

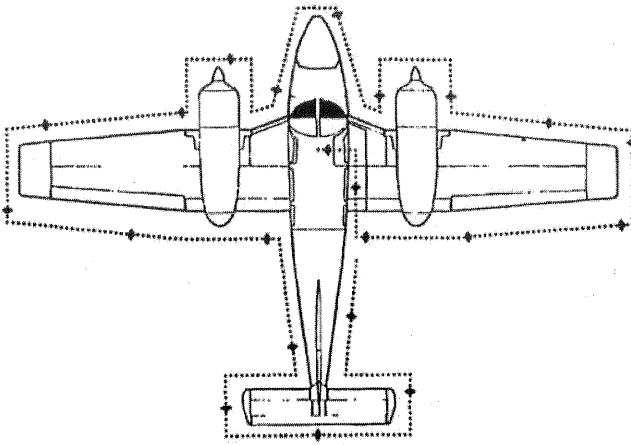
**PIPER PA44-SEMINOLE  
CHECK LIST  
NORMAL PROCEDURES**

**AIRSPEEDS FOR SAFE OPERATIONS**

The following airspeeds are those which are significant to the safe operation of the airplane. These figures are for standard airplanes flown at gross weight under standard conditions at sea level.

Performance for a specific airplane may vary from published figures depending upon the equipment installed, the condition of the engine, airplane and equipment, atmospheric conditions and piloting technique.

- (a) Best Rate of Climb Speed ..... 88 KIAS
- (b) Best angle of Climb Speed ..... 82 KIAS
- (c) Turbulent Air Operating Speed (See Subsection 2.3) ..... 135 KIAS
- (d) Maximum Flap Speed..... 111 KIAS
- (e) Landing Final Approach  
    Speed (Flaps 40°) Short Field Effort..... 75 KIAS
- (f) Intentional One Engine Inoperative Speed..... 82 KIAS
- (g) Maximum Demonstrated Crosswind Velocity ..... 17 KTS



**WALK-AROUND**

**NORMAL PROCEDURES CHECK LIST**

**PREPARATION**

- Airplane status ..... airworthy, papers on board
- Weather ..... suitable
- Baggage..... weighed, stowed, tied
- Weight and C.G ..... within limits
- Navigation..... planned
- Charts and navigation equipment..... on board
- Performance and range..... computed and safe

**PREFLIGHT CHECK**

**INSIDE CABIN**

- Landing gear control .....DOWN position
- Avionics..... OFF
- Master switch..... ON
- Landing gear lights .....3 GREEN
- Fuel quantity .....adequate plus reserve
- Cowl flaps ..... OPEN
- Master switch..... OFF
- Ignition switches ..... OFF
- Mixture controls.....idle cut-off
- Trim indicators ..... neutral
- Flaps ..... check operation
- Controls..... free
- Pitot and static systems ..... drain
- Empty seats ..... fasten belts
- Emergency exit ..... closed and locked

## OUTSIDE CABIN

Fuel sump drains ..... drain  
Right wing, aileron and flap ..... check, no ice  
Right main gear ..... no leaks  
Strut ..... proper inflation  
Tire ..... check  
Right wing tip ..... check  
Right leading edge ..... check, no ice  
Fuel cap ..... open, check quantity & color, secure  
Right Engine nacelle ..... check, oil  
Right propeller ..... check  
Cowl flaps ..... OPEN and secure  
Fuel drains ..... drain  
Nose section ..... check  
Nose gear ..... no leaks  
Strut ..... proper inflation  
Tire ..... check  
Tow bar ..... removed and stowed  
Landing light ..... check  
Windshield ..... clean  
Left wing, engine nacelle & landing gear ..... check as on right side  
Stall warning vanes ..... check  
Pitot/static mast ..... clear, checked  
Dorsal fin air scoop ..... clear  
Empennage ..... check, no ice  
Stabilator ..... free  
Antennas ..... check  
Navigation and landing lights ..... check  
Baggage door ..... secure and lock

## BEFORE STARTING ENGINES

Seats ..... adjusted  
Seat belts and harness ..... fastened  
Parking brake ..... set  
Circuit breakers ..... in  
Radios ..... OFF  
Cowl flaps ..... OPEN  
Carburetor heat ..... OFF  
Alternators ..... ON

## STARTING ENGINES

Fuel selector ..... ON  
Mixture ..... RICH  
Throttle ..... ¼ inch open  
Propeller ..... FORWARD  
Master switch ..... ON  
Electric fuel pump ..... ON  
Ignition switches ..... ON  
Propeller ..... clear  
Primer ..... as required  
Starter ..... engage  
Throttle ..... adjust when engine starts  
Oil pressure ..... check  
Repeat for opposite engine.  
Alternators ..... check  
Gyro suction ..... check

### NOTE

When starting at ambient temperatures +20°F 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.

## STARTING ENGINES IN COLD WEATHER (BELOW 10°F)

If available, preheat should be considered. Rotate each propeller through 10 blades manually during preflight inspection.

### CAUTION

Insure magneto and master switches are OFF and mixture controls are in idle cut-off before turning propeller manually.

Master switch ..... OFF  
External power ..... connected  
(Sees starting engines with external power)  
Magnetos ..... OFF  
Electric fuel pump ..... ON  
Mixture ..... full RICH  
Propeller ..... full forward  
Throttle ..... ¼ inch open  
Primer ..... 5-10 strokes  
Magnetos ..... ON  
Starter ..... engage  
Oil pressure ..... check

If engine does not start, add prime and repeat above. When engine fires, pump primer as required until engine is running smoothly.

External power ..... disconnected  
Master switch ..... ON

### STARTING ENGINES WHEN HOT

Throttle ..... ½ inch open  
Master switch ..... ON  
Electric fuel pump ..... ON  
Mixture ..... full RICH  
Starter ..... engage  
Throttle ..... adjust  
Oil pressure ..... check

### STARTING ENGINES WHEN FLOODED

Mixture ..... idle cut-off  
Throttle ..... open full  
Propeller ..... full forward  
Master switch ..... ON  
Ignition switch ..... ON  
Electric fuel pump ..... OFF  
Starter ..... engage  
Throttle ..... retard  
Mixture ..... advance  
Oil pressure ..... check

### STARTING ENGINES WITH EXTERNAL POWER

Master switch ..... OFF  
All electrical equipment ..... OFF  
Terminals ..... connect  
External power plug ..... insert in fuselage  
Proceed with normal start.  
Throttles ..... lowest possible RPM

#### **WARNING**

Shutdown the right engine when it is warmed prior to disconnecting the external power plug.

External power plug ..... disconnect from fuselage  
Master switch ..... ON – check ammeter  
Oil pressure ..... check  
Right engine ..... restart

## WARM-UP

Throttles ..... 1000 to 1200 RPM

## TAXIING

Chocks ..... removed  
Taxi area ..... clear  
Throttle ..... apply slowly  
Brakes ..... check  
Steering ..... check  
Instruments ..... check  
Heater and defroster ..... check  
Fuel selector ..... ON, check Crossfeed

## BEFORE TAKEOFF – GROUND CHECK

Parking brake ..... ON  
Mixture controls ..... FORWARD  
Prop controls ..... FORWARD  
Throttle controls ..... 1500 RPM  
Prop controls ..... check feathering, 500 RPM max. drop  
Throttle controls ..... 2000 RPM  
Prop controls ..... check governor  
Prop controls ..... full FORWARD  
Carburetor heat ..... check  
Magnetos ..... check, max. drop 175 RPM, max diff. drop 50 RPM  
Alternator output ..... check  
Gyro suction gauge ..... 4.8 to 5.2 in. Hg.  
Throttles ..... 800-1000 RPM  
Fuel selectors ..... ON  
Electric fuel pumps ..... ON  
Alternators ..... ON  
Engine gauges ..... in the green  
Annunciator panel ..... press-to-set  
Altimeter ..... set  
Attitude indicator ..... set  
D.G. .... set  
Clock ..... wound and set  
Mixtures ..... set  
Primers ..... locked  
Propellers ..... set in forward position  
Quadrant friction ..... adjusted  
Carburetor heat ..... OFF  
Cowl flaps ..... set  
Wing flaps ..... set  
Trim ..... set

Seat backs ..... erect  
 Seat belts and harness .....fastened  
 Empty seats ..... seat belts fastened  
 Controls..... free, full travel  
 Doors ..... latched  
 Air conditioner ..... OFF  
 Pitot heat..... as required

**TAKEOFF**

**CAUTION**

Fast taxi turns immediately prior to takeoff run should be avoided.

Adjust mixture prior to takeoff from high elevations. Do not over heat.  
 Adjust mixture only enough to obtain smooth engine operation.

**NORMAL TAKEOFF (Flaps up)**

Flaps ..... UP  
 Accelerate to 75 KIAS.  
 Control wheel ..... ease back to rotate to climb attitude  
 After breaking ground, accelerate to best rate of climb speed of 88 KIAS.  
 Gear ..... UP

**SHORT FIELD TAKEOFF (Flaps up)**

Flaps ..... UP  
 Stabilator trim..... takeoff range  
 Brakes.....set  
 Full power before brake release.  
 Accelerate to 70 KIAS.  
 Control wheel..... rotate firmly to attain 75 KIAS through 50 ft.  
 Accelerate to best angle of climb speed of 82 KIAS for obstacle clearance or  
 best rate of climb speed of 88 KIAS, no obstacle.  
 Gear ..... UP

**SHORT FIELD TAKEOFF (25° Flaps)**

Flaps ..... 25° (second notch)  
 Stabilator trim.....set  
 Brakes.....set  
 Full power before brake release.  
 Accelerate to 63 KIAS.  
 Control wheel..... rotate firmly to attain 67 KIAS through 50 ft.  
 Gear ..... UP

## TAKEOFF CLIMB

Best rate (flaps up) ..... 88 KIAS  
Best angle (flaps up)..... 82 KIAS  
En route ..... 105 KIAS  
Cowl flaps ..... as required  
Electric fuel pump ..... OFF at desired altitude

## CRUISE CLIMB

Mixture ..... full RICH  
Power ..... 75%  
Climb speed ..... 105 KIAS  
Cowl flaps ..... as required

## CRUISING

Reference performance charts and Avco-Lycoming Operator's Manual.  
Power ..... set per power table  
Mixture controls..... adjust  
Cowl flaps ..... as required

## DESCENT

Mixtures ..... adjust with descent  
Throttles ..... set  
Cowl flaps ..... CLOSED

## APPROACH AND LANDING

Gear warning horn ..... check  
Seat backs ..... erect  
Seat belts and harness ..... fastened  
Fuel selectors..... ON  
Cowl flaps ..... as required  
Electric fuel pumps ..... ON  
Mixture controls..... rich  
Prop controls..... full FORWARD  
Landing gear ..... DOWN, 140 KIAS max.  
Flaps ..... set, 111 KIAS max.  
Approach speed..... 75 KIAS or above  
Air conditioner ..... OFF



## GO-AROUND

Full takeoff power both engines.

Establish positive climb.

Flaps ..... retract  
Gear ..... UP  
Cowl flaps ..... adjust

## AFTER LANDING

Clear of runway.

Flaps ..... retract  
Cowl flaps ..... fully OPEN  
Carburetor heat ..... OFF  
Electric fuel pump ..... OFF

## SHUTDOWN

Radios ..... OFF  
Throttle ..... full alt  
Mixture ..... idle cut-off  
Magnetos ..... OFF  
Master switch ..... OFF

## PARKING

Parking brake ..... set  
Control wheel ..... secured with belts  
Flaps ..... full up  
Wheel chocks ..... in place  
Tie downs ..... secure

# EMERGENCY PROCEDURES CHECK LIST

## AIRSPEDS FOR SAFE OPERATIONS

One engine inoperative air minimum control .....	56 KIAS
One engine inoperative best rate of climb .....	88 KIAS
One engine inoperative best angle of climb .....	82 KIAS
Maneuvering .....	135 KIAS
Never exceed .....	202 KIAS

## ENGINE INOPERATIVE PROCEDURES

### DETECTING DEAD ENGINE

Loss of thrust.

Nose of aircraft will yaw in direction of dead engine (with coordinated controls).

### ENGINE SECURING PROCEDURE (FEATHERING PROCEDURE)

Minimum control speed .....	56 KIAS
One engine inoperative best rate of climb .....	88 KIAS
Maintain direction and airspeed above 82 KIAS.	
Mixture controls .....	forward
Propeller controls .....	forward
Throttle controls .....	forward
Flaps .....	retract
Gear .....	retract
Identify inoperative engine.	
Throttle of inop. engine .....	retard to verify

To attempt to restore power prior to feathering:

Mixtures .....	as required
Fuel selector .....	ON
Primers .....	locked
Magnetos .....	left or right only
Electric fuel pump .....	check ON
Carburetor heat .....	ON
Prop control of inop. engine .....	feather before RPM drops below 800
Mixture of inop. engine .....	idle cut-off
Trim .....	as required (3° to 5° of bank toward operative engine – ball ½ to ¾ out)
Electric fuel pump of inop. engine .....	OFF
Magnetos of inop. engine .....	OFF
Cowl flaps .....	close on inop. engine, as required on operative engine
Alternator of inop. engine .....	OFF

Electrical load..... reduce  
Fuel selector ..... OFF inop. engine consider Crossfeed  
Electric fuel pump operative engine..... OFF

**ENGINE FAILURE DURING TAKEOFF (Below 75 KIAS)**

If engine failure occurs during takeoff and 75 KIAS has not been attained:  
Throttles ..... CLOSE both immediately  
Stop straight ahead.

If inadequate runway remains to stop:  
Throttles ..... CLOSED  
Brakes ..... apply max. braking  
Master switch ..... OFF  
Fuel selectors ..... OFF  
Continue straight ahead, turning to avoid obstacles.

**ENGINE FAILURE DURING TAKEOFF (75 KIAS or above)**

If engine failure occurs during takeoff ground roll or after lift-off with gear still down and 75 KIAS has been attained:  
If adequate runway remains CLOSE both throttles immediately, land if airborne and stop straight ahead.  
If runway remaining is inadequate for stopping, decide whether to abort or continue, maintain heading and when climb is established retract landing gear, accelerate to 88 KIAS, and feather inoperative engine prop (see Engine Securing Procedure).

**WARNING**

Certain combinations of aircraft weight, configuration, ambient conditions and speeds will not permit positive climb.

**ENGINE FAILURE DURING FLIGHT (below 56 KIAS)**

Rudder ..... apply toward operative engine  
Throttles (both)..... retard to stop turn  
Pitch attitude ..... lower nose to accelerate above 56 KIAS  
Operative engine ..... increase power as airspeed increases above 56 KIAS

If altitude permits, a restart may be attempted. If restart fails or if altitude does not permit restart, see Engine Securing Procedure.

## ONE ENGINE INOPERATIVE LANDING

Inop. engine prop..... feather  
When certain of making field:  
Landing gear.....extend  
Wing flaps..... lower  
Maintain additional altitude and speed during approach.  
Final approach speed ..... 90 KIAS  
Wing flaps..... 25°

## ONE ENGINE INOPERATIVE GO-AROUND (SHOULD BE AVOIDED IF AT ALL POSSIBLE)

Mixture..... forward  
Propeller..... forward  
Throttle.....open slowly  
Flaps..... retract  
Landing gear..... retract  
Airspeed..... 88 KIAS  
Trim..... set  
Cowl flap operating engine..... as required

## AIR START (UNFEATHERING PROCEDURE)

Fuel selector inop. engine..... ON  
Electric fuel pump inop. engine..... ON  
Throttle..... open ¼ inch  
Prop control..... forward to cruise RPM position  
Mixture..... RICH  
Magneto switches..... ON  
Starter..... engage until prop windmills  
Throttle..... reduce power until engine is warm  
If engine does not start, prime as required.  
Alternator..... ON

## FIRE

### ENGINE FIRE ON GROUND

If engine has not started:

Mixture..... idle cut-off  
Throttle..... open  
Starter..... crank engine

If engine has already started and is running, continue operating to try pulling the fire into the engine.

If fire continues, extinguish with best available means.

If external fire extinguishing is to be applied:

Fuel selector valves ..... OFF  
Mixture ..... idle cut-off

## ENGINE FIRE IN FLIGHT

Affected engine:

Fuel selector ..... OFF  
Throttle ..... close  
Propeller ..... feather  
Mixture ..... idle cut-off  
Cowl flap ..... OPEN

If terrain permits land immediately.

## FUEL MANAGEMENT DURING ONE ENGINE INOPERATIVE OPERATION

### CRUISING

When using fuel from tank on the same side as the operating engine:

Fuel selector operating engine ..... ON  
Fuel selector inop. engine ..... OFF  
Electric fuel pumps ..... OFF

(except in case of engine driven pump failure, electric fuel pump on operating engine side must be used)

### NOTE

Use Crossfeed in level cruise flight only.

### LANDING

Fuel selector operating engine ..... ON  
Fuel selector inop. engine ..... OFF

### ENGINE DRIVEN FUEL PUMP FAILURE

Electric fuel pump ..... ON

### LANDING GEAR UNSAFE WARNINGS

Red light indicates gear intransit.

Recycle gear if indication continues.

Light will illuminate and gear horn sounds when the gear is not down and locked if throttles are at low settings or wing flaps are in second or third notch position.

## MANUAL EXTENSION OF LANDING GEAR

Check following before extending gear manually:

Circuit breakers..... check  
Master switch ..... ON  
Alternators..... check  
Navigation lights ..... OFF (daytime)

To extend, proceed as follows:

Airspeed..... reduce (100 KIAS max.)  
Gear selector ..... GEAR DOWN LOCKED position  
Emergency gear extend knob..... pull  
Indicator lights..... 3 green  
Leave emergency gear extension knob out.

## GYRO SUCTION FAILURES

Suction below 4.5 in. Hg.

RPM..... increase to 2700  
Altitude ..... descend to maintain 4.5 in. Hg.  
Use electric turn indicator to monitor Directional Indicator and Attitude Indicator performance.

## ELECTRICAL FAILURES

ALT annunciator light illuminated.

Ammeters..... observe to determine inoperative alternator  
If both ammeters show zero output, reduce electrical load to a minimum.  
Turn OFF both alt. switches; then turn them ON momentarily one at a time while observing ammeters.  
Determine alt. showing LEAST (but not zero) amperes and turn its switch on.  
Electrical loads..... re-establish up to 60 amps.

If one ammeter shows zero output, cycle its switch off, then on.

If power is not restored check circuit breakers and reset once if required.

If alternator remains inoperative, reduce electrical loads and continue flight.

## SPIN RECOVERY (INTENTIONAL SPINS PROHIBITED)

Throttles ..... retard to idle  
Rudder ..... full opposite to direction of spin  
Control wheel..... release back pressure  
Control wheel..... full forward if nose does not drop  
Ailerons ..... neutral  
Rudder ..... neutralize when rotation stops  
Control wheel..... smooth back pressure to recover from dive

## NOTE

Federal Aviation Administration Regulations do not require spin demonstration of multi-engine airplanes; therefore, spin tests have not been conducted. The recovery technique presented is based on the best available information.

### OPEN DOOR (ENTRY DOOR ONLY)

If both upper and side latches are open, the door will trail slightly open and airspeeds will be reduced slightly.

To close the door in flight:

Slow airplane to 82 KIAS.

Cabin vents ..... close  
Storm window ..... open

If upper latch is open ..... latch  
If side latch is open ..... pull on armrest while  
moving latch handle  
to latched position

If both latches are open ..... latch side latch then top latch

### PROPELLER OVERSPEED

Throttle ..... retard  
Oil pressure ..... check  
Prop control ..... full DECREASE rpm,  
then set if any control available  
Airspeed ..... reduce  
Throttle ..... as required to remain below 2700 rpm

### EMERGENCY EXIT

Remove thermoplastic cover.  
Pull handle forward.  
Push window out.