

Piper Dakota (PA-28-236)

- ★ 1. Oil (8-9 Qt Normal, 12 Max) Add oil when <8 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 $\geq$ 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. AoA Probe | (5) Openings Clear |
| 5. Fuel Vent | Unobstructed |
| 6. Fuel Drain Sample Clean | No Leaks |
| ★ 7. Fuel Tank Quantity Verified | Cap Secure |
| 8. Main Gear Strut | 4.25"-4.75" extension |
| 9. Tire & Brakes | 35-40 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 | 29-33 psi |
| ★ 8. Nose Wheel Chock | Removed |

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9. Main Fuel Strainer L & R Sample Clean

Left Wing

1. Leading Edge No Contamination
2. Main Gear Strut 4.25"-4.75" extension
3. Tire & Brakes 35-40 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. Left Static Port (3) Openings Clear
- ★ 3. Tail Tie Down Removed
4. Rudder & Stabilator Check Skin & Hinges
5. Right Static Port (3) Openings Clear
- ★ 6. 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
9. AoA Switch ON
10. Display Backup Switch AUTO

ENGINE START

1. Throttle OPEN 1/2" hot, 1/4" cold
2. **Propeller** **Full FORWARD**
3. Mixture FULL RICH
4. Master & Alternator Switches ON
5. **Engine Monitor** **Fuel Quantity SET, MAIN PAGE selected**
6. Beacon Light (and Nav if night) ON
7. Fuel Pump ON
8. Primer 4-6 shots
9. **Prop Area** **Clear**
10. Magneto Switch START
11. Throttle 800-1200 RPM
12. **Oil Pressure** **Within 30 Sec** **25 psi minimum**
13. Fuel Selector Fulllest/LEFT Tank
14. Fuel Pump OFF
15. Mixture **LEANED (Max RPM)**

BEFORE TAXI

1. Fuel Quantity Sufficient for flight
2. Avionics Master ON
3. AoA Indicator Press TEST: Bars Lit
4. Transponder Code & Mode Set
5. Nav/GPS/Radios Programmed & Set
6. ADI/HSI Crew Profile Load Desired Profile
7. Elevator Trim Set to NEUTRAL
8. **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. Both Altimeters Baro Set; +/- 75 feet
- c. VSI Check Zero
- d. Heading Aligned & Bug Set
- e. Turn & Bank No Flags

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4. Primer	In and Locked
5. Mixture	RICH / leaned >5000'
6. Throttle	2000 RPM
a. Oil Pressure	In the Green
b. Magneto Check	10-170 RPM Drop, < 50 RPM Difference
c. Propeller	Exercise (<500 RPM drop), Full RPM
d. Ammeter	Check w/ Load
e. Carb Heat	ON w/ Carb Temp Rise
f. Throttle	IDLE
g. Carb Heat	COLD w/ RPM Rise
7. Throttle	1000-1200 RPM
8. ADI & HSI Check	Review messages, No yellow/red battery icon
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	60-65 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	50-60 Kts, accel to 73
7. Flaps	Retract After 85 Kts

- **Climb Speed to 1000' AGL V_y (85 KIAS)**

ENROUTE CLIMB

1. Airspeed 100 KIAS
2. Throttle FULL OPEN
3. Propeller FULL FORWARD

4. Landing Light OFF abv 3000' AGL
5. 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 Fulllest Tank [E]
5. Approach Procedures Reviewed

LANDING (Pattern / FAF)

- | | | |
|--------------------|--------------|-----|
| 1. Fuel Pump | ON | [G] |
| 2. Mixture | RICH | [M] |
| 3. Propeller | FULL FORWARD | [P] |

PATTERN:

- | | |
|----------------------|------------------------|
| 1. Downwind | 95 Kts (Flaps 10° - 1) |
| 2. Base | 80 Kts (Flaps 25° - 2) |
| 3. Final | 73 Kts (Flaps 40° - 3) |
| 4. Short Final | AoA reference speed |

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. ADI & HSI power | OFF |
| 10. Flight Plan | Closed |

Piper Dakota (PA-28-236)

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	73 KIAS	V_s	65 KIAS
V_y	85 KIAS	V_{so}	56 KIAS
V_{fe}	102 KIAS	1.3 V_{so}	73 KIAS
$V_a - 3000$ lbs	124 KIAS	$V_{app} - 3000$ lbs	72 KIAS
$V_a - 1761$ lbs	96 KIAS	$V_{app} - 2500$ lbs	66 KIAS
V_{ne}	173 KIAS	$V_{app} - 2000$ lbs	59 KIAS
V_{no}	137 KIAS		
Max Demonstrated Crosswind – 17 KIAS		V_g	85 KIAS

USABLE FUEL

2 @ tabs: 50 gal	1 tab, 1 full: 61 gal	2 full: 72 gal
Add 2.5 gal per side (5 gal total) for total fuel capacity		

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 60 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
G_u MPS	Gas, Mixture, Prop, Switches
GAS	Gas, Air, Spark

Piper Dakota (PA-28-236)

Lycoming O-540-J3A5, 235 HP @ 2400

P. Alt	Std. Temp C/F	55% (~10.5 GPH)				65% (~12.5 GPH)				75% (~14.5 GPH)				85% (~17+ GPH)			
		2100	2200	2300	2400	2100	2200	2300	2400	2200	2300	2400	2200	2300	2400		
0	15/59	20.8	20.0	19.4	18.7	23.2	22.4	21.7	21.0	24.6	23.9	23.1	27.2	26.4	25.5		
1000	13/55	20.5	19.8	19.2	18.5	22.9	22.2	21.5	20.8	24.3	23.6	22.9	26.9	26.1	25.3		
2000	11/52	20.3	19.5	19.0	18.3	22.7	21.9	21.2	20.6	24.1	23.4	22.6	F.T.	25.8	25.0		
3000	9/48	20.0	19.3	18.8	18.1	22.4	21.7	21.0	20.4	23.8	23.1	22.4		F.T.	24.7		
4000	7/45	19.8	19.1	18.5	17.9	22.1	21.4	20.8	20.2	23.5	22.8	22.1			F.T.		
5000	5/41	19.5	18.9	18.3	17.7	21.9	21.2	20.5	20.0	23.2	22.6	21.9					
6000	3/37	19.3	18.6	18.1	17.5	21.6	21.0	20.3	19.7	F.T.	22.3	21.7					
7000	1/34	19.1	18.4	17.9	17.3	21.3	20.7	20.1	19.5		F.T.	21.5					
8000	-1/34	18.8	18.2	17.7	17.2	21.1	20.5	19.9	19.3			F.T.					
9000	-3/27	18.6	18.0	17.5	17.0	F.T.	20.2	19.7	19.1								
10000	-5/23	18.3	17.7	17.2	16.8		F.T.	19.4	18.9								
11000	-7/19	18.1	17.5	17.0	16.6			F.T.	F.T.								
12000	-9/16	17.8	17.3	16.8	16.4												
13000	-11/12	F.T.	17.0	16.6	16.2												
14000	-13/9		F.T.	16.4	16.0												
15000	-15/5			F.T.	15.8												
16000	-17/1				F.T.												

MAP Adjustments
Each + 6C/11F = +0.2”
Each - 6C/11F = -0.2”

NOTES
There are no MP limits for 2300-2400 RPM
Lower RPM = lower CHTs & oil temp
Max cruise CHT < 400F
Max climb CHT < 430F

NOTES

- There are no MP limits for 2300-2400 RPM
- Lower RPM = lower CHTs & oil temp
- Max cruise CHT < 400F
- Max climb CHT < 430F

MAP Adjustments

Each + 6C/11F = +0.2"

Each - 6C/11F = -0.2"

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 - 85 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 - 85 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**

LOW OIL PRESSURE / HIGH OIL TEMPERATURE

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

HIGH (>430F) CHT

1. Mixture RICH
2. Airspeed 100+ 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

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**



LOSS OF PRIMARY ADI

1. **Standby HSI**..... **Verify on ADI Page**
- If manual reversion required: **Display Backup Switch** **ON**

Piper Dakota (PA-28-236)

OPEN DOOR

- With Passenger:
 1. **Airspeed** **Slow to 83 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 & AoA Heat ON (2 switches)
2. Carb Heat FULL ON
3. *Maintain airspeed – stall speed may be greatly increased!*
4. **Exit icing conditions as soon as possible!**

PROPELLER OVERSPEED

1. **Throttle** **REDUCE** **Maintain < 2470 RPM**
2. Oil Pressure Check If Normal
3. Propeller FULL DECREASE
4. Airspeed DECREASE

FORCED LANDINGS

LANDING WITHOUT POWER

1. **Airspeed** **V_g - 85 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: (flip page for continuation)

Piper Dakota (PA-28-236)

- a. Transponder 7700
- b. Radio Mayday (121.5)

8. Prior to touchdown:

- a. Cabin Door Unlatched & Opened

PRECAUTIONARY LANDING WITH POWER

- 1. **Airspeed** **V_g - 85 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 - 85 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 Dakota (PA-28-236)

MAXIMUM GLIDE

	ALTITUDE (AGL)	GLIDE DISTANCE
V_g – 85 KIAS	1000	1.2 nm
	2000	2.4 nm
	3000	3.6 nm
	4000	4.8 nm
	5000	6.0 nm
Propeller Wind-milling		
Flaps RETRACTED (0)	6000	7.2 nm
	7000	8.4 nm
	8000	9.6 nm
	9000	10.8 nm
	10000	12.0 nm
Zero Wind		
3000 lbs.	11000	13.2 nm
	12000	14.4 nm
	13000	15.6 nm
	14000	16.8 nm
	15000	18.0 nm
	16000	19.2 nm