Night Flying

Objective

To operate the aircraft safely both on the ground and in the air at night.

1. 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

Familiarity with Aeroplane

- Know location of controls and switches

Familiarity with Aerodrome

- Vol 4 Operational Data
- Aerodrome lighting
- ATC light signals
- Approach lighting

Weather

- Inadvertent IMC
- Diurnal wind effect
- Overcast Vs clear sky
- Temp and dew point

Emergencies

- Radio failure
- Runway lighting failure
- Landing or Nav light failure
- Internal light failure
- Electrical failure
- Engine failure

2. Airmanship

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

3. Aeroplane Management

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

4. Human Factors

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

5. Air Exercise

On the Ground

- Taxy 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

- Famil 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