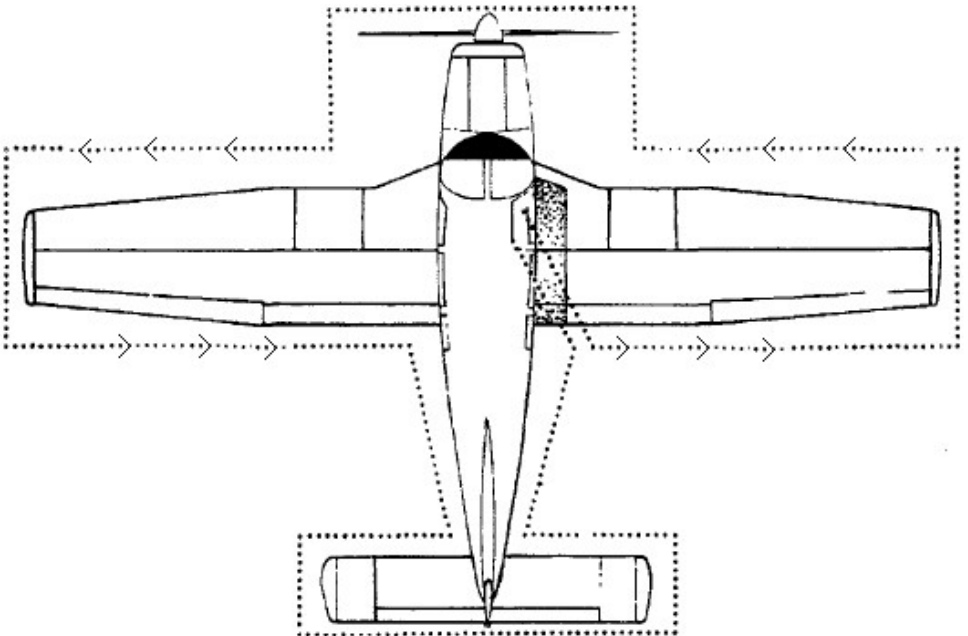


NORMAL OPS

WALK AROUND



PRE-FLIGHT

PREPARATION

Airplane status	Airworthy – AROW DOCS
Baggage	Weighed, stowed, secured
Flight Plan, Performance	Computed and Safe
W&B and CG	Within Limits

COCKPIT

1 Control wheel	Release Belts
2 Avionics	OFF
3 Electric switches	OFF
4 Magnetos	OFF
5 Mixture	Idle Cut-Off
6 Flaps	DOWN
7 Master Switch	ON
8 Fuel Qty gauges	Check
9 Cockpit Lighting	Check
10 Exterior Lighting	Check
11 Stall warning	Check
12 Pitot Heat	Check
13 Master Switch	OFF
14 Electrical Switches	OFF
15 Tow Bar	Stow
16 Windows and Windshield	Check and Clean
17 Baggage Door	Close, Secure and Unlocked.

WING (EACH)

1 Wing	Free of ice, snow, frost
2 Control Surfaces	Check for interference
3 Hinges	Check for interference
4 Fuel Tanks	Check qty, secure cap
5 Fuel Tank Sump	Check for water, sediment, smell
6 Fuel Vent	Clear

Piper Warrior II

7 Tie down and chock	Remove
8 Gear Strut	Proper Inflation ~ 4.5"
9 Tire	Check
10 Break block and discs	Check
11 Fresh air inlet	Clear
12 Static Wicks (if installed)	Check
13 Pitot Head	Remove Cover / Holes Clear
NOSE SECTION	
1 Fuel and Oil	Check for Leaks
2 Cowling	Secure
3 Propeller and Spinner	Check
4 Air inlets	Clear
5 Alternator Belt	Check Tension
6 Nose chock	Remove
7 Nose gear strut	Proper inflation ~ 3.25"
8 Nose wheel tire	Check
9 Oil	Check level
10 Dipstick	Properly seated
11 Fuel Strainer	Drain, check contaminants
FUSELAGE	
1 Antennas	Check
2 Empennage	Free of ice, snow, frost
3 Fresh air inlet	Clear
4 Stabilator and trim tab	Check for interference
5 Tie down	Remove
6 Passengers	Board
7 Cabin door	Close and secure
8 Seat belts and harnesses	Fasten – Check inertia reel

PRE-START

1 PREFLIGHT - COMPLETE	6 CARB HEAT - OFF
2 SEATS AND BELTS - ADJUST	7 PARKING BRAKE - SET
3 PASSENGERS - INSTRUCT	8 PRIME – IF COLD START
4 FLAPS - UP	9 PRIMER - LOCK
5 CIRCUIT BREAKERS - CHECK	10 AVIONICS - OFF

STARTING

1 MASTER BATTERY SWITCH - ON
2 BEACON - ON
3 FUEL SELECTOR - FULLEST TANK
4 (NIGHT) NAV LIGHTS - ON
5 MIXTURE - RICH
6 BOOST (FUEL) PUMP - ON
7 THROTTLE – OPEN ¼ (COLD) or ½ (HOT)
8 PROPELLER AREA – CLEAR
9 STARTER - ENGAGE
10 OIL PRESSURE - CHECK
11 WARMUP - 750 - 900 RPM
12 MIXTURE – LEAN FOR TAXI
13 BOOST PUMP - OFF
14 MASTER ALTERNATOR SWITCH – ON (VOLTS ABOVE 13)
15 RADIOS - ON / FREQUENCY SET
16 TRANSPONDER - 1200
17 PARKING BREAK - OFF
18 TAXI SLOWLY - CHECK BRAKES
19 PARKING AREA - CHECK FOR LEAKING FLUIDS

PRE-TAKEOFF RUN UP

- 1 PARKING BREAK - **SET**
- 2 MIXTURE - **RICH**
- 3 THROTTLE - **SMOOTHLY TO 2000 RPM**
- 4 ENGINE INSTRUMENTS - **WITHIN GREEN**
- 5 CARBURATOR HEAT – **RPM DROP**
- 6 VACUUM - **4.8" - 5.1"**
- 7 MAGS - **CHECK (175 MAX DROP, 50 DIFF)**
- 8 ANNUNCIATOR PANEL - **PRESS TO TEST**
- 9 BOOST PUMP – **ON (CHECK FUEL PRESSURE)**
- 10 BOOST PUMP - **OFF**
- 11 THROTTLE - **1000 RPM**
- 12 FLIGHT CONTROLS - **FREE & CORRECT**
- 13 FLIGHT INSTRUMENTS - **CHECK & SET**
- 14 PRIMER - **LOCKED**
- 15 FLAPS - **AS REQUIRED**
- 16 TRIM (RUDDER & ELEVATOR) - **SET**
- 17 MIXTURE - **SET**
- 18 RADIOS - **FREQUENCY SET**
- 19 TRANSPONDER - **SQUAWK & ALT**
- 20 DOOR & WINDOW - **CLOSED & LATCHED**
- 21 ENGINE GUAGES - **CHECK**
- 22 SEATS - **CHECK TRACKS LOCKED**
- 23 RESTRAINT SYSTEM - **FASTENED**
- 24 BOOST PUMP – **ON**
- 25 NAV LIGHTS - **ON**
- 26 LANDING LIGHT - **ON**
- 27 STROBE LIGHTS - **ON**
- 28 **BEFORE TAKE OFF BRIEFING AND READ OUTLOUD TAKE OFF AND CLIMB CHECKLIST**

TAKEOFF AND CLIMB OUT

ROTATE - 52 KTS	V _x	63
1000' AGL – FUEL PUMP OFF	V _y	79
1500' AGL – 87 KTS		

APPR & LANDING - BGUMPLS (verbalize)

B	BOOST PUMP - ON	V _{FE} – 103 KTS
G	GAS - FULLEST TANK	V _{REF} – 63 KTS
U	UNDERCARRIAGE - DOWN & WELDED	
M	MIXTURE - RICH	<i>NOTE: SWITCH FUEL TANKS</i>
P	POWER – 2300-2500 RPM	<i>ONLY WHEN YOU CAN MAKE</i>
L	LANDING LIGHT - ON	<i>A SAFE LANDING IN THE</i>
S	SEATS & BELTS - CHECK	<i>EVENT OF ENGINE FAILURE</i>

AFTER LANDING

1 FLAPS - RETRACTED	2 - BOOST PUMP - OFF
3 LANDING LIGHT - OFF (DAYTIME)	4 – STROBE LIGHTS - OFF

SHUTDOWN

1 AVIONICS MASTER SWITCH - OFF	
2 THROTTLE - 1000 RPM	<i>NOTE: REMOVE ALL TRASH &</i>
3 MIXTURE - IDLE / CUT OFF	<i>PERSONAL ITEMS. SECURE</i>
4 MAGNETOS - OFF	<i>CHAINS. INSTALL AIRCRAFT</i>
5 ALL LIGHTS - OFF	<i>COVER.</i>
6 MASTER SWITCH - OFF	
7 HOBBS / TACH - RECORD	
8 SEATBELTS - SECURE AROUND WHEEL	

OPERATING NOTES

TAKEOFF

Normal: VR 55 KTS Then Vy

Soft field: Flaps 25, Nose up, Vx in gnd effect

Short fld: Flaps 25, VR 52, 57 to obstacle then Vy

CLIMB

To 1000' AGL Fuel pump Off. After 1500' AGL, 87 KTS

CRUISE

65% POWER AT 2450 RPM

PATTERN

DOWNWIND: 2300RPM, 90KTS, F/PUMP ON, HOLD ALT

NUMBERS: 1650 RPM, FLAPS 10, 80 KTS. 500 FPM

BASE: FLAPS 25, 70 KTS.

FINAL: FULL FLAPS, VREF 65 KTS

LANDING

Normal: Full Flaps, Ease power on flare

Short: Full Flaps, VREF 63KTS. Idle before abv flare

Retract Flaps and brake heavily.

Soft: Full Flaps, carry power into flare, land on mains

Nose down Easy

180° : Abeam t/d point, idle, pitch level, best glide. Add flaps and maintain best glide.

GO AROUND

Power up (Mix / Throttle)

Flaps 25, pitch for Vy, Retract flaps in 10 KTS increment in the speed

Clearing turns, landing spot, radio calls, outside ref (heading)**SLOW FLIGHT**

Outside reference	Select
RPM	1500
IAS	95 KTS
Flaps	10°
IAS	80 KTS
Flaps	25°
IAS	75 KTS
Flaps	40°
IAS	50-55 KTS
RPM	2100 Initial
RPM	Adjust
PITCH FOR SPEED	POWER FOR ALTITUDE

RECOVERY

Lower nose - IAS	60 KTS
Throttle	FULL FWD (Right rudder)
Flaps	25°
IAS	65 KTS
Flaps	10°
IAS	70 KTS
Flaps	0°

Resume navigation and cruise power setting and lean

Clearing turns, landing spot, radio calls, outside ref (heading)**POWER OFF STALLS (B-GUMPS)**

Electrical Fuel Pump	ON
RPM	1500
IAS	90 KTS
Flaps	10°
IAS	80 KTS
Flaps	25°
IAS	75 KTS
Flaps	40°
IAS	65 KTS
PITCH DOWN	2 Seconds
PITCH LEVEL	NOSE TO HORIZON
CALL INDICATION	HORN, BUFFET

RECOVERY

Lower nose - IAS	+55 KTS
Throttle	Full Fwd
Flaps	25°
PITCH LEVEL	NOSE TO HORIZON
IAS	65 KTS
Flaps	10°
IAS	70
Flaps	0°
Fuel Pump	OFF

Resume navigation and cruise power setting and lean

Clearing turns, landing spot, radio calls, outside ref (heading)**POWER ON STALLS**

RPM	1500
ALTITUDE	Maintain
IAS	55 KTS
Throttle	FULL FWD (Right rudder)
Pitch	+15°
CALL	HORN, BUFFET

RECOVERY

PITCH LEVEL	NOSE TO HORIZON
<i>Resume navigation and cruise power setting and lean</i>	

Clearing turns, landing spot, radio calls, outside ref (heading)**STEEP TURNS (45° x 1 PSEL / 50° x 2 CSEL)**

RPM	2200
TRIM	STRAIGHT & LEVEL
BANK	30°
RPM	2400 - 2500
BACK PRESSURE + BANK	45° (50° CSEL)

RECOVERY

Degrees from entry	20 °
RPM	2200
Heading	Entry

Resume navigation

Clearing turns, landing spot, radio calls, outside ref (heading)**GROUND REF MANEUVERS (600'-1000' AGL)****ELECTRICAL FUEL PUMP****ON****RPM****2200-2300****IAS****90 KTS****HEADING****Enter downwind****URNS AROUND A POINT****RADIUS FROM POINT****Keep Constant****HEADING****Exit downwind****ELECTRICAL FUEL PUMP****OFF****S-TURNS OVER A ROAD**

Cross perpendicular to the road and start the turn

Constant half-circles in each direction

Steeper bank on downwind, shallow on upwind

ELECTRICAL FUEL PUMP**OFF****8's ON PYLONS****MAX BANK****30° to 40°****HEADING****Exit downwind****ELECTRICAL FUEL PUMP****OFF**

SHORT FIELD

TAKE OFF

Flaps	25°
Rwy Use	Max possible
Toe Breaks	Hold
Power	Full
Toe Breaks	Release @ MAX RPM
VR	52 KTS
Vx @ 25° Flap	57 KTS
Altitude	+50' AGL (Positive rate)
IAS	63 KTS
Flaps	10°
Altitude	200' AGL
Flaps	0°
IAS	79 KTS
Altitude 1000' AGL	FUEL PUMP OFF
Altitude 1500' AGL	87 KTS

LANDING

Flaps	40°
VREF	63 KTS
POWER	IDLE 150' BEFORE TD
BREAKS	MAX BREAK
FLAPS	0°

SOFT FIELD

TAKE OFF






Flaps	25°
Nose	UP
Power	Full
Altitude	10' AGL (Ground effect)
IAS	52 KTS
Altitude	+50' AGL (Positive rate)
IAS	63 KTS
Flaps	10°
Altitude	200' AGL
Flaps	0°
IAS	79 KTS
Altitude 1000' AGL	FUEL PUMP OFF
Altitude 1500' AGL	87 KTS

LANDING

Flaps	40°
VREF	70 KTS
POWER	CARRY INTO FLARE
	LAND ON MAINS
Nose	UP
Breaks	Minimal
Power	As necessary
Nose	Down Easy

EMERGENCIES

LIGHTGUN SIGNALS

Color / Type	On the Ground	In the Air
	Clear for take off.	Clear to land.
	Clear to taxi.	Return for landing (Followed by steady green)
	Stop.	Continue circling. Give way to other A/C.
	Taxi / Clear the runway.	Airport unsafe. Do not land.
	Return to starting point.	N/A.
	Exercise extreme caution.	Exercise extreme caution.

ENGINE FIRE DURING START

- | | |
|-----------------------|--------------|
| 1) STARTER | CRANK ENGINE |
| 2) MIXTURE | IDLE CUT-OFF |
| 3) THROTTLE | FULL OPEN |
| 4) ELECTRIC FUEL PUMP | OFF |
| 5) FUEL SELECTOR | OFF |

ABANDONE IF FIRE CONTINUES

USE FIRE EXTINGUISHER IF AVAILABLE

ENGINE POWER LOSS ON TAKE OFF

- 1) If sufficient runway remains for a normal landing, land straight ahead
- 2) If you have enough altitude to attempt a restart:
 - A) MAINTAIN SAFE AIRSPEED - **BEST GLIDE 73 KTS**
 - B) FUEL SELECTOR - **SWITCH TANKS WITH FUEL**
 - C) ELECTRICAL FUEL PUMP - **ON**
 - D) MIXTURE - **RICH**
 - E) CARB HEAT - **ON**

NOTE

If engine failure was caused by fuel exhaustion, power will not be regained after tanks are switched until empty fuel lines are filled, which might take up to 10 seconds.

If power is not regained, proceed with the POWER OFF LANDING procedure

ENGINE POWER LOSS ON IN FLIGHT

If it occurs at low altitude, prepare for **POWER OFF LANDING**.

- 1) FUEL SELECTOR - **SWITCH TANKS WITH FUEL**
- 2) ELECTRICAL FUEL PUMP – **check ON**
- 3) MIXTURE – **check RICH**
- 4) CARB HEAT - **ON**
- 5) PRIMER - **LOCKED**

When power is restored

CARB HEAT - **OFF**

Electrical Fuel Pump - **OFF**

If no power is restored, prepare for Emergency Landing. If time permits:

- 1) Ignition Switch - "L" then "R" then back to "BOTH"
- 2) Throttle and Mixture - Different settings
- 3) Try another fuel tank

NOTE – TRIM FOR 73KTS

If engine failure was caused by fuel exhaustion, power will not be regained after tanks are switched until empty fuel lines are filled, which might take up to 10 seconds.

If power is not regained, execute POWER OFF LANDING.

ENGINE ROUGHNESS

- 1) CARB HEAT – **ON**

If roughness continues after one minute:

- A) CARB HEAT – **OFF**
- B) MIXTURE – **ADJUST FOR MAX SMOOTHNESS**
- C) ELECTRIC FUEL PUMP – **ON**
- D) FUEL SELECTOR – **SWITCH TANKS**
- E) ENGINE GAUGES - **CHECK**
- F) MAG SWITCH – **L then R then BOTH**. *If one mag is bad, cont on good mag at reduced power, mixture **RICH** to 1st airport.*

OPEN DOOR

An open door will not affect normal flight characteristics, normal landing can be made. A slip to the right will assist with procedure.

- 1) IAS – **89 KTS**
- 2) Cabin Vents - **CLOSE**
- 3) Storm Window - **Open**
- 4) If upper latch is open - **Latch.**

If lower latch is open -open top latch, push door further open and then close rapidly. **Latch side then top latch.**

LOSS OF OIL PRESSURE

-Loss of oil pressure may be either partial or complete. A partial Loss of oil pressure usually indicates malfunction in the oil pressure regulating system, and a landing should be made ASAP

-A complete loss of oil press. Indication may signify oil exhaustion or faulty gauge. Proceed towards the nearest airport, prepare for a forced landing. If the problem is not a pressure gauge malfunction, the engine may stop suddenly. Maintain altitude until then as a dead stick landing can be accomplished. Don't change power settings unnecessarily, as this may hasten complete power loss.

-Depending on the circumstances, it may be better to make an off airport landing while power is still avail, moreover if other indications of actual oil pressure loss, such as sudden increase in temp, or oil smoke, are apparent, and an airport is not close.

If engine stops, proceed to POWER OFF LANDING.

LOSS OF FUEL PRESSURE

- 1) Electric Boost Pump – **On**
 - 2) Mixture Control – **Forward**
 - 3) Fuel Selector - **Check on full tank.**
- If problem is not an empty fuel tank, land as soon as practicable.

POWER OFF LANDING

Trim for **73KTS**. Check nearest airport/suitable field. squawk **7700**
Spiral over landing spot, try to be 1000' on downwind.

Reduce **IAS to 63 KTS**.

- 1) Ignition – **OFF. KEYS OUT**
- 2) Master Switch – **OFF**
- 3) Fuel Selector - **OFF**
- 4) Mixture - **Idle cut-off**
- 5) Tighten seat belts and shoulder harness.
- 6) Door - **Unlatched**
- 7) ELT - **Activate**
- 8) **TOUCH DOWN NORMAL AT LOWEST POSSIBLE SPEED**

CARBURATOR ICE

- 1) Carburator Heat - **ON**
- 2) Mixture – **Adjust for max smoothness**

SPINS - Intentional spins are prohibited

- 1) THROTTLE - **IDDL**.
- 2) AILERONS - **NEUTRAL**.
- 3) RUDDER - **FULL OPPOSITE TO DIRECTION OF ROTATION**.
- 4) CONTROL WHEEL - **FULL FORWARD**
- 5) RUDDER - **NEUTRAL (WHEN ROTATION STOPS)**.
- 6) CONTROL WHEEL - **AS REQUIRED TO SMOOTHLY REGAIN LEVEL FLIGHT ATTITUDE**.

FIRE IN FLIGHT- ID Source Immediately

1) Cabin Heater and Defroster - **OFF**

ELECTRICAL FIRE - (Smoke in cabin)

2) Master Switch - **OFF**

3) Vents - **OPEN**

4) Cabin Heat - **OFF**

5) Land as soon as practicable

ENGINE FIRE IN FLIGHT

2) Fuel Selector - **OFF**

3) Throttle - **CLOSE**

4) Mixture - **IDLE CUT OFF**

5) AIS – **INCREASE**

6) Electric Fuel Pump – **check OFF**

7) If terrain permits - **LAND IMMEDIATELY**

ENGINE FIRE ON THE GROUND

A) ENGINE NOT STARTED

1) Mixture - **IDLE CUT OFF**

2) Throttle - **OPEN**

3) Turn engine with starter

B) ENGINE RUNNING

1) Continue to try pull fire into the engine

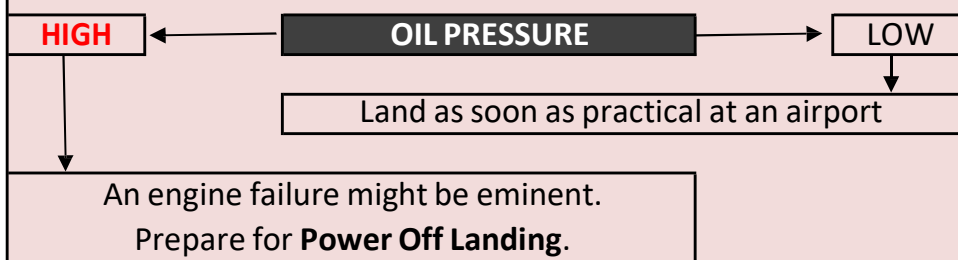
IF FIRE CONTINUES AFTER A FEW SECONDS

1) Extinguish by external means.

2) Fuel Selector - **OFF**

3) Mixture - **IDLE CUT OFF**

HIGH OIL TEMPERATURE



ELECTRICAL FAILURE

When operating with light load and charged battery, ALT light may illuminate due to minimal Alternator output. Increase load to see if warning goes away.

1) Actuate an electrically power device (i.e. **Landing Light**)

2) Ammeter – **Verify INOP**

If so, 3) Reduce electrical Load

4) Alternator Circuit Breakers - **CHECK**

5) "Alt" Switch - **OFF** (for 1 second), then **ON**.

If ammeter still indicates "0", or alternator will not stay reset

6) Maintain minimum electrical load

7) "Alt" Switch - **OFF**

8) Land as soon as practical

ELECTRICAL OVERLOAD

Alternator over 20 amps above known electrical load

ALT switch – **ON** If alternator loads are reduced

BATT switch – **OFF** Reduce electrical load to minimum

If alternator loads are not reduced:

ALT switch – **OFF**

BATT switch – **AS REQ** **Land as soon as possible**