

Terrain and weather awareness

ADVANCED MANOEUVRES

Objectives

- To establish a useable horizon reference when the actual horizon is not available.
- To operate in a confined area.
- To develop further awareness of space and inertia when confined by terrain.
- To safely cross ridges, saddles, passes or spurs.

Considerations

Superimposed horizon

- Horizon is where the sea meets the sky
- Imaginary or superimposed horizon used when real horizon can't be seen
- Visualise where sea meets sky



Operating in a confined space - valley turning

- Select a clear area 500 m x 500 m
- Select another area the same size, where there is no horizon available
- Identify imaginary horizon, as if terrain were transparent, use it to reference nose attitude
- Wind cues and drift estimation
- Use all available space by varying bank angle, power to maintain safe speed
- Develop awareness of the significance of wind velocity relative to the terrain

Crossing ridges, spurs, saddles or passes

- Consider the approach, the actual crossing, and after the crossing
- Ensure approach angles take wind and terrain into account, allow escape options that minimise period of commitment - 45° or less is best
- Attitude for crossing - level, speed under control, no climb or descent
- Use parallax to judge height above saddle
- How much clearance is required?
- Types of saddles and merits
- Escape options must always be available

Air exercise

Conditions

- Clean configuration
- Poor visibility configuration
- Calm conditions
- With wind / wind indicators
- No precipitation
- Some precipitation
- Left turns
- Right turns
- 180° turns
- 360° turns

Operating in a confined area

- Fly boundaries with minimum angle of bank
- Use all available space
- Control speed with power
- Note wind direction and speed
- Position for 360° and 180° turns
- Check turns

Airmanship

- Think ahead, decision making critical
- Situational awareness
- Position reports
- SADIE
- Minimum altitude

Aeroplane management

- Clean and poor visibility configuration
- Operating speed range between V_S and V_A
- Carb heat as required
- Engine leaning
- Smooth control movements
- Aeroplane position near terrain

Human factors

- Disorientation
- Visual illusions
- Motion sickness

Confined area with no horizon

- Same exercise and conditions as confined area
- Use saddle crossing technique

Crossing ridges, saddles, passes or spurs

- Determine lift/sink side
- Approach at 45° or less for best escape options
- Left to right best for visibility and escapes
- Look at different saddles
- Approach level and below V_A
- Use parallax to assess sink and relative height
- Have escape route available at all times - other than during period of commitment