

# Piper PA28-181 Checklist

## LAKE ELMO



### INTERIOR PREFLIGHT

Required Documents.....	On Board
Master Switch.....	Off
Avionics Master.....	Off
Fuel Selector.....	Cycle
Pitot/Static Drain .....	Drain (2-3 Sec)
Master Switch.....	On
Fuel Quantity Gauges.....	Check
Flaps.....	Extend
Aircraft Lights.....	On/Check
Pitot Heat.....	On/Check
Stall Warning Horn.....	Check
All Electrical Switches.....	Off

### EXTERIOR PREFLIGHT

<b>RIGHT WING:</b>	
Flap.....	Check
Aileron.....	Check
Nav/Anti-Collision.....	Check
Leading Edge.....	Check
Fuel Vent.....	Check
Fuel Tank Sump.....	Drain
Fuel Quantity.....	Check
Main Wheel/Strut.....	Check
Brakes.....	Check
Air Inlets.....	Clear
<b>NOSE:</b>	
Windshield.....	Check
Oil.....	6 Qts Min
Cowling.....	Check
Alternator Belt.....	Check
Propeller.....	Check
Nose Wheel/Strut.....	Check
Air Inlet.....	Check
Fuel System Sump.....	Drain
<b>LEFT WING:</b>	
Air Inlet.....	Check
Brakes.....	Check
Main Wheel/Strut.....	Check
Fuel Tank Sump.....	Drain
Fuel Quantity.....	Check
Fuel Vent.....	Check
Leading Edge.....	Check
Pitot Head.....	Check

### EXTERIOR PREFLIGHT CON'T

Nav/Anti Collision.....	Check
Aileron.....	Check
Flap.....	Check
<b>FUSELAGE/TAIL:</b>	
Antennas.....	Check
Lights.....	Check
Stabilator.....	Check
Rudder.....	Check
Baggage Door.....	Check

### BEFORE START

Preflight.....	Complete
Passenger Briefing.....	Complete
Belts/Harnesses/Seats.....	Secure
Circuit Breakers.....	In
Avionics Master.....	Off
Fuel Selector.....	Fullest Tank

### ENGINE START

Throttle.....	1/4 Inch Cold
	1/2" Hot
Mixture.....	Rich
Primer .....	4-6 Cold
	3-4 Hot
Master Switch.....	On
Aircraft Lights.....	Set
Fuel Pump.....	On
Brakes.....	Hold
Propeller Area.....	Clear
Starter.....	Engage
Throttle.....	800-1,000 RPM
Oil Pressure.....	Check

### BEFORE TAXI

Ammeter.....	Check Positive
Flaps.....	Up
Mixture.....	Lean
Fuel Pump.....	Off
Fuel Selector.....	Switch Tanks
Avionics Master.....	On
Transponder.....	Set Code/ALT
Avionics.....	Set
Flight Instruments.....	Set/Check
Aircraft Lights.....	Set
Nav Lights.....	On
Brakes.....	Test

### RUN-UP

Brakes.....	Hold
Flight Controls.....	Free & Correct
Fuel Selector.....	Fullest Tank
Circuit Breakers.....	Check
Mixture.....	Rich
Throttle.....	2,000 RPM
Magnetos.....	Check
<i>*Max drop 175 RPM, Max Diff 50 RPM*</i>	
Carburetor Heat.....	Check
Vacuum.....	5.0" Hg
Oil Pressure.....	Check
Fuel Pressure.....	Check
Oil Temp.....	Check
Annunciator Lights .....	Check
Throttle.....	Idle Check
Throttle.....	800-1000 RPM
Backup Vacuum,.....	Test
Radios/Nav.....	Set
Magnetos.....	Both

### BEFORE TAKEOFF

Trim.....	Set Takeoff
Flaps.....	Set
Mixture.....	Rich
Fuel Pump.....	On
Flight Instruments.....	Set
Transponder.....	Set ALT
Aircraft Lights.....	Set
Cabin Door/Windows.....	Latched
Takeoff Briefing.....	Complete

### NORMAL TAKEOFF

Heading.....	Check Correct Runway
Throttle.....	Full Open
Rotate.....	48-53 KIAS

### CLIMB

Flaps.....	Up
Best Rate .....	Vy 76 KIAS
Cruise Climb .....	90 KIAS

### CRUISE

Throttle.....	Set
Fuel Pump.....	Off
Mixture.....	Set
Aircraft Lights.....	Set
Fuel Selector.....	Switch tanks every 30 min

### DESCENT

Weather/Avionics .....	Checked
Approach Briefing.....	Complete
Descent Power.....	Set
Carburetor Heat .....	Set
Fuel Pump.....	On
Mixture.....	Set
Fuel Selector.....	Fullest Tank

### BEFORE LANDING

Fuel Pump.....	On
Mixture.....	Rich
Throttle.....	Set
Aircraft Lights.....	Set
Flaps.....	Set
Approach Airspeed.....	66 KIAS

### AFTER LANDING

Flaps.....	Up
Trim.....	Set Takeoff
Carburetor Heat .....	Off
Aircraft Lights.....	Set
Pitot Heat.....	Off
Fuel Pump.....	Off
Mixture.....	Lean

### SHUT DOWN

Avionics Master.....	Off
Throttle.....	Idle
Magneto.....	Check
Mixture.....	Idle Cut-Off
Magnetos.....	Off
All Switches.....	Off
Aircraft Lights.....	Set
<b>Nav Lights</b> .....	<b>ON</b>
Brakes.....	Released

### Important Speeds

#### KIAS

Vso.....	49
Vs1.....	55
Vr.....	48-53
Vx.....	64
Vy.....	76
Vfe.....	102
Va (2550 lbs.).....	113
Vno.....	125
Vne.....	154
<b>Best Glide</b> .....	<b>76</b>
Approach.....	66

# Piper PA28-181 Maneuvers

## LAKE ELMO



### Normal Takeoff

*\*Before Takeoff Checklist Complete\**

Flaps ..... 0°  
Throttle ..... Full  
Engine Instruments ..... Verify Green  
Rotate ..... 55 KIAS  
Climb out ..... Vx 64  
Vy 76

### Normal Landing

*\*Before Landing Checklist Complete\**

Entry/Downwind ..... BCGUMPS  
Abeam Threshold –  
Throttle ..... 1500 rpm  
Airspeed ..... 90 KIAS  
Flaps ..... 10°  
Base –  
Airspeed ..... 80 KIAS  
Flaps ..... 25°  
Final –  
Airspeed ..... 70 KIAS  
Flaps ..... 40°  
Touchdown ..... Just above stall speed

### Short Field Takeoff

*\*Before Takeoff Checklist Complete\**

Flaps ..... 25°  
Runway ..... Use All Available  
Brakes ..... Hold  
Throttle ..... Full  
Engine Instruments ..... Verify Green  
Brakes ..... Release  
Rotate ..... 49 KIAS  
Climb Out ..... Vx 64  
*When Clear of Obstacle*  
Accelerate to ..... Vy 76  
Flaps ..... Retract Slowly

### Short Field Landing

*\*Before Landing Checklist Complete\**

Downwind ..... BCGUMPS  
*Approach slightly steeper than normal*  
Abeam Runway Threshold  
Airspeed ..... 90 KIAS  
Flaps ..... 10°  
Base –  
Airspeed ..... 80 KIAS  
Flaps ..... 25°  
Final –  
Airspeed ..... 70 KIAS  
Flaps ..... 40°  
Threshold ..... 66 KIAS  
Touchdown ..... Just above stall speed  
*Use max. foot and aerodynamic braking*

### Soft Field Takeoff

*\*Before Takeoff Checklist Complete\**

Flaps ..... 25°  
Flight Controls ..... Full Back  
Engine Instruments ..... Verify Green  
Throttle ..... Full  
Rotate ..... Min. Airspeed  
Ground Effect ..... Remain until Vy  
Or Runway Threshold  
Climb ..... Vy 76  
Flaps ..... Retract Slowly

### Soft Field Landing

*\*Before Landing Checklist Complete\**

Entry/Downwind ..... BCGUMPS  
Abeam Runway Threshold  
Airspeed ..... 90 KIAS  
Flaps ..... 10°  
Base –  
Airspeed ..... 80 KIAS  
Flaps ..... 25°  
Final –  
Airspeed ..... 70 KIAS  
Flaps ..... 40°  
Threshold ..... 66 KIAS  
Touchdown ..... Just above stall speed  
Yoke ..... Full Aft  
*Keep nosewheel off ground as long as possible, holding full backpressure. Use min. wheel braking*

### Go-Around

Throttle ..... Full  
Carburetor Heat ..... Off  
Flight Control ..... Start Climbout  
Flaps ..... Retract to 25°  
Airspeed ..... Accelerate to Vx 64  
or Vy 76  
Flaps ..... Retract to 0°

### Slow Flight

Clearing Turns ..... Complete  
BCGUMPS ..... Complete  
Throttle ..... 1500 RPM  
Flaps ..... 40° (in white arc)  
Altitude ..... Maintain  
Throttle ..... Add power to  
Maintain 55-60 KIAS  
Bank ..... Shallow Turns  
Recovery ..... Go-around procedure

### Power Off-Stall

Clearing Turns ..... Complete  
BCGUMPS ..... Complete  
Throttle ..... 1500 RPM  
Flaps ..... 40°  
Airspeed ..... 66 KIAS  
Descent ..... Initiate 500 FPM to  
simulate final approach  
Throttle ..... Idle  
Stall ..... Pitch to Induce  
*Recognize and recover from stall*

### Stall Recovery:

Flight Control ..... Release back pressure  
Throttle ..... Full  
Carb Heat ..... Off  
Flaps ..... Retract to 25°  
Altitude ..... Minimal Loss  
Airspeed ..... Accelerate to Vx or Vy  
before the final flap retraction

### Power-On Stall

Clearing Turns ..... Complete  
BCGUMPS ..... Complete  
Throttle ..... 1500 RPM  
Flaps ..... 0° - 25°  
Airspeed ..... 65 KIAS  
Throttle ..... Full  
Stall ..... Pitch to Induce  
*Recognize and recover from stall.*

### Stall Recovery:

Flight Control ..... Release back pressure  
Throttle ..... Full  
Carb Heat ..... Off  
Flaps ..... Retract to 25°  
Altitude ..... Minimal Loss  
Airspeed ..... Accelerate to Vx or Vy  
before the final flap retraction

### Secondary Stall

Clearing Turns ..... Complete  
BCGUMPS ..... Complete  
Throttle ..... 1500 RPM  
Flaps ..... 40°  
Airspeed ..... 66 KIAS  
Descent ..... Initiate 500 FPM to  
simulate final approach  
Throttle ..... Idle  
Stall ..... Pitch to Induce  
*Recognize and recover from stall.*  
Flight Control ..... Release back pressure  
Throttle ..... Full  
Flight Control ..... Increase back elevator  
pressure to initiate as secondary stall  
*Recognize and recover from stall.*

### Stall Recovery:

Flight Control ..... Release back pressure  
Throttle ..... Full  
Carb Heat ..... Off  
Altitude ..... Minimal Loss  
Airspeed ..... Accelerate to Vx or Vy  
before the final flap retraction

# Piper PA28-181 Maneuvers

## LAKE ELMO



### Elevator Trim Stall

Clearing Turns.....	Complete
BCGUMPS.....	Complete
Throttle.....	1500 RPM
Flaps.....	0° - 40°
Airspeed.....	66 KIAS
Stall...Pitch to Induce, using Elevator Trim	
<i>Recognize and recover from stall.</i>	

#### Stall Recovery:

Flight Control.....	Release back pressure
Throttle.....	Full
Altitude.....	Minimal Loss
Airspeed.....	Accelerate to V <sub>x</sub> or V <sub>y</sub> before the final flap retraction

### Cross-Controlled Stall

Clearing Turns.....	Complete
BCGUMPS.....	Complete
Throttle.....	1500 RPM
Flaps.....	0° - 40°
Airspeed.....	66 KIAS
Stabilized Descent.....	Establish
Stall.....Pitch to Induce, Cross Controls	
<i>Recognize and recover from stall.</i>	

#### Stall Recovery:

Flight Control.....	Release back pressure
Throttle.....	Full
Altitude.....	Minimal Loss
Airspeed.....	Accelerate to V <sub>x</sub> or V <sub>y</sub> before the final flap retraction

### Accelerated Stall

Clearing Turns.....	Complete
BCGUMPS.....	Complete
Throttle.....	1500 RPM
Flaps.....	0°
Airspeed.....	66 KIAS
Bank.....	45°
Pitch.....	Maintain Alt. Induce Stall
<i>Recognize and recover from stall.</i>	
<b>Stall Recovery:</b>	
Flight Control.....	Release back pressure
Throttle.....	Full
Altitude.....	Minimal Loss
Airspeed.....	Accelerate to V <sub>x</sub> or V <sub>y</sub>

### Steep Turns

Clearing Turns.....	Complete
BCGUMPS.....	Complete
Throttle.....	2000-2200 RPM
Airspeed.....	100 KIAS
Bank.....	45° Private 50° Commercial
Roll Out.....	Original heading
Repeat.....	Opposite direction

### Lazy Eights

Altitude.....	Min Alt 1500 AGL
Clearing Turns.....	Complete
BCGUMPS.....	Complete
Throttle.....	2000-2200 RPM
Airspeed.....	100 KIAS
<i>(Constant change of pitch and roll rate)</i>	
<b>45° Point.....</b>	Max. Pitch UP, Bank 15°
<b>90° Point.....</b>	Level. Pitch, Bank 30°
<b>135° Point.....</b>	Max. Pitch DN, Bank 15°
<b>180° Point.....</b>	Level Pitch, Bank 0°

### Steep Spiral

Altitude.....	Complete (3) 360° turns
Reference Point.....	Select
Clearing Turns.....	Complete
BCGUMPS.....	Complete
Throttle.....	Idle
Airspeed.....	76 KIAS
Spiral.....	Max. Bank 60°
Entry.....	Downwind ½ mi from reference point
Radius.....	Maintain constant ½ mi
Engine.....	Clear once each turn on the upwind
Ground Track.....	Adjust for wind to maintain ½ mi radius

### Chandelles

Altitude.....	Min Alt. 1500 AGL
Clearing Turns.....	Complete
BCGUMPS.....	Complete
Airspeed.....	100 KIAS
Establish Bank.....	30°
Throttle.....	Full
<i>0° - 90° Point</i>	
Throttle.....	Full
Bank.....	30° Constant
Pitch.....	Gradually Increase
<i>90° - 180° Point</i>	
Bank.....	Gradual Rollout
Pitch.....	Constant
<i>180° point</i>	
Airspeed.....	5 kts above stall
Bank.....	0°

### Rectangular Course

<i>Select Rectangular field for maneuver</i>	
Clearing Turns.....	Complete
BCGUMPS.....	Complete
Throttle.....	2000-2200 RPM
Airspeed.....	100 KIAS
Altitude.....	600-1000 ft AGL
Entry.....	Downwind 45° ¼ -½ mi away from reference area
Ground Track.....	Adjust for wind drift to maintain ¼ -½ mi distance

### S -Turns Along a Road

<i>Select road perpendicular to wind</i>	
Clearing Turns.....	Complete
BCGUMPS.....	Complete
Throttle.....	2000-2200 RPM
Airspeed.....	100 KIAS
Altitude.....	600-1000 ft AGL
Entry.....	Downwind 45° ¼ -½ mi away from reference area
Ground Track.....	Adjust for wind drift to maintain ¼ -½ mi distance

### Turns Around a Point

<i>Select a clearly defined point i.e. 4-Way Intersection</i>	
Clearing Turns.....	Complete
BCGUMPS.....	Complete
Throttle.....	2000-2200 RPM
Airspeed.....	100 KIAS
Altitude.....	600-1000 ft AGL
Entry.....	Downwind 45° ¼ -½ mi away from reference area
Ground Track.....	Adjust for wind drift to maintain ¼ -½ mi distance

### Eights on Pylons

Reference Point.....	Select: 3-5 Sec.
Clearing Turns.....	Complete
BCGUMPS.....	Complete
Throttle.....	2000-2200 RPM
Airspeed.....	100 KIAS
Entry.....	Downwind 45° at Pivotal Alt. PA= $\frac{GS \times KIAS}{11.3}$
Bank.....	30° - 40°

# Piper PA28-181

## Emergencies & Abnormals

### LAKE ELMO



#### Engine Fire-Start

Starter ..... Continue Cranking  
Mixture ..... Idle Cut-Off  
Throttle ..... Open  
Fuel Pump ..... Off  
Fuel Selector ..... Off

#### Engine Failure-Takeoff

Airspeed ..... Maintain Safe Airspeed  
Land ..... Straight Ahead

*If Sufficient altitude has been gained  
attempt to restart:*

Airspeed ..... Maintain Safe Airspeed  
Fuel Selector ..... Switch Tanks  
Electric Fuel Pump ..... On  
Mixture ..... Rich  
Carburetor Heat ..... On

*If power is not restored, proceed to  
**POWER OFF LANDING***

#### Engine Failure-In Flight

Airspeed ..... 76 KIAS  
Fuel Selector ..... Switch Tanks  
Fuel Pump ..... On  
Mixture ..... Rich  
Carburetor Heat ..... On  
Engine Gauges ..... Check  
Primer ..... Check Locked  
Ignition ..... Check L and R

*If power is NOT restored proceed to  
**POWER OFF LANDING:***

#### Power Off Landing

Airspeed ..... 76 KIAS  
Place to Land ..... Locate

*When committed to landing:*

Landing Assured ..... 66 KIAS  
Flaps ..... Set  
Touchdown ..... Lowest Airspeed  
Squawk ..... 7700  
Radios ..... Transmit  
Ignition ..... Off  
Master Switch ..... Off  
Fuel Selector ..... Off  
Mixture ..... Idle Cut-Off  
Seatbelt ..... Secure

#### Engine Fire-Flight

Throttle ..... Idle  
Mixture ..... Idle Cut-Off  
Fuel Selector ..... Off  
Fuel Pump ..... Off  
Magneto Switch ..... Off  
Master Switch ..... Off  
Heater/Defroster ..... Off

*Proceed to **POWER OFF LANDING***

#### Electrical Fire in Flight

Master Switch ..... Off  
Vents ..... Open  
Cabin Heat ..... Off

*\*Land as Soon as Possible\**

#### Spin Recovery

Rudder ..... Full Opposite  
(To the direction of rotation)  
Control Wheel ..... Neutral/Forward  
Throttle ..... Idle

*(When rotation stops)*

Rudder ..... Neutral  
Control Wheel ..... To Desired Flight Path  
Throttle ..... Set

#### Emergency Descent

Throttle ..... Idle  
Mixture ..... Rich  
Bank ..... 30° - 45°  
Fuel Pump ..... On  
Roll Out ..... Vne  
(or pattern altitude)

#### Alternator Failure

Ammeter ..... Verify Failure  
Electrical Load ..... Reduce  
ALT Circuit Breaker ..... Check/Reset  
Alternator Switch ..... Off 30 sec.  
Alternator Switch ..... On

*If Power is not restored:*

Alternator Switch ..... Off  
*\*Land as Soon as Practical\**

#### Engine Roughness

Carburetor Heat ..... On  
*If roughness continues after one min:*  
Carburetor Heat ..... Off  
Mixture ..... Adjust for Smoothness  
Fuel Pump ..... On  
Fuel Selector ..... Switch Tanks  
Engine Gauges ..... Check  
Magneto Switch ..... "L" then "R"  
then "BOTH"

*If operation is satisfactory on either one,  
continue on that magneto at reduced power  
and full "RICH" mixture to first airport.*

*Prepare for **POWER OFF LANDING***

#### Loss of Oil Pressure

*\*Land as Soon as Practical\**

*Prepare for **POWER OFF LANDING***

#### Loss of Fuel Pressure

Fuel Pump ..... On  
Fuel Selector ..... Fullest Tank

#### High Oil Temperature

Mixture ..... Rich  
Throttle ..... Reduce

*\*Land as Soon as Practical\**

*Prepare for **POWER OFF LANDING***

#### Electrical Overload

ALT Switch ..... On  
BATT Switch ..... Off

*If Alternator Load are reduced:*

Electrical Load ..... Reduce  
Land ..... As Soon as Practical

*If Alternator Loads are not reduced:*

ALT Switch ..... Off  
BATT Switch ..... Off

*\*Land as Soon as Practical\**

#### Open Door

Airspeed ..... Slow to 87 KIAS  
Cabin Vents ..... Close  
Storm Window ..... Open  
Door ..... Secure Top Latch