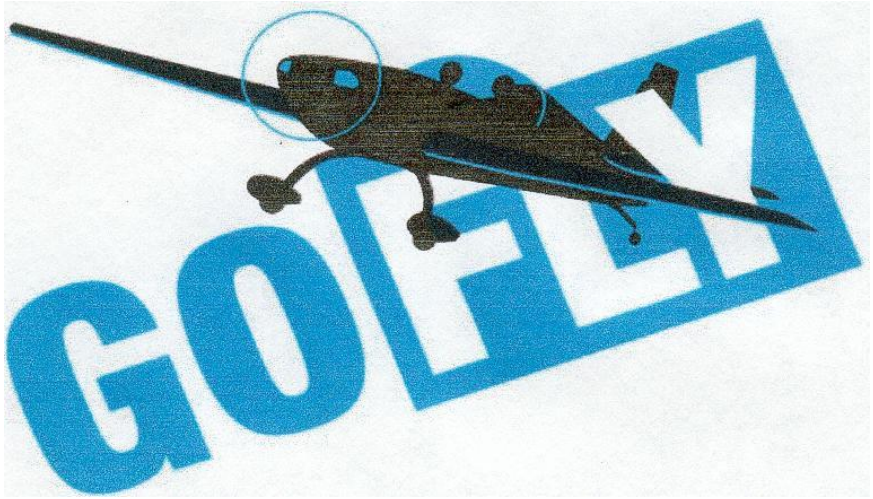


# WARRIOR PA28-161

# CHECK LIST

GoFly
Hangar 1,
Old Sarum Airfield,
SALISBURY SP4 6DZ
O1722 444890
www.goflyuk.com

| | | |
|---|---|---|
| **Usable fuel capacity** | **48USG/182 L.** | **Tabs.34 USG / 130 litres** |
| **Fuel consumption/hour** | **10 USG/38L** | **Per hour without leaning** |
| **OIL** | **5-7 QTS** | **American quart=approx.1 litre** |
| **Max. take off weight** | **2325lbs/1054kg** | **Check weight and balance if 3 pob.** |
| **G limits** | **4.4 - 0** | **Aerobatics and spinning prohibited** |
| **Vso** | **44 kts IAS** | **Stall speed, landing configuration** |
| **Vs1** | **50 kts IAS** | **Stall speed without flap** |
| **Vr** | **55 kts IAS** | **Not applicable to grass runway** |
| **Vy** | **79 kts IAS** | **Best rate of climb airspeed** |
| **Vx** | **63 kts IAS** | **Best angle of climb airspeed** |
| **Vat Full** | **65 kts IAS** | **Final approach speed with flap** |
| **Vat Flapless** | **70 kts IAS** | **Final approach speed without flap** |
| **Vat perf** | **60 kts IAS** | **Final approach short runway** |
| **V best glide** | **73 kts IAS** | **Glide speed for best range** |
| **Vfe** | **103 kts** | **Max. flap extension speed** |
| **Max. cross wind** | **17 kts** | **As demonstrated by expert pilot!** |

# Piper PA-28 Checklist ……..……PA-28-161-Warrior II



## ***PREFLIGHT CHECK***

Tie down and chocks……..**REMOVE**
Control locks and covers……**REMOVE AND STOW**
Avionics……..**OFF**
Park Brake…… **ON**
Ignition……**OFF/ KEY OUT**
Master switch……..**ON**
Annunciator panel (if equipped)……**CHECK**
Fuel quantity gauges……..**check, on tank with lowest content**
External electrical switches……..**ALL ON**
Navigation lights……**CHECK**
Strobes……..**CHECK**
Landing light…… **CHECK**
Stall Warner…….. **CHECK**
Pitot heat…….. **CHECK**
Anti-collision beacon…….. **CHECK**
External electrical switches.(except anti-collision beacon)……**ALL OFF**
Master switch……**OFF**
First aid kit……**In position, secure**
Fire extinguisher…… **In position, secure**
Cockpit……..**Check for & remove/stow any loose items**
Flaps……**SET 25°**

## ***EXTERNAL***

*Check all of exterior and all surfaces for damage, interference, ice, snow, frost*

**STARBOARD WING**

Flap…….. **Linkages, hinges, condition (free of mud)**
Aileron…… **. Linkages, hinges, full & free movement**
Wing tip…….. **Condition, security, navigation light**
Wing surface…… ……. ...**Condition, upper & lower surfaces**
Leading edge……**Check for dents**
Fuel tank……..**Contents visually checked, fuel cap secure,**
Fuel drain……..**Examine sample, check fully closed**.
Fuel vent……**Open**

**STARBOARD UNDERCARRIAGE**

Tyre……..**Condition, inflation, creep marks aligned**
Hydraulic lines……..**Conditions, leaks**
Disc brake block……..**Condition**
Oleo/Strut……**Normal extension (approx.4.5 inches)**
Torque link……**Nuts and split pins secure**

**FRONT FUSELAGE & ENGINE**

Starboard cowling……**Check oil level (6 qts.)**
Engine compartment……**Check for leaks, contamination, loose connections. Secure cowling**
Windscreen……..**CLEAN, OAT probe secure**
Nose leg……**Oleo/strut extension (3.25inch), torque link**, **nuts & split pins**
Nosewheel……..**Condition, inflation, creep marks aligned**
Front cowling……..**Condition & security, air intakes clear**
Propeller……**Check Condition, especially leading edge**
Port Cowling……**Check brake fluid level**
Engine compartment……**Check for leaks, contamination, loose leads Secure cowling**
Fuel drain……**Examine sample, check fully closed**

**PORT UNDERCARRIAGE**

Tyre……**Condition, inflation, creep marks aligned**
Hydraulic lines……**Conditions, leaks**
Disc brake block……**Condition**
Oleo/Strut……**Normal extension (approx.4.5 inches)**
Torque link……**Nuts and split pins secure**

**PORT WING**

Flap……. **Linkages, hinges, condition (free of mud)**
Aileron…… . **Linkages, hinges, full & free movement**
Wing tip…… **Condition, security, navigation light**
Wing surface……..**Condition, upper & lower surfaces**
Leading edge……**Check for dents**
Fuel tank……..**Contents visually checked, fuel cap secure**,
Fuel drain……..**Examine sample, check fully closed**.
Fuel vent……**Open**

**PORT FUSELAGE**

Windows……**Clean**
Skin…… **Examine condition**
Aerials……**Secure**
Tail Fin…… **condition & security, fairings, aerials, beacon**
Rudder…… **condition, linkages, nuts & split pins, nav. light**
Stabilator…… **condition, linkages, full and free movement**
Anti-balance tab ……..**condition, hinges, linkage**.

**STARBOARD FUSELAGE**

Skin…… **Examine condition**
Aerials……**Secure**
Windows……**…Clean**
Baggage door……**Closed and secure**
Doors……**Latch & Hinges secure**

***INTERNAL***

Mobile phones……**OFF / FLIGHT MODE**
Passenger brief……**If required**
Seats……**Adjusted &locked**
Hatches & harnesses……**Closed and latched: tight and locked**
Parking Brake……**.ON**
Radios……**.OFF**
Instruments……..**Legible, serviceable, readings within limits**
Flying Controls……**Full & free movement, correct sense**
Trimmers……**Full & free movement, set for take-off**
Flaps……**Check in stages, select up**
Cabin air controls……**Closed (Off)**
Fuel……**On, select tank with lowest contents**

***START***

**COLD START**

Throttle……**Operate full & free movement, set 1/2 inch open**
Mixture……**.Full & free movement, set rich**
Throttle friction……**Operate and check loose**
Carburettor heat……..**Full & free movement, set cold**
Master switch……**ON**
Circuit breakers/fuses……**In/secure**
Beacon……**Confirm ON**
Fuel pump……**ON, check fuel pressure, then OFF**
Primer……**Prime (2-6 strokes*) &LOCK**
Lookout……**Good look around, call "CLEAR PROP"**
Starter……**Engage**
RPM on start-up……**Avoid high revs. Set 1200 rpm**

* Depending on ambient temperature

**STARTING ENGINE WHEN HOT**

As detailed above except:-
Initially avoid priming. If unsuccessful try 2 strokes of primer.
DO NOT pump with the throttle.
DO NOT engage starter motor for more than 10 secs. continuous.

**STARTING ENGINE WHEN FLOODED**

Brakes……**Park brake ON. Brake pedals covered**
Throttle……**Fully open**
Master switch……**ON**
Electric fuel pump……**OFF**
Mixture……**Idle cut-off**
Lookout……**Good look around, call "CLEAR PROP"**
Starter……**ENGAGE**
When engine fires:-
Mixture……**.Advance**
Throttle……**Retard**

**STARTING WITH EXTERNAL POWER SOURCE**

Master switch……**.OFF**
All electrical equipment……**.OFF**
External power plug……**Insert in fuselage**
Proceed with normal start: after engine is running:-
Throttle……**Lowest possible RPM**
External power plug……**Disconnect from fuselage**
Master switch……**ON**
Ammeter……**if no reading do not proceed with flight**

## *AFTER START*

RPM……**Set to 1200 rpm**
Brakes……**Check holding**
Starter warning light……**OUT ***
Oil Pressure……**Rising to green arc within 30 secs. ***
Ammeter……**Charging**
Suction……**.Registering**
Magnetos……**CHECK**
Flight Instruments……**Set as required**
Radios……**Tuned / checked /airfield information**
Taxi clearance……**If required**

* If not close down engine immediately.

## *TAXYING*

Brakes……**Checked as soon as possible**
Rudder……**…Full Movement & nose wheel steering checked**
Differential braking……**Checked**
Flight instruments*……**Checked in turns**

* HI, Compass, Turn Co-ordinator, Attitude Indicator

## *POWER CHECKS*

Position……**Into wind, check clear all round, esp. behind**
Parking brake……**ON**
Throttle……**1200 rpm set**
Fuel……**Note time and change tanks**
Engine temp. & press……**Within limits**
Throttle……**SET 2000rpm – check brakes holding**
Carb. Heat…**ON** for 15 secs……, **drop approx. 75 rpm, steady, SET COLD**
Magnetos……**Check left & right & back to BOTH**
**Max. Drop 175rpm, max. Difference between mags. 50 rpm**
Engine temp. & pressures (oil and fuel)……**Within limits**
Ammeter……**Charging**
Suction……**3"-5"**
Throttle fully closed…… **500 – 700rpm**
Throttle……**Reset 1200rpm**

## *PRE TAKE OFF CHECKS – VITAL ACTIONS*

**T** Trimmers……**set for take-off**
**T** Throttle Friction……**Set finger tight**
**M** Mixture……**RICH**
**M** Magnetos……**ON BOTH**
**M** Master switch ……**ON**
**P** Pitot Heater…(if flight temp.<5° in visible moisture)……**ON**
**P** Primer……**.Locked**
**F** Fuel……**Sufficient and on correct tank**

**F** Fuel pump ……**ON**

**F** Flaps……..**As required (25 ° short field)**

**G** Gauges (Instruments)…….. **HI, AI, altimeter: Checked and set**

**H** Hatches……..**Doors and windows secure**

**H** Harnesses……**Secure**

**C** Carburettor heat……**Re-check if necessary, set COLD**

**C** Controls……..**Full and free movement**

Transponder……on **ALT**

Strobes ……**ON**

Landing light…… **ON**

## ***TAKE-OFF***

LOOKOUT……**Runway, approach and departure paths clear**

Radio……**Call Ready for departure**

On runway……**Check HI and compass and runway QDM**

Throttle……**Full power**

Engine……**Temp. and Press. rpm within limits**

Airspeed……**Increasing**

## ***AFTER TAKE-OFF***

Flaps (at safe height / airspeed)……..**Up in stages**

Engine……**Temp. and Press. Steady within limits**

Radios……**calls as necessary**

Altimeter……**Check QFE/QNH set as required**

Fuel pump……**OFF** once above 1000’ AGL

Landing light……**OFF when clear of circuit**

## ***DESCENT***

### CRUISE (at 500 fpm rate of descent)

Throttle……**Reduce by 250 rpm**

Airspeed…… **100 KIAS maintained**

Mixture……**Rich**

Carburettor heat……**ON if required**

### POWER OFF

Carburettor heat……**ON**

Throttle……..**Closed**

Airspeed……**73 KIAS**

Mixture……..**Rich**

Power……**Verify with throttle every 1000 ft.**

## ***CRUISE CHECKS F.R.E.D.A***

**F** Fuel……**pump off, mixture leaned, correct tank in use**.

**R** Radios……**current and next frequency set**

**E** Engine……**Temp. and Press., Mixture, Carb. Ht, ammeter and suction**

**D** Direction……**HI synchronized with compass**

**A** Altimeter……**QNH/QFE set as required**

Carb.heat ……**OFF**

## ***PRE-STALL/AEROBATICS CHECKS H.A.S.E.L.L***

**H** Height……**sufficient to recover by 3000ft AGL**

**A** Airframe……**Flaps if required**

**S** Security……..**Hatches and harnesses tight and secure, no loose articles.**

**E** ENGINE…..**Mixture rich, carb heat ON, fuel pump ON, Ts. And Ps. checked**

**L** Location……..**A,B,C,D ***

**L** LOOKOUT……..**Turn to check for other aircraft, especially below**

***A**irfields **B**uilt-up areas **C**louds/**C**ontrolled airspace **D**anger Areas

### *CONTINUED STALL/H.E.L.L. CHECKS*

As above but omitting formal **A**irframe and **S**ecurity checks.

### ***PRE-LANDING CHECKS***

(Ensure good look-out all round)

**B** Brakes……**OFF**
**U** (Undercarriage……Fixed/down)
**M** Mixture……**RICH**
**F** Fuel pump……ON
**F** Fuel……**on fuller tank/sufficient for go-around**
**F** Flaps……**As required**
**P** (Pitch……Fixed)
**I** Instruments……**T.s and P., ammeter, suction QFE**
**C** Carburettor heat……**ON for at least 20 secs.**
**H** Hatches……**Secure**
**H** Harnesses……**All occupants / Secure**

### ***GO AROUND***

Throttle……**Full power, correct for yaw**
Carburettor heat……**.COLD**
Flaps……**Retract in stages at safe height**
Radio……**call 'Going-around'**

### ***AFTER LANDING***

Clear runway as soon as is safe and stop: **brake on, set 1200rpm**
Carburettor heat……**COLD**
Flaps……**UP**
Trimmers……**SET NEUTRAL**
Throttle Friction……**.LOOSEN**
Fuel pump……**.OFF**
Electrics……**NON-ESSENTIAL OFF**
Radios……**NON-ESSENTIAL OFF**
Transponder……**to STBY**

### ***SHUT DOWN***

Position……**Into wind, nosewheel straight**
Parking brake……**.ON**
RPM……**12OO for 30 secs**
Magnetos……**Check: "Drop no Stop"**
Radio……**.OFF**
Throttle……**Set at 1200rpm**
Mixture…… **Fully lean**

### ***AFTER ENGINE STOPS***

Magnetos……**.OFF, KEY OUT**
Electrics (except anti collision beacon)……**.OFF**
Master switch……**.OFF**
Fuel……**.OFF***
Harnesses……**.Left tidy**
Hatches……**.Doors and windows closed**
Aircraft……**Secured as appropriate**

* GoFly policy is to leave fuel **ON**. Ensure you are thoroughly familiar with the technique for turning fuel to OFF in an emergency situation.

## ***EMERGENCIES***

### ***ENGINE FIRE DURING START-UP***

Starter……**Crank engine**
Mixture……**Idle cut-off**
Throttle……**OPEN**
Electrical Fuel Pump……**OFF**
Fuel Selector……**OFF**
Abandon if fire continues leaving hand brake off and taking the fire-extinguisher if possible. Alert the ground crew.

### ***ENGINE POWER LOSS DURING TAKE OFF***

If sufficient runway remains for a normal landing, land straight ahead

If insufficient runway remains:
Maintain safe airspeed by lowering the nose.
Make only shallow turn to avoid obstructions
Flaps as situation requires
.
Do not turn back if on initial climb-out

If sufficient altitude has been gained to attempt a restart
Maintain safe airspeed
Fuel selector……**Change tanks**
Electric Pump……**Check ON**
Mixture……**Check RICH**
Carburettor Heat……**.ON**
Primer……LOCKED
If power is not regained, proceed with power off landing
**. MASTER SWITCH OFF / FUEL OFF /MAYDAY IF TIME PERMITS**

### ***ENGINE POWER LOSS IN FLIGHT***

Individual circumstances will vary but generally below 2,500 ft. AGL GoFly recommends the following;_
Turn Down -wind (increases your glide range).
Establish a glide attitude and trim.
Select a field towards the wing-tip if possible –left or right.
Plan the pattern of your approach using “constant aspect” technique.
Then check for cause of power loss if this is not obvious.

Fuel Selector……**Switch fuel tanks.**
Electric fuel pump……**ON**
Mixture……**RICH**
Carburettor heat……**ON**
Engine gauges……**Check for indication of cause of power loss**
Primer……**Check locked**
If no fuel pressure is indicated, check tank selector position to be sure it is on a tank containing fuel.

When power is restored:
Carburettor heat……**.OFF**
Electric fuel pump……**OFF**

If power is not restored prepare for power off landing.

MAYDAY call and set 7700 unless already allocated a squawk.
Touchdowns should normally be made at lowest possible airspeed with full flaps.

When committed to landing:
**F** Fuel ……**OFF.**
**I** Ignition ……**OFF**
**E** Electrics (master switch) ……**ALL OFF**
**L** Lap strap ……**TIGHT**.
**D** Door ……**CRACKED OPEN**

## ***FIRE IN FLIGHT***

Electrical fire (smoke in cabin):
Master switch……**OFF**
Vents……**OPEN**
Cabin heat……**OFF**
Fire extinguisher……**Use only if absolutely necessary**
If source of fire is apparent restore the other services.
Land as soon as practicable.

Engine fire:
Fuel selector……**OFF**
Throttle……**CLOSED**
Mixture……**Idle cut off**
Fuel pump……**Check OFF**
Heater……**OFF**
Defroster……**OFF**
Do not attempt restart
Proceed with POWER OFF LANDING procedure.

## ***LOSS OF OIL PRESSURE***

Check oil temp. gauge. If remaining normal suspect pressure gauge failure.
Land as soon as possible and investigate cause.
Prepare for POWER OFF LANDING.

## ***HIGH OIL TEMPERATURE***

Check Oil Pressure. If low/zero prepare for POWER OFF LANDING.
If Oil Pressure is normal:-
Reduce power and richen mixture.
Increase airspeed if in the climb.
Land at nearest airport and investigate the problem.
Prepare for POWER OFF LANDING

## ***ALTERNATOR FAILURE***

ALT annunciator light illuminated / low voltage light flashing.
Ammeter……**Check to verify inoperative alternator**.
Ammeter shows zero……**Check circuit breaker.**
If circuit breaker normal:-
ALT switch……**OFF**
After 5 seconds
ALT switch……**ON AGAIN**
If power not restored:
ALT switch…… **OFF**
Electrical loads……**Reduce to minimum essential**

Land as soon as practicable. Battery is the only remaining source of power.
Advise nearest Air Traffic Unit or 121.50.
Anticipate complete electrical failure.
Be aware that radio transmission makes a heavy drain on battery.
Reference to the circuit breakers will give an indication of individual current loads.

## ***RADIO FAILURE***

Radio……**Check frequency, volume, squelch, switches, ( individual and Radio Master)**
Headset……**Check plugs secure, change headsets**,
**Check ammeter, master switch, circuit breakers – reset once only**
Transponder……**Set 7600**
Speechless/transmit blind/non-radio procedure as appropriate