

Private Pilot Flight Lesson: No-Flap Landings and Go-Arounds

Objectives:

1. exhibit knowledge relating to no-flap landings
2. be able to perform no-flap landings
3. exhibit knowledge of go-arounds
4. be able to perform go-arounds

Justification:

1. develops proper go-around techniques and judgement
2. go-arounds may be required in a variety of situation
3. in case of a flap failure, no-flap landings must be performed
4. maneuvers are required for the Private Pilot checkride

Schedule:

Activity	Est. Time
Ground	0.25
Preflight/Taxi	0.25
Flight	1.0
Debrief	0.25
Total	1.75

Recommended Readings:

AFH	Ch 8: 8-11 to 8-13
AOPA	http://www.aopa.org/members/ftmag/article.cfm?article=5407

Elements Ground:

- no-flap landing overview
- no-flap landing procedure
- go-around
- go-around procedure

Elements Air:

- no-flap landings
- go-arounds

Completion Standards:

1. when the student is able o perform a go-around with minimal assistance
2. when the student is able to perform no-flap landings with minimal assistance

Common Errors:

- No-flap landings
 - does not lengthen pattern
 - too high on final
 - lowers nose to “regular” landing attitude, resulting in a high airspeed
 - student dives for the runway
- go-around
 - rushes go around
 - retracts all the flaps at once
 - student turns cross wind too early
 - student forgets to advise the tower

Presentation Ground:

no-flap landing overview

PTS Standards			
initial airspeed	approach speed	Δ airspeed	+10/-5 kts
touchdown	-0/+400 ft	tchdwn speed	≈ V _{SO}

1. simulates any failure of the flap system
2. what do flaps do?
 - (1) increase lift - reduced stall speed
 - (2) add drag - steeper angle of descent
 - (3) change in chord line - plane flies at a more nose low attitude
3. so without flaps:
 - (1) higher approach speed
 - (2) shallower flight path, requiring an extended traffic pattern
 - (3) higher nose attitude on approach causing poorer forward visibility
 - (4) minimal flare and longer float (because of less drag)
 - (5) greater risk of ballooning if the flare is too pronounced
 - (6) risk of tail strike if the nose is raised too high in a prolonged float
 - (7) longer ground roll due to higher landing speed and lower aerodynamic braking
4. it is important to control airspeed and flight path precisely
 - (1) a “clean” wing takes longer to bleed off airspeed, which can lengthen the float considerably if airspeed isn’t held appropriately

no-flap landing procedure

1. approach
 - (1) extend downwind longer to account for shallower flight path
 - (2) begin descent earlier (reduce power earlier) or hold less power
 - (3) approach at recommended no-flap speed (usually +5 over normal approach speed)
2. flare and touchdown
 - (1) less attitude change in the flare
 - (2) longer period of holding off in a nose high attitude
 - (3) expect a longer landing run due to the higher approach speed

go-around overview

1. *stopping a descent to land and climbing away*
 - (1) also known as “rejected landing”
2. reasons for go-around
 - (1) another airplane on the runway
 - (2) instructed to by control tower
 - (3) conditions are too severe to land
 - (4) approach is unstable
 - (5) aircraft too high to land safely and stop in time
3. always act decisively, calmly and procedurally in a go-around

go-around procedure

1. power - full (carb heat - off)
2. pitch to climb attitude (Vy)
3. retract flaps to 20° initially
4. at positive rate of climb, retract other flaps incrementally while maintaining attitude
5. fly runway heading (unless instructed otherwise) and rejoin pattern
 - (1) note: altitude at which turn is usually started will be reached sooner, so be aware of sequence in the pattern
6. notify tower of go-around if time permits

Presentation Air:

1. no-flap landings
2. go-arounds