

## POWERED FLIGHT FOUR

### *Use of instruments in flight*

#### **Syllabus # 9**

*Estimated time: 0.7 hour.*

##### 1. Preflight:

- a. Discuss previously completed syllabus flights as appropriate.
- b. Explain the use of basic navigation instruments (clock, altimeter, airspeed indicator and magnetic compass). Explain the inherent errors of the magnetic compass.
- c. Explain the pitot/static system and its relationship to the airspeed indicator, altimeter, and vertical velocity indicator.
- d. Discuss the importance of flight plans and demonstrate filing a flight plan.

##### 2. In flight:

- a. Explain the difference between absolute altitude (AGL), true altitude (MSL), and pressure altitude (PA).
- b. Demonstrate how to read the altimeter.
- c. Demonstrate how to read the airspeed indicator and discuss the difference between indicated airspeed, true airspeed and ground speed.
- d. Point out how attitude and airspeed are related.
- e. Demonstrate how shallow climbs and descents affect the vertical velocity indicator and the airspeed indicator.
- f. Demonstrate turns using the magnetic compass. Discuss compass turning errors: variation, deviation, magnetic dip, and oscillation error.

##### 3. Post flight. Answer questions pertaining to the flight and stress safety.

Refer to *Aerospace Dimensions* module 2: Aircraft Systems & Airports.

