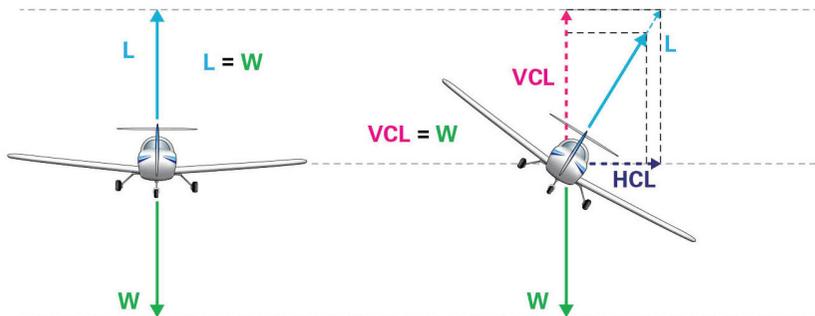# Medium, Climbing and Descending Turns

Objectives

To change direction through 360 degrees at a constant rate – using 30 degrees angle of bank – while maintaining a constant altitude and keeping the aeroplane in balance.

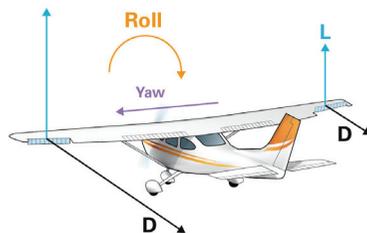To complete a medium turn while climbing and while descending.

2. Airmanship

- 20° per 2 second scan technique
- Lookout and Listenout
- SA – 360° turns, position, altitude, weather
- VFR minima, 5–2–1

3. Aeroplane Management

- Smooth and positive throttle movements
- Carb heat

4. Human Factors

- 360° turns to minimise disorientation
- Turning sensation

1. Principles of Flight

- In order to turn need to create a force towards the centre of the turn – bank the aeroplane
- HCL provides the force
- VCL reduced \ more L required → increase angle of attack slightly
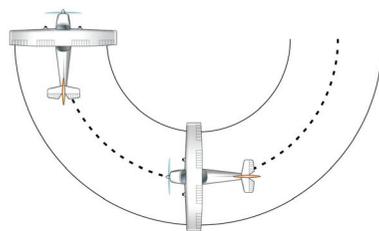

Adverse Yaw

- ↑ L on upgoing wing, also means ↑ D ↓ yaw away from turn
- Rudder to balance yaw as ailerons deflected – neutral

Overbanking

- Outer wing travels further, ∴ more L, tries to keep rolling
- Hold off bank with aileron

Performance

- When climbing and turning, angle of bank must be reduced Maximum of 20°, use 15°

5. Air Exercise

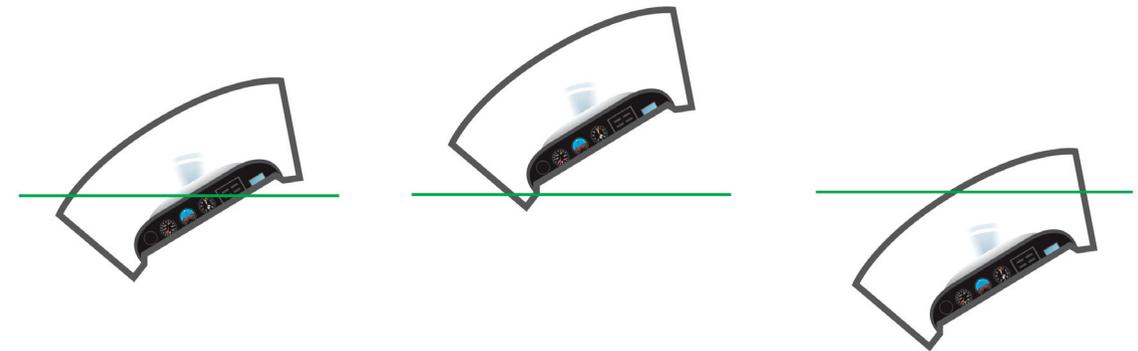**Adverse Yaw**
- Demonstration only

Entry

Medium Level Turn
- From S+L
- Lookout
- Roll with aileron to 30° AoB
- Balance with rudder
- Backpressure to set attitude – ↑ slightly

Climbing Turn
- Establish in climb
- Lookout
- Roll with aileron to 15° AoB
- Balance with rudder
- Relax backpressure to maintain attitude – ↓

Descending Turn
- Establish in glide
- Lookout
- Roll with aileron to 30° AoB
- Balance with rudder
- Relax backpressure to maintain attitude – ↓

In Turn

- 'Check' the ailerons and maintain balance
- **L**ookout
- **A**ttitude
- **I**nstruments
- Angle of bank controlled with aileron
- Altitude controlled with backpressure

Exit

- Look for reference point
- Anticipate rollout by half the angle of bank
- Roll wings level
- Balance with rudder
- Relax backpressure
- Reset S+L attitude
- Check **PAT**