Piper PA28-181 Checklist

LAKE ELMO AERO

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

RIGHT WING:

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

NOSE:

Windshield	Check
Oil	6 Qts Min
Cowling	Check
Alternator Belt	Check
Propeller	Check
Nose Wheel/Strut	Check
Air Inlet	Check
Fuel System Sump	Drain

LEFT WING:

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

FUSELAGE/TAIL:

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 ½" 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

Avionics Master	On
Ammeter	Check Positive
Flaps	Up
Mixture	Lean
Fuel Pump	Off
Fuel Selector	Switch Tanks
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

Max drop 175 RPM, Max Diff 50 RPM

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
Radios/Nav	Set
Magnetos	Both

BEFORE TAKEOFF

Trim	Set Takeoff
Flaps	Set
Mixture	Rich
Aircraft Lights	Set
Fuel Pump	On
Flight Instruments/Avionics	Set
Transponder	Set ALT
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	87 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	Off
Nav Lights	**ON**
Brakes	Released

Important Speeds (KIAS)

V_{S0}	49
V_{S1}	55
V_R	48-53
V_X	64
V_Y	76
V_{FE}	102
V_A (2550 lbs.)	113
V_{NO}	125
V_{NE}	154
Best Glide	**76**
Approach	66

Piper PA28-181 Maneuvers

LAKE ELMO AERO

SEE PIPER ARCHER STANDARDIZATION MANUAL FOR AMPLIFIED PROCEDURES

Normal Takeoff

Before Takeoff Checklist Complete

Flaps …….. 0˚
Throttle ……Full
Engine Instruments ……...Verify Green
Rotate ……...53 KIAS
Initial climb……...76 KIAS
Enroute climb……87 KIAS

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 ……Initially 55 KIAS
then Vy 76
Flaps …….When >70 KIAS, 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 50-55 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:
Go-Around Procedure
Minimize altitude loss

Power-On Stall

Clearing Turns ……Complete
BCGUMPS ……Complete
Throttle ……..1500 RPM
Flaps……...0° - 25°
Airspeed…… 65 KIAS
Throttle……...2300 RPM
Stall.....….Pitch to Induce
Recognize and recover from stall.
Stall Recovery:
Flight Controls……Nose Down
Throttle……Full

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 Controls……Nose Down
Go-Around Procedure
Minimize altitude loss

Steep Turns

Clearing Turns ……Complete
BCGUMPS ……Complete
Throttle……2300 RPM
Airspeed……..100 KIAS
Bank……..45° Private
50˚ Commercial
Roll Out ……...Original heading
Repeat ……Opposite direction

Elevator Trim Stall

Clearing Turns……Complete
BCGUMPS……..Complete
Throttle……..1500 RPM
Flaps……...40°
Airspeed……...75 KIAS
Throttle……Idle
Trim……..Full Nose-Up
Throttle……Full
Stall Recovery:
Flight Controls……Nose Down
Trim……Maintain control
Flaps…….When >70 KIAS, retract to 0

Piper PA28-181 Maneuvers

LAKE ELMO AERO

Cross-Controlled Stall

Clearing Turns ……Complete
BCGUMPS ……Complete
Throttle ……..1500 RPM
Airspeed……70 KIAS
Stabilized Descent……Establish
Stall……..Pitch to Induce, Cross Controls
Recognize and recover from stall.
Stall Recovery:
Flight Control …….Release back pressure
Throttle……Full
Altitude……Minimal Loss
Airspeed……Accelerate to Vx or Vy 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
Recognize and recover from stall.
Stall Recovery:
Flight Control…….Release back pressure
Throttle……Full
Altitude……Minimal Loss
Airspeed……...Accelerate to Vy

Lazy Eights

Altitude……..……..Min Alt 1500 AGL
Clearing Turns……Complete
BCGUMPS……..Complete
Throttle……..2200 RPM
Airspeed……95 KIAS
(Constant change of pitch and roll rate)
45° Point…...Max. Pitch UP, Bank 15°
90° Point……..Level. Pitch, Bank 30°
135° Point…..… Max. Pitch DN, Bank 15°
180° Point……..… Level Pitch, Bank 0°

Steep Spiral

Altitude……Sufficient for 3 360° turns
Clearing Turns……Complete
BCGUMPS……..Complete
Reference Point……Select
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 ……...95 KIAS
Establish Bank …… 30˚
Throttle…… Full
0° - 90° Point
Throttle……..Full
Bank……30° Constant
Pitch……...Gradually Increase
90° - 180° Point
Bank……...Gradual Rollout
Pitch……...Constant
180° point
Airspeed…….5 kts above stall
Bank……0°

Rectangular Course

Select Rectangular field for maneuver
Clearing Turns……Complete
BCGUMPS ……Complete
Throttle……2000-2200 RPM
Airspeed …….....90 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

Select road perpendicular to wind
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

Select a clearly defined point i.e. 4-Way Intersection
Clearing Turns……Complete
BCGUMPS ……Complete
Throttle……2000-2200 RPM
Airspeed …….....90 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

Clearing Turns……Complete
BCGUMPS……..Complete
Throttle……100 KIAS
Reference Point(s)……Selected
Entry……Downwind 45° at Pivotal Alt.

$$PA = \frac{(GS \times KIAS)}{11.3}$$

Bank……..30° - 40°

SEE PIPER ARCHER STANDARDIZATION MANUAL FOR AMPLIFIED PROCEDURES

Piper PA28-181
Emergencies&Abnormals
LAKE ELMO AERO

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
Best Landing Site……Locate
Fuel Pump ……On
Fuel Selector ……Switch Tanks
Mixture ……..……..Rich
Carburetor Heat ……On
Engine Gauges ……Check
Primer ……..Check Locked
Ignition ……Check Both

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

Power Off Landing

Airspeed ……...76 KIAS
Best Landing Site ……Locate
Passengers……Prepare

If time and altitude permit:

Transponder …..... 7700
Radios …..... Transmit 121.5
ELT ….... On

When committed to landing:

Throttle …..... Idle
Mixture …..... Idle Cut-Off
Fuel Selector …..... Off
Magnetos …..... Off
Master Switch …..... Off
Belts/Shoulder Harness …..... Secure
Door..……..Open
Approach Speed …....66-70 KIAS
Flaps……Extend (time/altitude permitting)

Engine Fire-*Flight*

Fuel Selector ……Off
Mixture ……...Idle Cut-Off
Throttle ……Idle
Fuel Pump ……Off
Fresh Air Vents/Windows……...Open
Panel Cabin Air/Heat/Defrost……...Closed
Magneto Switch ……Off
Master Switch ……...Off

If fire extinguishes, proceed to ***POWER OFF LANDING***

If fire does not extinguish, proceed to ***EMERGENCY DESCENT***

Electrical Fire

Batt/Alt Master Switch ….....Off
Radio Master and All Electrical…….Off
Fresh Air Vents/Windows……...Open
Panel Cabin Air/Heat/Defrost……...Closed

If fire appears out and electrical power is necessary:

Batt/Alt Master Switch …..... On
Circuit Breakers …..... DO NOT RESET
Radio/Electrical Equip---ON one at a time
Land As Soon as Practical

Emergency Descent

Throttle …..... Idle
Mixture ….....Rich (unless fire)
Bank …..... 30º – 45º
Airspeed……...125 KIAS

Alternator Failure (ALT Light)

Prepare for ***ELECTRICAL FIRE***
All Non-Required Equipment……Off
12V Charging Socket……..Unplug
Circuit Breakers……Check

If no circuit breakers popped…

Alternator Master Switch……Cycle Off/On

If circuit breakers popped, reset them only if absolutely necessary for safety of flight.

If Alternator is not restored, land as soon as practical.

Engine Roughness

Throttle……2500 RPM
Carburetor Heat …..... On
Fuel Pump……On

If roughness continues after 30 sec:

Fuel Selector ….....Switch Tanks

Check each tank for 30 sec

Mixture ….....Full Rich
Engine Gauges …..... Check
Magneto Switch ….....Check Individually

If operation is satisfactory on either magneto, continue on that magneto at reduced power and Full Rich mixture. Land as soon as practical.

If roughness continues, land as soon as possible.

Loss of Oil Pressure (OIL) Light

Land as Soon as Practical
Prepare for ***POWER OFF LANDING***

Loss of Fuel Pressure

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

High Oil Temperature

Altitude……Level (stop climb)
Throttle……..2200 RPM

If temp does not go down, or continues to rise, land as soon as practical.
Prepare for ***POWER OFF LANDING***

Loss of Vacuum Pressure (VAC Light)

Standby Vacuum Pump…….On

If vacuum pressure returns to normal, continue normal operation.

If vacuum pressure does not return to normal, exit IMC (if applicable) and do not rely on vacuum-driven instruments.

Open Door

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

Spin Recovery

Throttle …..... Idle
Ailerons …..... Neutral
Rudder …..... Full opposite
(to the direction of rotation)
Yoke …..... Full forward
Rudder …..... Neutral
(when rotation stops)
Yoke ….....Recover from dive
Throttle …..... Do not exceed 154 KIAS

IN AN EMERGENCY
Call 911 FIRST if necessary for safety
Then call Lake Elmo Aero at 651-777-1399