

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.

1. 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

- Select a clear area 500m x 500m
- 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, 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° 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

2. Airmanship

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

3. Aeroplane Management

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

4. Human Factors

- Disorientation
- Visual illusions
- Motion sickness

5. Air Exercise

Conditions

- Clean configuration
- Poor visibility configuration
- Calm conditions
- With wind
- 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

Confined Area with no Horizon

- Same exercise and conditions as above
- Use saddle crossing technique

Crossing Ridges, Saddles, Passes or Spurs

- Determine lift/sink side
- Approach at 45° 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