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
Oil Pressure.....Check
Fuel Pressure.....Check
Oil Temp.....Check
Annunciator Lights .....Check
Throttle.....Idle Check
Throttle.....800-1000 RPM
Radios/Nav.....Set
Mixture.....Re-Lean for Taxi
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**
Master Switches.....Off
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

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…… 1500-1700 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…… 1500-1700 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 …….... 1500-1700 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

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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……..80 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

SEE PIPER ARCHER STANDARDIZATION MANUAL FOR AMPLIFIED PROCEDURES

Lazy Eights

Altitude……..……Min Alt 1500 AGL
Clearing Turns……...Complete
BCGUMPS……Complete
Throttle……2300 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°

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***

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

When rotation stops…

Rudder …..... Neutral
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