

# Basic mountain flying

## ADVANCED MANOEUVRES

### Objectives

- To consistently identify a useable horizon and to superimpose it on a variable background.
- To appropriately position an aircraft in a valley and to conduct level, climbing and descending turns.
- To safely approach, cross, and position after crossing ridges, saddles, passes or spurs.
- Experience real or simulated circumstances of disorientation and the strategies for reorienting in place and time.
- To practice emergencies where options may be limited.

### Considerations

- Wind indicators for speed and direction

#### Superimposed horizon

- Horizon is where the sea meets the sky
- Illusions – most dangerous is slowly rising terrain in bottom of valley
- Experience factors affecting contour flying at constant altitude

#### Operating in a valley

- Check turns
- Select appropriate position in valley
- Use minimum angle of bank
- Poor visibility configuration
- Climbing and descending turns for entry and exit of valleys
- Valley gradients
- Sun and shade

#### Crossing ridges, saddles, passes or spurs

- Consider all aspects of crossing, effect of wind and terrain, escape options, parallax, saddle types
- Increased wind
- Approach path should be planned well ahead
- Escape options

#### Route finding

- Good planning and preparation
- Water flow
- Valley alignment
- Sun's position

#### Emergencies

- No horizon → more difficulties
- Variables:
  - Height
  - Distance to landing site
  - Existence of landing site
  - Wind/turbulence/precipitation
  - Light
- Confined space
- Wind, lift/sink
- Valley gradient
- Illusions and mindsets
- Early MAYDAY
- Habitation
- Survival kit – contents and use

### Air exercise

- Identify and interpret wind cues

#### Superimposed horizon

- Fly constant altitude and constant wingtip distance from terrain for indications of student performance
- Smooth coordinated control movements
- Awareness of: area and environment, inertia while turning, escape options, right of way rules, lookout
- Fly constant height above descending valley floor
- Fly constant height above climbing valley floor

#### Operating in a valley

- Check turns
- Level, climbing and descending turns
- Cruise configuration, using full width
- Poor visibility configuration, using full width
- Position in the valley dependent on space available
- Steep descending turn into valley
- Climbing turn out of valley or for saddle crossing
- Right of way
- Lookout principles

#### Crossing ridges, saddles, passes or spurs

- All factors of approach, crossing, after crossing and escape options throughout
- Wind >15 kt
- Saddle crossing, taking all effects into account
- Show sound decision making

#### Route finding

- Simulate or use actual opportunity to experience/practise

#### Emergencies

- FLWOP and precautionary landing where no real horizon
- Apply sound decision making
- Adapt standard pattern
- Identify and mitigate threats

### Airmanship

- Anticipate environment and recognise threats
- Aeroplane performance
- Situational awareness
- Position reports
- **SADIE**
- Always have escape options

### Aeroplane management

- Poor visibility configuration
- Operating speed range between  $V_S$  and  $V_A$
- Use of power
- Carburettor heat
- Engine leaning
- Control coordination
- Aeroplane position

### Human factors

- Illusions – whiteout, brightout
- Workload, stress, fatigue – effect on performance
- Hypoxia
- Dehydration
- Further reading