Coventry Flying School Ltd

Piper

PA28 – 161 WARRIOR III

CHECK LIST

G-COVC

Do Not Remove From the Aircraft!

Edition 1.1 – 05/10/2016

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

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 CFI.

CONTENTS

ALTIMETER SETTING PROCEDURES

PHASE OF FLIGHT	ALTIMETER #1	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',
  - Slide your seat fully rearward
  - Re-tighten your seat belt
  - Remove any spectacles / false teeth
  - 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)	**H**
Airframe – Flaps as required	**E**
Security – Seat belts secure, no loose items	**L**
Engine - Temperatures & Pressures, Carburettor heat check	**L**
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 Maximum Flap Speed (Vfe) Maximum Demonstrated Crosswind Velocity	111 KIAS 103 KIAS 17 KTS
STALL SPEEDS - 2440 lbs (0° Flaps) (Vs1) STALL SPEEDS - 2440 lbs (Full Flaps) (Vs0)	50 KIAS 44 KIAS
MANOEUVRING SPEEDS (Va) - 2440 lbs MANOEUVRING SPEEDS (Va) - 1531 lbs	111 KIAS 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 / Defects / Documents ..... airworthy / cleared / papers 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

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
Circuit breakers ..... check IN
Carburettor heat ..... full OFF
Fuel selector ..... LOWEST tank
Navigation lights ..... as required

STARTING ENGINE WHEN COLD

Throttle ..... ¼ in (6mm) 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

Proceed to 'warm up' section of checklist

STARTING ENGINE WHEN HOT

Throttle ..... ½ in (12mm) open
Battery master ..... ON
Alternator switch ..... ON
Electric fuel pump ..... ON
Mixture ..... full RICH
Propeller ..... CLEAR
Starter ..... engage
Throttle ..... adjust 800 to 1200 RPM
Oil pressure ..... check
Starter warning light ..... check

Proceed to 'warm up' section of checklist

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

Proceed to 'warm up' section of checklist

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 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/Garmin 430/ Intercom ..... ON
ATIS ..... obtain
Altimeters (2) ..... 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
Vacuum ..... 4.8" to 5.2" Hg
Oil temp ..... check
Oil pressure ..... check
Annunciator panel ..... press-to-test
Ammeter ..... check
Carburettor heat ..... check
(Observe approx. 75 RPM drop)

(Engine is warm for take-off when throttle can be opened without engine faltering).

Electric fuel pump ..... OFF
Fuel pressure ..... check
Throttle ..... Idle check
Backup vacuum pump ..... check
Throttle ..... 800 to 1200 RPM

BEFORE TAKEOFF

Fuel selector ..... fullest tank
Magnetos ..... both
Flight instruments ..... check
incl. DI align with compass, Altimeter (2)
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
Air ventilation ..... closed
Transponder ..... ALT
Pitot heat ..... ON
Landing light ..... as required
Strobes ..... ON

TAKEOFF

NORMAL

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

0° FLAPS TAKEOFF PERFORMANCE

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.

25° FLAPS TAKEOFF PERFORMANCE

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, 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, 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 (2) ..... check
Engine instruments ..... check
Ammeter ..... check
Ice ..... check

CLIMB

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

CRUISE (m)

Fuel ..... check
Radios ..... check
Engine gauges ..... check
Ammeter ..... check
Flight instruments ..... check
incl. DI align with compass, Altimeter (2)
Carburettor heat ..... check
Power ..... check
Mixture ..... check
Ice ..... check

WAYPOINT CHECKS

Compass & DI ..... aligned
Heading ..... check
Altimeter ..... set
Time ..... give ETA

DESCENT

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

CRUISE (i.a.w POH fig 5-31)
Throttle ..... 2500 rpm
Airspeed ..... 126 KIAS
Mixture ..... rich
Carburettor heat ..... ON if required

GLIDE
Carburettor heat ..... ON if required
Throttle ..... close idle
Airspeed ..... as required
Mixture ..... as required
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 ..... check
incl. DI align with compass, Altimeter (2)
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)

Landing clearance ..... obtained
Flaps ..... set
Carburettor heat ..... OFF
Final approach speed (flaps 40°) ..... 63 KIAS

AFTER LANDING

Flaps ..... full up
Electric fuel pump ..... OFF
Strobes ..... 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
Radio master ..... OFF
Throttle ..... close idle
Mixture ..... idle cut-off

AFTER ENGINE STOPPED

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

LOSS OF VACUUM SUCTION

(i.e. Vacuum inop (VAC) annunciator and VAC OFF warning lamp lit)

Vacuum gauge ..... check to verify inoperative pump.
If vacuum gauge reads below 4.5 inches of mercury:
Auxiliary vacuum switch .....Press AUX ON.
Verify vacuum pressure of 4.8 to 5.2 inches of mercury.
Verify VAC inop annunciator and VAC OFF lights go out.

CAUTION - Compass error may exceed 10° when aux vacuum system is in operation.

Electrical load .....Monitor
Verify alternator capacity is not being exceeded.
If required, turn off nonessential electrical equipment.