Flapless Landings

CIRCUIT TRAINING

Objective

To carry out a flapless approach and landing.

1. Considerations

- In all cases, when faced with the unexpected
- **Aviate – Navigate – Communicate**

Flap System

- Flap system operated by _____
- Electrical system diagrammatics
- Flap operating system diagrammatics

Detection

- To help detection of this failure before getting airborne
- Thorough preflight inspection
- Sound systems knowledge
- Regular SADIE checks
- Probably won't detect it until base leg
- Once detected – go around

Causes

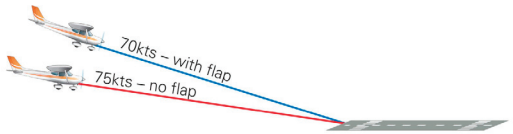
- Mechanical linkage failure (manual or electric flap)
- Electric flap motor failure
- Electrical current failure
- Overspeed – should never happen
- Always limit speed to below V_{FE} before deploying flap

Diagnosis

- Once in level flight, can then diagnose problem
- Check electrics for indications – Master ON, CB set, Battery output
- Visual check for indication failure

Procedure

- Stall speed ↑ ∴ approach speed higher (5 kts)
- Longer landing distance – P-charts have no detail
- Less power required
- Descent angle shallower
- Less visibility over the nose



2. Airmanship

- Good systems knowledge
- SADIE checks
- Higher approach speed

3. Aeroplane Management

- Small power changes to adjust approach path

4. Human Factors

- Lower nose attitude causes illusion and acceleration

5. Air Exercise

- Will simulate late downwind
- Carry out a go around and position downwind

Downwind

- Downwind checks and radio call
- Assess runway length
- Confirm appropriate approach speed
- Choose power setting for approach
- Extend downwind leg

Base

- Lower power
- Higher nose attitude
- Trim
- Anticipate turn onto final

The Approach

- Attitude to maintain higher approach speed
- Small power changes to adjust RoD
- Higher nose attitude – less forward visibility
- Attitude + Power = Performance

Landing

- Less round-out
- Slight hold-off
- Do not over-flare – wait for touchdown
- Caution floating – may require go around