

Primary and Supporting Instruments



Ground Lesson

Lesson Objective

To develop understanding of the instruments used for pitch, bank, and power control.

The Layout

Top row left to right

Airspeed indicator (ASI)

Attitude Indicator (AI)

Altimeter (Alt)

Bottom row left to right

Turn Coordinator (TC)

Heading Indicator (HI)

Vertical Speed Indicator (VSI)



Straight and Level

Primary

Pitch – Altimeter

Power – Airspeed Indicator

Trim

Rudder – Turn Coordinator

Bank – Heading Indicator



Straight and Level

Supporting

Pitch – VSI & AI

Power – Tach & MP

Trim

Rudder – Turn Coordinator

Bank – Turn Coordinator & AI



Standard-Rate Turn Establishing

Primary

Pitch – Altimeter

Power – Airspeed Indicator

Trim

Rudder – Turn Coordinator

Bank – AI then Turn Coordinator



Standard-Rate Turn Establishing

Supporting

Pitch – VSI & AI

Power – Tach & MP

Trim

Rudder – Turn Coordinator

Bank – Turn Coordinator & AI

Same as

Straight and Level - Supporting



Standard-Rate Turn Turning

Primary

Pitch – Altimeter

Power – Airspeed Indicator

Trim

Rudder – Turn Coordinator

Bank – Turn Coordinator



Standard-Rate Turn Turning

Supporting

Pitch – VSI & AI

Power – Tach & MP

Trim

Rudder – Turn Coordinator

Bank – Turn Coordinator & AI

Same as

Straight and Level - Supporting



Constant Speed Climb/Descent

Primary

Pitch – Attitude Indicator

Power – Tach & MP

Trim

Rudder – Turn Coordinator

Bank – Heading Indicator



Constant Speed Climb/Descent

Supporting

Pitch – VSI

Power – Airspeed Indicator

Trim

Rudder – Turn Coordinator

Bank – Turn Coordinator & AI



Constant Rate Climb/Descent Entry

Primary

Pitch – Attitude Indicator

Power – Tach & MP

Trim

Rudder – Turn Coordinator

Bank – Heading Indicator



Constant Rate Climb/Descent Entry

Supporting

Pitch – VSI

Power – Airspeed Indicator

Trim

Rudder – Turn Coordinator

Bank – Turn Coordinator & AI



Constant Rate Climb/Descent Stabilized

Pitch – VSI

Trim

Bank – Heading Indicator



Bank

Pitch

Constant Rate Climb/Descent Stabilized

Supporting

Pitch – Attitude Indicator

Power – Tach & MP

Trim

Rudder – Turn Coordinator

Bank – Turn Coordinator & AI



Changing Airspeed In Turns

Primary

Pitch – Altimeter

Power – Tach & MP then ASI

Trim

Rudder – Turn Coordinator

Bank – Turn Coordinator



Changing Airspeed In Turns

Supporting

Pitch – VSI & AI

Power – Tach & MP

Trim

Rudder – Turn Coordinator

Bank – Attitude Indicator





Any questions I can answer or
follow up later on?