



PIPER PA 44-180 MANEUVER GUIDE

Disclaimer: This guide is to be used as reference only and does not preclude checklist usage, pilot operating handbook or flight instruction

Normal Takeoff:

1. Takeoff Checklist
2. Perform Radio Communications
3. Line-Up on Runway
4. Full Power
5. Verify Engine instruments green and 2700 RPM
6. Rotate at **75 KIAS**
7. Positive Rate: Tap Brakes, Gear up
8. Accelerate and Climb at 105 KIAS
9. 500' AGL Reduce to Cruise Climb 25" MP/2500 RPM
10. Perform Climb/Cruise checklist when appropriate

Private Standards	Airspeed: -5/+10 KIAS
Commercial Standards	Airspeed: ±5 KIAS

In the Pattern

1. Complete an Descent Checklist prior to pattern entry
 - o Mixtures (adjust with Descent)
 - o Throttles (adjust with Descent)
 - o Cowl Flaps (Close for full stop or prolonged descent)
2. Downwind: **20" MP/2500 RPM**
3. Complete Landing Checklist



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- **Gas** (Fuel Selectors & Aux Pumps) On
 - **Undercarriage** - Down (Below 140 KIAS)
 - 3 Green - 1 in the mirror
 - No Gear warning horn
 - **Mixture** - Gradually full rich
 - **Propellers** - Sync and Full Forward on **Final**
 - **Seat belts** - Secure
 - **Switches** - Lights on
4. **Abeam** Touchdown point: Throttles 16" MP, Flaps 10° below 111 KIAS, 100 KIAS
5. **Base:**
- 25° Flaps as needed, Gradually slow to 85-90 KIAS
 - **Gas** (Fuel Selectors & Aux Pumps) On
 - **Undercarriage** - Down (Below 140 KIAS)
 - 3 Green - 1 in the mirror
 - No Gear warning horn
 - **Mixture** - Gradually full rich
 - **Propellers** - Sync and Full Forward on **Final**
 - **Seat belts** - Secure
 - **Switches** - Lights on
6. **Final:**
- **Gas** (Fuel Selectors & Aux Pumps) On
 - **Undercarriage** - Down (Below 140 KIAS)
 - 3 Green - 1 in the mirror
 - No Gear warning horn
 - **Mixture** - Gradually full rich
 - **Propellers** - Sync and Full Forward on **Final**
 - **Seat belts** - Secure
 - **Switches** - Lights on
 - Flaps to 40° as needed
 - Throttle gradually reduce to maintain 75-80 KIAS (Normal) 70-75 KIAS (Short)

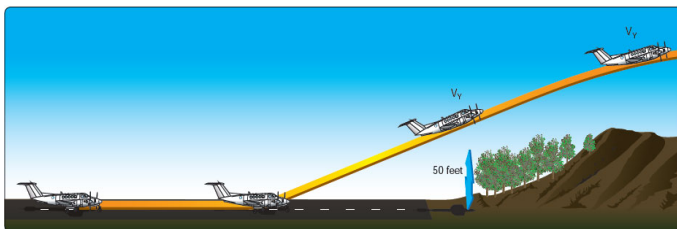
Private Standards (Short field landing)	Airspeed: -5/+10 KIAS TD Point: -0/+200 FT	Private Standards (Normal Landing)	Airspeed: -5/+10 KIAS TD Point: -0/+400 FT
Commercial Standards (Short field landing)	Airspeed: ±5 KIAS TD Point: -0/+100 FT	Commercial Standards (Normal Landing)	Airspeed: ±5 KIAS TD Point: -0/+200 FT

One Engine Inop Pattern

1. Simulate Engine Failure on upwind/crosswind
2. Engine Failure Flow
3. Identify and Verify - Dead foot dead engine
4. Simulate feather inop prop and mixture, MEI/DPE will simulate zero thrust
5. Turn downwind
6. Maintain full throttle on operating engine until reaching TPA and 110 KIAS
7. Adjust power to maintain 100 KIAS in downwind, Landing checklist- Check Gear Down
8. Abeam landing point - Power as needed for 100 KIAS 500 FPM Descent
9. Base slow to 88 KIAS Blue line
10. On final, Flaps 10 as needed, adjust power as needed - Verify with MEI/DPE when you have both throttles back.

Short Field Takeoff

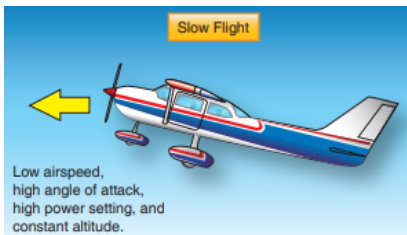
1. Use ALL available runway, HOLD Brakes
2. **Full power** verify 2700 RPM
3. Engine gauges Green (Approx. 3 seconds)
4. Brakes release
5. Rotate at 70 KIAS
6. Climb at V_x (82 KIAS)
7. Tap brakes, Gear up
8. Clear of Obstacle: Pitch for normal climb at 105 KIAS
9. After 500' AGL: Throttle 25" MP Prop 2500 RPM



Private Standards	Airspeed: -5/+10 KIAS
Commercial Standards	Airspeed: ± 5 KIAS

Slow Flight

1. Perform **Pre-Maneuver Checklist** and **Clearing Turns**
2. Fuel pumps on, Mixtures Set
3. Throttle 15" MP
4. Props Full Forward
5. Gear Down (below 140 KIAS)
6. Pitch nose to maintain alt (check heading)
7. Flaps 10° (below 111 KIAS)
8. Pitch nose to maintain alt (check heading)
9. Flaps 25°, Stabilize
10. Flaps 40°, Stabilize
11. Slow to 60 KIAS (Power for altitude pitch for speed)
12. **Recovery:** Throttle Full, nose to horizon, Flaps 25°, Stabilize, Flaps 10°
13. Accelerate to Blue Line (88 KIAS), Positive Rate, Gear up
14. Flaps 0°
15. Pitch for Blue Line, perform cruise checklist when appropriate



Private Standards	Airspeed: -0/+10 KIAS Heading: ±10° Altitude: ±100 FT Specified Bank: ±10°
Commercial Standards	Airspeed: -0/+5 KIAS Heading: ±10° Altitude: ±50 FT Specified Bank: ±5°

Power-Off Stall (Stall can be to first indication or full)

1. Perform **Pre-Maneuver Checklist** and **Clearing Turns**
2. Fuel pumps on, Mixtures Set
3. Throttle 15" MP
4. Props Full Forward
5. Gear Down (below 140 KIAS)
6. Pitch nose to maintain alt (check heading)
7. Flaps 10° (below 111 KIAS)
8. Pitch nose to maintain alt (check heading)
9. Flaps 25°, Stabilize
10. Flaps 40°, Stabilize
11. initiate landing descent 500 to 700 FPM
12. Power Idle, Flare to land, hold until stall
13. **Recovery:** Throttle Full, nose to horizon, Flaps 25°, Stabilize, Flaps 10°
14. Accelerate to Blue Line (88 KIAS), Positive Rate, Gear up
15. Flaps 0°
16. Pitch for Blue Line, Climb to starting altitude, perform cruise checklist when appropriate

Private Standards	Heading: ±10° Specified Bank(if any): ±10°
Commercial Standards	Heading: ±10° Specified Bank(if any): ±5°

Power On Stall (Stall can be to first indication or full)

1. Perform **Pre-Maneuver Checklist** and **Clearing Turns**
2. Fuel pumps on, Mixtures Set,
3. Throttles: 12" MP
4. Props Full Forward
5. Slow to Blue Line 88kts (maintain heading & altitude)
6. Increase Power to 17" MP (maintain heading & altitude)
7. Increase pitch to stall (approx. 15-20° pitch up) hold until stall
8. **Recovery:** Decrease back pressure to break stall, nose to horizon, Throttle Full
9. Pitch for Blue Line (88 KIAS) and initiate climb
10. Perform Climb/Cruise Checklist when appropriate

Private Standards	Heading: ±10° Specified Bank(if any): ±10°
Commercial Standards	Heading: ±10° Specified Bank(if any): ±5°

Steep Turns

1. Perform **Pre-Maneuver Checklist** and **Clearing Turns**
2. Fuel pumps on, Mixtures Set, Props 2500 RPM
3. Throttle 20" MP Establish 110-120 KIAS
4. Roll into 50° Bank (45° for private)
5. Throttle Increase approximately 2" MP
6. **Add 1 swipe of nose up trim**
7. Maintain altitude and bank angle
8. Roll out swiftly but smoothly 15° prior to heading
9. Smoothly and briskly roll into opposite direction turn
10. Roll out swiftly but smoothly 15° prior to heading
11. Bring power back to 20" MP and maintain altitude
12. Cruise checklist when appropriate

Private and Commercial Standards	Airspeed: ±10 KIAS Heading: ±10° Altitude: ±100 FT Bank: ±5°
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Accelerated Stall (Commercial Only)

1. Perform **Pre-Maneuver Checklist** and **Clearing Turns**
2. Fuel pumps on, Mixtures Set
3. Throttle 15" MP
4. Props FWD
5. Pitch nose up to maintain altitude
6. Slow to 100 KIAS or less
7. Power idle, Bank to **45°** and add extensive back pressure
8. At first indication: **Reduce AoA, Level Wings**
9. After wings level, **Add Cruise Power**
10. Perform Cruise Checklist when appropriate

Commercial Standards	Complete no lower than 3000 AGL
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Vmc Demo - *Must be performed above 4,000AGL per POH*

1. Perform **Pre-Maneuver Checklist** and **Clearing Turns**
2. Left cowl flap closed
3. Fuel Pumps ON, Mixtures RICH
4. Throttles 15" MP
5. Props FWD
6. Slowly reduce left throttle to idle (simulated windmilling)
7. Establish Zero Side Slip (up to 5° bank) and maintain directional control (heading)
8. Adjust trim as needed
9. Slow to Blue Line (88 KIAS)
10. Right Throttle FULL POWER (leave hand on this throttle)
11. Increase Pitch to decrease airspeed 1 knot per second
12. Increase Right Rudder as necessary to maintain heading
13. Continue increasing pitch until loss of directional control, stall horn or buffet
14. **Recovery:** Immediately relax back pressure and simultaneously reduce power on operative engine.
15. Increase throttle on operative engine to accelerate to Blue Line (88kts)
16. Maintain Vyse, 88kts for a few seconds as well as zero side slip and directional control at blue line
17. Sync throttles together, Cruise Checklist
18. Cowl Flaps OPEN (After CHT in green)

Private Standards	Recovery Heading: $\pm 20^\circ$ Recovery Airspeed: Vyse +10/-5 KIAS
Commercial Standards	Recovery Heading: $\pm 20^\circ$ Recovery Airspeed: Vyse ± 5 KIAS

Precision Approach

1. Enroute: Approach should be fully briefed/ NAV aids set/checked/ Instruments checked
2. **Slow to 100 KIAS (16" MP) within approx. 5 NM from initial approach fix/** or while given vectors to approach
3. HSI Set and Checked
4. **Before Landing Checklist**
5. When 1 dot of deflection on glideslope
 - a. **Throttle to 16" MP**
 - b. **Flaps 25** (Flaps 10 or up on single engine approach)
 - c. **Maintain 88 KIAS**, Trim
 - d. GUMPS check
 - e. Re-Brief Approach mins and missed approach procedures
6. **Gear should be extended when glideslope captured**
 - a. Verify gear down, 3 green, no red, check visually
7. At FAF
 - a. 5 T's
 - b. **Announce:** "Gear Down, Before Landing Checklist Complete"
 - c. **Descent with approximately 15" MP**
8. **Announce** 100' above minimums: "100 to go"
9. Decision Altitude, **Announce:** "Minimum"
10. Flaps—as required on final (no more than 25 for single engine)
11. **Airspeed 88 (blueline) until landing is assured**
12. Final GUMPS check
13. Follow glideslope down to runway
14. Reduce power smoothly when landing is assured

Private and Commercial Standards

Airspeed: ± 10 KIAS
Heading: $\pm 10^\circ$
Altitude: ± 100 FT
Course: $< \frac{3}{4}$ scale deflection

Non Precision Approach

1. En-route: Approach should be fully briefed/ NAV aids set/checked/ Instruments checked
2. **Slow to 100 KIAS (16" MP) within approx. 5 nm from initial approach fix/ or while given vectors to approach**
3. HSI Set and Checked
4. **Before Landing Checklist**
5. At FAF
 - a. **Throttle - 16" MP**
 - b. **Flaps - 25** (2 engines), Flaps 10 or up on single engine approach
 - c. **Maintain 88 KIAS**, Trim
 - d. GUMPS check, **Gear - Down**, verify 3 green, no red, check visually
 - e. Re-Brief approach mins and missed approach
 - f. 5 T's
 - g. **Announce:** "Gear Down, Before Landing Checklist Complete"
 - h. **Descend approx 700 fpm when established, 13" MP, maintain 88 KIAS**
6. **Announce** 100' from MDA: "100 to go"
7. MDA
 - a. **Announce:** "Minimum"
 - b. **Level off at MDA using approx 20" MP**
8. Flaps- as required on final (no more than 25 for single engine)
9. **Airspeed 88 (blue line) until landing is assured**
10. Final GUMPS check
11. Continue stabilize approach to runway
12. Reduce power smoothly when landing is assured

Private and Commercial
Standards

Airspeed: ± 10 KIAS
Heading: $\pm 10^\circ$
Altitude: ± 100 FT
Course: $< \frac{1}{4}$ scale deflection

Drag Demo (MEI only)

1. Perform **Pre-Maneuver Checklist** and **Clearing Turns**
2. Left cowl flap closed
3. Fuel pumps on, Mixtures Set
4. Throttle 15" MP
5. Props FWD
6. Slowly reduce left throttle to idle (simulated windmilling)
7. Establish Zero Side Slip and maintain directional control (heading)
8. Adjust trim as needed
9. Slow to Blue Line (88 KIAS)
10. Right Throttle FULL POWER
11. Using Pitch, Maintain Blue Line (88 KIAS)
12. ***Note VSI***
13. Establish Simulated Feather on idle engine (~12 in MP)
14. Pitch nose to maintain Blue Line (88 kts) (check heading)
15. ***Note VSI***
16. Gear DOWN (Below 140 KIAS)
17. Pitch nose to maintain Blue Line (88 kts) (check heading)
18. ***Note VSI***
19. Flaps 10° (Below 111 KIAS), Pitch nose to maintain Blue Line (88 KIAS)
20. Flaps 25°, then 40° degrees, Pitch nose to maintain Blue Line (88 KIAS)
21. ***Note VSI***
22. Gear up (Below 109 KIAS)
23. Pitch nose to maintain Blue Line (88 kts) (check heading)
24. ***Note VSI***
25. Throttle 15" MP on idle engine until CHT in green
26. Flaps 25° and stabilize
27. Flaps 10°, Flaps 0°
28. Cowl Flaps OPEN
29. Cruise Checklist