

Langley Flying School Pilot Checklist

PA-28-140 Piper Cherokee (14-02)

Airspeeds for Safe Operation¹

V _r (Rotation Speed)	64 MPH IAS
V _{so} (Stall Speed Landing Configuration)	47 MPH IAS
V _{sl} (Stall Speed Clean Configuration)	58 MPH IAS
V _x (Best Angle Climb)	76 MPH IAS
V _y (Best Rate Climb)	86 MPH IAS
V _{fe} (Flap Extension Speed)	115 MPH IAS
V _a (Manoeuvring)	131 MPH IAS
Maximum Distance Glide	80 MPH IAS
Initial Approach Speed 25° Flaps	80 MPH IAS
Final Approach Speed 40° Flaps	68 MPH IAS
Final Approach Speed 25° Flaps	71 MPH IAS
Final Approach Speed 10° Flaps	74 MPH IAS
Final Approach Speed 0° Flaps	77 MPH IAS
Nose Gear Oleo Exposure	3¼ Inches
Main Gear Oleo Exposure	4½ Inches

Initial Cockpit Checks 1

Control Column	Unlocked
Fire Extinguisher	Secured and Checked
First-aid Kit	Checked
Survival Kit	Checked
Pilot Operating Handbook	Checked
Aircraft Documents	Checked
Journey Log (on board if required)	Checked
Unoccupied Seats	Belts Secured
Flight Supplement	Checked
Navigation Charts	Checked
Life Jackets (if required)	Checked
Radio	Off
VOR, ADF, GPS, Loran C (as applicable)	Off
Transponder	Off
Electric Switches	Off
Intercom	Off
Circuit Breakers	Checked
Master Battery Switch	On
Fuel Gauges	Checked
Fuel Selector	Lowest Tank
Fuel Pump	On
Fuel Pressure	Checked

Continued next page

¹ Speeds are listed here as "indicated" airspeeds, and are based on published "calibrated" airspeed published in the Pilot Operating Handbook that are converted using the data that appears on P.7-7 of the POH. The conversion from calibrated to indicated airspeed assumes zero instrument error, and is valid only when the aircraft is flown at maximum gross weight in level flight.

Initial Cockpit Checks continued

Fuel Pump	Off
Landing Light	On
Anti-Collision Light	On
Navigation Lights	On
External Lights	Checked
Stall Warning Light	Checked
Landing Light	Off
Anti-Collision Light	Off
Navigation Lights	Off
Master Battery Switch	Off
Flaps	Extend To 40°

Conduct External Pre-flight Inspection

Passenger Briefing 2

ELT	Location and Function
Door / Emergency Exit	Operation
Fire Extinguisher	Location & Operation
Seat & Seat Belts	Operation
Baggage	Stowage
First Aid Kit	Location
Survival Kit	Location
Smoking	No Smoking
Emergency	Review Procedure

(Bags - stowed, seat backs- upright, seat belts - tight, sharp objects – remove from pockets, eye glasses - remove, dentures – remove, brief passenger re. opening door prior to landing).

Pre-Start 3

Flaps	Retracted
Park Brake	Set
Area	Clear
Fuel Selector (per pre-flight)	Confirm Lowest Tank
Carburetor Heat	Off
Hobbs and Time	Record
Master Battery Switch	On

Engine Start 4

Cold Engine 4a

Throttle	Open 1/4 inch
Fuel Pump	On
Mixture	FULL RICH
Propeller	"Clear"
Starter	Engage
Throttle	<1000 RPM

If engine does not fire in 5-10 Second, Prime 3 times, Repeat starting procedures.

Oil Pressure	Checked
Throttle	set 1000 RPM
Fuel Pump	Off
Fuel Pressure	Checked
Master Alt Switch	On

Warm or Hot Engine 4b

Throttle	Open ½ inch
Fuel Pump	On
Mixture	Full RICH
Propeller	Clear
Starter	Engage
Throttle	< 1000 RPM
Oil Pressure	Checked
Throttle	set 1000 RPM
Fuel Pump	Off
Fuel Pressure	Checked
Master Alt Switch	On

Flooded Engine Start 4c

Caution: A flooded engine start should not be attempted until all fuel at the bottom of the engine cowling has evaporated.

Fuel Pump	Off
Mixture	Set Lean
Throttle	Full Open
Propeller	Clear
Starter	Engage
When engine starts:	
Throttle	Closed
Mixture	Set Rich
Oil Pressure	Checked
Throttle	set 1000 RPM
Fuel Pressure	Checked
Master Alt Switch	On

Taxi 5

Intercom	On
Transponder	Set Standby and Squawk 1200
Radios	On
ATIS (if available)	Checked
Altimeter	Set To ATIS/Elevation
Communications (as applicable)	Position/Intention
Altimeter (if applicable)	Re-set
Transponder (if applicable)	Set Discrete Code
Brakes	Check
Flight Instrument	Ground Roll Check

Warning: The **survival equipment** on board this aircraft contains minimal content for operational training in the temperate west-coast climatic area. When flying outside this area, Langley Flying School requires that it is the pilot's responsibility to ensure survival equipment appropriate to the climatic conditions as per *CAR 602.61*.

Warning: With the exception of emergencies, Langley Flying School prohibits the landing of this aircraft at any aerodrome not certified by Transport Canada or the US FAA.

Run-up 6

Throttle	Set 1000 RPM
Area	Clear
Brakes	Set
Fuel Selector	Fullest Tank
Alternator	Load Check (Electrical Switches "ON", check Load increase, Electrical Switches "OFF", check Load decrease)
Throttle	Set 2000 RPM
Gyro Vacuum	Check (5"Hg ± 0.1")
Magnetos	Check (175 RPM max. drop & 50 RPM max. difference)
Oil Temperature	Check
Oil Pressure	Check
Carburettor Heat	Check
Mixture	Check
Throttle	Closed
Carburettor Heat	On
Oil Pressure	Idle Check
Carburettor Heat	Off
Throttle	Set 1000 RPM

Pre-takeoff 7

Seats	Secure
Harnesses	Secure
Hatches	Closed and Locked
Heading Indicator	Set
Flight Instruments	Check and Set
Magnetos	Both
Fuel	Sufficient
Engine Gauges	Check
Primer	In and Locked
Mixture	Set
Carburettor Heat	Off
Fuel Pump	On
Flaps	Free, Symmetrical, and Set
Trim (Stabilator and Rudder)	Check and Set
Control Column	Free and Correct

Takeoff Briefing

Runway Length	Verify Sufficient
Crosswind Condition	Check Windsock
Rotation and Climb Speeds	Review
Departure Procedures	Review

Engine Failure Vital Actions Review

Below 800'

Glide Speed	80 MPH
Control	Gentle turns avoid fixed objects
Carburettor Heat	On
Fuel Pump	On
Fuel Selector	Switch Tanks

Above 800'

Same vital actions—more aggressive in selecting field.

Holding Short 8

Time	Record
Traffic and Runway	Checked and Clear
Communications	Clearance and/or Intentions ²

Runway 9

Traffic	Clear
Landing Light	On
Anti-collision Lights	On
Navigation Lights (as required)	On
Transponder	Set ALT
Heading Indicator	Confirm Runway Heading
Aileron Inputs	For Crosswind as required
Maximum Power	Confirmed

Post Takeoff (500' AGL) 10

Fuel Pump	Off
Fuel Pressure	Green
Oil Pressure	Green
Oil Temperature	Green
Flaps	Retract

Level/Cruise 11

Throttle	Set
Mixture	Set
	(do not lean at or below 4000')
Carburettor Heat	Check
Heading Indicator	Confirmed/Set

Pre-descent 12

Mixture	Set Full Rich
Altimeter	Set

Pre-landing 13

Magnetos	Both
Oil Temperature	Green
Fuel Pressure	Green
Oil Pressure	Green
Primer	In & Locked
Mixture	Rich
Master	On
Fuel Pump	On
Carburettor Heat	On
Fuel Selector	Fullest Tank
Carburettor Heat	Off
Brakes	Checked
Seats	Upright
Seat Belts	Secured
Baggage	Stowed

Post-landing 14

Fuel Pump	Off
Landing Light	Off
Anti-collision Light	Off
Transponder	Off
Time	Record

Engine Shut-down 15

Throttle	Set 1000 RPM
Radio	Select 121.5 & Check ELT
Radios	Off
Navigation (VOR, ADF, GPS, Loran C)	Off
Navigation Lights	Off
Panel Lights	Off
Intercom	Off
Throttle	Close
Magnetos	Check Dead Mags
Mixture	Idle cut-off
Magnetos	Off
Key	Dash
Master	Off
Hobbs and Time	Record
Control Column	Secure as required
Aircraft	Secure as required
ATC Flight Plan	Closed if applicable

² Note: All clearance from a Control Tower authorising movement on to a runway or takeoff from a runway must be read-back to the controller.

EMERGENCY

Engine Failure during Takeoff

Aircraft Control	Pitch Down to Maintain Airspeed
Airspeed	80 MPH

Below 800' AGL:	
Control	Gentle Turns
Carburettor Heat	On
Fuel Pump	On
Fuel Selector	Switch Tank
Communication	May Day

Above 800' AGL	
Same vital actions as above, but more aggressive in selecting field.	

When committed to landing:

Magnetos	Off
Master Switch	Off
Fuel Selector	Off
Mixture	Idle Cut-off
Seat Belts/Harnesses	Tight

"The proper action to be taken if loss of power occurs during takeoff will depend on circumstances.

1. If sufficient runway remains for a normal landing, land straight ahead.
2. If insufficient runway remains, maintain a safe airspeed and make only a shallow turn if necessary to avoid obstructions. Use of flaps depends on circumstances. Normally, flaps should be fully extended for touchdown." (POH, P. 4-1)

Note: "If an engine failure was caused by fuel exhaustion, power will not be restored after tanks are switched until empty fuel lines are filled, which may require up to ten seconds. (POH, P. 4-1)"



EMERGENCY

Engine Power Loss In Flight

Glide Speed	80 MPH
Control	Gentle Turns & avoid fixed objects

Carburettor Heat	On
Fuel Pump	On
Fuel Selector	Switch Tanks
Mixture	Rich
Primer	In & Locked
Magnetos	Variable Settings (Left, Right, Both)
Throttle	Variable Settings
Mixture	Variable Settings
Engine Gauges	Check
Fuel Pressure	Check

(if no pressure is indicated, check fuel selector is set on a tank containing fuel).

When power is restored:

Carburettor Heat	Off
Fuel Pump	Off

"Complete engine power loss is usually caused by fuel flow interruption, and power will be restored shortly after fuel flow is restored. If power loss occurs at low altitude, the first step is to prepare for an emergency landing (See POWER OFF LANDING). Maintain an airspeed of at least 80 MPH IAS, and if altitude permits, proceed . . ." as above. (POH, P. 4-2)

"Try other fuel tanks. (Water in the fuel could take some time to be used up, and allowing the engine to windmill may restore power. If power loss is due to water, fuel pressure indications will be normal.)" (POH, P. 4-2)

Note: "If an engine failure was caused by fuel exhaustion, power will not be restored after tanks are switched until empty fuel lines are filled, which may require up to ten seconds. (POH, P. 4-2)"

If power is not restored, proceed with "POWER OFF LANDING" procedure.
(POH, P. 4-2 & 4-3).



EMERGENCY

Power Off landing

Glide Speed	80 MPH
Landing Area	Select
Radio	Mayday 121.5 MHz
Transponder	Squawk 7700

When committed to landing:

Ignition	Off
Master Switch	Off
Fuel Selector	Off
Mixture	Idle Cut-Off
Seat Belt & Harness	Tight
Door	Open Latch

Note: "If loss of power occurs at altitude, trim the aircraft for best gliding angle (80 MPH IAS) and look for a suitable field. If measures taken to restore power are not effective, and if time permits, check your charts for airports in the immediate vicinity: it may be possible to land at one if you have sufficient altitude. If possible, notify ATS by radio of your difficulty and intentions. If another pilot or passenger is aboard, let them help.

When you have located a suitable field, establish a spiral pattern around this field. Try to be at 1000 feet above the field at the downwind position to make a normal approach. Excess altitude may be lost by widening your pattern, using flaps or slipping, or a combination of these.

Touchdowns should normally be made at the lowest possible airspeed, with full flaps (POH, P. 4-2 & 4-3)."

Spins

Intentional spins are prohibited in the normal category airplane and the utility category airplane when air conditioning is installed. For approved manoeuvres as a utility category airplane, refer to the [Pilot Operating Handbook] . . . If a spin is inadvertently entered, immediately use the following recovery procedures (POH, P. 4-3).":

Throttle	Idle
Rudder	Full Opposite to direction of rotation
Control Wheel	Full Forward
Rudder	Neutral (when rotation stops)
Control Wheel	As required to smoothly regain level flight attitude.

EMERGENCY

Engine Fire during Start

Starter	Continue Cranking Engine
Mixture	Idle Cut-off
Fuel Selector	Off
Throttle	Set Full Open
Fuel Pump	Off
Abandon aircraft if fire continues.	

"Engine fires during start are usually the result of over priming. The [above] . . . procedure is designed to draw the excess fuel back into the induction system. (POH, P. 4-4)."

Engine Fire In Flight

Aircraft Control	Airspeed 80 MPH
Fuel Selector	Off
Throttle	Closed
Mixture	Idle Cut-off
Cabin Heat	Close
Defrost	Close
Landing Area	Select
Communication	May Day
Transponder	Squawk 7700

Prepare cabin and passengers for landing.

Just prior to landing:	
Magnetos	Off
Master	Off
Seat Belts/Harnesses	Tight
Door Hatch	Open

Note: "The possibility of an engine fire in flight is extremely remote. The procedure given above is general and pilot judgement should be the deciding factor for action in such an emergency (POH, P. 4-4)."

Caution: "The presence of fire is noted through smoke, smell, and heat in cabin. It is essential that the source of the fire be promptly identified through instrument readings, character of the smoke, or other indications, since the action to be taken differs somewhat in each case (POH, P. 4-4)."

EMERGENCY

Electrical Fire during Flight

Master	Off
Vents	Open
Cabin Heat	Close
Land as soon as possible.	

If use of electrical equipment is essential for safety:

All electrical switches	Off
Master	On
Required equipment	On

If re-ignition of fire detected:

Master	Off
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Engine Roughness

Caution: "Engine roughness is usually due to carburettor icing which is indicated by a drop in RPM, and may be accompanied by a slight loss of airspeed or altitude. If too much ice is allowed to accumulate, restoration of full power may not be possible; therefore, prompt action is required (POH, P. 4-6)."

Carburettor Heat	On
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Wait for decrease in engine roughness or increase in RPM.

If engine roughness remains:

Mixture	Adjust for maximum smoothness
Fuel Pump	On
Fuel Selector	Switch Tanks
Engine Gauges	Check
Magneto Switch	Select Left and Right
Primer	In & Locked

If roughness persists, prepare for a precautionary landing at pilot's discretion.

Note: Partial carburettor heat may be worse than no heat at all, since it may partially melt ice, which will refreeze in the intake system. When using carburettor heat, therefore, always use full heat, and when ice is removed return the control to the full cold position (POH, P. 4-6)."

EMERGENCY

Loss of Oil Pressure

"Loss of oil pressure may be either partial or complete. A partial loss of oil pressure usually indicates a malfunction in the oil pressure regulating system, and a landing should be made as soon as possible to investigate the cause and prevent engine damage.

A complete loss of oil pressure indication may signify oil exhaustion or may be the result of a faulty gauge. In either case, proceed toward the nearest airport, and be prepared for a forced landing. If problem is not a pressure gauge malfunction, the engine may stop suddenly. Maintain altitude until such time as a dead stick landing can be accomplished. Don't change power settings unnecessarily, as this may hasten complete power loss.

Depending on the circumstances, it may be advisable to make an off airport landing while power is still available, particularly if other indications of actual oil pressure loss, such as sudden increase in temperatures, or oil smoke, are apparent, and an airport is not close (POH, P. 4-5)."

If engine stoppage occurs, proceed to Engine Failure During Flight.

Open Door

If door opens during takeoff, fly aircraft normal and return for landing.

Where closing the door is required during flight:

Airspeed	Reduce to 100MPH IAS
Cabin Vents	Close
Storm Window	Open

If upper latch is open—latch. If lower latch is open—open top latch, push door further open, and then close rapidly. Latch top latch. (A slip in the direction of the open door will assist in latching procedure.)

"The cabin door on the Cherokee is double latched, so the chances of it springing open in flight at both the top and bottom are remote. However, should you forget the upper latch, or not fully engage the lower latch, the door may spring partially open. This will usually happen at takeoff or soon afterwards. A partially open door will not affect normal flight characteristics, and a normal landing can be made with the door open.

If both upper and lower latches are open, the door will trail slightly open, and airspeed will be reduced slightly. (POH, P. 4-5)."

EMERGENCY

High Oil Temperature

"An abnormally high oil temperature indication may be caused by a low oil level, an obstruction in the oil cooler, damaged or improper baffle seals, a defective gauge, or other causes. Land as soon as practical at an appropriate airport and have the cause investigated.

A steady rise in oil temperature is a sign of trouble. Land at the nearest airport and let a mechanic investigate the problem. Watch the oil pressure gauge for an accompanying loss of pressure (*POH*, P. 4-5)."

Loss of Fuel Pressure

Electric Fuel Pump **On**
Fuel Selector **Check on Full Tank**

"If problem is not an empty fuel tank, land as soon as practical and have engine-driven fuel pump checked (*POH*, P. 4-5)."

Alternator Failure

Note: "Loss of alternator output is detected through a zero reading on the ammeter. Before executing the following procedure, insure that the reading is zero and not merely low by actuating an electrically powered device, such as the landing light. If no increase in the ammeter reading is noted, alternator failure can be assumed (*POH*, P. 4-6)."

Electrical Load **Reduce**
Alternator Circuit Breakers **Check**
"ALT" Switch **OFF for 1 second, then ON**

Note: "If the ammeter continues to indicate no output, or alternator will not stay reset, turn off "Alt" switch, maintain minimum electrical load and land as soon as practical. All electrical load is being supplied by the battery (*POH*, P. 4-6)."

Operational Telephone Numbers:

Langley Flying School	(887) 532-6461
LFS outside office hours	(778) 255-2560 (604) 312-4114
Kamloops FIC	(866) 992-7433
Canadian FSS Toll Free	(800) 463-6377
US FSS Toll Free	(800) WX-BRIEF
Canadian Customs ³	(888) CAN-PASS

Operational Requirements

Except in the case of emergencies, or prior approval from the Chief Flying Instructor, landings are permitted only at airport certified by Transport Canada.

Pilot and Student Pilots seated in the front seat must wear quick donning life jackets during Georgia Strait crossings.

It is prohibited to fly Langley Flying School aircraft beyond gliding distance to shore.

Add oil at the 6 US quarts level.

Keep cabin doors secured at all times.

Langley Flying School's *Aircraft Status Board* must be reviewed prior to flight

Relay all emergencies through Flight Service (1-800-INFO-FSS).

Also contact Langley Flying School at or, after hours, (604) 312-4114.

As per Transport Canada requirements, maintenance on this aircraft (other than the adding of fuel, oil, or air) is prohibited without the consent of the *Maintenance Manager* for Langley Flying School—(778) 255-2560.

The pilot is responsible to ensure that the aircraft is properly equipped with survival equipment as per the *Canadian Aviation Regulation 602.61*.

³ Note: Canada Customs must be advised prior to departure for a return flight to Canada, including the estimated ETA, the airport of entry, the citizenship, name, and birthdate of all passengers on board the aircraft, and any declarations related to purchases made in the US. Also note the limited times at which CYXX is a valid airport of entry.

Useful Local Radio Frequencies:

Caution: Check Current Charts as data may be incomplete or outdated.

Abbotsford		CYXX
ATIS	119.8	
Gnd	121.8	
Twr (inner)	119.4	
Twr (outer)	121.0	
MF	119.4	
Boundary Bay		CZBB
ATIS	125.5	
Gnd	124.3	
Twr (inner)	118.1	
Twr (outer)	127.6	
MF	118.1	
Chilliwack		CYCW
ATF	122.7	
Delta Heritage Air Park		CAK3
ATF	123.3	
Fort Langley		CBQ2
ATF	123.2	
Langley		CYNJ
ATIS	124.5	
Gnd	121.9	
Twr	119.0	
MF	119.0	
Hope		CYHE
ATF	123.3	
Naniamo		CYCD
Radio	122.1	
MF/ATF	122.1	
Pitt Meadows		CYPK
ATIS	125.0	
Gnd	123.8	
Twr	126.3	
MF	126.3	
Sechelt-Gibsons		CAP3
ATF	123.5	
Surrey / King George Airpark		CSK8
ATF	123.5	
Vancouver Harbour		CBC7
ATIS	126.8	
Twr	118.4	
ATF	118.4	
Vancouver Intl		CYVR
ATIS	124.6 / 124.75	
Cinc Del	121.4	
Gnd (South)	121.7	
Gnd (North)	127.15	
Twr (South)	118.7	
Twr (North)	119.55	
Twr (Outer)	124.0	
Victoria Intl		CYYJ
ATIS	118.8	
Cinc Del	126.4	
Gnd	121.9	
Twr (Inner)	119.7	
Twr (Outer)	119.1	