

# Langley Flying School Pilot Checklist

PA-28-140 Piper Cherokee

## Airspeeds for Safe Operation<sup>1</sup>

V <sub>so</sub> (Stall Speed Landing Configuration)	47 MPH IAS
V <sub>st</sub> (Stall Speed Clean Configuration)	58 MPH IAS
V <sub>x</sub> (Best Angle Climb)	76 MPH IAS
V <sub>y</sub> (Best Rate Climb)	86 MPH IAS
V <sub>a</sub> (Manoeuvring)	131 MPH IAS
Maximum Distance Glide	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

Fire Extinguisher	Secured and Checked
First-aid Kit	Checked
Survival Kit	Checked
Life Jackets (if required)	Checked
Flight Supplement	Checked
Navigation Charts	Checked
Pilot Operating Handbook	Checked
Journey Log	Checked
Aircraft Documents	Checked
Electric, Radio, & Intercom Switches	Off
Control Column	Unlocked
Unoccupied Seats	Belts Secured
Circuit Breakers	Checked
Master Switch	On
Fuel Gauges	Checked
Fuel Selector	Lowest Tank
Fuel Pump	On
Fuel Pressure	Checked
Fuel Pump	Off
Navigation Lights	On and Checked
Landing Light	On and Checked
Stall Warning Light	Checked
Navigation Lights	Off
Landing Light	Off
Master Switch	Off
Fuel Sumps	Drained
Airframe and Engine	Conduct Pre-flight Inspect

<sup>1</sup> 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.

## Pre-Start 2

Passengers	Briefed
Flaps	Retracted
Brakes	Set
Area	Clear
Fuel Selector	Confirm Lowest Tank
Carburetor Heat	Off
Hobbs and Time	Record
Master Switch	On

## Engine Start 3

### Cold Engine 3a

Mixture	Set Rich
Fuel Pump	On
Primer	Inject 6 Times
Throttle	Closed
Propeller	"Clear"
Starter	Engage
Throttle	less than 1000 RPM
Oil Pressure	Checked
Throttle	set 1000 RPM
Fuel Pump	Off
Fuel Pressure	Checked

### Warm or Hot Engine 3b

Mixture	Set Rich
Fuel Pump	Off
Throttle	Closed
Propeller	Clear
Starter	Engage
Throttle	less than 1000 RPM
Oil Pressure	Checked
Throttle	set 1000 RPM
Fuel Pressure	Checked

### Flooded Engine Start 3c

**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

<b>Taxi</b>	<b>4</b>
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Intercom	On
Transponder	Set Standby and Squawk 1200
Radios	On
Frequencies	Set
Communications	ATIS/Position/Intention
Altimeter	Set
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.

<b>Run-up</b>	<b>5</b>
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Throttle	Set 1000 RPM
Area	Clear
Brakes	Set
Fuel Selector	Fullest Tank
Fuel Pump	On
Landing Light	On
Anti-collision Light	On
Pitot Heat	On
Alternator	Load Check
Fuel Pump	Off
Landing Light	Off
Anti-collision Light	Off
Pitot Heat	Off
Throttle	Set 2000 RPM
Gyro Vacuum	Check (5"Hg±.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

<b>Pre-takeoff</b>	<b>6</b>
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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	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**

<b>Below 800'</b>	
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.

Time	Record
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<b>Holding Short</b>	<b>7</b>
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Traffic and Runway	Checked and Clear
Communications	Clearance and/or Intentions <sup>2</sup>

<b>Runway</b>	<b>8</b>
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Traffic	Clear
Landing Light	On
Anti-collision Lights	On
Transponder	Set ALT
Heading Indicator	Confirm Runway Heading
Aileron Inputs	For Crosswind as required
Maximum Power	Confirmed Proper RPM

<sup>2</sup> 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.

**Post Takeoff (500') 9**

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

**Level/Cruise 10**

Throttle	Set
Mixture	Set (do not lean at or below 5000')
Carburettor Heat	Apply
Heading Indicator	Confirmed/Set

**Pre-descent 11**

Mixture	Set Full Rich
Altimeter	Set

**Pre-landing 12**

Oil Pressure	Green
Oil Temperature	Green
Fuel Pump	On
Carburettor Heat	On
Seats	Upright
Seat Belts	Secured
Baggage	Stowed
Fuel Selector	Fulllest Tank
Brakes	Check
Carburettor Heat	Off

**Post-landing 13**

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

**Engine Shut-down 14**

Throttle	Set 1000 RPM
Radio	Select 121.5 & Check ELT
Radios	Off
Navigation	Off
Navigation Lights	Off
Panel Lights	Off
Intercom	Off
Throttle	Close

*continued next page*

**Engine Shut-down continued**

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

**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 Failure during Takeoff**

Aircraft Control	5° Pitch Down
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

# EMERGENCY

**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)"

## Engine Fire during 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)"

## 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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# EMERGENCY

## 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**

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

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)."

## 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.**

