

### Objective

To operate the aircraft safely both on the ground and in the air at night within 25 NM of the aerodrome.

### Considerations

- Night is between ECT and MCT
- Legal: Aerodrome /aircraft lighting and minima (controlled /uncontrolled)

### Prerequisites

- 2 hours IF
- PPL – 2 hrs dual, 2 hrs solo, 5 total

### Night vision

- Rods and cones
- Cones – colour
- Rods – peripheral vision and movement
- Used for night vision

### Dark adaptation

- 30 minutes
- Avoid bright lights

### Illusions

- Lookout
- Speed perception
- Lack of horizon
- IF illusions
- Flicker vertigo
- Auto-kinesis
- Star light confusion
- Black hole

### Equipment

- Torch, and spare batteries
- High viz
- All lights operational
- Personal equipment – torch, pen, mobile phone, watch, warm clothing, survival kit, possibly spare VHF or GPS

### Air exercise

#### On the ground

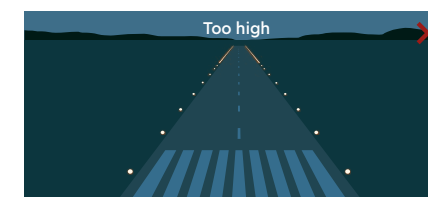
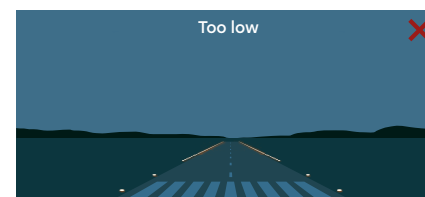
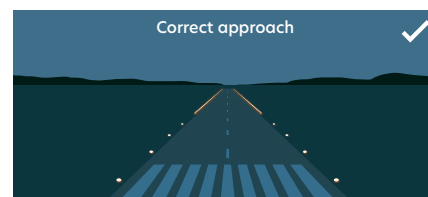
- Taxi slowly
- Notice runway light in peripheral vision
- Aircraft on approach
- Transfer to instruments as soon as airborne
- When established in climb, can use visual reference

#### In the circuit

- Familiarity with the circuit
- Local landmarks and townships
- Downwind spacing

#### Approach and landing

- Approach perspective with runway edge lights
- Don't look in to the area lit by landing light
- Speed when vacating
- Emergencies – simulate
- Illusions – experience



### Airmanship

- Preflight in the light
- Use of aeroplane's lights
- Number of other aircraft in the circuit
- Illusions
- Minimum elevation figures

### Aeroplane management

- More frequent SADIE checks
- Dew and frost
- Cockpit layout
- Trust instruments

### Human factors

- Instrument flying illusions
- Night vision factors – adaptation, health, oxygen, colour perception, depth perception, focus, focal length, black hole, lights and stars