

NORMAL PROCEDURES CHECKLIST

Piper
Freedom of Flight

Seneca V
PA 34 220



This Checklist does not replace POH!!!

PREFLIGHT CHECKLIST

COCKPIT

Control Wheel	RELEASE RESTRAINTS
Static System	DRAIN
Parking Brake	SET
Magneto Switches	OFF
Standby Fuel Pump Switches	OFF
Flight Controls	PROPER OPERATION
Gear Selector	DOWN
Throttles	IDLE
Mixture Controls	IDLE CUT-OFF
Alternate Static Source	NORMAL
Cowl Flaps	OPEN
Stabilator & Rudder Trim	NEUTRAL
Fuel Selectors	ON
Radio Master Switch	OFF
All Electrical Switches	OFF
Battery Master Switch	ON
Annunciator Panel	PRESS TO TEST
Fuel Gauges	CHECK QUANTITY
Landing Gear Lights	3 GREEN
Flaps	EXTEND
Battery Master Switch	OFF
Windows	CHECK CLEAN
Required Papers	CHECK ON BOARD
POH	CHECK ON BOARD
Baggage	STOW PROPERLY – SECURE
Crossfeed Drains	DRAIN

RIGHT WING

Crossfeed Drains	CHECK CLOSED
Surface Condition	CLEAR of ICE, FROST & SNOW
Flap and Hinges	CHECK
Aileron, Hinges & Freedom of Movement	CHECK
Static Wicks	CHECK
Wing Tip and Nav/Anti-Collision Lights	CHECK
Fuel Filler Cap	CHECK & SECURE
Fuel Tank Vent	CLEAR

CAUTION

When draining any amount of fuel, care should be taken to ensure that no fire hazard exists before starting engine.

Wing Tank Drains (2)	DRAIN
Tie Down	REMOVE
Fuel Filter Drain	DRAIN
Engine Oil & Cap	CHECK & SECURE
Propeller & Spinner	CHECK
Air Inlets	CLEAR
Cowl Flap Area	CHECK
Main Gear Strut	PROPER INFLATION (8cm +- 1,5 cm)
Main Wheel Tire	CHECK
Brake, Block & Disc	CHECK
Chock	REMOVE

NOSE SECTION

General Condition	CHECK
Windshield	CLEAN
Landing Lights	CHECK
Tow bar	REMOVED AND STOWED

Chock	REMOVE
Nose Gear Strut	PROPER INFLATION (3cm+-0,8cm)
Nose Wheel Tire	CHECK
Forward Baggage Door (key removable in locked position only)	SECURE AND LOCKED

LEFT WING

Surface Condition	CLEAR of ICE, FROST & SNOW
Main Gear Strut	PROPER INFLATION (8cm +- 1,5 cm)
Brake, Block & Disc	CHECK
Chock	REMOVE
Cowl Flap Area	CHECK
Engine Oil & Cap	CHECK & SECURE
Propeller & Spinner	CHECK
Air Inlets	CLEAR
Fuel Filter Drain	DRAIN
Stall Warning Vanes (2)	CHECK
Pitot Head	CLEAR
Tie Down	REMOVE

CAUTION

When draining any amount of fuel, care should be taken to ensure that no fire hazard exists before starting engine.

Wing Tank Drains (2)	DRAIN
Fuel Tank Vent	CLEAR
Fuel Filler Cap	CHECK & SECURE
Wing Tip and Nav/Anti-Collision Lights	CHECK
Aileron, Hinges & Freedom of Movement	CHECK
Flap and Hinges	CHECK
Static Wicks	CHECK

FUSELAGE (LEFT SIDE)

General Condition	CHECK
Antennas	CHECK
Fresh Air Inlet	CLEAR
Battery Vents	CLEAR
External Power Receptacle	CHECK
Rear Doors	LATCHED
Left Static Vent	CLEAR

EMPENNAGE

Surface Condition	CLEAR of ICE, FROST & SNOW
Anti-Collision Light	CHECK
Stabilator, Trim Tab & Freedom of Movement	CHECK
Rudder, Trim Tab & Freedom of Movement	CHECK
Static Wicks	CHECK
Tie Down	REMOVE

FUSELAGE (RIGHT SIDE)

General Condition	CHECK
Fresh Air Inlet	CLEAR
Right Static Vent	CLEAR
Cabin Door	CHECK

MISCELLANEOUS

Battery Master Switch	ON
Flaps	RETRACT
Interior Lighting (Night Flight)	ON & CHECK

CAUTION

Care should be taken when an operational check of the heated pitot head is being performed. The unit becomes very hot. Ground operation should be limited to 3 minutes to avoid damaging the heating elements.

Pitot Heat/Lift Detect Switch	ON
Exterior Lighting Switches	ON & CHECK
Pitot Head	CHECK – WARM
Lift Detect Switch	CHECK – WARM
All Lighting Switches	OFF
Pitot Heat/Lift Detect Switch	OFF
Battery Master Switch	OFF
Passengers	BOARD

BEFORE STARTING ENGINE

Preflight Check	COMPLETED
Flight Planning	COMPLETED
Aft Cabin Doors	CLOSE & SECURE
Forward Cabin Door	CLOSE & SECURE
Seats	ADJUSTED & LOCKED

CAUTION

With the shoulder harness fastened and adjusted, a pull test of its locking restraint feature should be performed.

Seatbelts and Harness	FASTEN/ADJUST CHECK INERTIA REEL
Empty Seats	SEAT BELTS SNUGLY FASTENED
Alternators	ON

WARNING

No braking will occur if knob is pulled before brake application.

Parking Brake	SET
Gear Selector	GEAR DOWN
Throttles	IDLE
Propeller Controls	FULL FORWARD
Mixture	IDLE CUT-OFF
Friction Handle	AS DESIRED
Alternate Air Controls	OFF
Cowl Flaps	OPEN
Stabilator & Rudder Trim	SET
Fuel Selectors	ON
Heater Switch	OFF
Radio Master Switch	OFF
Electrical Switches	OFF
Circuit Breakers	CHECK IN

CAUTION

For cold weather starting, ensure magneto and master switches are off and mixture controls are in idle cut-off before turning propeller manually.

NOTE

When starting at ambient temperatures -6°C and below, operate first engine started with alternator ON (at max charging rate not to exceed 1500 RPM) for 5 minutes minimum before initiating start on second engine.

To prevent starter damage, limit starter cranking to 30-second periods. If the engine does not start within that time, allow a cooling period of several minutes before engaging starter again. Do not engage the starter immediately after releasing it. This practice may damage the starter mechanism.

NOTE

If available, preheat should be considered. Rotate each propeller through three times manually during preflight inspection.

NOTE

Do not attempt an engine start while the engine gauges are in the process of conducting the self test feature.

NORMAL START – COLD ENGINE

Propeller Controls	FULL FORWARD
Battery Master Switch	ON
Gear Lights	3 GREEN
Fin Strobe Light	ON
*Throttle	1 INCH OPEN
*Standby Fuel Pump	ON
*Magneto Switches	ON
*Mixture	RICH – THEN IDLE CUT-OFF

NOTE

The amount of prime depends on engine temperature. Familiarity and practice will enable the operator to estimate the amount of prime required.

*Propeller Area	CLEAR
*Starter	ENGAGE
*Mixture (when engine fires)	ADVANCE
*Throttle	ADJUST 1000 RPM
*Oil Pressure	CHECK
*Standby Fuel Pump	OFF or AS REQUIRED

Repeat Above Procedure (*) for Second Engine Start

Voltmeter	CHECK (28+-1 VOLT)
Alternator	CHECK AMP OUTPUT
Gyro Vacuum	CHECK (within normal operating range)

ENGINE START – COLD WEATHER (NORMAL START FOR OE-FMW)

Propeller Controls	FULL FORWARD
Battery Master Switch	ON
Gear Lights	3 GREEN
Fin Strobe Light	ON
*Throttle	½ INCH OPEN
*Standby Fuel Pump	ON
*Magneto Switches	ON
*Mixture	FULL RICH
*Throttle	IDLE (after 5 sec. of prime)
*Propeller area	CLEAR
*Starter	ENGAGE
*Throttle	ADJUST AS REQUIRED
*Oil Pressure	CHECK
*Standby Fuel Pump	OFF or AS REQUIRED

Repeat Above Procedure (*) for Second Engine Start

Voltmeter	CHECK (28+-1 VOLT)
Alternator	CHECK AMP OUTPUT
Gyro Vacuum	CHECK (within normal operating range)

NORMAL START – HOT ENGINE

Propeller Controls	FULL FORWARD
Mixture	IDLE CUT-OFF
Battery Master Switch	ON
Gear Lights	3 GREEN
Fin Strobe Light	ON
*Throttle	1/2 INCH OPEN
*Standby Fuel Pump	OFF

NOTE

Pump may be turned ON after successful engine start, if long periods of engine idle in high ambient temperatures are anticipated.

*Magneto Switches	ON
*Propeller Area	CLEAR
*Starter	ENGAGE
*Mixture (when engine fires)	ADVANCE
*Throttle	ADJUST 1000 RPM
*Oil Pressure	CHECK

Repeat Above Procedure (*) for Second Engine Start

Voltmeter	CHECK (28+-1 VOLT)
Alternator	CHECK AMP OUTPUT
Gyro Vacuum	CHECK (within normal operating range)

ENGINE START WHEN FLOODED

Propeller Controls	FULL FORWARD
Mixture	IDLE CUT-OFF
Battery Master Switch	ON
Gear Lights	3 GREEN
Fin Strobe Light	ON
*Throttle	OPEN FULL
*Standby Fuel Pump	OFF

NOTE

Pump may be turned ON after successful engine start, if long periods of engine idle in high ambient temperatures are anticipated.

*Magneto Switches	ON
*Propeller Area	CLEAR
*Starter	ENGAGE
*Mixture (when engine fires)	ADVANCE SLOWLY
*Throttle	RETARD to 1000 RPM
*Oil Pressure	CHECK

Repeat Above Procedure (*) for Second Engine Start

Voltmeter	CHECK (28+-1 VOLT)
Alternator	CHECK AMP OUTPUT
Gyro Vacuum	CHECK (within normal operating range)

ENGINE START WITH EXTERNAL POWER SOURCE**NOTE**

For all normal operations using an external power source, the battery master switch should be OFF, but it is possible to use the ship's battery in parallel by turning the battery master switch ON. This will give longer cranking capabilities, but will not increase the amperage.

CAUTION

Care should be exercised because if the ship's battery has been depleted, the external power supply can be reduced to the level of the ship's battery. This can be tested by turning the battery master switch ON momentarily while the starter is engaged.

If cranking speed increases, the ship's battery is at a higher level than the external power supply. If the battery has been depleted by excessive cranking, it must be recharged before the second engine is started. All the alternator current will go to the low battery until it receives sufficient charge, and it may not start the other engine immediately.

Battery Master Switch	OFF
Alternator Switches	OFF
All Electrical Equipment	OFF
Receptacle Door	OPEN
External Power Plug	INSERT in RECEPTACLE

Proceed with normal start.

Throttles	LOWEST POSSIBLE RPM
External Power Plug	DISCONNECT from RECEPTACLE
Receptacle Door	CLOSE & SECURE
Battery Master Switch	ON
Alternator Switches	ON
Throttles	1000 RPM

Oil Pressure	CHECK
Voltmeter	CHECK BUS VOLTAGE (28+-1 Volt)
Alternator Output	CHECK, BOTH LT and RT
Gyro Vacuum	CHECK (within normal range)

BEFORE TAXI CHECKLIST

Warm-Up

External Power Source Unit	REMOVE (IF APPLIED)
Throttles	1000 to 1200 RPM

Before Taxi

Battery Master Switch	ON
Radio Master Switch	ON
Gyros	SET
Altimeter	CHECK & SET
Nav Lights	ON
Heater and Defroster	AS DESIRED
Fuel Selectors	ON - CHECK CROSSFEED 15 SEC
GNS 530 / GNS 430	POWERED & ACKNOWLEDGED
GNS 530 / GNS 430	TAS NORMAL SET (NAV Page 3)
EX500 MFD	POWERED & ACKNOWLEDGED
Autopilot	TEST (CHECK RDY INDICATION)
Electric Trim	CHECK
Passenger Briefing	COMPLETE
Transponder	STBY or ON
Parking Brake	RELEASE

TAXI CHECKLIST

Taxi Area	CLEAR
Taxi Lights	ON
Standby Fuel Pumps	AS REQUIRED

NOTE

During extended periods of engine idle at high ambient temperatures, fuel flow to the engine can be interrupted by the formation of fuel vapor bubbles in the fuel line. This condition can be corrected by turning standby fuel pump ON, to provide positive pressure to the engine driven pump inlet.

Throttles	APPLY SLOWLY
Brakes	CHECK
Steering	CHECK
Flight Instruments	CHECK

NOTE

During taxi, if the Low Bus Voltage annunciator illuminates, increase engine RPM (if possible) to retain adequate battery charging.

GROUND CHECKLIST**CAUTION**

Alternate air is unfiltered. Use of alternate air during ground or flight operations, when dust or other contaminants are present, may result in engine damage from particle ingestion.

Parking Brake	SET
Taxi Light	OFF
Mixtures	FULL RICH
Propeller Controls	FULL FORWARD
Throttles	1000 RPM
Engine Instruments	CHECK

Throttles - Both	1500 RPM
Propeller Controls - Both (max. Drop – 300 RPM)	FEATHER - CHECK
Throttles – Both	1700 RPM
Propeller Controls – Both (max. Drop -300 RPM)	EXERCISE
Alternate Air - Both	CHECK ON (OBSERVE APPROX. 25 RPM DROP) THEN OFF
Throttles - Both	1700 RPM
Magnetos (max. Drop – 150 RPM; max. Diff. – 50 RPM)	CHECK
Voltmeter	CHECK BUS (28+-1 VOLT)
Alternator Output	CHECK, BOTH LT and RT
Annunciator Panel Lights	OUT
Gyro Vacuum Gauge	CHECK (within normal range)

WARNING

If flight into icing conditions (in visible moisture below +5°C) is anticipated or encountered during climb, cruise or descent, activate the aircraft ice protection system, including the pitot heat.

Ice Protection Equipment	CHECK AS REQUIRED
Throttles – Both	1000 RPM
Friction Handle	SET

BEFORE TAKEOFF CHECKLIST

Doors	LATCHED
Seat Backs	ERECT
Seats	ADJUSTED & LOCKED IN POSITION
Seat Belts, Harnesses	FASTENED / ADJUSTED
Armrests	STOWED
Battery Master Switch	ON
Alternators	ON
Standby Fuel Pumps	ON

Flight Instruments	CHECK & SET FOR DEPARTURE
Autopilot - Altitude Selector Alerter	CHECK QNH SET
Engine Instruments	CHECK
Prop Heat	AS REQUIRED
Windshield Heat	AS REQUIRED
Pitot / Stall Warning Heat	ON
Prop Controls	FULL FORWARD
Mixtures	FULL FORWARD
Alternate Air	OFF
Flaps	SET
Airconditioner	OFF
Stabilator and Rudder Trims	SET
Yaw Damper	OFF or AUTO
Fuel Selectors	ON
Flight Controls	CHECK
Parking Brake	RELEASE

CAUTION

Fast taxi turns immediately prior to takeoff should be avoided to prevent unporting fuel feed lines.

NOTE

Takeoffs are normally made with full throttle. However, under some off standard conditions, the manifold pressure indication can exceed its indicated limit at full throttle. Limit manifold pressure to 38 in.Hg. maximum.

LINEUP PROCEDURE

Landing Light	ON or PULSE
Strobe Lights	ALL ON
Transponder	ALT
Taxi Light	OFF
Runway	IDENTIFIED
Flight Instruments	RECHECK

NORMAL (0° FLAP) PERFORMANCE TAKEOFF PROCEDURE

Flaps	UP
Stabilator and Rudder Trim	CHECK SET
Brakes	HOLD
Mixture	FULL RICH
Power	2600 RPM, 38 in.Hg. MAN PRESS
Brakes	RELEASE
Rotate Speed	79 KIAS
Obstacle Clearance Speed	79 KIAS
Gear	UP
Climb Speed	88 KIAS

SHORT FIELD PERFORMANCE TAKEOFF PROCEDURE

Flaps	25°
Stabilator and Rudder Trim	CHECK SET
Brakes	HOLD
Mixture	FULL RICH
Power	2600 RPM, 38 in.Hg. MAN PRESS
Brakes	RELEASE
Rotate Speed	71 KIAS
Obstacle Clearance Speed	73 KIAS
Gear	UP
Flaps	RETRACT WHILE ACCELERATING
Climb Speed	88 KIAS

CLIMB CHECKLIST

MAXIMUM PERFORMANCE CLIMB

Best Rate (Flaps Up)	88 KIAS
Best Angle (Flaps Up)	83 KIAS
Cowl Flaps	FULL OPEN
Power	Max. Continuous Power
Standby Fuel Pumps	OFF (ON above 10.000 ft)

CRUISE CLIMB

Mixture	FULL RICH
Power	2500 RPM, 32 in.Hg. MAN PRESS
Climb Speed	110 KIAS
Cowl Flaps	CLOSED or AS REQUIRED ½ OPEN
Standby Fuel Pumps	OFF (ON above 10.000 ft)

CRUISE CHECKLIST

Power	SET (STD MP 27" / 2300RPM)
Mixture Controls	ADJUST (MAX TIT 1450°F)
Prop Synchronizer	AS DESIRED
Standby Fuel Pumps	OFF
Cowl Flaps	AS REQUIRED

DESCENT CHECKLIST

Throttles	AS REQUIRED
Mixture Controls	ADJUST
Cowl Flaps	CLOSED
Altimeter	SET
Windshield Defrost	AS DESIRED
Prop Synchronizer	OFF

APPROACH CHECKLIST

NAV Source	VERIFY HSI (GPS/VLOC on GNS 530)
Seat Backs	ERECT
Seat Belts, Harnesses	FASTEN / ADJUST
Armrests	STOWED
Standby Fuel Pumps	ON
Fuel Selectors	ON
Cowl Flaps	AS REQUIRED

LANDING CHECKLIST

Mixture Controls	FULL RICH
Propeller Controls	FULL FORWARD
Landing Gear (Below 128 KIAS)	DOWN – 3 GREEN
Nacelle Mirror	NOSE GEAR DOWN
Airconditioner	OFF
Yaw Damper	OFF or AUTO
Prop Synchronizer	OFF
Brakes	DEPRESS TO CHECK
Landing Lights	ON or PULSE

NORMAL LANDING PROCEDURE

Flaps (Below 113 KIAS)	FULL DOWN
Airspeed	90 KIAS
Trim	AS REQUIRED
Throttles for Touchdown	AS REQUIRED
Touchdown	Main Wheels
Braking	AS REQUIRED

SHORT FIELD PERFORMANCE LANDING PROCEDURE

Flaps (Below 113 KIAS)	FULL DOWN
Airspeed	82 KIAS
Trim	AS REQUIRED
Throttles for Touchdown	IDLE
Touchdown	Main Wheels
Flaps	RETRACT
Control Wheel	BACK PRESSURE
Braking	MAXIMUM without SKIDDING

GO AROUND PROCEDURE

Mixtures	FULL RICH
Propeller Controls	FULL FORWARD
Throttles	FULL POWER
Control Wheel	BACK PRESSURE TO OBTAIN POSITIVE CLIMB ATTITUDE at 85 KIAS
Flaps	RETRACT SLOWLY
Gear	UP
Cowl Flaps	AS REQUIRED
Trim	AS REQUIRED

AFTER LANDING CHECKLIST

Clear of Runway.

Flaps	RETRACT
Cowl Flaps	FULL OPEN
Airconditioner	AS DESIRED
Weather Radar	OFF or STANDBY
Standby Fuel Pumps	AS REQUIRED

NOTE

During extended periods of engine idle at high ambient temperatures, fuel flow to the engine can be interrupted by the formation of fuel vapor bubbles in the fuel line. This condition can be corrected by turning standby fuel pump ON, to provide positive pressure to the engine driven pump inlet.

Strobe Lights	FIN
Landing and Taxi Lights	AS REQUIRED
Pitot Heat	OFF
Prop Heat	OFF
Windshield Heat	OFF
Transponder	STBY or ON

SHUTDOWN CHECKLIST

Parking Brake	SET
Taxi and Landing Lights	OFF
Heater (If ON)	FAN – 2 MIN THEN OFF
Nav Light	OFF
Transponder	SBY
Radio Master Switch	OFF
Electrical Equipment	OFF
Throttles	IDLE
Mixtures	IDLE CUT-OFF
Magneto Switches	OFF
Strobe Light	OFF
Alternator Switches	OFF
Panel Lights	OFF
Battery Master	OFF
Hobbs Meter	NOTICE

AIRSPEED LIMITATIONS

Design Maneuvering Speed	V_A 135 KIAS
Maximum Gear Extended Speed	V_{LE}128 KIAS
Maximum Landing Gear Operating Speed	V_{LO}128 KIAS (Extension) V_{LO}107 KIAS (Retraction)
Maximum Flaps Extended Speed	V_{FE}113 KIAS
Maximum Flaps extended Speed Flaps 10	V_{FE10}140 KIAS
Maximum Flaps extended Speed Flaps 25	V_{FE25}120 KIAS
Maximum Flaps extended Speed Flaps 40	V_{FE40}113 KIAS
One Engine Inop Best Rate of Climb Speed	V_{YSE}88 KIAS
One Engine Inop Best Angle of Climb Speed	V_{XSE}83 KIAS
Air Minimum Control Speed	V_{MCA}66 KIAS
Never Exceed Speed	V_{NE}204 KIAS
Maximum Structural Cruising Speed	V_{NO}164 KIAS
Intentional One Engine Inop Speed	V_{SSE}85 KIAS