

Piper Archer II (PA-28-181)

- ★ 1. Oil (5-6 Qt Normal, 8 Max) **Add oil when <5 Qt, Verify Cap is Secure**

CABIN PREFLIGHT

- 1. POH & Documents In Copilot Seatback
- 2. **Magneto Switch** **OFF**
- 3. **Pitot/Static Drains** **Push to Drain**
- 4. **Avionics/Electrical Switches** **OFF**
- 5. **Master Switch** **ON**
- 6. **Fuel Quantity** **Note Quantity**
- 7. Pitot Heat & **Light** Switches ON; Verify Operation
- 8. Stall Warning Horn Verify Operation
- 9. Pitot Heat & **Light** Switches OFF
- 10. Annunciator Panel PRESS TO TEST
- 11. Hobbs & Tachometer Record
- 12. **Master Switch** **OFF**
- 13. Flaps Full DOWN (3)

WALKAROUND

Right Wing

- 1. Flap & Aileron Check Skin & Hinges
- 2. Wing Surfaces No Contamination
- ★ 3. **Wing Tie Down & Chock** **Removed**
- 4. **Fuel Vent** **Unobstructed**
- 5. **Fuel Drain** **Sample Clean** **No Leaks**
- ★ 6. **Fuel Tank** **Quantity Verified** **Cap Secure**
- 7. Main Gear Strut 4.25"-4.75" extension
- 8. Tire & Brakes 24-27 psi, No Leaks

Nose

- 1. Cowling (4) Latches Secure
- 2. Prop & Spinner Check Condition
- 3. **Alternator Belt** **Check Secure**
- ★ 4. **Engine Cooling Inlet** **Unobstructed**
- 5. Air Filter Inlet Unobstructed
- 6. Nose Wheel Strut 3.0"-3.5" extension
- 7. Nose Wheel Tire 18-20 psi
- ★ 8. **Nose Wheel Chock** **Removed**
- 9. **Main Fuel Strainer** **Check L & R Sample**

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Left Wing

1. Leading Edge No Contamination
2. Main Gear Strut 4.25"-4.75" extension
3. Tire & Brakes 24-27 psi, No Leaks
- ★ 4. **Wing Tie Down & Chock** **Removed**
5. **Fuel Vent** **Unobstructed**
6. **Fuel Drain** **Sample Clean** **No Leaks**
- ★ 7. **Fuel Tank** **Quantity Verified** **Cap Secure**
- ★ 8. **Pitot/Static Mast** **(3) Openings Clear**
9. Flap & Aileron Check Skin & Hinges

Fuselage

1. Empennage No Contamination
- ★ 2. **Tail Tie Down** **Removed**
3. Rudder & Stabilator Check Skin & Hinges
- ★ 4. Baggage Door Closed & Latched

BEFORE ENGINE START

1. Flaps RETRACTED (o)
2. Parking Brake Set
3. Seats & Belts Adjusted & Secure
4. **PASSENGER BRIEFING**

- No Smoking
- Turn cell phones OFF or activate "airplane" mode
- Seatbelts must be worn during taxi, takeoff, & landing
- **Explain door operation**
- Sterile cockpit during taxi, takeoff, and landing
- Fire extinguisher location
- Help point out other nearby air traffic

5. **Circuit Breakers** **Check Closed**
6. **Avionics/Electrical Switches** **OFF**
7. Carb Heat **COLD (off)**
8. **Fuel Selector** **Lowest/RIGHT Tank**

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ENGINE START

1. Throttle OPEN 1/2" hot, 1/4" cold
2. Mixture FULL RICH
3. Master & Alternator Switches ON
4. **Engine Monitor Fuel Quantity** SET
5. Beacon Light (and Nav if night) ON
6. Fuel Pump ON
7. Primer 3-5 shots
8. Prop Area Clear

9. Magneto Switch START

10. Throttle 800-1200 RPM
11. **Oil Pressure** In the Green
12. Fuel Selector Fullest/LEFT Tank
13. Fuel Pump OFF
14. Mixture LEANED (Max RPM)

BEFORE TAXI

1. Fuel Quantity Sufficient for flight
2. Avionics Master ON
3. Transponder Code & Mode Set
4. Nav/GPS/Radios Programmed & Set

5. Elevator Trim Set to NEUTRAL
6. **Flight Controls** Free and Correct

ENGINE RUNUP

1. Parking Brake Set – Guard w/ Feet
2. Seats & Belts Check Secured
3. **FLIGHT INSTRUMENTS**

- | | |
|----------------------|-----------------------|
| a. A.H. | Level |
| b. Altimeter | Baro Set; +/- 75 feet |
| c. VSI | Check Zero |
| d. Heading | Aligned & Bug Set |
| e. Turn & Bank | No Flags |

4. Primer In and Locked

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- | | |
|------------------------|-----------------------------------------|
| 5. Mixture | RICH / leaned >5000' |
| 6. Throttle | 2000 RPM |
| a. Magneto Check | 10-170 RPM Drop,
< 50 RPM Difference |
| b. Suction Gauge | 4.9" – 5.1" |
| c. Ammeter | Check w/ Load |
| d. Carb Heat | ON w/ Carb Temp Rise |
| e. Throttle | IDLE |
| f. Carb Heat | COLD w/ RPM Rise |
| 7. Throttle | 1000-1200 RPM |

- | | |
|-------------------------------|----------------------|
| 8. Emergency Procedures | Reviewed |
| 9. Departure Briefing | Completed (see p. 7) |

Check THAT Setup (Transponder, Heading, Altimeter, Talk)

TAKEOFF

- | | |
|------------------------------|------------------|
| ★ 1. Doors | Closed & Latched |
| 2. All Exterior Lights | ON [Lights] |
| 3. Transponder | ALT [Camera] |
| 4. Fuel Pump | ON [Action] |
| 5. Timer | Start |

NORMAL:

- | | |
|-----------------------------|----------------------------|
| 1. Flaps | RETRACTED (0) |
| 2. Throttle | FULL OPEN |
| 3. Engine Instruments | Verify in the green |
| 4. Rotate | 52-65 KIAS |

SHORT FIELD, OBSTACLE CLEARANCE:

- | | |
|----------------------------|----------------------------|
| 1. Flaps | 25-degrees (2) |
| 2. Brakes | Hold |
| 3. Throttle | FULL OPEN |
| 4. Engine Instruments..... | Verify in the green |
| 5. Brakes | RELEASE @ full power |
| 6. Rotate | 41-49 Kts, accel to 54 |
| 7. Flaps | Retract After 64 Kts |

- Climb Speed to 1000' AGL V_y (76 KIAS)

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ENROUTE CLIMB

1. Airspeed 87 KIAS
2. Throttle After 5 Minutes \leq 2650 RPM

3. Landing Light OFF abv 3000' AGL
4. Mixture LEAN abv 5000' MSL

CRUISE

1. Fuel Pump OFF
2. Fuel Pressure **Verify in the green**

3. Power 75% or less
4. Trim Adjusted
5. Mixture LEAN as required

BEFORE LANDING (~12 nm / IAF)

1. ATIS & Altimeter Current & Set [WIR]
2. Landing Light ON
3. Seats & Belts Secured

4. Fuel Selector **Fullest Tank** [E]
5. Approach Procedures Reviewed

Piper Archer II (PA-28-181)

LANDING (Pattern / FAF)

- | | | |
|--------------------|------|-----|
| 1. Fuel Pump | ON | [G] |
| 2. Mixture | RICH | [M] |

PATTERN:

- | | |
|-------------------|------------------------|
| 1. Downwind | 90 Kts (Flaps 10° - 1) |
| 2. Base | 75 Kts (Flaps 25° - 2) |
| 3. Final | 66 Kts (Flaps 40° - 3) |

SHORT FIELD (AFTER TOUCHDOWN):

- | | |
|-----------------------|---------------|
| 4. Brakes | Max as Needed |
| 5. Flaps | RETRACTED (o) |
| 6. Control Yoke | Full Aft |

AFTER LANDING

- | | |
|------------------------|----------------|
| 1. Fuel Pump | OFF |
| 2. Landing Light | OFF |
| 3. Carb Heat | COLD (off) |
| 4. Flaps | RETRACTED (o) |
| 5. Elevator Trim | Set to NEUTRAL |

SHUTDOWN

- | | |
|---------------------------------------|---------------------|
| 1. Parking Brake | As Needed |
| 2. Throttle | IDLE |
| 3. Avionics/Electrical Switches | |
| a. Avionics | OFF |
| b. Beacon Lights | ON until prop stops |
| 4. Mixture | IDLE CUTOFF |
| 5. Magneto Switches | OFF |
| 6. Exterior Lights | OFF |
| 7. Tach time | Recorded |
| 8. Master & Alternator Switches | OFF |
| 9. Flight Plan | Closed |

Piper Archer II (PA-28-181)

COMMUNICATION

DXR ATIS	127.75	Flight Services	122.20
DXR Ground	121.60	Air-to-air	122.75
DXR Tower	119.40	Helicopter Air-to-air	123.02

V-SPEEDS

V_x	64 KIAS	V_{fe}	102 KIAS
V_y	76 KIAS	V_{no}	125 KIAS
		V_{ne}	154 KIAS
$V_a - 2550$ lbs	113 KIAS	V_s	53 KIAS
$V_a - 1634$ lbs	89 KIAS	V_{so}	47 KIAS
Max Demonstrated Crosswind – 17 KIAS		$1.3V_{so}$	61 KIAS
$V_g - 76$ KIAS			

USABLE FUEL

2 @ tabs: 34 gal	1 tab, 1 full: 41 gal	2 full: 48 gal
<ul style="list-style-type: none"> Add 1 gal per side (2 gal total) for total fuel capacity 		

ALTITUDE LIMITS

Service Ceiling	13,650
Absolute Ceiling	15,750
<ul style="list-style-type: none"> Full Throttle Flaps Retracted 76 KIAS 2550 lbs Gross Weight 	

Departure Briefing

- Takeoff Abort Point 50 Kts before 50% takeoff roll
- Safety Altitude At least 1000' AGL
- Initial Departure Heading ... Review
- Initial Departure Altitude Review

Abbreviations

WIRE	Weather, Instruments, Radios, Everything else
GM	Gas, Mixture
GAS	Gas, Air, Spark

Piper Archer II (PA-28-181)

Lycoming O-360-A4M, 180HP @ 2700 RPM

Pressure Alt.	Std. Temp C/F	55%	65%	70%	75%
0	15/59	2170	2320	2390	2460
1000	13/55	2190	2340	2410	2485
2000	11/52	2210	2360	2435	2510
3000	9/48	2235	2395	2460	2530
4000	7/45	2260	2410	2480	2555
5000	5/41	2280	2430	2505	2580
6000	3/37	2300	2450	2525	2600
7000	1/34	2310	2475	2550	2625
8000	-1/30	2340	2500	2575	2650
9000	-3/27	2360	2520	2590	
10000	-5/23	2385	2540	2605	
11000	-7/19	2410	2560		
12000	-9/16	2430	2580		

RPM Adjustments Each + 5C/9F | +10 RPM
 Each - 5C/9F | -10 RPM

Fuel Flow (GPH)

% Power	Best Power (100F ROP)	Best Economy (Peak EGT)
55	N/A	6.5
65	9.0	N/A
70	10.5	N/A
75	11.5	N/A

- Max cruise CHT < 400F
- Max climb CHT < 420F

ENGINE FAILURE

TAKEOFF RUN

1. Throttle IDLE
2. Brakes Maximum Effort
3. *If Insufficient Runway Remaining:*
 - a. Mixture IDLE CUTOFF
 - b. Master Switch OFF
 - c. Magneto Switch OFF
 - d. Fuel Selector OFF

IMMEDIATELY AFTER TAKEOFF

1. Airspeed V_g - 76 KIAS
2. Mixture IDLE CUTOFF
3. Master Switch OFF
4. Magneto Switch OFF
5. Fuel Selector OFF
6. Flaps As Required
7. Cabin Door Unlatched & Opened
8. Land Straight Ahead

DURING FLIGHT (Restart Procedure)

1. Airspeed V_g - 76 KIAS
2. Mixture RICH
3. Fuel Pump ON [G]
4. Fuel Selector Switch tanks
5. Carb Heat ON [A]
6. Magneto Switch Try LEFT, RIGHT [S]
7. *If no restart, see FORCED LANDINGS on pages 12 & 13*

ENGINE PROBLEMS

LOSS OF FUEL PRESSURE

1. Fuel Pump ON
2. Fuel Selector Select fullest tank
3. Fuel Pressure Indicator Cross-check fuel flow
4. *If fuel flow is abnormal AND/OR loss of power is experienced:*
 - a. **LAND AS SOON AS PRACTICAL**

Piper Archer II (PA-28-181)

LOW OIL PRESSURE / HIGH OIL TEMPERATURE

1. Throttle Minimum Power
2. **LAND AS SOON AS PRACTICAL**

HIGH (>430F) CHT

1. Mixture RICH
2. Airspeed 90+ KIAS
3. Throttle Reduce Power

ENGINE ROUGHNESS / LOSS OF POWER

1. Carb Heat FULL ON
2. *If problem continues after 2 minutes:*
 - a. Fuel Pump ON
 - b. Mixture Adjust [G]
 - c. Fuel Selector Switch Tanks
 - d. Carb Heat OFF [A]
 - e. Magneto Switch Try LEFT, RIGHT [S]
 - f. *If problem continues:* **LAND AS SOON AS PRACTICAL**

FIRES

ENGINE FIRE – DURING START

1. Starter Continue cranking
2. Mixture IDLE CUTOFF
3. Throttle FULL OPEN
4. Fuel Pump OFF
5. Fuel Selector OFF
6. Engine Secure
7. Avionics/Electrical Systems OFF
8. Fire Extinguish

ENGINE FIRE – DURING FLIGHT

1. Mixture IDLE CUTOFF
2. Fuel Pump OFF
3. Fuel Selector OFF
4. Heater & Defroster OFF
5. **LAND AS SOON AS POSSIBLE**

Piper Archer II (PA-28-181)

ELECTRICAL FIRE

1. **Master & Alternator Switches** **OFF**
2. **Vents, Cabin Air, Heat** **Closed**
3. **Fire Extinguisher** **Use As Needed**
4. **Avionics/Electrical Switches** **OFF**
5. *If fire appears out & electrical equipment necessary:*
 - a. **Master Switch** **ON**
 - b. **Circuit Breakers** **Check, Don't Reset**
 - c. **Avionics / Electrical Switches** **ON, one at a time**

ELECTRICAL PROBLEMS

ALTERNATOR FAILURE

1. **Alternator Switch** **OFF**
2. **Alternator Circuit Breakers** **Check Closed**
3. **Alternator Switch** **ON**
4. *If alternator still inoperative:*
 - a. **Follow ELECTRICAL OVERLOAD Checklist Below**

ELECTRICAL OVERLOAD

1. **Electrical Load** **Reduce**
2. *If loads are not reduced:*
 - a. **Alternator** **OFF**
 - b. **Flight** **Terminate ASAP**

MISCELLANEOUS

CO ALERT

1. **Cabin Heater/Defroster** **OFF**
2. **Storm Window** **Open**
3. **Cabin Vents** **Open Fully**
4. *If alert doesn't stop after 2 minutes:*
 - a. **Altitude** **Lowest Safe Altitude**
 - b. **LAND AS SOON AS PRACTICAL**

Piper Archer II (PA-28-181)

OPEN DOOR

- With Passenger:
 1. Airspeed Slow to 87 KIAS
 2. Cabin Vents Open
 3. Storm Window Open
 4. If side latch open:
 - a. Pull on armrest to close door
 - b. Move handle to latched position

If upper latch open:

 - a. Pull on armrest to close door

If both latches open:

 - a. Latch side latch, then upper latch
- Without Passenger:
 1. Land when practical

ICING CONDITIONS

1. Pitot Heat ON (1 switch)
2. Carb Heat FULL ON
3. *Maintain airspeed – stall speed may be greatly increased!*
4. **Exit icing conditions as soon as possible!**

FORCED LANDINGS

LANDING WITHOUT POWER

- | | |
|----------------------------------|--------------------------|
| 1. Airspeed | V _g - 76 KIAS |
| 2. Seats, Belts, Harnesses | Secured |
| 3. Mixture | IDLE CUTOFF |
| 4. Master Switch | OFF |
| 5. Magneto Switch | OFF |
| 6. Fuel Selector | OFF |
| 7. Flaps | As Required |
| 8. <u>If time permits:</u> | |
| a. Transponder | 7700 |
| b. Radio | Mayday (121.5) |
| 9. <u>Prior to touchdown:</u> | |
| a. Cabin Door | Unlatched & Opened |

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PRECAUTIONARY LANDING WITH POWER

1. **Airspeed** **V_g - 76 KIAS**
2. Seats, Belts, Harnesses Secured
3. Landing Site Overfly, noting conditions

4. If time permits:
 - a. Transponder 7700
 - b. Radio Mayday (121.5)
5. When landing is assured:
 - a. **Mixture** **IDLE CUTOFF**
 - b. **Master Switch** **OFF**
 - c. Magneto Switch OFF
 - d. **Fuel Selector** **OFF**
 - e. Flaps As Required

6. Prior to touchdown:
 - a. **Cabin Door** **Unlatched & Opened**

DITCHING (WITH OR WITHOUT POWER)

1. **Airspeed** **V_g - 76 KIAS**
2. Seats, Belts, Harnesses Secured
3. Heavy Objects Secure or jettison

4. **Mixture** **IDLE CUTOFF**
5. **Master Switch** **OFF**
6. Magneto Switch OFF
7. **Fuel Selector** **OFF**
8. Flaps As Required
9. If time permits:
 - a. Transponder 7700
 - b. Radio Mayday (121.5)

10. Approach:
 - a. High Winds, Heavy Seas Land into Wind
 - b. Light Winds, Heavy Swells Parallel to Swells
11. Prior to touchdown:
 - a. **Cabin Door** **Unlatched & Opened**

Piper Archer II (PA-28-181)

MAXIMUM GLIDE

	ALTITUDE (AGL)	GLIDE DISTANCE
	1000	1.5 nm
V_g - 76 KIAS	2000	3.0 nm
	3000	4.5 nm
Power Off	4000	6.0 nm
	5000	7.5 nm
Flaps RETRACTED (o)	6000	9.0 nm
	7000	10.5 nm
Zero Wind	8000	12.0 nm
	9000	13.5 nm
2550 lbs.	10000	15.0 nm
	11000	16.5 nm
	12000	18.1 nm

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