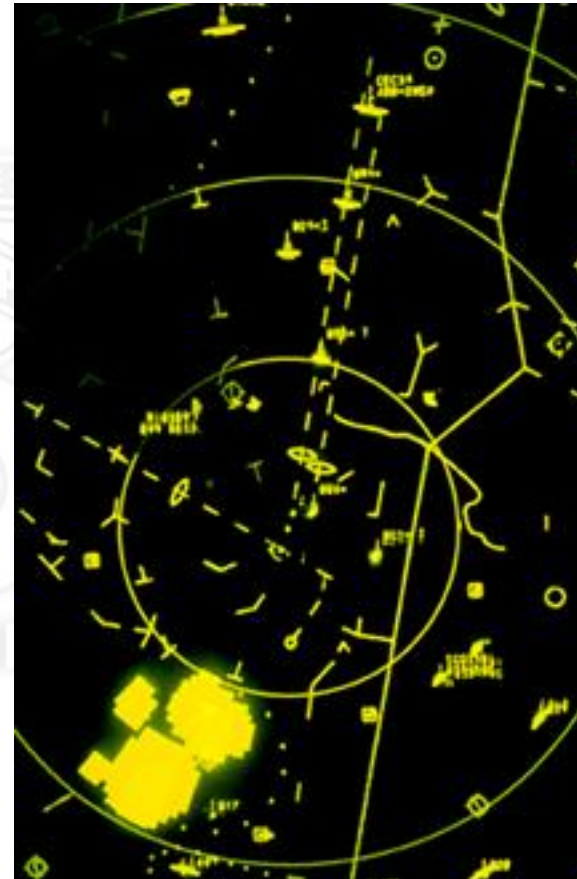
BASIC INSTRUMENTS

Pilots use radios to communicate with air traffic control and other pilots. Other radios also are used to navigate using ground stations or satellites.



COMMUNICATION

Most airplanes have a **radar transponder** that shows their location, speed and altitude to air traffic controllers



An assigned four-digit code helps identify a particular airplane on a controller's radar screen

COMMUNICATION

Pilots increasingly use **GPS satellite navigation** to display position and ground speed, locate nearby airports, and plot course, distance and time to any destination



Top: GPS can be small, handheld and portable.

Bottom: Flat-panel GPS moving maps and flight displays are just the ones in airliners and some cars.



There are plenty of things to learn INSIDE THE COCKPIT OF AN AIRPLANE



TO LEARN MORE
GO TO WWW.AOPA.ORG/PATH

PATH

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