

# 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. **Engine Temperatures** ..... **CHT/Oil Temp ≥ 40F**
- 7. **Fuel Gauges** ..... **Verify Accurate**
- 8. Pitot Heat & **Light** Switches ..... **ON; Verify Operation**
- 9. Stall Warning Horn ..... **Verify Operation**
- 10. Pitot Heat & **Light** Switches ..... **OFF**
- 11. Annunciator Panel ..... **PRESS TO TEST**
- 12. Hobbs & Tachometer ..... **Record**
- 13. **Master Switch** ..... **OFF**
- 14. 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** ..... **L & R Sample Clean**

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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,  
MAIN PAGE selected
5. Beacon Light (and Nav if night) ..... ON
6. Fuel Pump ..... ON
7. Primer ..... 3-5 shots
8. Prop Area ..... Clear

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9. Magneto Switch ..... START

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10. Throttle ..... 800-1200 RPM
11. Oil Pressure ..... Within 30 Sec ..... 25 psi minimum
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

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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

# Piper Archer II (PA-28-181)

- |                             |   |
|-----------------------------|---|
| 5. Mixture .....            | <b>RICH / leaned &gt;5000'</b>          |
| 6. Throttle .....           | 2000 RPM                                |
| a. Oil Pressure .....       | <b>In the Green</b>                     |
| b. Magneto Check .....      | 10-170 RPM Drop,<br>< 50 RPM Difference |
| c. Suction Gauge .....      | 4.9" – 5.1"                             |
| d. Ammeter .....            | <b>Check w/ Load</b>                    |
| e. Carb Heat .....          | ON w/ Carb Temp Rise                    |
| f. Throttle .....           | IDLE                                    |
| g. Carb Heat .....          | <b>COLD w/ RPM Rise</b>                 |
| 7. Throttle .....           | 1000-1200 RPM                           |
| 8. Departure Briefing ..... | Completed (see p. 7)                    |
- Check THAT Setup (Transponder, Heading, Altimeter, Talk)**

## TAKEOFF

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

### NORMAL:

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

### SHORT FIELD, OBSTACLE CLEARANCE:

- |                            |                            |
|----------------------------|----------------------------|
| 1. Flaps .....             | 25-degrees (2)             |
| 2. Brakes .....            | Hold                       |
| 3. Throttle .....          | FULL OPEN                  |
| 4. Engine Instruments..... | <b>Verify in the green</b> |
| 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)

# Piper Archer II (PA-28-181)

## 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. Tach time .....                    | Recorded            |
| 7. Exterior Lights .....              | OFF                 |
| 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	$V_s$	53 KIAS
$V_y$	76 KIAS	$V_{so}$	48 KIAS
$V_{fe}$	102 KIAS	1.3 $V_{so}$	62 KIAS
$V_a - 2500$ lbs	113 KIAS	$V_{app}$	66 KIAS
$V_a - 1634$ lbs	89 KIAS		
$V_{no}$	125 KIAS		
$V_{ne}$	154 KIAS		
Max Demonstrated Crosswind – 17 KIAS		$V_g$	76 KIAS

## USABLE FUEL

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

## OIL OPERATING RANGES

	Idle	Normal	Max
Operating Pressures	25-60 PSI	60-90 PSI	100 PSI
Operating Temperature	180 – 210 F		

## 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
GUMPS	Gas, Mixture, Switches
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. If time permits:
  - a. Transponder ..... 7700
  - b. Radio ..... Mayday (121.5)
9. Prior to touchdown:
  - a. Cabin Door ..... Unlatched & Opened

# Piper Archer II (PA-28-181)

## PRECAUTIONARY LANDING WITH POWER

1. **Airspeed** ..... **V<sub>g</sub> - 76 KIAS**
2. Seats, Belts, Harnesses ..... Secured
3. Landing Site ..... Overfly, noting conditions

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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

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

## DITCHING (WITH OR WITHOUT POWER)

1. **Airspeed** ..... **V<sub>g</sub> - 76 KIAS**
2. Seats, Belts, Harnesses ..... Secured
3. Heavy Objects ..... Secure or jettison

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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)

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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
	<b>1000</b>	<b>1.5 nm</b>
<b>V<sub>g</sub> - 76 KIAS</b>	2000	3.0 nm
	3000	4.5 nm
Power Off	4000	6.0 nm
	5000	7.5 nm
<b>Flaps RETRACTED (o)</b>	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

Flying 20 Club, Inc.