
Middle Georgia State University

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Checklists and Briefings

Takeoff Briefing

Takeoffs are briefed so that the pilots have a clear understanding of the runway environment, emergency actions that may be required during the ground roll, initial takeoff and departure.

Procedure:

1. Determine which pilot will be PIC in case of emergency
2. Brief will be conducted (from memory) in the runup area prior to call for departure and crossing the hold short line. The Brief consists of five areas of concentration:
   - Runway Information
   - Engine Failure / Emergency During Ground Roll
   - Engine Failure with runway remaining
   - Engine Failure without runway remaining
   - Engine Failure above 1,000' AGL

BriefingScript:

- "This will be a _____ takeoff from Runway ____ by the pilot in the _____ seat."
- "If we

S-Turns Across a Road (Private, CFI)

The objective of S-turns Across a Road is track two equidistant, constant radii, half turns across a road, while maintaining coordinated flight, and applying proper wind-drift correction.

Procedure:

1. Pre-Maneuver Checklist
2. Select altitude between 600' - 1,000' AGL (recommend 1,200' MSL), in non-congested area
3. Determine wind direction for downwind (tailwind) entry
4. Select straight road or other reference (wires, tree line), perpendicular to the wind
5. Enter at cruise speed (100 -110 KIAS), bug reference heading
6. Execute two 180º turns crossing the road perpendicular each time.
7. Apply appropriate wind correction for each segment of turn
    a. Highest groundspeed = steepest bank
    b. Slowest groundspeed = most shallow bank
8. Exit maneuver on entry heading

Airman Certification Standards:

- Altitude: +/- 100'
- Airspeed: +/- 10 Knots

Common Errors:

- Failure to clear the area, collision hazards
- Poor coordination
- Failure to maintain airspeed and altitude
- Failure to maintain constant radius across road

Rectangular Course (Private, CFI)

Eights -On Pylons (Commercial, CFI)

The objective of Eights-On Pylons is to develop intuitive control of the aircraft at a varying, low level altitude around two points on the ground. The main concept of this maneuver is to maintain the visual reference around the pylons, while maintaining pivotal altitude. Pivotal altitude varies throughout the maneuver as ground speed changes.

Procedure:

1. Pre-Maneuver Checklist
2. Determine pivotal altitude ( ) $5^2 \div 11.3$) + ground elevation.
3. Select two outside visual reference points (pylons) approximately half a mile, to a mile apart, ensure these pylons are perpendicular to the wind

(e)]TJ004. 5412 Tc visual

Chandelles (Commercial, CFI)

The objective of a Chandelle is to complete a high performance, climbing 180º turn. The maneuver begins in level cruise flight and ends in a nose high altitude just above stall speed. This maneuver is divided into two 90º segments. The first 90º degree segment consists of a constant bank, varying pitch. The last 90º involves a constant pitch, and varying bank.

Procedure:

1. Pre-Maneuver Checklist
2. Select altitude for task to be completed no lower than 1,500' AGL
3. Select 90º outside visual reference point, bug entry heading
4. Enter at cruise speed (100 - 110 KIAS)
5. Roll into 30º of bank
6. Smoothly Add Full Power
7. Hold bank constant and slowly increase pitch until to the 90º visual reference point
8. At the 90º reference point, hold constant pitch, while decreasing the bank.
9. Complete rollout at the 180° point, ±10° just above a stall airspeed, and maintaining that airspeed momentarily avoiding a stall.
10. Hold this airspeed for a few moments before returning to cruise flight
11. Lower nose and return to cruise without losing altitude

Airman Certification Standards:

- Bank Angle: 30º – first 90º of turn
- Airspeed: Just above stall speed
- Heading: +/- 10º at 180° point

Common Errors:

- Failure to clear the area, collision hazards
- Initial bank is too shallow resulting in a stall
- Initial bank is too steep resulting in failure to gain maximum performance
- Allowing the bank angle to increase after initial establishment
- Allowing the pitch attitude to increase as the bank is rolled out during the second 90º of turn
- Pitch attitude is too low resulting in airspeed well above stall speed
- Performing maneuver by reference to flight instruments rather than outside visual points
- Failure to maintain adequate altitude control during the maneuver
- Poor coordination, or Stalling at any point throughout the maneuver
- Not scanning for traffic throughout the maneuver
- Failure to maintain orientation as the maneuver progresses
- Rolling out of turn too early
- Ineffective use of trim

Steep Spiral (Commercial, CFI)

The objective of a Steep Spiral is to provide a flight maneuver for rapidly dissipating substantial amounts of altitude while remaining over a selected point on the ground. A steep spiral is a gliding turn effective for emergency descents or landings.

Procedure:

1. Pre-Maneuver Checklist
2. Select altitude for task to be completed no lower than 1,500' AGL (recommend at least 4,300' MSL for three complete turns)
3. Select ground reference point, outside visual reference, and bug heading
4. Enter maneuver downwind
5. Select ground reference point, outside visual reference, and bug heading
6. Begin power reduction so you are in line with visual reference at 80 KIAS (or airspeed otherwise indicated by examiner)
7. Power smoothly to idle upon entry
8. Pitch for 80 KIAS (or specified airspeed), maintain airspeed throughout the maneuver
9. Roll into steep banked turn not to exceed 60º, adjusting for wind
10.

Slow Flight and Stalls

Maneuvering During Slow Flight (All)

The objective of Slow Flight is to understand the flight characteristics and how the airplane's flight controls feel when operating in a near-stall condition.

Procedure:

1. Pre-Maneuver Checklist
2. Select altitude for task to be completed no lower than 1,500' AGL
3. Select outside visual reference, bug reference heading
4. Reduce power, maintain heading and altitude as the airplane slows.
5. Flaps in smoothly to FULL when able
6. Maintain 55 - 60 KIAS, power as necessary (or just above the stall warning horn)
7. On recovery, simultaneously reduce angle of attack, apply full power, retract flaps to 25º
8. Upon establishing a positive climb, retract flaps to 10º
9. Upon reaching approximately 79 KIAS retract flaps to 0º
10. Return to starting altitude and cruise power

Airman Certification Standards:

- Altitude: +/- 100' (+/- 50' for Commercial)
- Airspeed: + 10, -0 Knots (+5, -0 knots for Commercial)
- Heading: +/- 10º
- Bank Angle: +/- 10º (+/- 5ºº for Commercial)

Common Errors:

- Failure to clear the area, collision hazards
- Inadequate back pressure to maintain airspeed
- Excessive elevator resulting in climb
- Insufficient right rudder
- Inadequate power management to maintain altitude
- Failure to respond to stall warning

Accelerated Stall (Commercial, CFI)

The objective of the accelerated stall maneuver is to demonstrate a stall at airspeeds greater than 1+G. Accelerated stalls are performed with 45º of bank, to demonstrate how bank angle and airspeed affect stall characteristics. Select entry altitude no lower than 3,000’ AGL.

Procedure:

1. Pre-Maneuver Checklist
2. Select altitude for task to be completed no lower than 3,000’ AGL
3. Select outside

Takeoffs and Landings

Go Around (All)

Utilize the Go-Around procedure if the landing environment is fowled or unsafe, a stabilized approach cannot be achieved, or the landing / touchdown is unsafe.

Procedure:

1. FULL POWER, PITCH FOR CLIMB (8º above the horizon)
2. Flaps retract to 25º
3. Pitch for Vy (79 KIAS)
4. Positive rate of climb and side step if necessary, retract flaps to 10º
5. Retract remaining flaps to 0º and pitch for Vy (79 KIAS)
6. Announce to tower that you are going around
7. Fly a1.54 Tm(6.)Tj0 11.04 Tw Tj/TT0 1 Tf-0 9j-m 85.56ende002 Tw 0.261 0 Td[goj0 11.04 Tw Tj/TT1

Normal Takeoff (All)

The objective of a Normal Takeoff is to perform a takeoff under standard conditions.

Procedure:

1. Complete Before Take-off Checklist and Take-off Briefing
2. Once clearance is obtained to take-off, visually check final for traffic and verify Runway with a callout, “Runway ____ verified”
3. Line up on centerline and smoothly advance throttle to FULL POWER
4. Callout “airspeed alive”
5. Accelerate to V_R 55 KIAS, apply backpressure, and allow the airplane to lift off.
6. Pitch for 7.5º-10º and climb out at Vy (79 KIAS)
7. Maintain coordination with right rudder
8. Maintain runway centerline using wind drift correction
9. At 1,000’ AGL, perform Climb Checklist

Airman Certification Standards:

- Maintain Vy: +10 Knots / -5 Knots to safe maneuvering altitude (+5/-5 for Commercial)

Common Errors:

- Failure to maintain runway centerline
- Failure to add adequate right rudder
- Rotating at too low or too high airspeeds
- Failure to adequately clear Final Approach

Normal Landing (All)

The objective of a Normal Landing is to maintain positive control of the airplane in normal configuration.

Procedure:

1. Perform the Before Landing Checklist before entering the pattern.
2. Enter downwind on a 45º angle at midfield
3. Downwind- reduce power and slow to around 100 KIAS
4. Abeam touchdown point- reduce power to 1,500 - 1,900 RPM, check speed and extend flaps to 10º slowing to approximately 90 KIAS
5. Base- extend flaps to 25º slowing to 80 KIAS
6. Final - extend flaps to 40º, slowing to 70 KIAS, aiming for the runway numbers.
7. Flare so that the main tires touchdown first at near stalling speed gently letting the nose down on the centerline
8. Align the longitudinal axis of the aircraft with the centerline using rudder

Short Field Takeoff (All)

The objective of a Short Field Takeoff is to simulate taking off from a short runway, with obstacles.

Procedure:

1. Complete Before Take-off Checklist and Take-off Briefing
2. Once clearance is obtained to take-off, visually check final for traffic and verify Runway with a callout, “Runway ____ verified”
3. Use all available runway, line up on centerline, apply brakes firmly, and apply full power slowly
4. Verify engine in parameters
5. Release brakes and smoothly accelerate
6. Call out “airspeed alive” and “rotate” at appropriate times (Vr 55 KIAS)
7. Climb out at 65 KIAS with flaps 25º
8. Once clear of 50 ft. obstacle and at a safe altitude, retract flaps to 10º
9. accelerate to Vy (79 KIAS) and retract flaps slowly to prevent sinking to 0º
10. Maintain coordination with right rudder pressure
11. At 1,000’ ft. AGL, transition to cruise climb 87 KIAS and perform climb checklist

Airman Certification Standards:

- Rotate and lift off at Vx (63 knots) +10 Knots / -5 Knots (+/-5 Knots [illegible] -2.12 Td(-)T667 -0 0 1-370 Td-0.[illegible]

Short Field Landing (All)

The objective of a short field landing is to simulate landing on a short runway.

Procedure:

1. Perform the Before Landing Checklist before entering the pattern.
2. Enter downwind on a 45º angle at midfield
3. Downwind- reduce power and slow to around 100 KIAS
4. Abeam touchdown point- reduce power to 1,500 - 1,900 RPM, check speed and extend flaps to 10º slowing to approximately 90 KIAS
5. Base- extend flaps to 25º slowing to 80 KIAS
6. Final - extend flaps to 40º, slowing to 65 KIAS, aiming for just short of the touchdown point.
7. Use power to adjust sink rate and [illegible]

Soft Field Takeoff (All)

The objective of the Soft Field Takeoff procedure is to simulate taking off from an unimproved runway i.e. grass, dirt, or gravel runway. Pressure is held off the nose wheel to prevent the nose gear from sinking into an unimproved surface during takeoff roll. Ground effect is used to allow the aircraft to accelerate prior to climb.

Procedure:

1. Use aft yoke pressure during taxi. Complete Before Take-off Checklist and Take-off Briefing
2. Once clearance is obtained to take-off, visually check final for traffic and verify Runway with a callout, “Runway ____ verified”
3. Line up on centerline without stopping and smoothly advance throttle to FULL POWER
4. Use back pressure on the yoke to lift the weight off the nose gear. Once the nose wheel comes up, reduce aft pressure. Call out “airspeed alive”
5. Lift off at the lowest possible airspeed. Do not allow aircraft to settle back on to the runway
6. Maintain aircraft in ground effect (half wingspan from the surface) and accelerate to Vx 63 KIAS (for obstacle) or Vy 79 KIAS (for no obstacle)
7. Once clear of obstacle, retract flaps to 10º and accelerate to Vy (79 KIAS)
8. Establish positive rate of climb, retract flaps smoothly to 0º
9. Maintain coordination with right rudder pressure
10. Maintain runway centerline using wind drift correction

Airman Certification Standards:

- Remain in ground effect while accelerating
- During climb to safe maneuvering altitude, maintain Vx or Vy ÷+10 Knots / -5 Knots (+/-5 Knots if Commercial)

Common Errors:

- Failure to remain in ground effect
- Climbing out at airspeed below Vx

Situio

Diversion

The diversion procedure is practiced so that the pilot is aware of the tasks required to divert to another airport in the case of emergency, weather, or maintenance.

Procedure:

1. Recognize a situation that requires a diversion
2. Write down time and identify current location on chart
3. Turn to estimated heading, avoiding any obstacles or airspace
4. Determine exact heading and turn on course
5. Determine Distance
6. Determine Groundspeed
7. Determine Time Enroute ETA
8. Determine Fuel required

Emergency Descent Fuel

Non-Precision Instrument Approach (Instrument)

The objective of Non-Precision Instrument Approach is to proficiently execute non-precision approaches using VOR/DME, Localizer, and GPS systems, ensuring compliance with all regulatory and operational guidelines.

Procedure:

1. Pre-Approach Preparation (prior to IAF crossing or final intercept vector):
   - Load the approach procedure into the Flight Management System (FMS) as time and workload allows.
   - Conduct the Instrument Approach Checklist.
   - Comply with ATC assigned altitudes until cleared for the approach.
   - Tune and identify VOR and or Localizer frequencies prior to being cleared for the approach
2. Approach Initiation:
   - Once cleared for the approach, activate the approach in the FMS, comply with published step-down altitudes, and procedure turns (if needed)
   - When established on approach (CDI begins to center), announce “positive course guidance” (VOR/GPS) or “localizer alive” (Localizer).
3. Final Approach:
   - ½ NM prior to the FAF, reduce speed to final approach speed 90 KIAS, ensure approach speed (V_{FE} = 102 KIAS) to add 10° of flaps .
   - Cross the FAF at the published altitude.
   - Begin a stabilized descent with the CDI centered after crossing the Final Approach Fix (FAF).
   - Cross any intermediate step-down fixes at the published altitude.
   - If you have the runway environment in sight at a Visual Descent Point (VDP) (if applicable), begin a normal descent to the runway. This descent should be executed in a manner that allows for a stabilized landing approach. If you do not have sufficient visual reference by the VDP, you should not descend below MDA.
   - Maintain a stabilized descent until reaching the Minimum Descent Altitude (MDA).
   - Perform altitude callouts at 1,000', 500', 100', and at minimums.
4. Landing or Missed Approach Decision:
   - If the required visual references are in sight, continue descent to land and slow to an airspeed that allows for a stabilized landing.
   - If the runway environment is not in sight, maintain MDA until the Missed Approach Point (MAP).
   - At the MAP, if still not visual, initiate the missed approach procedure and do not descend below MDA.

System-Specific Considerations:

- VOR/DME Approach: Utilize lateral course guidance provided by the VOR/DME. Altitude step-down fixes are identified using radials and DME distances.
- Localizer Approach: This is used when the glideslope of an ILS is inoperative, turning it into a non-precision approach using only the localizer for lateral guidance.
- GPS Approach: Follow GPS guidance using LP or LNAV minimums. Announce "positive course guidance" upon approach activation, noting that there will be no vertical guidance provided.

Airman Certification Standards:

- Prior to Beginning Final Approach Segment:
  - Altitude: +/- 100 feet
  - Airspeed: +/- 10 knots
  - Heading: +/- 10º from selected heading

- Final Approach Segment:
  - Altitude: Above MDA, +100/-0 feet to the VDP or the MAP
  - Airspeed: +/- 10 knots
  - Bearing: Within ¾ scale deflection of the CDI

Common Errors:

- Failure to identify the navigation aid (VOR, localizer, or GPS waypoint).
- Failure to properly configure the aircraft for the approach.

- Not activating the approach mode on the navigation system.
- Descending below published step-down altitudes.
- Failure to maintain airspeed.
- Exceeding ¾ scale deflection of the CDI.

Precision Instrument Approach (Instrument)

The objective of Precision Instrument Approach is to proficiently execute precision approaches using Instrument Landing System (ILS) and GPS-based systems, ensuring compliance with all regulatory and operational guidelines.

Procedure:

1. Pre-Approach Preparation (prior to IAF crossing or final intercTw 10.34925 0 Td (l)3.o4 (a)5.8 (r)8 (i)3.1 (sf 3.96 -0 5

- Inadvertent exceedance of the critical angle of attack.
- Range, limitations, and operational characteristics of airspeed indicators and stall warning indicators
- Unacknowledged stall warning indication

Cross -Controlled Stall Demonstration (CFI Only)

The objective of a cross controlled stall demonstration is to show the student how an improper cross control /uncoordinated turn on a simulated base-to-final turn could result in a stall.

Procedure:

5. Pre-Maneuver Checklist
6. Select altitude for task to be completed no lower than 3,000’ AGL
7. Select outside visual reference, bug reference heading.
8. Slow the airplane.
9. Check speed extend flaps to 25º, establish 79 KIAS, trim airplane.
10. Close throttle.
11. Begin a 30º bank to the left, simulating a descending base leg.
12. Apply excessive rudder in the direction of the turn (bottom rudder) while holding bank constant with opposite aileron input and add elevator pressure to keep the nose from lowering.
13. Acknowledge the cues at the first indication of a stall (e.g., aircraft buffet, stall horn, etc.).
14. Recover at the first indication of a stall or after a full stall has occurred, as specified by the instructor/ evaluator. Recover by decreasing angle of attack and level the wings.
15. Regain coordinated flight, Full Power .
16. Establish a positive climb rate, retract flaps to 10º
17. Maintain a climb rate and retract the remaining flaps.
18. Time permitting, describe and demonstrate conditions that lead to a cross-controlled stall for future avoidance.
19. Maintain altitude and heading throughout the recovery.
20. Return to normal cruise flight at the altitude and heading specified by the instructor/evaluator.

Secondary Stall (CFI Only)

The objective of secondary stall demonstration is to show the student how an improper stall recovery can lead to remaining stalled.

Procedure:

1. Pre-Maneuver Checklist
2. Select altitude for task to be completed no lower than 3,000' AGL
3. Select outside visual reference, bug reference heading
4. Slow the airplane to 65 KIAS and extend flaps to 40º
5. Execute a Power-off stall.
6. As the airplane stalls, DO NOT release the backpressure and add full power.
7. Note how the airplane pitches up and buffets a second time.
8. Reduce the angle of attack and recovery normally as a Power-off Stall.
9. Time permitting, describe and demonstrate conditions that lead to a secondary stall for future avoidance.

Airman Certification Standards:

- Exhibits instructional knowledge

Common Errors: