



Normal/Abnormal/Emergency

Checklists

Revision 02 – 05/10/2023

PIPER

CHEROKEE 235 “PATHFINDER”

PA-28-235

PREFLIGHT

Pitot Mast Cover Removed

Cabin:

Documents Checked

Control Locks Removed

Parking Brake Set

Avionics OFF

Master Switch ON

Electric Fuel Pump Check

Fuel Quantity Gauges Check

Magneto Switch OFF

Pitot Heat ON

Aircraft Lights ON

Exit Aircraft and Complete:

Stall Warning Horn Check

Pitot Heat (IFR) Check

Aircraft Lights Check

Pitot Heat OFF

Aircraft Lights OFF

Master Switch OFF

Flaps Extended Full

Pitch Trim Control Takeoff

Right Wing:

Flaps Check

Aileron Check

Surface Condition Check

Wing Tie Down Disconnect

Main Wheel Tire Check

Brake Pad/Disc Check

Fuel Quantity (Main and Tip) Check

Fuel Tank Sump Drains (Main and Tip) Drain

Fuel Filler Cap (Main and Tip) Secure

THIS CHECKLIST MUST REMAIN IN AIRPLANE

ENGINE START

Cold:

Throttle ¼ Inch Open

Anti-Collision Switch ON

Battery Master ON

Electric Fuel Pump ON

→ Mixture Rich

Prime As Required

Propeller Area Clear

Magneto/Starter Engage

↳ **CAUTION: If engine does not start within 10 seconds, follow Starter Limits, and wait 20 seconds.** Restart procedure at “Mixture”

Hot:

Throttle ½ Inch Open

Anti-Collision Switch ON

Battery Master ON

Electric Fuel Pump ON

→ Mixture Rich

Propeller Area Clear

Magneto/Starter Engage

↳ **CAUTION: If engine does not start within 10 seconds, follow Starter Limits, and wait 20 seconds.** Restart procedure at “Mixture”

Flooded:

Throttle Full Open

Anti-Collision Switch ON

Batter Master ON

Electric Fuel Pump OFF

Mixture Idle Cut-Off

Propeller Area Clear

Magneto/Starter Engage

Mixture (When Engine Starts) Smoothly Advance

Throttle Reduce

CAUTION: If engine does not start within 10 seconds, follow Starter Limits, and wait 20 seconds. Proceed to Hot or Cold Start procedure; Attempt a start with minimum prime to avoid re-flooding the engine

AFTER START

Tachometer 1000RPM

Oil Pressure Check

Electric Fuel Pump OFF

Mixture As Required

NAV Light As Required

Primer Check Locked

Avionics ON

Transponder ALT and “SET”

BEFORE TAXI

Fuel Selector Switch Tank
ATIS/AWOS/ASOS Obtain
Altimeter(s) Set
Heading Indicator Match Compass
Radio Check Completed
Aircraft Lights As Required
Seat and Seatbelts Secure
Taxi Briefing Completed
Parking Brake Release
Brakes Checked

RUN-UP

Parking Brake Set
Flight Controls Free and Correct
Flight Instruments Check
Fuel Selector Fullest Tank
Pitch Trim Control Takeoff
Mixture Rich
Throttle 2150RPM
Magnetos Check L & R
Oil Pressure/Temperature Check
Fuel Pressure Check
Ammeter Check
Propeller Cycle
Carburetor Heat Check
Circuit Breakers Check
Throttle Check Full Idle
Throttle 1000RPM
Throttle Friction Lock Adjust

BEFORE TAKEOFF

Flaps As Required
Mixture Rich or As Required
Propeller High RPM
Electric Fuel Pump ON
Pitot Heat As Required
COM/NAV Frequency Set
Transponder Set
Cabin Door/Windows Closed/Locked
Takeoff Briefing/Time Reviewed
Brakes Release
Landing Light **ON**

CLIMB

Airspeed 87 KIAS (100 KIAS En-Route)
Throttle/Propeller 25" /2500 RPM
Mixture As Required
Flaps UP
Engine Gauges Checked

Nose:

Surface Condition Check
Engine Oil (*Minimum 8 Quarts*) Check
Engine Cooling Air Inlets Check
Propeller and Spinner Check
Nosewheel Strut and Tire Check
Chocks Removed

Left Wing:

Fuel Quantity (*Main and Tip*) Check
Fuel Filler Cap (*Main and Tip*) Secure
Fuel Tank Vent Tab (*Main and Tip*) Check
Main Wheel Tire Check
Brake Pad/Disc Check
Fuel Tank Sump Drains Drain
Wing Tiedown Disconnect
Stall Warning Opening Check
Pitot Mast Check
Static Source Check
Aileron Check
Flaps Check
Surface Condition Check

Empennage:

Surface Condition Check
Tail Tiedown Disconnect
Control Surfaces Check
Stabilator Anti-Servo Tab Check
Antennas Check
Baggage Compartment Door Locked

Final Walk Around:

Chocks Removed
Fuel Caps Secure
Engine Air Inlet Covers Removed
Pitot Mast Cover Removed
Baggage Door Closed and Locked

BEFORE START

Passenger Briefing Completed
Seat and Seatbelts Adjust and Lock
Brakes Test
Circuit Breakers Check In
Carburetor Heat OFF
Propeller High RPM
Avionics OFF
Hobbs and Tach Time (JPI) Verify
Parking Brake Set
Fuel Selector Desired Tank
Flaps Up
Alternate Static Closed

DO NOT RUSH

ENGINE FIRE DURING START

Ignition/Starter Continue to Crank Engine
Mixture Idle Cut-Off
Throttle Open
Electric Fuel Pump OFF
Fuel Selector OFF

If Fire continues Abandon Aircraft

ENGINE FIRE IN FLIGHT

Fuel Selector OFF
Throttle Closed
Mixture Idle Cut-Off
Electric Fuel Pump OFF
Heater and Defroster OFF

If Fire continues:

Airspeed Increase
Land Proceed to Power-Off Landing Procedure

ELECTRICAL FIRE (SMOKE IN CABIN)

Master Switch OFF
Vents Open
Heater and Defroster OFF

Fire Extinguisher Use As Needed
Emergency Descent Complete as Needed
Land As Soon As Practical

SPIN RECOVERY

Throttle Closed
Ailerons Neutral
Rudder Full opposite to Direction of Spin
Control Wheel Full forward
Rudder Neutral (When Rotation Stops)
Control Wheel As required for level flight

CARBURETOR ICING

Carburetor Heat ON
Mixture Adjust for max smoothness

LOSS OF FUEL PRESSURE

Electric Fuel Pump ON
Fuel Selector Check on Full Tank

FLY THE AIRPLANE

CRUISE

Throttle As Required
Propeller As Required
Mixture As Required
Electric Fuel Pump OFF
Engine Gauges Check
Landing Light OFF

DESCENT

Throttle As Required
Mixture Adjust
Landing Light ON
ATIS/AWOS/ASOS Obtain
Altimeter(s) Set

BEFORE LANDING

Seat and Seatbelts Check Secure
Fuel Selector Fullest Tank
Mixture Rich
Propeller High RPM
Electric Fuel Pump ON
Carburetor Heat As Required
Approach Briefing Complete

AFTER LANDING

Flaps Retracted
Mixture As Required
Electric Fuel Pump OFF
Aircraft Lights As Required
Pitot Heat OFF
Carburetor Heat OFF
Pitch Trim Control Takeoff

SHUTDOWN

Parking Brake On
Throttle 1000RPM
ELT Silent on 121.500MHz
Transponder ALT and "1200"
Avionics OFF
Mixture Idle Cut-Off
Magneto Switch Off and Key Removed
Master Switch OFF
Hobbs and Tach Time (JPI) Record
Final Walk-Around:

Control Lock Install
Engine Air Inlet Covers Install
Pitot Tube Cover Install
Chocks Install
Parking Brake Release

REMOVE ALL PERSONAL BELONGINGS

Ensure the aircraft is left in a clean manner for the next pilot. Debris left can cause major damage.

DO NOT RUSH

ENGINE POWER LOSS DURING TAKEOFF

Throttle Closed
Land Straight Ahead
Brakes Apply

ATC/CTAF Notify

ENGINE POWER LOSS DURING FLIGHT

Airspeed 83 KIAS
Suitable Place to Land Identify
If Altitude Permits:
Fuel Selector Switch to Tank Containing Fuel
Electric Fuel Pump ON
Mixture Rich
Carburetor Heat ON
Primer Check Locked
Magnetos Both

CAUTION: If no fuel pressure is indicated, check fuel selector to be sure it is on a tank containing fuel.

If Power is Restored:

Carburetor Heat Off
Electric Fuel Pump Off

If Power is NOT Restored:

Trim 83 KIAS
Land Proceed to Power Off Landing Procedure

POWER OFF LANDING

Suitable Place to Land Identify
Ignition OFF
Master Switch OFF
Fuel Selector OF
Mixture Idle Cut-Off
Seatbelt and Harness Tight
Transponder 7700
Door Open
Radio Transmit
Flaps As Desired
Passengers Briefed
Airspeed (Upon Landing) 78 KIAS

FLY THE AIRPLANE

DO NOT RUSH

AP MALFUNCTION / PITCH TRIM RUNAWAY

Control Wheel Grasp Firmly
AP DISC/ TRIM INT Button Press and Hold
Aircraft Attitude Maintain/Regain Aircraft Control

CAUTION: Do not release the AP DISC / TRIM INT Button until after pulling the AUTOPILOT Circuit Breaker

Elevator Trim Re-Trim
Autopilot Circuit Breaker Pull

CAUTION: Pulling the AUTOPILOT circuit breaker will render the autopilot and ESP inoperative.

In flight, do not overpower the autopilot. The trim will operate in the direction opposing the overpower force, which will result in large out-of-trim forces.

Do not attempt to re-engage the autopilot or use manual electric pitch trim until the cause of the malfunction has been corrected.

AP FAILURE / ABNOMRAL DISCONNECT

AP DISC/ TRIM INT Button Press and Release
Aircraft Attitude Maintain/Regain Aircraft Control

CAUTION: The autopilot disconnect may be accompanied by a red AFCS in the autopilot status box, indicating the automatic flight control system has failed. The flight director will not be available and the autopilot cannot be re-engaged with this annunciation present.

If the disconnect is accompanied by an amber AP with a red X, the autopilot will not be available however the flight director will still be functional.

FLY THE AIRPLANE

DO NOT RUSH

AP ESP ACTIVATION

Power As Required
Aircraft Attitude Maintain/Regain Aircraft Control

CAUTION: If ESP is active for approximately 10 seconds, the autopilot will automatically engage in LVL mode, an aural 'ENGAGING AUTOPILOT' will be played, (or a Sonalert tone will sound for installations without a supported audio panel) and the autopilot will roll the wings level and fly at zero-vertical speed. Refer to Section 7, System Description for further information.

ESP will be disabled by pressing and holding the AP DISC / TRIM INT button. Releasing the button will allow ESP to function.

PITCH TRIM FAILURE

Control Wheel Grasp Firmly
AP DISC/ TRIM INT Button Press and Release
Elevator Trim As Required

CAUTION: The autopilot may be re-engaged. Refer to the normal procedures section of this AFMS, MANUAL PITCH TRIM WITH AUTOPILOT ENGAGED.

OVERSPEED PROTECTION (MAXSPD)

Power Reduce
Aircraft Attitude and Altitude Monitor

If condition has been corrected:

Autopilot Reselect lateral and vertical modes
Power ADJUST as necessary

CAUTION: Autopilot Overspeed Protection Mode provides a pitch up command to maintain 140 KIAS

UNDERSPEED PROTECTION (MINSPD)

Power INCREASE to maximum
Aircraft Attitude and Altitude Monitor

If condition has been corrected:

Autopilot Reselect lateral and vertical modes
Power ADJUST as necessary

CAUTION: Autopilot Overspeed Protection Mode provides pitch down command to maintain 65 KIAS

FLY THE AIRPLANE

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:

Airspeed 85 KIAS
Cabin vents Close
Strom window Close
If upper latch is open Latch
If side latch is open Pull arm rest, move
Handle to the latched position
If both latches are open Latch side, then top

HIGH OIL TEMPERATURE

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

ENGINE ROUGHNESS

Carburetor Heat ON

If roughness continues after one minute:

Carburetor 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 one, continue on that magneto at reduced power and full "Rich" mixture to first airport

ELECTRICAL OVERLOAD

Alternator over 20 AMPS above known load:

ALT Switch ON
BATT Switch OFF

If Alternator Load Reduced:

Electrical Load Reduce to Minimum

If Alternator Load is NOT Reduced:

ALT Switch OFF
BATT Switch As Required

ELECTRICAL FAILURE

“ALT” Annunciator Light Illuminated:

Ammeter (JPI) Check to Verify INOP

If Ammeter Shows Zero:

ALT Switch OFF

Electrical Load Reduce to Minimum

Alternator Circuit Breaker Check and Reset

ALT Switch ON

If Electrical Power is NOT Restored:

ALT Switch OFF

CAUTION: If alternator output cannot be restored, reduce electrical loads and land as soon as practical. The battery is the only remaining source of electrical power. Land as soon as practical.

G5 “ATTITUDE FAIL” OR RED “X”

“ATTITUDE FAIL” Annunciator or Red “X” over Attitude indicator:

Maintain Flight Straight and Level

Standby Attitude Indicator Monitor

If annunciators or red “X” remains:

Seek VFR or Land As Soon as Practical

CAUTION: Rate of turn and slip information will not be available.

G5 “HEADING FAIL” OR RED “X”

YELLOW “HDG” Annunciator or Red “X” over Heading indicator:

Standby Compass Monitor

CAUTION: If the G5 DG/HSI has a valid GPS signal the G5 DG/HSI instrument will display the GPS track information in magenta.

G5 LOSS OF ELECTRICAL POWER

“HH:MM” Annunciator on G5 battery status:

Electrical Load Monitor

CAUTION: There has been a failure of the external electrical source and the G5 is using its internal battery. Be prepared for the unit to fail at any time. The time remaining on the battery is displayed in hours and minutes on the battery status.

“BATT” Annunciator on G5 battery status:

Electrical Load Monitor

CAUTION: There has been a G5 battery fault and failure of the unit may occur.

G5 ATTITUDE ALIGNING

Yellow “ALIGNING KEEP WINGS LEVEL”

Annunciator displays in flight:

Standby Flight Instruments Monitor

If Attitude Information Does NOT return:

Seek VFR or Land As Soon as Practical

CAUTION: The message will clear when the attitude solution is within the systems internal accuracy tolerances.

Yellow “ALIGNING” Annunciator displays in cruise flight WITH attitude information:

Maintain Flight Straight and Level

CAUTION: If attitude information is displayed, the data is VALID. The message will clear when the attitude solution is within the systems internal accuracy tolerances.

G5 GPS FAILURE “LOI” or “DR” on HSI

If NAV2 is operative:

Alternate NAV source (NAV2) Use

If NAV2 is inoperative with “DR” annunciator:

Amber CDI Use

VFR Conditions As Soon as Practical

If NAV2 is inoperative with “LOI” annunciator:

VFR Conditions As Soon as Practical

POWER SETTING TABLE:

→ Lycoming O-540-B4B5 - Constant Speed Prop.

→ 75% Power – 176 HP (~14 GPH)

Press. Alt. 1000' Feet	Std. Alt. Temp. °F	RPM and MAN. PRESS.			
		2100	2200	2300	2400
SL.	59	25.7	25.0	24.4	23.7
1	55	25.4	24.7	24.1	23.4
2	52	25.2	24.5	23.8	23.1
3	48	24.9	24.2	23.5	22.8
4	45	24.7	24.0	23.3	22.5
5	41	-	23.7	23.0	22.3
6	38	-	-	22.7	22.0
7	34	-	-	-	21.6

→ 65% Power – 153 HP (~11.5 GPH)

Press. Alt. 1000' Feet	Std. Alt. Temp. °F	RPM and MAN. PRESS.			
		2100	2200	2300	2400
SL.	59	23.2	22.6	22.0	21.5
1	55	22.9	22.3	21.7	21.2
2	52	22.7	22.1	21.5	21.0
3	48	22.4	21.8	21.2	20.7
4	45	22.2	21.6	21.0	20.5
5	41	21.9	21.3	20.7	20.2
6	38	21.7	21.1	20.5	19.9
7	34	21.4	20.8	20.2	19.7
8	31	21.3	20.6	20.0	19.4
9	27	-	20.4	19.8	19.2

→ 55% Power – 129 HP (~10.3 GPH)

Press. Alt. 1000' Feet	Std. Alt. Temp. °F	RPM and MAN. PRESS.			
		2100	2200	2300	2400
SL.	59	20.6	20.1	19.6	19.2
1	55	20.3	19.8	19.3	18.9
2	52	20.1	19.6	19.1	18.7
3	48	19.8	19.3	18.8	18.4
4	45	19.6	19.1	18.6	18.2
5	41	19.3	18.8	18.3	17.9
6	38	19.1	18.6	18.1	17.7
7	34	18.8	18.3	17.8	17.4
8	31	18.6	18.1	17.6	17.2
9	27	18.4	17.9	17.4	17.0
10	23	18.2	17.7	17.2	16.8
11	19	18.0	17.5	17.0	16.6
12	16	17.8	17.3	16.8	16.4
13	12	-	17.1	16.6	16.2
14	9	-	-	16.4	16.1
15	5	-	-	-	15.9

**** REFERENCE ONLY - CONSULT POH ****

AUTOPILOT ABNORMAL DISCONNECT

“Red AP” in the G5 autopilot status box, continuous aural disconnect tone:

AP DISC/ TRIM INT Button Press and Release Aircraft Attitude..... Maintain/Regain Aircraft Control

CAUTION: The autopilot disconnect may be accompanied by a red AFCS in the autopilot status box, indicating the automatic flight control system has failed. The flight director will not be available and the autopilot cannot be re-engaged with this annunciation present.

If the disconnect is accompanied by an amber AP with a red X, the autopilot will not be available however the flight director will still be functional.

LOSS OF NAVIGATION INFORMATION

Amber GPS, VOR, LOC, or BC flashes for 10 seconds on G5:

GFC 500 Mode Panel SELECT HDG (desired)
NAV SOURCE Select a valid NAV source
NAV Key Press

If on an instrument approach at the time the navigation signal is lost:

Missed Approach Procedure EXECUTE

LOSS OF AIRSPEED DATA

CAUTION: If airspeed data is lost while the autopilot is tracking airspeed, the flight director will default to pitch mode (PIT).

“Red X” through airspeed tape on the G5 display, amber AP with a red X in autopilot status box:

AP DISC/ TRIM INT Button Press and Release Aircraft Attitude..... Maintain/Regain Aircraft Control
Elevator Trim As Required

CAUTION: The autopilot cannot be re-engaged. The flight director is available however IAS mode cannot be selected. Loss of airspeed will be accompanied by a red PTRIM indication on the G5 (if a pitch trim servo is installed).

LOSS OF ALTITUDE DATA

CAUTION: If altitude data is lost while the autopilot is tracking altitude, the autopilot will default to pitch mode (PIT).

“Red X” through altitude tape on the G5 display:

Autopilot SELECT different vertical mode

LOSS OF HEADING DATA

CAUTION: The following features will be INOP:

1. GPSS will not be provided to the autopilot for heading legs.
2. Map cannot be oriented to Heading Up.
3. Track information will be displayed on the G5.

Autopilot SELECT different lateral mode

ELEVATOR MISTRIM (AUTOTRIM)

Amber “TRIM UP” or “TRIM DOWN” displayed on the G5

If a pitch trim servo is not installed and “TRIM DOWN”:

TRIM WHEEL..... Manually TRIM NOSE DOWN

If a pitch trim servo is not installed and “TRIM UP”:

TRIM WHEEL..... Manually TRIM NOSE UP

If a pitch trim servo is installed:

CAUTION: Momentary display of the TRIM UP or TRIM DOWN message during configuration changes or large airspeed changes is normal.

Control Wheel.....Grasp Firmly

CAUTION: Be prepared for significant sustained control forces in the direction of the mistrim annunciation. For example, TRIM DOWN indicates nose down control wheel force will be required upon autopilot disconnect.

AP DISC/ TRIM INT Button Press and Release
Elevator Trim As Required

Electric pitch trim should be considered inoperative until the cause of the mistrim has been investigated and corrected.

IMPORTANT SPEEDS:

V_G..... 83 KIAS

V_R..... 52 KIAS

V_Y..... 87 KIAS

V_X..... 78 KIAS

V_S..... 61 KIAS

V_{SO}..... 52 KIAS

V_{FE}..... 100 KIAS

V_{NO}..... 136 KIAS

V_{NE}..... 171 KIAS

V_A..... 109-120 KIAS

PASSENGER BRIEFING:

Seatbelts/Harness

- Operation and Adjustment
- Fastened for Taxi, Takeoff, and Landing

Emergency Exits

- Location and Operation

Fire Extinguisher

- Location and Operation

Sterile Cockpit

Flight Controls

- Do not Block or Interfere

Emergency Procedures

TAXI BRIEFING:

Departure Runway

Anticipate Taxi Route

- Taxiways to be use
- Intersecting Runways
- Run-Up area
- Hotspots

TAKEOFF BRIEFING:

Departure Runway

- Length/Distance Available
- Surface Condition
- Wind Direction/Speed

Lift-Off Speed/ Initial Climb Speed

Emergency Procedures

- On-Ground
- In-Air

Normal Departure Procedures

CAUTION: Always ensure that you have the most recent revision of this checklist. Always refer to the pilots operating handbook for specific procedures. Always choose the safest course of action.

THIS CHECKLIST MUST REMAIN IN AIRPLANE