

**Coventry Flying School Ltd**

**Piper**

**PA28 – 161 WARRIOR III**

**CHECK LIST**

**G-COVC**

**Edition 1.3 – 24/05/2021**

This checklist is to be used by all pilots flying the Schools PA28, G-COVA.

The checklist was produced by combining the Normal and Emergency checks from the aircraft POH with School SOPs and then making some additions for clarity. Changes to the previous checklist version are annotated by vertical bar in left margin.

Suggestions for improvements to the checklist or discrepancies with the POH should be notified to the Head of Training.

**CONTENTS**

**USEFUL INFORMATION – PAGE 3**

This section includes;

- Altimeter Setting Procedures
- Example Passenger Brief
- Stalling checklist
- Standard Operating Speeds
- Limitations

**NORMAL PROCEDURES – PAGE 5**

This section describes the recommended procedures for the conduct of normal operations for the WARRIOR III. This checklist supplies an action sequence for normal operations and is intended for use as an in-flight reference

Pilots should familiarise themselves with the procedures given in this section in order to become proficient in the normal operations of the airplane.

The Pilot Operating Handbook, “amplified normal procedures” provide detailed information and explanations of the procedures and how to perform them.

**EMERGENCY PROCEDURES – PAGE 16**

This section describes the recommended procedures for the conduct of emergency operations for the WARRIOR III. These procedures are suggested as a course of action for coping with the particular condition described, but are not a substitute for sound judgement and common sense.

Pilots should familiarise themselves with the procedures given in this section and be prepared to take appropriate action should an emergency arise.

The Pilot Operating Handbook, “amplified emergency procedures” contains additional information to provide the pilot with a more complete understanding of the procedures.

**ALTIMETER SETTING PROCEDURES**

PHASE OF FLIGHT	ALTIMETER #1 & G5	ALTIMETER #2
Pre-Flight (check)	QFE, QNH +50’/-70’	QFE, QNH +50’/-70’
Departure / Go Around	Airfield QNH	Airfield QNH
En-Route	QNH when flying below Transition Level*  1013 when flying above Transition Altitude*  (*IFR - set once cleared by ATC to Altitude / FL)	Regional Pressure Setting / Airfield QNH as appropriate
Arrival	Airfield QNH	Airfield QNH
Approach / Circuit	Airfield QNH	Airfield QNH

**EXAMPLE PASSENGER BRIEF**

DEMONSTRATE:

1. How to adjust the Seats
2. How to use of the Seat Belts
3. The location of Exits; how to latch and unlatch the Doors
4. The location of the Fire Extinguisher and First Aid Kit

“In the unlikely event of an emergency, which necessitates a forced landing:

- On the command ‘BRACE’,
  - o Slide your seat fully rearward
  - o Re-tighten your seat belt
  - o Remove any spectacles / false teeth
  - o Unlatch you door and assume the BRACE POSITION (demonstrate)
- Once the aircraft has come to a complete stop, vacate rearwards, away from the propeller. If time permits you take the Fire Extinguisher and I’ll take the First Aid Kit.
- Do not return to the aircraft.
- Any questions?”
- 

**PRE-STALLING CHECKS (memory item)**

INITIAL STALL	SUBSEQUENT
Height (Recover by 2000’ AGL)	<b>H</b>
Airframe – Flaps as required	<b>E</b>
Security – Seat belts secure, no loose items	<b>L</b>
Engine - Temperatures & Pressures, Carburettor heat check	<b>L</b>
Location – Clear of Airfields, Built-up areas, Cloud, CAS, Danger areas	
Lookout – 2 x 90° or 1 x 180° turn	

**STANDARD OPERATING SPEEDS**

**TAKE OFF**

Rotate (Vr) (Normal) .....	45-55 KIAS
Rotate (Vr) (flapless - Performance) .....	40-52 KIAS
Rotate (Vr) (25° Flap - Performance) .....	40-52 KIAS
Initial climb .....	44-57 KIAS

**CLIMB**

Best Rate of Climb Speed (Vy).....	79 KIAS
Best Angle of Climb Speed (Vx) .....	63 KIAS
Enroute Climb.....	87 KIAS

**CRUISE**

Cruise .....	100 KIAS
Circuit .....	90 KIAS
Bad Weather Circuit .....	70 KIAS

**APPROACH**

Powered (25° Flap) .....	70 KIAS
Flapless .....	75 KIAS
Glide .....	73 KIAS
Short Field.....	70 KIAS

**FINAL**

Powered (40° Flap) .....	63 KIAS
Flapless .....	70 KIAS
Glide .....	73 KIAS
Short Field.....	63 KIAS

**LIMITATIONS**

These figures are for standard airplanes flown at gross weight under standard conditions at sea level.

NORMAL	
Turbulent Air Operating Speed	111 KIAS
Maximum Flap Speed (Vfe)	103 KIAS
Maximum Demonstrated Crosswind Velocity	17 KTS
STALL SPEEDS - 2440 lbs (0° Flaps) (Vs1)	50 KIAS
STALL SPEEDS - 2440 lbs (Full Flaps) (Vs0)	44 KIAS
MANOEUVRING SPEEDS (Va) - 2440 lbs	111 KIAS
MANOEUVRING SPEEDS (Va) - 1531 lbs	88 KIAS
NEVER EXCEED SPEED (Vne)	160 KIAS
POWER OFF GLIDE SPEED - 2325 lbs (0° Flaps)	73 KIAS
USABLE FUEL (FULL/TABS)	48/34 USG (182/130 litres)

**NORMAL PROCEDURES  
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*(m) - indicates checks that should be memorised.*

**PREPARATION**

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  
 NOTAMS & Royal Flights..... checked

**PREFLIGHT & A CHECK**

**Airplane status = Airworthy / Defects = Cleared / Documents = On board**

**COCKPIT**

Control wheel..... release belts  
 Radio master ..... OFF  
 Parking brake ..... ON  
 Electric switches ..... OFF  
 Magneto switch..... OFF  
 Mixture ..... idle cut-off  
 Battery master..... ON  
 Fuel selector/Fuel quantity gauges..... ON/check  
 Annunciator panel..... check

**DO NOT PRESS ANNUNCIATOR LIGHTS**

Battery master..... OFF  
 Flight controls..... check  
 Flaps..... check and lower  
 Trim ..... check, set neutral  
 Pitot drain..... DRAIN, close  
 Static drain ..... DRAIN, close  
 Alternate static source..... close  
 Windows ..... check, clean  
 Tow bar..... stow  
 Baggage ..... secure  
 Baggage door..... close, secure  
 Fire extinguisher ..... check  
 First aid kit..... check  
 Personal Locator Beacon ..... check  
 Carbon Monoxide Detector..... check

**RIGHT WING**

Wing ..... free of ice, snow, frost  
 Control surfaces (incl. flaps)..... check for interference - free of ice, snow, frost  
 Hinges ..... check for interference  
 Static wicks ..... check  
 Wing tip and lights..... check

Fuel tank .....check supply visually - secure caps  
 Fuel tank sump .....drain, check for water, sediment and correct fuel  
 Fuel vent ..... clear  
 Tie down and chock .....remove  
 Main gear strut ..... correct inflation 4.50 ± .25 in (115 ± 6 mm)  
 Tyre ..... check  
 Brake block and discs ..... check  
 Fresh air inlet ..... clear

**NOSE SECTION**

Fuel and oil .....check for leaks  
 Cowling..... secure  
 Windshield ..... clean  
 OAT ..... check  
 Propeller and spinner ..... check  
 Air inlets ..... clear  
 Alternator belt ..... check tension  
 Landing light ..... check  
 Nose chock .....remove  
 Nose gear strut ..... correct inflation 3.25 ± .25 in (82 ± 6 mm)  
 Nose wheel tyre ..... check  
 Oil .....check level  
 Dipstick .....correctly seated  
 Fuel strainer ..... drain, check for water, sediment and correct fuel

**LEFT WING**

Wing ..... free of ice, snow, frost  
 Fresh air inlet ..... clear  
 Main gear strut ..... correct inflation 4.50 ± .25 in (115 ± 6 mm)  
 Tyre ..... check  
 Brake block and discs ..... check  
 Fuel tanks .....check supply visually - secure caps  
 Fuel tank sumps ..... drain, check for water, sediment and correct fuel  
 Fuel vents ..... open  
 Tie down and chock .....remove  
 Pitot head .....remove cover - holes clear  
 Wing tip and lights ..... check  
 Control surfaces (incl. flaps) ..... check for interference - free of ice, snow, frost  
 Hinges ..... check for interference  
 Static wicks ..... check

**FUSELAGE**

Antennas ..... check  
 Empennage ..... free of ice, snow, frost  
 Fresh air inlet ..... clear

Stabilator and trim tab .....check for interference  
 Tie down and chocks .....remove  
 Battery master ..... ON  
 Cockpit lighting ..... check  
 Nav and strobe lights ..... check  
 Landing light ..... check  
 Stall warning ..... check  
 Pitot heat ..... check  
 All switches ..... OFF

**TRANSIT CHECK**

The following abbreviated check list may be used as a pre-flight check if the aircraft has an A check undertaken on the same day of the flight and signed off in the technical log.

DOCUMENTATION ..... check

**COCKPIT PREPARATION**

Parking brake ..... ON  
 Mixture ..... idle cut-off  
 Mag/Start switch ..... OFF/key out  
 Radio master ..... OFF  
 Battery master ..... ON  
 Fuel selector/Fuel quantity gauges ..... ON/check  
 Battery master ..... OFF  
 Flaps ..... check and lower

**EXTERNAL**

Airframe general ..... check  
 Control surfaces (incl. flaps) ..... check  
 Windshield ..... clean  
 Pitot head ..... check  
 Landing gear ..... check  
 Fuel tanks .....check supply visually - secure caps  
 Fuel tank sumps ..... drain, check for water, sediment and correct fuel  
 Oil contents .....check level  
 Cowlings ..... secure  
 Propeller and spinner ..... check

*End of transit check*

Should any defect be found during the pre-flight inspection or transit check the operations manual must be consulted to ascertain whether the aircraft should be placed unserviceable. If the flight is carried out with a deferred defect this must be recorded in the Deferred Defects Log. Pilot deferred defects can only be entered by a School Instructor.

**BEFORE STARTING ENGINE**

Passengers ..... board & briefed (see page 3)  
 Cabin door ..... close and secure  
 Seat belts and harnesses ..... fasten – check inertia reel  
 Empty seats ..... seat belts snugly fastened  
 Brakes ..... ON  
 Flaps ..... UP  
 Circuit breakers ..... check IN  
 Carburettor heat ..... full OFF  
 Fuel selector ..... LOWEST tank  
 Navigation lights ..... as required  
 Strobes ..... ON

**NORMAL ENGINE START - WHEN COLD OR (HOT)**

Throttle ..... Cold Engine; ¼ in (6mm) open / (Hot Engine: ½ in (12mm) open)  
 Battery master ..... ON  
 Alternator switch ..... ON  
 Electric fuel pump ..... ON  
 Mixture ..... full RICH  
 Propeller ..... CLEAR  
 Starter ..... engage (max 10 secs)  
 Throttle ..... adjust 800 to 1200 RPM  
 Oil pressure ..... check  
 Starter warning light ..... check  
 If engine does not start within 10 sec, prime and repeat procedure

**STARTING ENGINE WHEN FLOODED**

Throttle ..... open full  
 Battery master ..... ON  
 Alternator switch ..... ON  
 Electric fuel pump ..... OFF  
 Mixture ..... idle cut-off  
 Propeller ..... CLEAR  
 Starter ..... engage  
 Mixture ..... advance  
 Throttle ..... close idle  
 Oil pressure ..... check  
 Starter warning light ..... check

**STARTING ENGINE WITH EXTERNAL POWER SOURCE**

Battery master ..... OFF  
 Alternator switch ..... OFF  
 All electrical equipment ..... OFF  
 External power plug ..... insert in fuselage  
 Proceed with normal engine start checklist, then:  
 Throttle ..... lowest possible RPM  
 External power plug ..... disconnect from fuselage

**WARM-UP**

Throttle ..... 800 to 1200 RPM

**AFTER ENGINE START**

Radio master ..... ON  
 Garmin G5 (2) ..... ON  
 Garmin 430 ..... powered and acknowledged  
 Intercom ..... ON  
 ATIS / Airfield Information ..... obtain  
 Altimeters / G5 (3) ..... check & set

**TAXIING**

Taxi area ..... clear  
 Throttle ..... close idle, release brakes, then apply slowly  
 Brakes ..... check  
 Steering ..... check  
 Instruments ..... check

**POWER CHECK**

Fuel selector ..... change tank  
 Throttle ..... 2000 RPM  
 Magnetos ..... max. drop 175 rpm / max. diff. 50 rpm  
 Oil temp ..... check  
**(Engine is warm for take-off when throttle can be opened without engine faltering).**  
 Oil pressure ..... check  
 Annunciator panel ..... **DO NOT PRESS ANNUNCIATOR LIGHTS** ..... press-to-test  
 Ammeter ..... check  
 Carburettor heat ..... check (Observe approx. 75 RPM drop)  
 Electric fuel pump ..... OFF  
 Fuel pressure ..... check  
 Throttle ..... Idle check  
 Throttle ..... 800 to 1200 RPM

**BEFORE TAKEOFF**

Fuel selector ..... fullest tank  
 Magnetos ..... both  
 Flight instruments (incl. DI align with compass, Altimeter/G5 (3)) ..... check  
 Engine gauges ..... check  
 Battery master ..... ON  
 Alternator switch ..... ON  
 Electric fuel pump ..... ON  
 Ammeter ..... check  
 Mixture ..... set  
 Throttle friction ..... as required  
 Carburettor heat ..... OFF  
 Flaps ..... set  
 Trim tabs ..... set  
 Door ..... latch  
 Seat backs ..... erect  
 Belts/harness ..... fastened/check  
 Controls ..... full & free  
 Brief ..... Captains / Departure / TEM  
 ----- Before Entering Runway (m) -----  
 Air ventilation ..... closed  
 Transponder ..... ALT  
 Pitot heat ..... ON  
 Landing light ..... as required

**NORMAL TAKEOFF**

Flaps ..... set  
 Trim ..... set  
 Accelerate to 45 to 55 KIAS  
 Control wheel ..... back pressure to rotate to climb attitude

**PERFORMANCE TAKEOFF 0° FLAPS**

Flaps ..... UP  
 Accelerate to 40-52 KIAS (depending on weight)  
 Control Wheel ..... back pressure to rotate to climb attitude  
 Accelerate to and maintain 44 to 57 KIAS (depending on weight) until obstacle clearance is achieved and climb out at 79 KIAS.

**PERFORMANCE TAKEOFF 25° FLAPS**

Flaps ..... 25° (second notch)  
 Accelerate to 40-52 KIAS (depending on weight)  
 Control Wheel ..... back pressure to rotate to climb attitude  
 Accelerate to and maintain 44 to 57 KIAS (depending on weight) until obstacle clearance is achieved and climb out at 79 KIAS.  
 Flaps ..... retract slowly

**SOFT FIELD TAKEOFF, OBSTACLE CLEARANCE**

Flaps ..... 25° (second notch)  
 Accelerate and lift off nose gear as soon as possible. Lift off at lowest possible airspeed.  
 Accelerate just above ground to 52 KIAS to climb past obstacle height. Continue climbing while accelerating to best rate of climb speed, 79 KIAS.  
 Flaps ..... retract slowly

**SOFT FIELD TAKEOFF, NO OBSTACLE**

Flaps ..... 25° (second notch)  
 Accelerate and lift off nose gear as soon as possible. Lift off at lowest possible airspeed.  
 Accelerate just above ground to best rate of climb speed, 79 KIAS.  
 Flaps ..... retract slowly

**AFTER TAKE-OFF / MISSED APPROACH (m)**

Flaps ..... check up  
 Fuel pump ..... OFF above 1000' AGL  
 Landing light ..... OFF  
 Altimeter / G5 (3) ..... check  
 Engine instruments ..... check  
 Ammeter ..... check  
 Ice ..... check

**CLIMB SPEEDS**

Best rate (flaps up) ..... 79 KIAS  
 Best angle (flaps up) ..... 63 KIAS  
 Enroute ..... 87 KIAS

**CRUISE (m)**

Fuel ..... check  
 Radios ..... check  
 Engine (T&P gauges / Carburettor heat) ..... check  
 DI aligns with compass ..... check  
 Altimeter / G5 (3) ..... check  
 Ammeter ..... check  
 Mixture ..... check  
 Ice ..... check

**WAYPOINT CHECKS**

DI aligns with compass ..... check  
 Heading ..... check  
 Altimeter / G5 ..... set  
 Time ..... note ATA / next ETA

**DESCENT**

Carburettor heat ..... ON  
 Throttle ..... reduce  
 Airspeed ..... 100 KIAS  
 Mixture ..... as required

**CRUISE DESCENT (To achieve the performance in POH fig 5-31)**

Throttle ..... 2500 rpm  
 Airspeed ..... 126 KIAS  
 Mixture ..... rich  
 Carburettor heat ..... ON if required

**GLIDE**

Carburettor heat ..... ON  
 Throttle ..... close idle  
 Airspeed ..... 73 kts  
 Mixture ..... rich  
 Power ..... verify with throttle every 30 seconds

**PRE LANDING (m)**

Brakes ..... OFF  
 Mixture ..... rich  
 Fuel selector ..... fullest tank  
 Electric fuel pump ..... ON  
 Engine gauges ..... check  
 Flight instruments (incl. DI align with compass, Altimeter/G5 (3)) ..... check  
 Carburettor heat ..... check  
 Seat backs ..... erect  
 Belts/harness ..... fasten/check  
 Landing Light ..... as required

**APPROACH (m)**

Flaps ..... set - 103 KIAS max  
 Trim to 70 KIAS

**FINAL (m) (Approx 500 AGL)**

Landing clearance ..... obtained  
 Flaps ..... Full or as required  
 Carburettor heat ..... OFF  
 Final approach speed ..... (flaps 40° => 63 KIAS) or as required

**AFTER LANDING**

Flaps ..... UP  
 Electric fuel pump ..... OFF  
 Landing light ..... as required  
 Pitot heat ..... OFF  
 Carburettor heat ..... OFF  
 Throttle friction ..... loosen

**STOPPING ENGINE**

Throttle ..... 1200 RPM  
 Magnetos ..... check  
 Garmin 430 ..... off and screen blank  
 Garmin G5 (2) ..... OFF  
 Radio master ..... OFF  
 Throttle ..... close idle  
 Mixture ..... idle cut-off

----- AFTER ENGINE STOPPED -----

Magnetos ..... OFF  
 Alternator switch ..... OFF  
 Battery master ..... OFF  
 Lights ..... OFF  
 Strobes ..... OFF

**PARKING**

Parking brake ..... set  
 Control wheel ..... secure with belts  
 Flaps ..... check up  
 Wheel chocks ..... in place  
 Tie downs ..... secure  
 Pitot cover ..... secure

## EMERGENCY PROCEDURES

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**ENGINE FIRE DURING START**

Starter..... crank engine  
 Mixture ..... idle cut-off  
 Throttle ..... open  
 Electric Fuel Pump..... OFF  
 Fuel Selector ..... OFF  
 Abandon if fire continues

**ENGINE POWER LOSS DURING TAKEOFF**

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

If insufficient runway remains Maintain safe airspeed  
 Make only shallow turn to avoid obstructions Flaps as situation requires

If sufficient altitude has been gained to attempt a restart: Maintain safe airspeed  
 Fuel Selector .....switch to tank containing fuel  
 Electric Fuel Pump.....check ON  
 Mixture ..... check RICH  
 Carburettor Heat.....ON

If power is not regained, proceed with power off landing.

**ENGINE POWER LOSS IN FLIGHT – RESTART CHECKS**

Fuel Selector .....switch to tank containing fuel  
 Electric Fuel Pump.....ON  
 Mixture ..... RICH  
 Carburettor Heat.....ON  
 Engine Gauges .....check for indication of cause of power loss

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 heater ..... OFF  
 Electric fuel pump..... OFF

If power is not restored, prepare for power off landing. Trim for 73 KIAS



**POWER OFF LANDING**

Locate suitable field. Establish spiral pattern.

1000 ft. above field at downwind position for normal landing approach.

When field can easily be reached slow to 63 KIAS for shortest landing.

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

When committed to landing:

Ignition..... OFF  
 Battery master switch..... OFF  
 ALTR Switch..... OFF  
 Fuel selector..... OFF  
 Mixture ..... idle cut-off  
 Seat belts and harnesses ..... tight

**FIRE IN FLIGHT**

NOTE: The possibility of an engine fire in flight is extremely remote. The procedure given is general and Pilot judgment should be the determining factor for action in such an emergency.

Source of fire ..... check

**Electrical fire (smoke in cabin):**

Battery master switch..... OFF  
 ALTR Switch..... OFF  
 Vents ..... open  
 Cabin heat ..... OFF

Land as soon as practical.

**Engine fire:**

Fuel selector..... OFF  
 Throttle ..... CLOSED  
 Mixture ..... idle cut-off  
 Electric fuel pump..... check OFF  
 Heater..... OFF  
 Defroster ..... OFF

Proceed with POWER OFF LANDING procedure.

**LOSS OF OIL PRESSURE**

Land as soon as possible and investigate cause.

Prepare for power off landing.

**LOSS OF FUEL PRESSURE**

Electric fuel pump..... ON

Fuel selector ..... check on tank containing fuel

**HIGH OIL TEMPERATURE**

Land at nearest airport and investigate the problem. Prepare for power off landing.

**ELECTRICAL FAILURES**

NOTE: Anytime the bus voltage is below 25 Vdc, the Low Bus Voltage Annunciator will be illuminated.

ALT annunciator light illuminated:

Ammeter ..... check to verify inop. alt.

If ammeter shows zero:

ALT switch ..... OFF

Reduce electrical loads to minimum:

ALT circuit breaker..... check and reset as required

ALT switch ..... ON

If power not restored:

ALT switch ..... OFF

If alternator output cannot be restored, reduce electrical loads and land as soon as practical. Anticipate complete electrical failure. Duration of battery power will be dependent on electrical load and battery condition prior to failure.

**ELECTRICAL OVERLOAD**

(i.e. Alternator over 20 amps above known electrical load)

ALT switch ..... ON

Battery master switch..... OFF

If alternator loads are reduced:

Electrical load ..... Reduce to Minimum

Land as soon as practical.

NOTE - Due to increased system voltage and radio frequency noise, operation with ALT switch ON and BATT switch OFF should be made only when required by an electrical system failure.

If alternator loads are not reduced:

ALT switch ..... OFF

BATT switch..... As required

Land as soon as possible. Anticipate complete electrical failure.

**SPIN RECOVERY**

Rudder..... full opposite to direction of rotation

Control wheel..... full forward while neutralizing ailerons

Throttle ..... idle

Rudder..... neutral (when rotation stops)

Control wheel..... as required to smoothly regain level flight attitude

**OPEN DOOR**

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

To close the door in flight:..... Slow airplane to 89 KIAS

Cabin vents ..... close

Storm window..... open

If upper latch is open.....latch

If side latch if open ..... pull on arm rest while moving latch handle to latched position

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

**ENGINE ROUGHNESS**

Carburettor Heat.....ON

If roughness continues after one min:

Carburettor Heat..... OFF

Mixture ..... adjust for max. smoothness

Electric Fuel Pump.....ON

Fuel Selector ..... switch tanks

Engine Gauges ..... check

Magneto Switch ..... L then R then BOTH

If operation is satisfactory on either magneto, continue on that magneto at reduced power and full RICH mixture to first airport.

Prepare for power off landing.

**CARBURETOR ICING**

Carburettor Heat.....ON

Mixture ..... adjust for max. smoothness