

Aircraft Instruments – Part 1

1. Flight instruments can be categorized by the way they operate – Pitot-static system instruments and gyroscopic instruments.
 - a. Identify the basic Pitot-static instruments
 - b. Identify the basic gyroscopic instruments
 - c. Which pitot-static system instrument(s) require the static system for operation? The pitot system for operation?
2. How does a turn and bank indicator differ from a turn coordinator?
3. What do the following markings on an air speed indicator (ASI) mean?
 - a. High speed end of the green arc? What is the V-speed designation for this?
 - b. Low speed end of the green arc? What is the V-speed designation for this?
 - c. High speed end of the white arc? What is the V-speed designation for this?
 - d. Low speed end of the white arc? What is the V-speed designation for this?
 - e. High speed end of the yellow arc? What is the V-speed designation for this?
 - f. Low speed end of the yellow arc? What is the V-speed designation for this?
 - g. A red radial line (straight red line that starts at the outer edge of the ASI and points towards the center of the ASI)? What is the V-speed designation for this?
 - h. A blue radial line (straight blue line that starts at the outer edge of the ASI and points towards the center of the ASI)? What is the V-speed designation for this?
 - i. What marking indicates the best angle of climb? What is the V-speed designation for this?
 - j. What marking indicates the best rate of climb? What is the V-speed designation for this?
 - k. What marking indicates the maneuvering speed? What is the V-speed designation for this?
4. You set your heading indicator to the actual runway heading when you are lined up on the runway – Do you need to reset it in flight?
 - a. If so, why?
 - b. And if so, how often?
 - c. Bonus question – how do you know the exact runway heading?
5. Magnetic compass – you are flying at a constant altitude and do not allow altitude to change.
 - a. You are headed due north and you start a turn to the east – which way does the compass turn (based on the magnetic heading indication, not clockwise or counterclockwise, right or left, etc.)
 - b. You are headed due north and you start a turn to the west – which way does the compass turn (based on the magnetic heading indication, not clockwise or counterclockwise, right or left, etc.)

- c. You are headed due south and you start a turn to the east – which way does the compass turn (based on the magnetic heading indication, not clockwise or counterclockwise, right or left, etc.)
 - d. You are headed due south and you start a turn to the west – which way does the compass turn (based on the magnetic heading indication, not clockwise or counterclockwise, right or left, etc.)
 - e. You are headed due east and you accelerate (maintaining level flight) – which way does the compass turn (based on the magnetic heading indication, not clockwise or counterclockwise, right or left, etc.)
 - f. You are headed due west and you decelerate (maintaining level flight) – which way does the compass turn (based on the magnetic heading indication, not clockwise or counterclockwise, right or left, etc.)
 - g. What is variation with respect to use of a magnetic compass?
 - h. What is deviation with respect to use of a magnetic compass?
6. Pre-flight instrument check – what to you do / look for to verify the following instruments appear to be working correctly:
- a. Turn coordinator?
 - b. Turn and bank indicator?
 - c. Airspeed indicator
 - d. Attitude indicator?
 - e. Altimeter?
 - f. Vertical speed indicator? – and what does this also test?
 - g. Heading indicator?