US Flight Co

Operations Guide

Pipistrel Alpha Trainer

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Normal Takeoff

Description

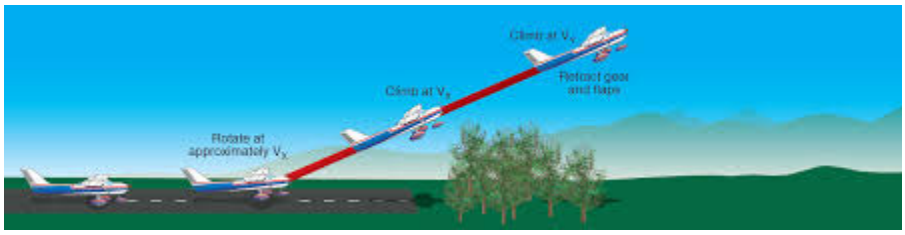
With the Before Takeoff checklist, which includes a pre-takeoff safety brief complete and air traffic control (ATC) clearance received, the airplane should be taxied into position on the runway centerline. If departing from an airport without an operating control tower, a careful check for approaching aircraft should be made along with a radio advisory on the appropriate frequency. Sharp turns onto the runway combined with a rolling takeoff are not a good operating practice and may be prohibited by the AFM/POH due to the possibility of "unporting" a fuel tank pickup. (The takeoff itself may be prohibited by the AFM/POH under any circumstances below certain fuel levels.) The flight controls should be positioned for a crosswind, if present. Exterior lights, such as landing and taxi lights, and wingtip strobes should be illuminated immediately prior to initiating the takeoff roll, day or night. If holding in takeoff position for any length of time, particularly at night, the pilot should activate all exterior lights upon taxiing into position.

FAA Airman Certification Standards

Rotate and lift-off at the recommended airspeed and accelerate to Vy.
Establish a pitch attitude that will maintain Vy ± 5 knots.
Maintain takeoff power and Vy ± 5 knots.

Pipistrel Profile

Flaps: +1
Power: Full Power
Engine Instruments: Green
Rotate: 55kts
At Safe Altitude: Flaps 0
Vy: 76kts



Short Field Takeoff

Description

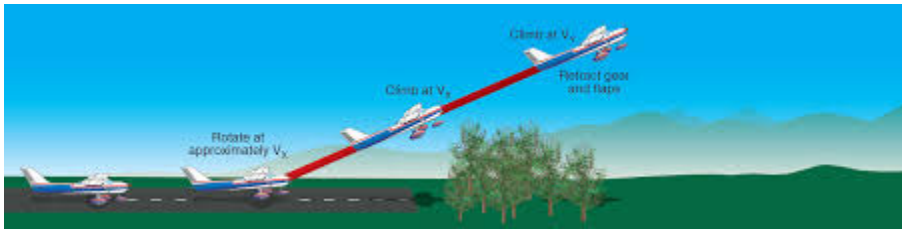
The short-field takeoff and climb differs from the normal takeoff and climb in the airspeeds and initial climb profile. Some AFM/POHs give separate short-field takeoff procedures and performance charts that recommend specific flap settings and airspeeds. Other AFM/POHs do not provide separate short-field procedures. In the absence of such specific procedures, the airplane should be operated only as recommended in the AFM/POH. No operations should be conducted contrary to the recommendations in the AFM/POH. On short-field takeoffs in general, just after rotation and lift-off, the airplane should be allowed to accelerate to VX, making the initial climb over obstacles at VX and transitioning to VY as obstacles are cleared

FAA Airman Certification Standards

- Rotate and lift-off at the recommended airspeed and accelerate to the recommended obstacle clearance airspeed or Vx, ± 5 knots.
- Establish a pitch attitude that will maintain the recommended obstacle clearance airspeed, or Vx, ± 5 knots, until obstacle is cleared or airplane is 50 feet above the surface.
- After clearing the obstacle, establish the pitch attitude for Vy, accelerate to Vy, and maintain Vy, ± 5 knots during the climb.
- Maintain Vy ± 5 knots to a safe maneuvering altitude.

Pipistrel Profile

Brakes: Hold
Flaps: +2
Power: Full
Engine Instruments: Green
Brakes: Release
Rotate: Smoothly at about 55kts
Vx: 58kts
Clear of Obstacle
60kts: Flaps +1
Safe Altitude: Flaps 0, Vy 76kts



Soft Field Takeoff

Description

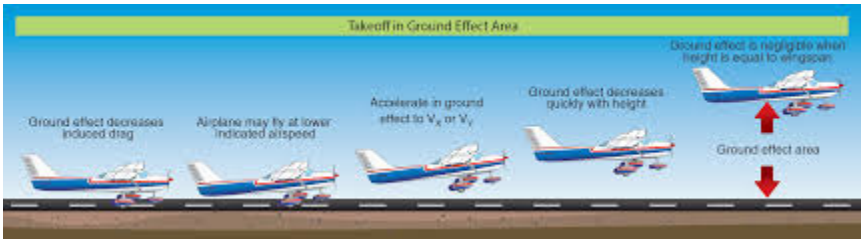
Taking off from a runway surface that is soft, like grass, mud, snow, or poorly maintained ground, where the goal is to get the aircraft airborne as quickly as possible by maintaining a high angle of attack (nose-high attitude) to minimize the time the wheels are in contact with the soft surface, thus reducing drag and allowing for a quicker lift-off

FAA Airman Certification Standards

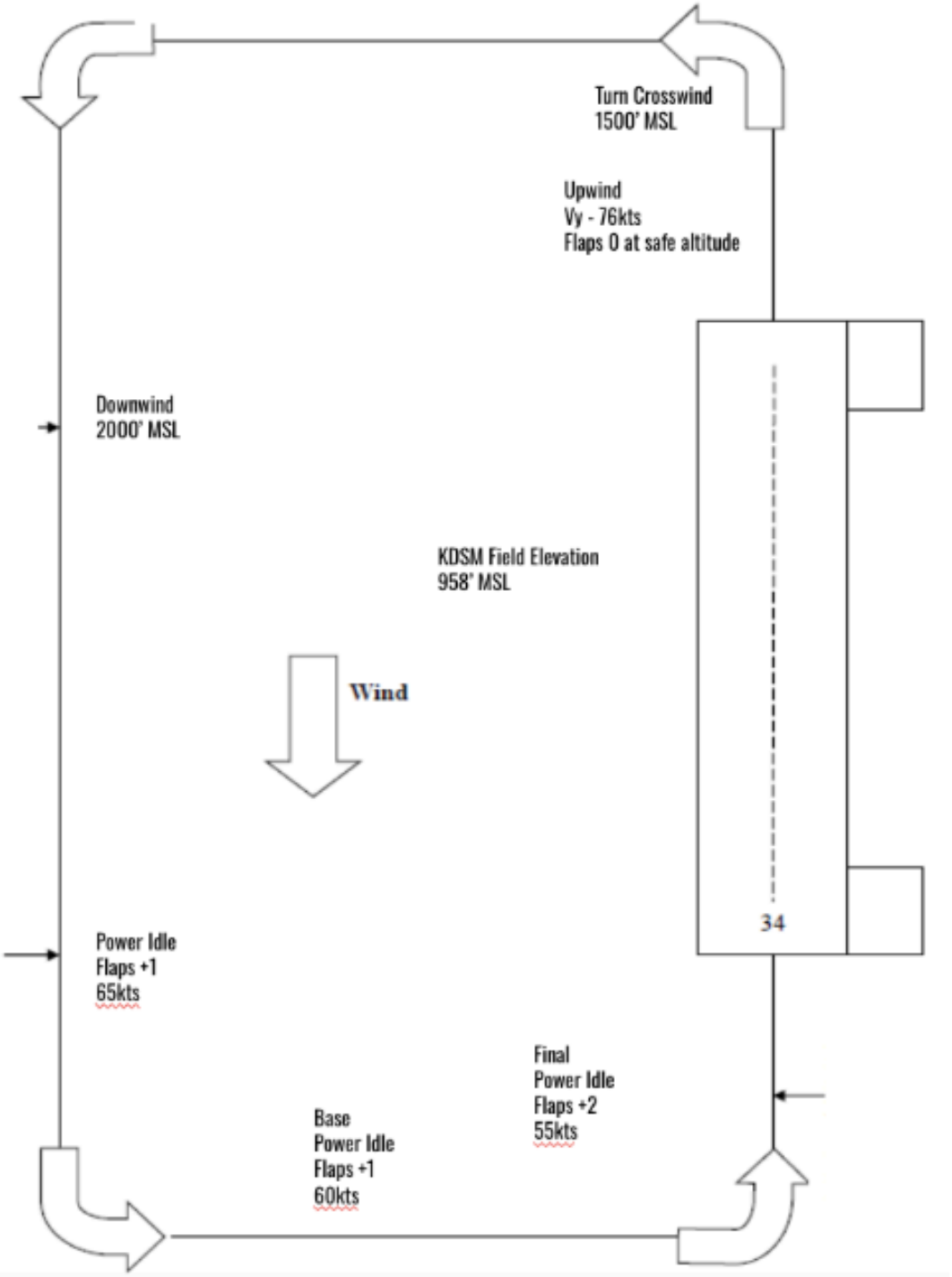
- Establish and maintain a pitch attitude that transfers the weight of the airplane from the wheels to the wings as rapidly as possible
- Lift off at the lowest possible airspeed and remain in ground effect while accelerating to VX or VY , as appropriate.
- Establish a pitch attitude for VX or VY , as appropriate, and maintain selected airspeed +10/-5 knots during the climb.

Pipistrel Profile

Flaps: +2
Elevator: Full Back
Brakes: None
Power Full
Engine Instruments: Green
Rotate: At or before 55kts, conditions permitting
Accelerate: In ground effect until Vx
Vx: 58kts
Clear of Obstacle
60kts: Flaps +1
Safe Altitude: Flaps 0, Vy 76kts



Traffic Pattern Diagram



Short Field Landing

Description

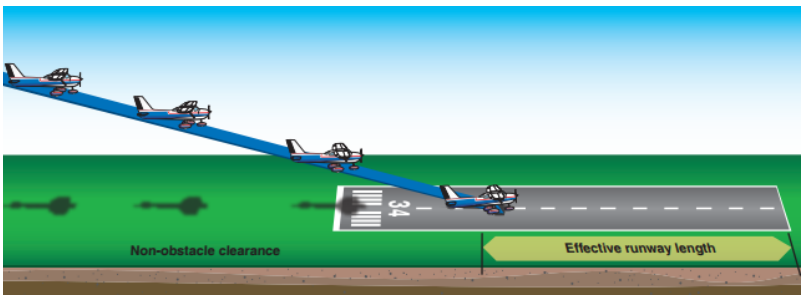
The primary elements of a short-field approach and landing do not differ significantly from a normal approach and landing. Many manufacturers do not publish short-field landing techniques or performance charts in the AFM/POH. In the absence of specific short-field approach and landing procedures, the airplane should be operated as recommended in the AFM/POH. No operations should be conducted contrary to the AFM/POH recommendations. The emphasis in a short-field approach is on configuration (full flaps), a stabilized approach with a constant angle of descent, and precise airspeed control. As part of a short-field approach and landing procedure, some AFM/POHs recommend a slightly slower than normal approach airspeed. If no such slower speed is published, use the AFM/POH recommended normal approach speed.

FAA Airman Certification Standards

- Establish the recommended approach and landing configuration and airspeed maintain a stabilized approach.
- Maintain recommended airspeed with wind gust factor applied ± 5 knots.
- Touch down within 200 feet beyond the specified point, threshold markings, or runway numbers, with no side drift, minimum float, and with the airplane's longitudinal axis aligned with and over the runway centerline.

Pipistrel Profile

Final Approach Speed: 60kts
Airbrakes: Extended
Flaps: +2
Power: Idle when landing spot is assured
Brakes: Firmly applied on runway centerline



Soft Field Landing

Description

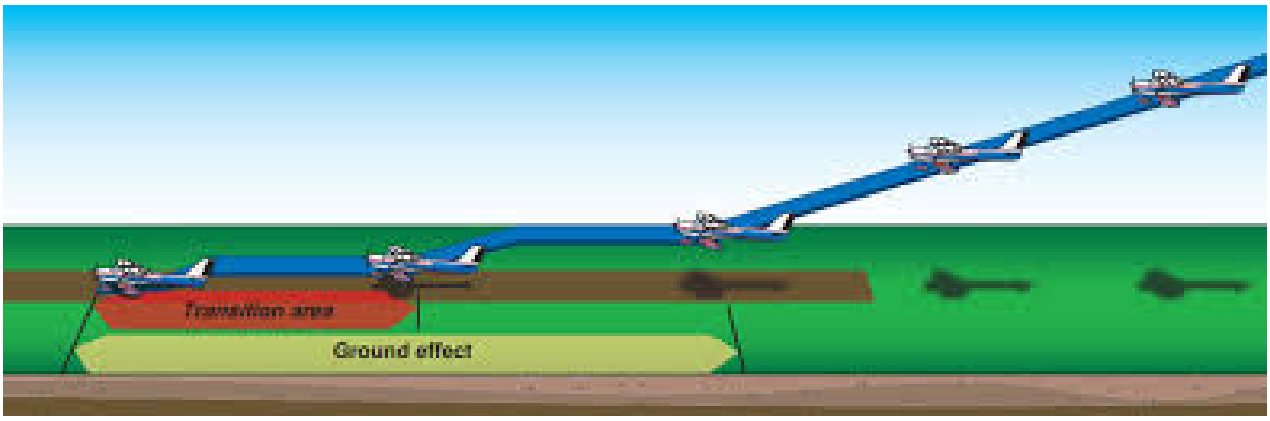
A landing technique used by pilots when touching down on a soft surface like grass, sand, snow, or mud, where the goal is to minimize the impact by keeping the aircraft's weight on the wings for as long as possible during the final approach, allowing for a gentle touchdown at the slowest possible speed

FAA Airman Certification Standards

- Make smooth, timely, and correct control inputs during the round out and touchdown, and, for tricycle gear airplanes, keep the nose wheel off the surface until loss of elevator effectiveness.
- Touch down at a proper pitch attitude with minimum sink rate, no side drift, and with the airplane's longitudinal axis aligned with the center of the runway.
- Maintain elevator as recommended by manufacturer during rollout and exit the "soft" area at a speed that would preclude sinking into the surface.

Pipistrel Profile

Final Approach Speed: 55kts
Flaps: +2
Airbrakes: Retracted
Power: Idle when landing is assured
Touchdown: Hold back pressure, keeping weight off nosewheel
Brakes: None



Go Around

Description

Whenever landing conditions are not satisfactory, a go-around is warranted. There are many factors that can contribute to unsatisfactory landing conditions. The assumption that an aborted landing is invariably the consequence of a poor approach, which in turn is due to insufficient experience or skill, is a fallacy. The go-around is not strictly an emergency procedure. It is a normal maneuver that is also used in an emergency situation (FAA Airplane Flying Handbook).

FAA Airman Certification Standards

- Apply takeoff power immediately and transition to climb pitch attitude for Vx or Vy, as appropriate, ± 5 knots.
- Maintain Vy ± 5 knots to a safe maneuvering altitude.
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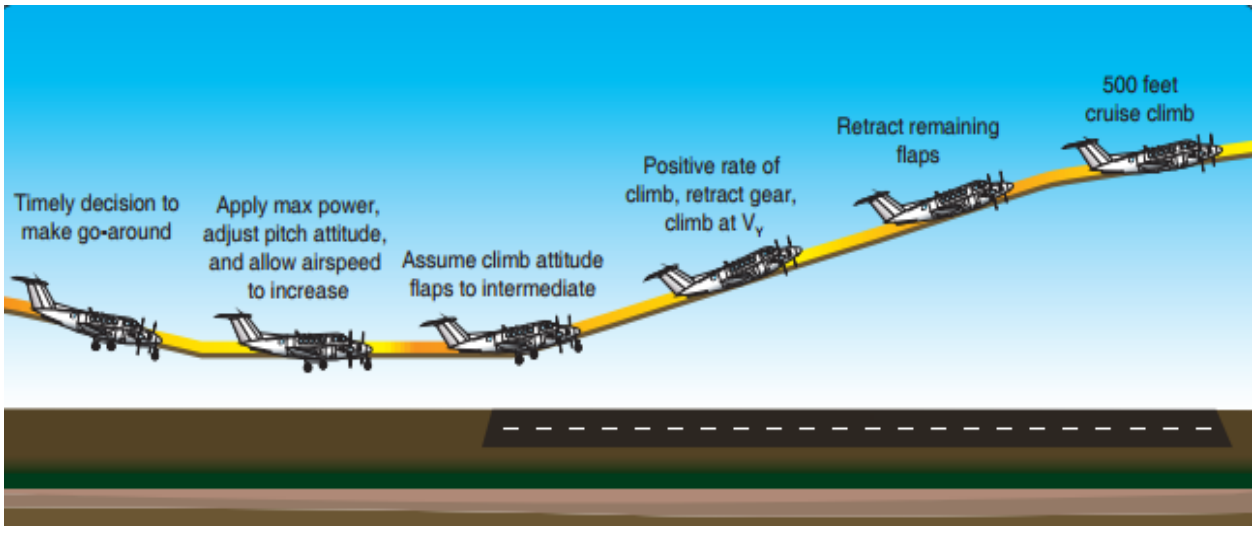
Pipistrel Profile

Power: Full
Flaps: 60kts +1, 70kts +0
Pitch: Vy 76kts



Slow Flight

Description

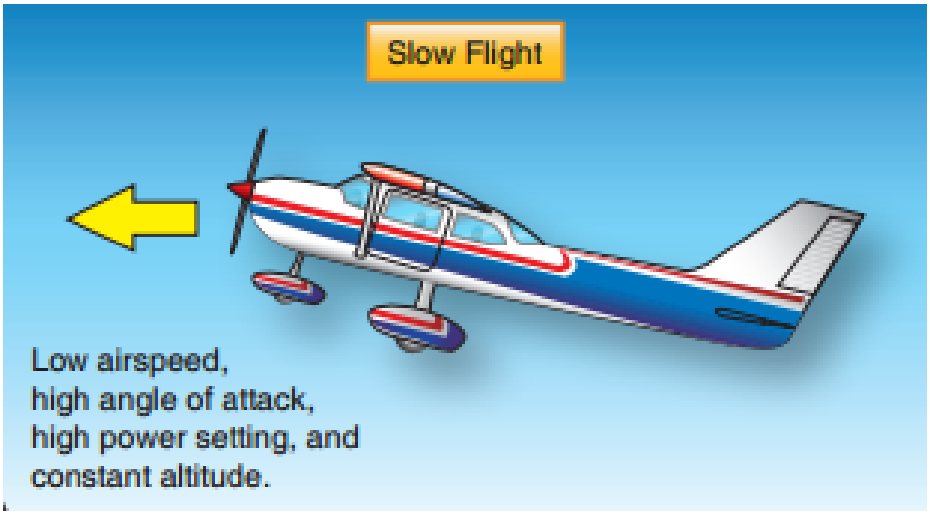
Slow flight is when the airplane AOA is just under the AOA which will cause an aerodynamic buffet or a warning from a stall warning device if equipped with one. A small increase in AOA may result in an impending stall, which increases the risk of an actual stall. In most normal flight operations the airplane would not be flown close to the stall-warning AOA or critical AOA, but because the airplane is flown at higher AOAs, and thus reduced speeds in the takeoff/departure and approach/ landing phases of flight, learning to fly at reduced airspeeds is essential. In these phases of flight, the airplane's close proximity to the ground would make loss of control catastrophic; therefore, the pilot must be proficient in slow flight (FAA Airplane Flying Handbook).

FAA Airman Certification Standards

- Select an entry altitude that allows the Task to be completed no lower than 1,500 feet above ground level (AGL) (ASEL, ASES) or 3,000 feet AGL (AMEL, AMES).
- Establish and maintain an airspeed at which any further increase in angle of attack, increase in load factor, or reduction in power, would result in a stall warning
- Maintain the specified altitude, ±100 feet; specified heading, ±10°; airspeed, +10/-0 knots; and specified angle of bank, ±10°

Pipistrel Profile

Power: Idle
70 kts: +1 Flap
60 kts: +2 Flap
55 kts: Power ~4000RPM
Power: For Altitude
Pitch: For Airspeed



Power Off Stall

Description

A power-off approach to stall is trained and checked to simulate problematic approach and landing scenarios. A power-off approach to stall may be performed with wings level, or from shallow and medium banked turns (20 degrees of bank). To initiate a power-off approach to stall maneuver, the area surrounding the airplane should first be cleared for possible traffic. The airplane should then be slowed and configured for an approach and landing. A stabilized descent should be established (approximately 500 fpm) and trim adjusted. A turn should be initiated at this point, if desired. The pilot should then smoothly increase the AOA to induce a stall warning. Power is reduced further during this phase, and trimming should cease at speeds slower than takeoff.

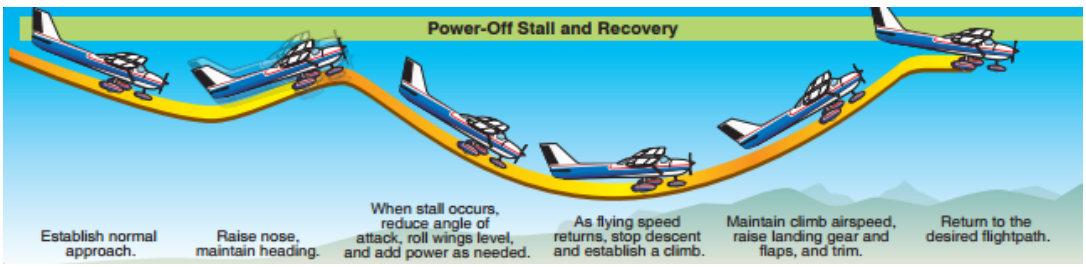
FAA Airman Certification Standards

- Select an entry altitude that allows the Task to be completed no lower than 1,500 feet above ground level (AGL)
- Configure the airplane in the approach or landing configuration, as specified by the evaluator, and maintain coordinated flight throughout the maneuver.
- Establish a stabilized descent.
- Maintain a specified heading ±10° if in straight flight; maintain a specified angle of bank not to exceed 20°, ±10° if in turning flight, while inducing the stall.

Pipistrel Profile

Power: Idle
70 kts: +1 Flap
60 kts: +2 Flap
55 kts: Power ~4000RPM
Decent: Establish
Power: Idle
Pitch: 20 Degrees

Stall
Power: Full
Recover



Power On Stall

Description

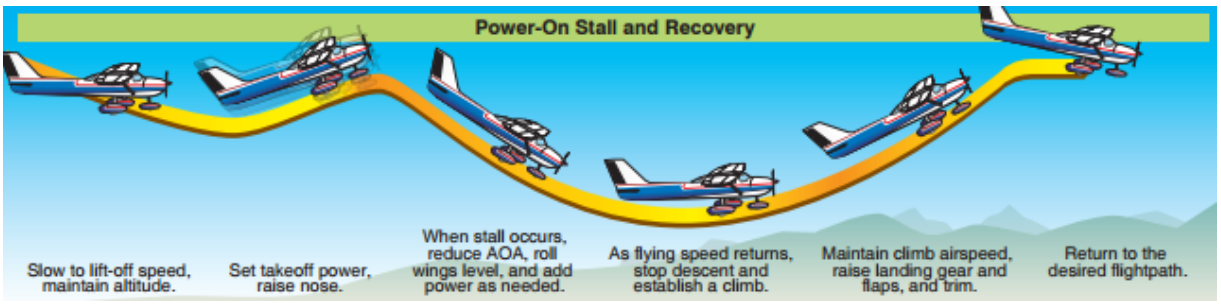
A power-on approach to stall is trained and checked to simulate problematic takeoff scenarios. A power-on approach to stall may be performed from straight-and-level flight or from shallow and medium banked turns (20 degrees of bank). To initiate a power-on approach to stall maneuver, the area surrounding the airplane should always be cleared to look for potential traffic. The airplane is slowed to the manufacturer's recommended lift-off speed. The airplane should be configured in the takeoff configuration. Trim should be adjusted for this speed. Engine power is then increased to that recommended in the AFM/POH for the practice of power-on approach to stall. In the absence of a recommended setting, use approximately 65 percent of maximum available power. Begin a turn, if desired, while increasing AOA to induce a stall warning (e.g., aural alert, buffet, etc.). Other specified (reduced) power settings may be used to simulate performance at higher gross weights and density altitudes.

FAA Airman Certification Standards

- Select an entry altitude that allows the Task to be completed no lower than 1,500 feet above ground level (AGL)
- Establish the takeoff, departure, or cruise configuration, as specified by the evaluator, and maintain coordinated flight throughout the maneuver.
- Set power (as assigned by the evaluator) to no less than 65 percent power.
- Maintain a specified heading, ±10° if in straight flight; maintain a specified angle of bank not to exceed 20°, ±10° if in turning flight, while inducing the stall.

Pipistrel Profile

Power: Idle
70 kts: +1 Flap
55 kts: Power ~4000RPM
Pitch: 20 Degrees
Stall
Power: Full
Recover



Steep Turns

Description

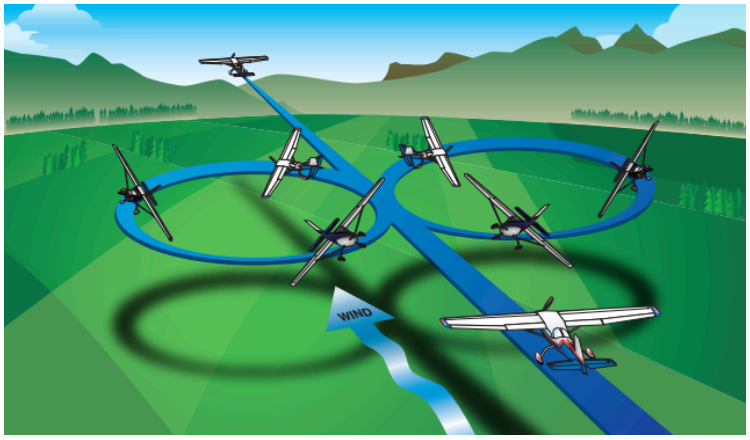
Steep turns consist of single to multiple 360° to 720° turns, in either or both directions, using a bank angle between 45° to 60°. The objective of the steep turn is to develop a pilot's skill in flight control smoothness and coordination, an awareness of the airplane's orientation to outside references, division of attention between flight control application, and the constant need to scan for hazards (FAA Airplane Flying Handbook).

FAA Airman Certification Standards

- Establish the manufacturer's recommended airspeed; or if one is not available, an airspeed not to exceed the maneuvering speed (VA).
- Roll into a coordinated 360° steep turn with approximately a 45° bank
- Perform the Task in the opposite direction, as specified by evaluator
- Maintain the entry altitude ±100 feet, airspeed ±10 knots, bank ±5°, and roll out on the entry heading ±10°.

Pipistrel Profile

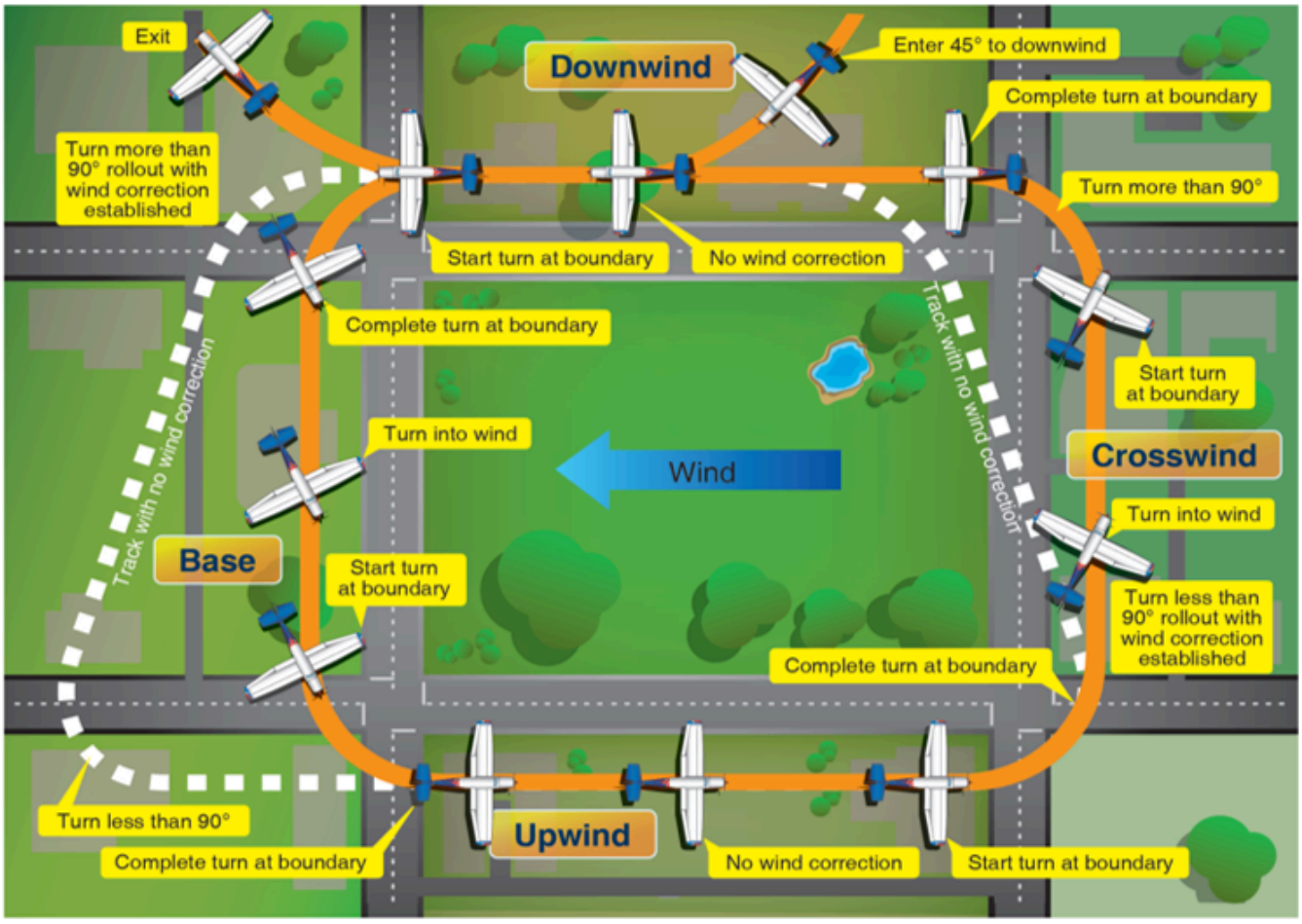
Power: 5300 RPM
Airspeed: Below Va
Bank: 45 Degrees
Pitch: ~2.5 Degrees
30 Degrees before Heading: Begin Wings Level
Recover



Rectangular Course

Description

A training maneuver in which the airplane maintains an equal distance from all sides of the selected rectangular references. The maneuver is accomplished to replicate the airport traffic pattern that an airplane typically maneuvers while landing.



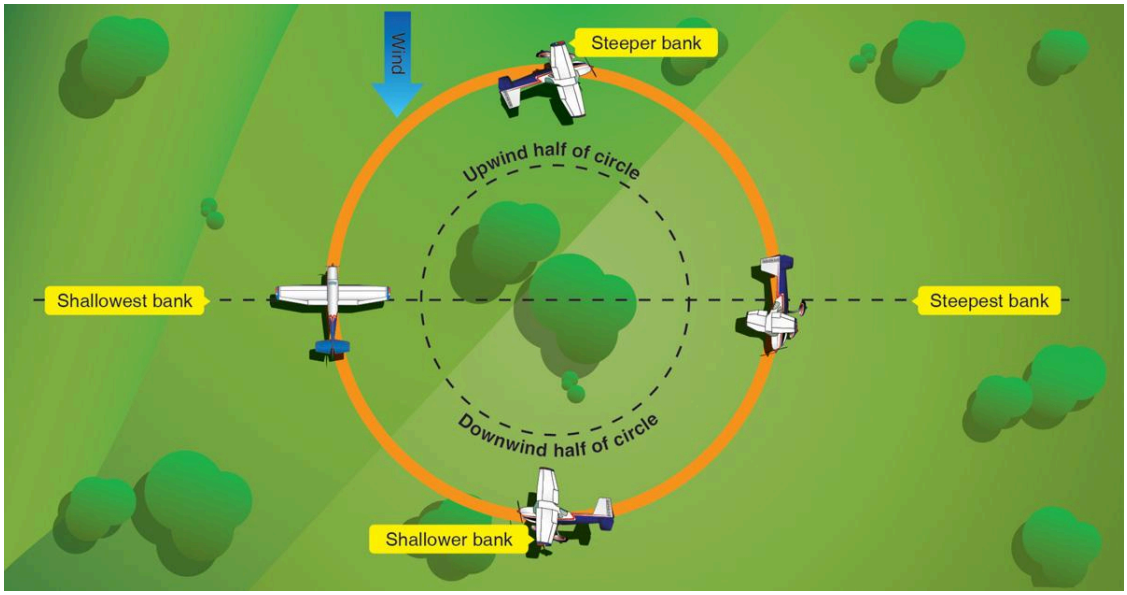
Turn around a Point

Description

A maneuver where a pilot flies an aircraft in a continuous circle around a fixed point on the ground, essentially maintaining a constant radius turn while constantly adjusting bank angle to compensate for wind drift and keep the aircraft precisely positioned relative to the chosen reference point

FAA Airman Certification Standards

- Enter at an appropriate distance from the reference point, 600 to 1,000 feet AGL at an appropriate distance from the selected reference area
- Apply adequate wind-drift correction during straight and turning flight to maintain a constant ground track around a rectangular reference area, or to maintain a constant radius turn on each side of a selected reference line or point.
- Maintain altitude ±100 feet; maintain airspeed ±10 knots.



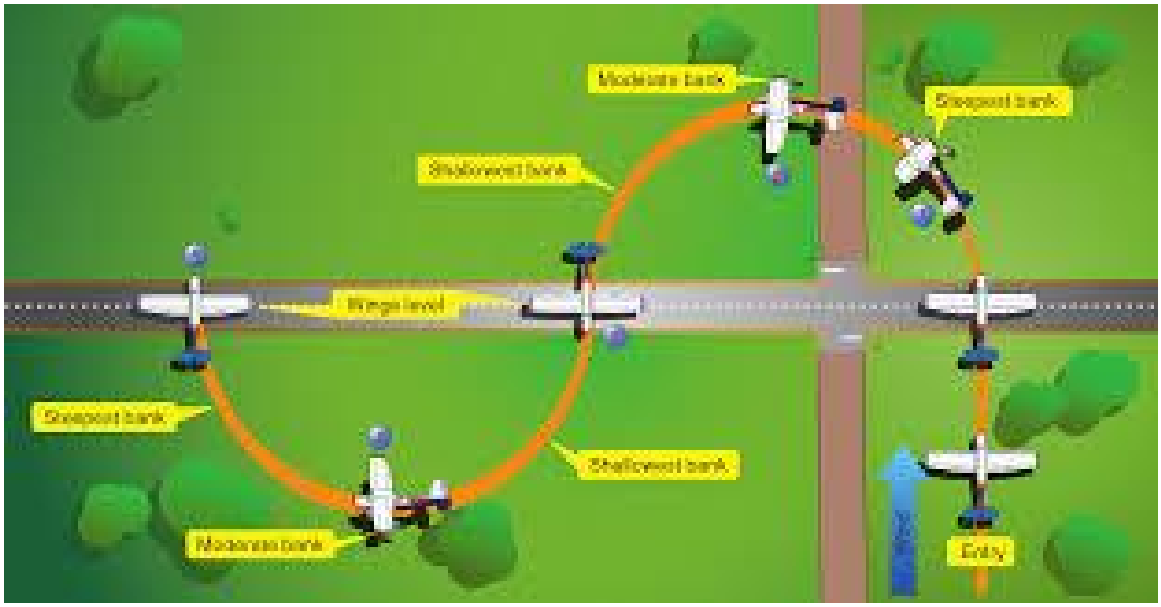
S-Turn

Description

The S-turn is a ground reference maneuver in which the airplane's ground track resembles two opposite but equal half-circles on each side of a selected ground-based straight-line reference, such as a road, railroad track, power line clearing, or hedgerow

FAA Airman Certification Standards

- Enter at an appropriate distance from the reference point, 600 to 1,000 feet AGL at an appropriate distance from the selected reference area
- Apply adequate wind-drift correction during straight and turning flight to maintain a constant ground track around a rectangular reference area, or to maintain a constant radius turn on each side of a selected reference line or point.
- If performing S-Turns, reverse the turn directly over the selected reference line; if performing turns around a point, complete turns in either direction, as specified by the evaluator.
- Maintain altitude ±100 feet; maintain airspeed ±10 knots.



Emergency Descent

Description

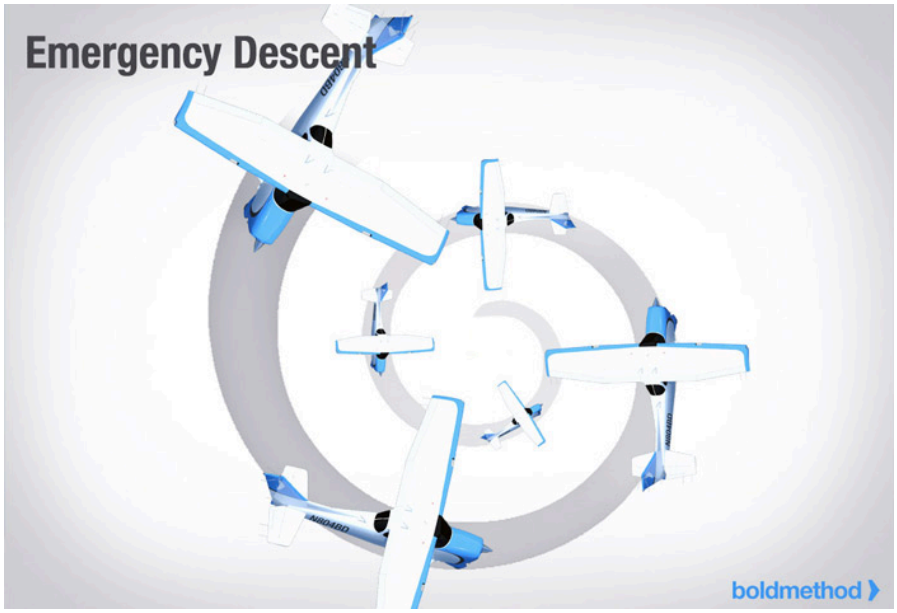
An emergency descent is a maneuver for descending as rapidly as possible to a lower altitude or to the ground for an emergency landing. The need for this maneuver may result from an uncontrollable fire, a sudden loss of cabin pressurization, or any other situation demanding an immediate and rapid descent. The objective is to descend the airplane as soon and as rapidly as possible within the structural limitations of the airplane (FAA Airplane Flying Handbook).

FAA Airman Certification Standards

- Establish and maintain the appropriate airspeed and configuration appropriate to the scenario specified by the evaluator.
- Use bank angle between 30° and 45° to maintain positive load factors during the descent.
- Maintain appropriate airspeed, +0/-10 knots, and level off at specified altitude, ± 100 feet.

Pipistrel Profile

Power: Idle
Bank: 45 Degrees
Pitch: Top of Green Arc
Find best landing spot
Recover: Wings Level, Pitch Neutral, Cruise Power



Loss of Power in Flight

Description

Although no pilot ever hopes to encounter an engine failure, preparing for one is a crucial skill all pilots must develop. This maneuver will introduce pilots to gliding descents and how to plan and execute an emergency landing.

FAA Airman Certification Standards

- After a simulated engine failure is declared, immediately establishes best glide airspeed +/- 10 kts.
- Selects a suitable landing area and begins an approach, configures the airplane, performs an emergency checklist, and simulates the appropriate radio calls.
- Uses a combination of approach geometry, slips, and flaps to manage the approach path, avoiding skidding turns at all times.
- Manages the descent and aims for a point so as to make a safe, controlled landing (if performed at an airport), or discontinues the approach at 500 ft AGL

Pipistrel Profile

A: Airspeed - 69kts

B: Best Landing Spot

C: Checklist/Communicate