Low Flying Consolidation

ADVANCED MANOEUVRES

Objectives

To compensate for the effects of inertia, visual illusions and stress when operating the aeroplane in close proximity to the ground.

To carry out various level turns in the poor visibility configuration in response to deteriorating weather.

1. Considerations

Perspective

- Ground features look different – plan view to profile view
- Need to estimate horizon – cross-reference instruments

Sloping Terrain

- Height above ground estimated visually – altimeter secondary reference
- Gently rising terrain – cross-reference airspeed indicator and altimeter

Turbulence

- Turbulence more pronounced, updraughts and downdraughts more significant
- Avoid flying in the lee of hills or the centre of valleys
- Fly on the upwind side of hilly terrain, or updraught side of valleys

Crossing Obstacles

- Cross power lines at the pylons
- Cross ridges at an oblique angle

2. Airmanship

- Revise boundaries of LFA and minimum height
- Solo flights must be authorised, and only 1 aircraft in LFA
- Make careful inspection of LFA, and **HASELLL** checks
- Broadcast on entry and exit

3. Aeroplane Management

- Poor visibility configuration
- Prolonged use of the poor visibility configuration may affect fuel reserves and engine operating temperatures
- Use **SADIE** more frequently

4. Human Factors

- Visual illusions created by drift
- Maintain a regular crosscheck of instruments, especially the balance indicator

5. Air Exercise

Medium Turn

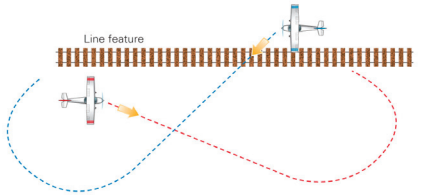
- In poor visibility configuration, do need a small increase in power to maintain the airspeed

Steep Turn

- In poor visibility configuration steep turns limited to 45° because
  1. drag and stall speed increase exponentially beyond 45° AoB, and as power is limited, may not be able to maintain the airspeed
  2. The G-load limit is lower with flap extended
- No decrease in airspeed is acceptable so power is increased substantially at the roll in
- Monitor attitude, angle of bank, speed, and balance
- If altitude is being lost, reduce the angle of bank, increase power if necessary
- Anticipate roll out and coordinate power reduction

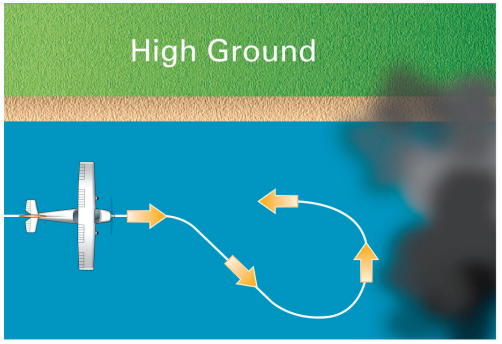
Obstacle Avoidance

- Simulate the worst case scenario
- Following a line feature in poor visibility an obstacle appears ahead
- Drift downwind at 45° to line feature to turn back into wind, completing the turn with feature back on the left



Coastal Reversal Turn

- Need to turn back, no horizon out to sea, high ground along the coast
- Must keep the coast in sight throughout the turn seaward and then track back along the coast
- Wind direction and strength determines heading needed to track away from the coast to provide enough space to complete the turn
- Headwind or tailwind – turn 45° away from coast. Compensate for crosswind by increasing or decreasing the 45° – do not lose sight of the coastline
- Angle of bank used depends on ability to keep coast in sight
- Continue away from shore until enough distance available to turn back
- Start turn with 45° AoB and reduce if not needed



Constant Radius Turn

- Adjust AoB to compensate for drift to maintain constant distance from object on surface
- Identify 4 points equidistant for reference to overfly
- As turn down wind, groundspeed increases, so increase AoB
- Turning crosswind again, groundspeed decreases, so decrease AoB
- Turning into wind, groundspeed decreases, so decrease AoB
- Turning crosswind again, groundspeed increases, so increase AoB