



WARRIOR PA28-161
TAE-125 DIESEL
CHECK LIST v2

GoFly
Hangar 1,
Old Sarum Airfield,
SALISBURY SP4 6DZ
01722 212063

www.goflyuk.com

Usable fuel capacity	43 USG / 160L	JET A1 (Avtur)
Fuel consumption/hour	5 USG / 20L	Approx. / hour @ 70% power
OIL	5-7 QTS	American quart=approx.1 litre
Max. take off weight	2325lbs/1054kg	Check M+B and perf. 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	70 kts IAS	* Best rate of climb airspeed
Vx	63 kts IAS	Best angle of climb airspeed
Vat Full Flap	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 still air
Vfe	103 kts	Max. flap extension speed
Max. cross wind	17 kts	As demonstrated by expert pilot!

* Recommended cruise climb speed (for engine cooling) 79kts IAS

Piper PA-28 TAE-125 CHECKLIST

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PREFLIGHT CHECK

COCKPIT

Tie down and chocks.....**REMOVE**
Control locks and covers.....**REMOVE AND STOW**
Park Brake..... **ON**
Avionics.....**OFF**
Engine Master.....**OFF**
Battery Master**ON**
Main Bus Switch**ON**
Fuel quantity gauges.....**check, confirm fuel turned ON**
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**
Battery Master.....**OFF**
Main Bus Switch.....**OFF**
Pitot drain.....**Press**
Static drain.....**Press**
First aid kit.....**In position, secure**
Fire extinguisher..... **In position, secure**
Cockpit.....**Check for & remove/stow any loose items**
Flaps.....**SET 25°**

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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

Windscreen.....**CLEAN**
Starboard cowling.....**OPEN**
Engine compartment.....**Check for leaks, contamination, loose leads**
Starboard cowling.....**Securely closed**
Exhaust.....**Secure**
Nose leg.....**Oleo/strut extension (3.25inch), torque link, nuts & pins**
Nosewheel.....**Condition, inflation, creep marks aligned**
Front cowling.....**Condition & security, air intakes clear**
Propeller.....**Check Condition, especially leading edge**
Gear box oil.....**Check visible in sight glass**
Engine oil.....**Check level, dipstick secure**
Port Cowling.....**OPEN**
Engine compartment.....**Check brake fluid, leaks, contamination, loose leads**
Port cowling.....**Securely 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

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

PORT FUSELAGE & TAIL EMPENNAGE

Windows.....**Clean**
 Skin.....**Examine condition**
 Aerials.....**Check 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.....**Check 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**
 Radio master switch(es).....**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)**
 Alternate air.....**exercise then OFF**
 Alternate static.....**exercise then OFF**
 Force B.....**guarded OFF**
 Fuel.....**CONFIRM ON required tank**

ENGINE START

Power lever.....**full & free movement, set IDLE**
 Thrust lever friction.....**Operate and check loose**
 Battery master switch.....**ON**
 Water level light.....**illuminates then Off**
 Main Bus switch.....**ON**
 AED / CED.....**diagnostic LEDs only**
 FADEC warning panel.....**ALT / AED / CED all ON**
 Circuit breakers/fuses.....**In/secure**
 Beacon.....**Confirm ON**
 Blower (if fitted).....**OFF**
 Fuel pump.....**ON**
 Engine Master Switch.....**ON**
 FADEC Warning Panel.....**ALT / AED / CED illuminated**
 Glow Plug indicator.....**Wait till this extinguishes**
 Lookout.....**Good look around, call "CLEAR PROP"**
 Starter button.....**for no more than 10 secs. Press and Hold**
 Starter Button.....**Release after start-up**
 Oil pressure.....**GREEN within 3 secs.**
 Load.....**Check<10%**

RPM.....4.....**Check 890-920**

STARTING IN COLD WEATHER

As for normal start but perform **Engine Master Switch ON /OFF** twice to ensure glow plug heating is maximal. Repeat as necessary.
Do not run starter motor continuously for more than 10 secs
Wait 20 secs. before further attempt.
If no start after several attempts leave for 30 minutes.
Do not flatten the battery.
Starting with an external power source is not permitted.

AFTER START

AED / CED Test button.....,,,,, **press briefly to reset**
FADEC warning panel.....**All lights out**
Ammeter (AED).....**GREEN**
Voltage (AED).....**GREEN**
Gyro suction.....**Registering**
Power lever.....**IDLE**
Fuel pump.....**OFF**
Avionics master switch.....**ON**
Radios.....**Tuned / checked /airfield information**
Transponder.....**Stand-by (STBY)**
Attitude Indicator (AI).....**ERECT**
Heading indicator (HI) and altimeter.....**Set as required**
Check Ts and Ps (CED).....**GREEN.**

Note: After 2 minutes at idle, **engine RPM may be increased to 1400** to facilitate engine warming. Taxiing permitted with Coolant Temp.(CT) **AMBER**

TAXIING

Taxi clearance.....**If required**
Brakes.....**Checked**
Rudder.....**Full Movement & nose wheel steering Checked**
Differential braking.....**Checked**
Flight instruments*.....**Checked in turns**

* Heading Indicator (HI), Attitude indicator (AI) Compass, Turn Co-ordinator

POWER CHECKS

Position.....**Into wind, check clear all round, esp. behind**
Park brake.....**ON**
Power lever.....**IDLE**
Fuel.....**Change tank and note time**

FADEC Function Check

FADEC A and B lights.....**Both OFF**
FADEC Test button.....**Press and hold for entire check**

Both FADEC lights come on and RPM increases
FADEC switches to component B and B light illuminates
RPM decreases
FADEC switches to component A and A light illuminates
FADEC B light goes out
RPM initially increases
RPM then decreases
FADEC A light goes OFF
RPM returns to IDLE

FADEC Test button.....Release: Test complete
FORCE B manual switch.....ON then OFF with guard down

Note: any departure from this exact sequence or rough running of the engine means the aircraft should not be flown.

Position.....**confirm clear behind**
Park brake.....**confirm ON: Brakes covered**
AED / CED.....**ALL GREEN**
Power lever.....**FULL FORWARD**
Brakes.....**Confirm holding**
Load.....**> 94%**
RPM.....**2240 – 2300**
Suction gauge.....**5-7 inches**
Alternate air.....**OPEN then CLOSE**
Thrust lever.....**IDLE**

PRE-STALL 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..... fuel pump ON, AED / CED, FADEC panel checked
- L Location.....A,B,C,D *
- L LOOKOUT.....Turn to check for other aircraft, especially below

*Airfields Built-up areas Clouds/Controlled airspace Danger Areas

REPEAT STALL/H.E.L.L. CHECKS

As above but omitting formal Airframe and Security checks.

PRE-LANDING CHECKS

(Ensure good look-out all round)

- Brakes.....OFF
- (Undercarriage.....Fixed/down)
- Fuel.....on correct tank/sufficient for go-around
- Fuel pump.....ON
- Landing light.....ON
- Flaps.....As required
- Instruments.....FADEC warnings, HI, AED /CED, suction, QFE
- Hatches.....Secure
- Harnesses.....All occupants / Secure

GO AROUND

- Power lever.....Full power, correct for yaw
- Flaps.....Retract in smoothly at safe height
- Radio.....call 'Going-around'

AFTER LANDING

- Clear runway as soon as is safe and stop:.....Park brake on
- Power lever.....IDLE
- Flaps.....UP
- Trimmers.....SET NEUTRAL
- Power lever Friction.....LOOSEN
- Fuel pump.....OFF
- Electrics.....NON-ESSENTIAL OFF
- Transponder.....to STBY

SHUT DOWN

- Position.....Into wind, nosewheel straight
- Parking brake.....ON
- Radio Master.....OFF
- Thrust lever.....IDLE
- Engine Master Switch.....OFF

AFTER ENGINE STOPS

- Electrics (except anti collision beacon).....OFF
- Battery Master Switch.....OFF
- Main Bus switch.....OFF
- Fuel.....OFF*
- Harnesses.....Left tidy
- Hatches.....Doors and windows closed
- Aircraft.....Secured as appropriate

*GoFly policy is to leave fuel ON. But ensure you are thoroughly familiar with the technique for turning fuel to OFF in an emergency situation. Starting the engine with fuel turned OFF may damage the high pressure pump. Do not continue with flight under these circumstances

EMERGENCIES

ENGINE FIRE DURING START-UP

- Engine Master.....**OFF**
- Fuel Selector.....**OFF**
- Fuel Pump.....**OFF**
- Battery and Bus Master Switches.....**OFF**

Evacuate Aircraft (with fire extinguisher if possible). Alert 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**

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 the 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.

- Power lever.....**Fully forward**
- Fuel Selector.....**Switch fuel tanks.**
- Electric fuel pump.....**ON**
- Alternate air.....**OPEN**
- AED / CED / FADEC warning panel.....**Check for cause of power loss**
- If no response.....**FORCE B ON**
- Engine Master Switch.....**OFF then ON**
- If propeller has stopped.....**press Starter Button**

If power is not restored prepare for power off landing.

MAYDAY call and set 7700 unless already allocated a squawk.

Touchdown should normally be made at lowest possible airspeed with full flaps.

When committed to landing:

- Fuel**OFF**
- Engine Master Switch**OFF**
- Battery and Main Bus Switches **OFF**
- Seat Belts and Harnesses**TIGHT**
- Door**CRACKED OPEN**

FIRE IN FLIGHT

Electrical fire (smoke in cabin):

- Main Bus Switch.....**OFF**
- Avionics Master Switch.....**OFF**
- Vents.....**OPEN**
- Cabin heat.....**OFF**
- Fire extinguisher.....**Use as necessary**

If source of fire is apparent and is controlled restore the other services.
Land as soon as practicable.

If the electrical fire is uncontrolled consider turning off Battery and Alternator. FADEC function will continue for up to 30 minutes using the FADEC back-up battery after which the engine will cease to function.

Engine fire:

- Engine master.....**OFF**
- Fuel selector.....**OFF**
- Fuel pump.....**Check OFF**
- Main Bus Switch.....**OFF after MAYDAY**
- Battery switch.....**OFF**
- Heater.....**OFF**
- Defroster.....**OFF**

Do not attempt restart
Proceed with POWER OFF LANDING procedure.

LOSS OF OIL PRESSURE

(Amber range in cruise / red range at idle)

Reduce power.
Check and monitor oil temp.gauge.
If oil temperature remains normal suspect pressure gauge failure
If oil temperature high and rising reduce power and land as soon as possible.
Prepare for POWER OFF LANDING.

HIGH OIL TEMPERATURE (OT)

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

Note: During hot weather operation and during climbing at high power and low air speeds engine temperatures may rise to the amber range.

HIGH COOLANT TEMPERATURE (CT)

Increase airspeed and reduce power where possible
Cabin heat to cold.
If condition improves monitor carefully and continue flight.

If problem persists land at nearest airport and investigate.

Prepare for POWER OFF LANDING

WATER LEVEL LIGHT ILLUMINATES

Increase airspeed and reduce power where possible
Monitor Coolant (CT) and Oil (OT) temperatures.
If normal continue flight.
If CT and OT rise divert to nearest airport.
Prepare for POWER OFF LANDING
Note: Intermittent illumination may occur in turbulent conditions.

HIGH GEARBOX TEMPERATURE (GT)

Reduce power to 55% - 75%
If problem persists land at nearest airport and investigate.
Prepare for POWER OFF LANDING

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTION

The TAE-125 diesel requires electrical power to continue function. At all times during normal flight Battery, Main Bus and Alternator must be ON. The alternator switch may be guarded and is *ON in the down position* or in some aircraft may be simply be a Circuit Breaker in the fuse panel.

Hence malfunction in the electrical system must be regarded as of the utmost importance

ALTERNATOR WARNING LIGHT ILLUMINATES

- Ammeter.....**Check and confirm**
- Alternator.....ensure guarded ALT switch **ON** (down)
.....or **Check circuit breaker IN**
- Battery Master Switch.....**Confirm ON**
- Reduce electrical load as appropriate
- Nav / Com 2.....**OFF**
- Fuel pump.....**OFF**
- Landing light.....**OFF**
- Strobes.....**OFF**
- Nav lights.....**OFF**
- Beacon.....**OFF**
- Pitot.....**OFF**
- Autopilot.....**OFF**
- Any other non-essential equipment.....**OFF**
- Com 1.....**Minimize voice transmissions**

If problem persists land at nearest airport and investigate.

Prepare for POWER OFF LANDING

BATTERY DISCHARGING

Present if the ammeter indication is illuminated on the left side and the voltage indicator is decreasing

Alternator..ensure guarded ALT switch **ON** (down)
.....or **Check circuit breaker IN**

If Alternator Circuit Breaker is out **RESET**

If current is not restored use Alternator failure as listed previous page

TOTAL ELECTRICAL FAILURE

If electrical supply from Alternator and Battery is interrupted simultaneously all equipment will become inoperative except the engine. This will continue to run for up to 30 minutes using the FADEC back-up battery.

Do not use the FORCE B Switch under these circumstances as this will stop the engine.

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**

FADEC WARNING LIGHTS

FADEC A and FADEC B are independent of each other so malfunction in the active one should automatically lead to switching to the other with a change in the FADEC A or B light.

One FADEC light flashing.

Note any abnormality AED /CED

Press and hold FADEC Test knob for at least 2 seconds.

If warning light extinguishes continue flight and report later. This is a LOW category warning.

If the warning light fails to extinguish observe other FADEC light and land as soon as practical This is a HIGH category warning and should be reported to Ops.and then to the engineers.

Both FADEC lights flashing.

Press and hold FADEC Test knob for at least 2 seconds.

If warning light extinguishes continue flight and report later. This is a LOW category warning.

If the warning lights fail to extinguish (HIGH category warning)

Suspect low fuel / empty tank.....**SWITCH TANKS**
Fuel pump.....**ON**

AED / CED.....**check parameters**
Power lever.....**Check response to changes.**

If engine responds normally continue flight but report occurrence to engineers as high pressure pump must be checked before next flight.

If the engine does not respond land as soon as possible and be prepared for POWER OFF landing.

ROUGH RUNNING ENGINE IN FLIGHT

Check for low fuel and take appropriate action (see opposite)

FADEC A should automatically switch to FADEC B

If this has not happened use FORCE B switch.

If the engine does not respond land as soon as possible and be prepared for POWER OFF landing.

Do not use the FORCE B Switch if the FADEC back-up battery is in use as this will cause the engine to stop.

PROPELLOR OVER SPEED

(Rpm between 2400 and 2500 for more than 10 secs,)

Reduce power and airspeed (<100kts.)

Set power to maintain altitude.

Land as soon as practical.

Climb at 65 kts. 100% power if required.

Transient over speed may occur on full power.

PROPELLOR RPM FLUCTUATIONS

(More that + / - 100RPM)

Change power setting. If this does not work:-
Set max. power with airspeed <100kts.

If problem not resolved:-

Reduce power to 55% - 75% till fluctuation minimized.
Airspeed maintained below 110KIAS
Land as soon as practical

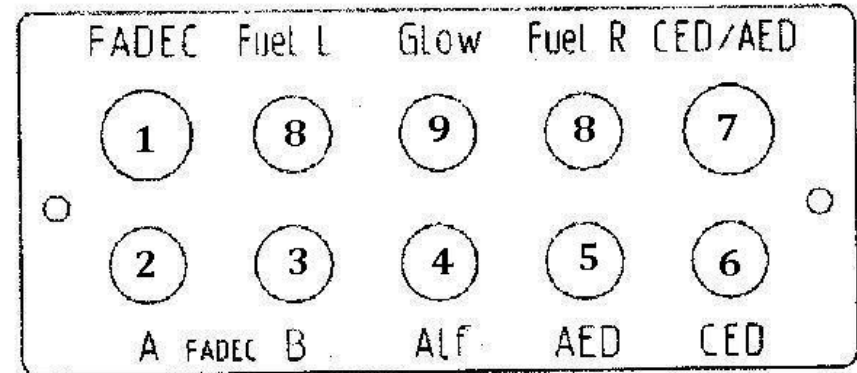
PROPELLOR FLUCTUATIONS SEVERE

Engine Master Switch.....OFF
Fuel Selector.....OFF
Fuel pump.....OFF
Airspeed.....reduce to < 55KIAS
(Do not stall the aircraft)
Airspeed after prop has stopped.....73KIAS
Prepare for POWER OFF landing.

FADEC BACK-UP BATTERY CHECK

(Only to be performed under Flight Instructor supervision)

Alternator / Alternator CB.....OFF
The engine must operate normally
Battery Switch.....OFF
The engine must operate normally for 10 seconds with no FADEC warning lights.
Battery.....ON
Alternator / Alternator CB.....ON



- 1. FADEC test button 2/3 FADEC A AND FADEC B
- 4 ALTERNATOR 5 / 6 AED AND CED INDICATORS (AMBER)
- 7 AED / CED TEST BUTTON 8 LOW FUEL WARNING (AMBER)
9 GLOW (AMBER)

