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.

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

Airmanship

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

Aeroplane management

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

Human factors

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

Air exercise

Medium turn

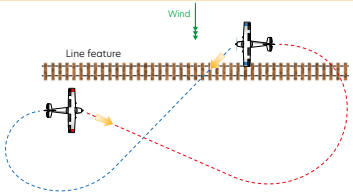
- In poor visibility configuration, do need a small increase in power to maintain the airspeed

Steep turn

- In poor visibility configuration steep turns limited to 45° because
  - drag and stall speed increase exponentially beyond 45° AoB, and as power is limited, may not be able to maintain the airspeed
  - 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

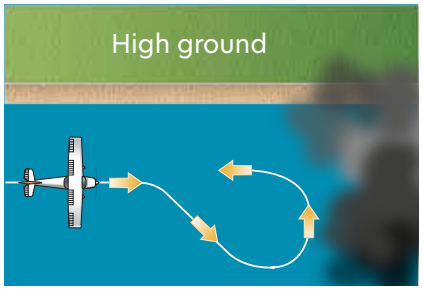
Obstacle avoidance

- 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