

# Short Field Take-off and Landing — In-flight Notes

*CASA Recreational Pilot License (Aeroplane) — Lesson 22*

# Language choices

**"all the runway"** — line up at the very threshold, every metre counts.

**"best angle to clear the obstacle"** rather than just "climb out" — the speed has a purpose.

**"flap up when it's safe"** rather than "flap up" — reinforce the when, not just the action.

**"go around"** — said early and without hesitation; never "save it".

## Demonstration-Performance

For the sequence of each activity, choose whether you use:

- Demonstration-Performance: Explain, Demonstrate, Performance and Monitor, Evaluation
- DDM: Demonstrate, Direct, Monitor

or some other preference. Each in-flight activity just describes the sequence to be demonstrated and performed, regardless of the method you use.

## Before starting the plane

- Confirm the take-off and landing **distances** have been calculated for today's conditions and there is a sensible margin
- Confirm the aircraft's recommended **short-field flap** setting,  $V_X$  and **short-field approach speed**
- Agree the **committal point** for the take-off and the **aim point** for the landing

# After departing / established in the circuit

- Confirm circuit direction, the obstacle (actual or assumed) and the go-around path
- Brief the first exercise: "We'll use all the runway, full power against the brakes, then lift off at the lowest safe speed and hold  $V_X$  until the obstacle's behind us."

# Short-field take-off

Configuration: recommended short-field flap; line up using all available runway, nose-wheel straight.

## Sequence

- Brakes held — **full power**, check RPM, oil pressure, engine indications
- Release brakes; keep straight with rudder — **airspeed alive**
- Ease into the flying attitude — **lift off at the lowest safe speed**
- Establish **best-angle climb ( $V_X$ )** — hold until the obstacle (actual/assumed) is cleared
- Obstacle cleared — lower nose to **best-rate climb ( $V_Y$ )**
- **Raise flap** in stages when safe — expect a sink if raised too early
- Complete after-take-off checks

*Loose / gravel surface: apply power **rolling slowly forward**, not against the brakes, to protect the propeller.*

# Best-angle climb — engine failure (simulated)

Setup: during the  $V_X$  climb after a short-field take-off.

## Sequence

- **Nose down immediately** — positive forward movement to the gliding attitude ( $V_X$  is close to the stall)
- Glide attitude and best glide speed established
- Land area **ahead**, minimal heading change
- Trouble-check / secure aircraft only if height and time permit
- Flap / sideslip as required for the landing area

# Short-field landing

Configuration: full flap; stable approach; aim point chosen short of obstacles.

## Sequence

- Full flap, stable, slightly steeper approach to clear the obstacle
- **Airspeed with elevator, rate of descent with throttle**
- Aim to reach the **minimum recommended speed** crossing the boundary
- Minimal round-out (attitude already low) — close throttle, touch down with little/no float at the aim point
- After touchdown: **maximum braking without locking the wheels**, hold direction
- A touch of power may be needed to arrest a high sink rate in a wind gradient

# Short-field landing — balloon / bounce

## Sequence

- Small balloon — hold the attitude, a touch of power, let it settle
- Larger balloon or a bounce you can't smoothly resolve — **go around**
- Maintain direction throughout; never force it onto the ground

# Go around

Trigger: too fast / too high at the boundary, a balloon or bounce, or any doubt about stopping.

## Sequence

- **Full power** (take-off power)
- Establish the **climb speed** while still in the landing configuration
- **Raise flap in stages** — expect large trim changes
- Re-trim; reposition for the circuit
- Decide **early** — do not try to convert a bad approach into a landing

# Engine failure in the circuit (simulated)

## Sequence

- **Attitude** — establish the glide and best glide speed
- **Assess** wind and position; pick the most achievable landing area
- **Plan** the glide approach to it with the energy available
- **Checks** — trouble-check and Mayday as height and workload allow

*Aviate · Navigate · Communicate — fly the controlled glide first.*

# Return to aerodrome