

Piper PA-30 **Emergencies & Abnormals** **LAKE ELMO** **AERO**

Engine Failure-Takeoff

Directional ControlMaintain
ThrottlesIdle
BrakesApply

Engine Failure-Critical Flight Phase

Directional Control.....Maintain
AirspeedMinimum 105MPH
MixturesRich
PropellersForward
ThrottlesForward
FlapsUp
GearUp
Electric Fuel PumpsOn
Fuel SelectorsMain Tanks
Affected Throttle.....Identify, Verify
Affected Propeller.....Feather

Proceed to Feathering and Securing.

Engine Fire on Start

StarterCrank Engine
MixtureIdle Cut-Off
ThrottleFull Open
Electric Fuel PumpOff
Fuel SelectorOff

Engine Fire in Flight

Affected ThrottleIdle
Affected MixtureIdle Cut-Off
Affected Fuel SelectorOff
Affected Fuel PumpOff
Heater/DefrosterOff

If fire stops, Feathering and Securing.

If fire does not stop, Emergency Descent.

Emergency Descent

ThrottlesIdle
PropellersHigh RPM
MixturesRich
Landing Gear.....Down
Airspeed.....150MPH
Cowl FlapsClosed
Bank30° - 45°

Fire/Smoke in Cabin

Master SwitchOff
VentsOpen
Door.....Open
Cabin HeatOff

Proceed to Feathering and Securing.

Engine Failure-Cruise Flight

Directional Control.....Maintain
AirspeedMinimum 105MPH
MixturesRich
PropellersForward
ThrottlesForward
Affected Throttle.....Identify, Idle

If engine power is not restored...

Landing Gear.....Up
Flaps.....Up
Affected Fuel Selector.....Best Tank
Affected Engine Fuel Pump.....On
Affected Engine Magnetos.....On
Affected Engine Alternate Air.....On

If engine power is not restored, proceed to Feathering and Securing.

Feathering and Securing

Affected Engine Throttle.....Confirm Idle
Affected Engine Propeller.....Feather
Affected Engine MixtureIdle Cut-Off
Affected Fuel PumpOff
Affected MagnetosOff
Affected Cowl FlapClose
Affected GeneratorOff
Electrical LoadReduce
Fuel Crossfeed.....As Required

Unfeathering/Restart Procedure

Do not begin if engine damage suspected

Fuel Selector.....Main Tank
Electric Fuel PumpOn
GeneratorsOn
Inop ThrottleAs Required
Inop PropellerHigh RPM
Inop MixtureRich
Inop MagnetosOn
StarterEngage Until Prop Windmills
Prop Control2000RPM
Throttle15" MP until engine warm
Prop/Throttle should not exceed 2000/15"
until CHT >200F

Fuel Crossfeed (Level Flight Only)

Operating Fuel Pump.....On
Inoperative Fuel Selector.....Main Tank
Operating Fuel Selector.....Crossfeed

Operating Fuel Selector.....Main Tank
Inoperative Fuel Selector.....Off

Single Engine Approach/Landing

Inoperative Engine Cowl Flap.....Closed
Operating Fuel Selector.....Main Tank
Operating Fuel Pump.....On
Operating Mixture.....Full Rich
Operating Propeller.....Full Forward
Aircraft Lights.....As Required
Approach Speed.....120 MPH
Do not extend Landing Gear or Flaps until landing is assured. Full flaps not required.
Avoid single-engine go-around if possible.

Propeller Overspeed

Propeller ControlDecrease
ThrottleReduce
Oil PressureCheck
AirspeedReduce
ThrottleAs Required

Generator Failure

Electrical LoadReduce
AmmeterVerify Failure
Generator SwitchesOff 30 sec.
GEN Circuit BreakerCheck/Reset
Generator SwitchesON one at a time
Affected Generator.....Determine
*If Power is **not** restored:*
Affected Generator SwitchOff
Voltmeter.....Monitor
Land As Soon as Practical, without flaps.
Prepare for complete electrical failure.

Complete Electrical Failure

GeneratorsOff
Electrical Load.....Reduce
Voltmeter.....Monitor
Prepare for manual landing gear extension.

High CHT or Oil Temperature

Cowl Flaps.....Open
Mixture.....Rich
Power.....Reduce if necessary
Airspeed.....>130MPH
Consider landing as soon as possible.

Engine Roughness in Flight

Alternate Air.....On
Affected Mixture.....Adjust
Affected Fuel Pump.....On
Affected Fuel Selector.....Switch
Engine Gauges.....Monitor
Affected Magnetos.....Check

If engine roughness continues...

Alternate Air.....Off

Prepare for engine failure in flight

Manual Landing Gear Extension

Master SwitchOn
Circuit BreakersCheck
Panel/Nav LightsOff (In Daytime)
Gear Indicator LightsCheck
EMER Gear CoverRemove
AirspeedSlow to 100 MPH
Gear SelectorDown
Gear MotorDisengage

Insert Gear Handle in right socket and twist to secure

Extend handle and rotate forward until left socket is clear

Engage handle in left socket and twist to secure

Rotate Full Forward

Gear Ind. LightsCheck for 3 Green

If gear does not extend...

Off airport landing.....Consider

Flap Failure or Asymmetry

If flaps are both failed...

Flap Switch.....Off

Airspeed.....<125 MPH

If flaps are split or asymmetrical...

Directional Control.....Maintain (Trim)

Airspeed.....<125 MPH

If situation permits...

Flap Switch.....Up/Down to Test Flaps

Avoid running the flap motor in any direction for more than two seconds at a time. Monitor position of both flaps closely.

Piper PA-30 Checklist

LAKE ELMO



BEFORE START

Belts/Harnesses/Seats.....	Secure
Circuit Breakers.....	In
Radio Master.....	Off
Fuel Selector.....	Main Tanks
Generators.....	On
Cowl Flaps.....	Open

ENGINE START

Brakes.....	Hold
Throttles.....	½ in. Open
Propellers.....	High RPM
Mixtures.....	Idle Cut-Off
Master Switch.....	On
Magnetos.....	On
Rotating Beacon Light.....	On

Fuel Pump.....	On
Mixture.....	Rich, note fuel flow
Mixture (When fuel flow peaks).....	Cutoff
Propeller Area.....	Clear
Starter.....	Engage
Mixture.....	Rich
Throttle.....	800-1,000 RPM
Oil Pressure.....	Check

Repeat steps below line for each engine

BEFORE TAXI

Flaps.....	Retract, Off
Mixtures.....	Lean
Fuel Pumps.....	Off
Radio Master.....	On
Avionics.....	Set
Transponder.....	Set Code/ALT
Flight Instruments.....	Set/Check
Aircraft Lights.....	As Required

WHILE TAXIING

Fuel Selectors.....	Aux Tanks for 30 sec
Brakes.....	Check
Directional Gyro.....	Check
Turn Coordinator.....	Check

RUN-UP

Brakes.....	Hold
Fuel Selectors.....	Main Tanks
Flight Controls	Free and Correct
Mixtures.....	Rich
Throttle.....	1500 RPM
Propellers.....	Feather Check

Do not exceed 500 RPM drop

Throttles.....	2000 RPM
Propellers.....	Exercise
Magnetos.....	Check

Max. Drop 175 RPM, Diff. 50 RPM

Alternate Air.....	Check
Voltmeter.....	Check
Vacuum.....	5.0" Hg
Engine Instruments.....	Check/Green
Throttles.....	Idle Check
Throttles.....	800-1000 RPM
Mixtures.....	Lean

BEFORE TAKEOFF

Transponder.....	Alt
Fuel Selectors.....	Main Tanks
Trim.....	Set
Flaps.....	Set
Cowl Flaps.....	Open
Mixtures.....	Rich
Propellers.....	High RPM
Fuel Pumps.....	On
Aircraft Lights.....	As Required
Flight Instruments.....	Set
Takeoff Briefing.....	Complete
Cabin Door/Windows.....	Latched

CLIMB

Speed.....	112 MPH
Gear.....	Up
Flaps.....	Up
Cowl Flaps.....	Set
Climb Power.....	24"MP, 2400 RPM
Fuel Pumps.....	Set

CRUISE

Cruise Power.....	Set (See Table)
Mixtures.....	Set
Cowl Flaps.....	Set
Fuel Pumps.....	Off
Aircraft Lights.....	As Required

Use Aux Tanks first in cruise, followed by Main tanks.

DESCENT

Fuel Pumps.....	On
Mixtures.....	Set
Fuel Selectors.....	Main Tanks
Approach Briefing.....	Complete

BEFORE LANDING

Fuel Pumps.....	On
Mixture.....	Rich
Propellers.....	High RPM
Throttles.....	Set
Aircraft Lights.....	As Required
Gear.....	Down & Locked
Flaps.....	Set

AFTER LANDING

Flaps.....	Retract
Aircraft Lights.....	As Required
Pitot Heat.....	Off
Fuel Pumps.....	Off
Cowl Flaps.....	Open
Mixtures.....	Lean

SHUT DOWN

Heater Switch and Valve.....	Off
Avionics Master.....	Off
Throttles.....	Idle
Magnetos.....	Check
Mixture.....	Idle Cut-Off
Magnetos.....	Off
External Lights.....	Off
All Switches.....	Off
Position Lights Switch.....	On (ADS-B)

Important Speeds

	MPH	KIAS
Vr.....	90-97	78-84
Vmc.....	90	78
Vx.....	90	78
Vy.....	112	98
Vyse.....	105	91
Vfe.....	125	108
Vlo.....	125	108
Vle.....	150	130
Va (3600 lbs.).....	162	140
Approach.....	120	104

Cruise Performance – 55% Economy

Alt	RPM	MAP	TAS
SL	2300	21.0"	156 mph
3000'	2300	20.2"	158 mph
6000'	2300	19.4"	161 mph
9000'	2300	18.6"	165 mph
Fuel Flow	13.4gph at peak EGT		

Cruise Performance – 65% Best Power

Alt	RPM	MAP	SPEED
SL	2400	22.7"	170 mph
3000'	2400	21.9"	175 mph
6000'	2400	21.1"	179 mph
9000'	2400	20.3"	182 mph
Fuel Flow	17.7gph 100F rich of peak		

Landing Data – 3600lb (MGW), ISA

Alt	Ground Roll	50' Barrier
SL	690 ft	2100 ft
3000'	760 ft	2250 ft
6000'	840 ft	2400 ft
Subtract 10% for every 5kt headwind		

Piper PA-30
Preflight Checklist

LAKE ELMO



INTERIOR PREFLIGHT

- Required Documents.....On Board
- Master Switch.....Off
- Landing Gear Handle.....Down
- Fuel Selector.....Cycle
- Fuel Strainers.....Drain
- Master Switch.....On
- Fuel Quantity Gauges.....Check
- Gear Indicator.....Green
- Flaps.....Extend
- Aircraft Lights.....On/Check
- Pitot Heat.....On/Check
- Stall Warning.....Check
- All Switches.....Off
- Leave Position Light switch on

EXTERIOR PREFLIGHT

- RIGHT WING:**
- Flap.....Check
 - Aileron.....Check
 - Nav/Anti-Collision.....Check
 - Leading Edge.....Check
 - Aux Fuel Quantity.....Check
 - Fuel Vent.....Check
 - Oil.....6 Qts Min
 - Cowling.....Check
 - Propeller.....Check
 - Main Fuel Quantity.....Check
 - Main Wheel/Strut.....Check
 - Brakes.....Check
- NOSE:**
- Windshield.....Check
 - Nose Wheel/Strut.....Check
 - Air Inlets.....Check
- LEFT WING:**
- Main Wheel/Strut.....Check
 - Brakes.....Check
 - Main Fuel Quantity.....Check
 - Fuel Vent.....Check
 - Oil.....6 Qts Min
 - Cowling.....Check
 - Propeller.....Check
 - Aux Fuel Quantity.....Check
 - Leading Edge.....Check
 - Pitot Head.....Check
 - Nav/Anti Collision.....Check
 - Aileron.....Check
 - Flap.....Check
- FUSELAGE/TAIL:**
- Antennas.....Check
 - Lights.....Check
 - Stabilator.....Check
 - Rudder.....Check
 - Baggage Door.....Check

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