Cessna 172L Operating Checklist (Aug 2023) AeroDynamic Aviation®

V_S	57 MPH	V_{BG}	80 MPH
V_{S0}	49 MPH	$V_{A\ @\ max}$	112 MPH
V_R	60 MPH	V_{FE}	100 MPH
V_X	68 MPH	V_{NO}	145 MPH
V_Y	91 MPH	V_{NE}	182 MPH

Before Starting Engine

1) Preflight inspection – COMPLETE
2) Towbar – STOWED
3) Fuel caps – ON & SECURE
4) Pitot cover – REMOVED
5) Control lock – REMOVED
6) Documents – ON BOARD
7) Hobbs & tach – RECORDED
8) Airplane keys – ON DASH
9) Pax & PIC briefing – COMPLETE
10) Seats & seatbelts – ADJUSTED
11) Brakes – TEST & SET
12) Avionics & electrical equipment – OFF
13) Circuit breakers – CHECK IN
14) Fuel selector – BOTH
15) Doors – CLOSED & LOCKED

Starting Engine

1) Primer
   - Engine Cold – 2-3 strokes, locked
   - Engine Hot – 0-1 strokes, locked
2) Carb heat – COLD
3) Throttle – OPEN ¼ inch
4) Mixture – RICH
5) Master switch – ON
6) Beacon/strobes – ON
7) Propeller area – "CLEAR" and visually clear area
8) Ignition – START, slowly advance throttle, release after start
9) Throttle – SET 800 to 1000 RPM
10) Oil pressure – CHECK GREEN within 30 seconds

After Start

Look around and move if people are waiting.

Don't block the ramp!

1) Ammeter – CHECK slightly positive
2) Avionics – ON
3) Mixture – LEAN for taxi, slightly rich of engine roughness
4) Flaps – UP, visually confirm
5) Transponder – ALT & 1200
6) ATIS/AWOS/ASOS – CHECK
7) Flight instruments – SET (altimeter near FE)
8) Radios – SET, CONTACT GROUND

Taxi

1) Brief taxi diagram & hot spots
2) Brakes – CHECK gently
3) Flight instruments – CHECK OPERATION

Run-up

1) Nosewheel straight, brakes held tight
2) Flight Controls – FREE & CORRECT
3) Trim – SET FOR TAKEOFF (yoke aft, trim flush with elevator)
4) Flight instruments – CHECK & SET
5) Doors & windows – CLOSED & LATCHED
6) Primer – IN & LOCKED
7) Mixture – RICH
8) Throttle – 1700 RPM
9) Magnetos – TEST R, BOTH, L, then BOTH (max. 125 RPM drop & 50 RPM differential)
10) Carb heat – CHECK HOT, note RPM drop, then COLD
11) Engine instruments – CHECK
12) Ammeter – CHECK (do not cycle the alternator!)
13) Suction gauge – CHECK
14) Throttle – IDLE (500-800 RPM), then 800-1000
15) Throttle friction – ADJUSTED
16) GPS/NAV – SET
17) Takeoff briefing – COMPLETE

"This will be a normal/short-field (soft-field) takeoff, flaps up (10°), departing runway ____ with a climb to _____ feet. V_R is 60 MPH, V_X is 68, and V_Y is 91. For any abnormality with runway remaining, I will call "abort, abort," reduce the throttle to idle, and bring the aircraft to a stop on the runway. For an engine failure below 400' AGL, I will land straight ahead. I will not attempt to return to the runway until reaching a safe altitude. For any abnormality or emergency I will aviate, navigate, communicate, and run the appropriate checklist. Best glide is 80 MPH. Any questions?"

Before Take-off

1) Lights – AS NEEDED
2) Transponder – ALT & squawk code
3) Flaps – UP for normal/short-field takeoff (10° for soft-field)
4) Mixture – RICH (or set for DA)
5) Carb heat – COLD
6) Trim – SET FOR TAKEOFF
7) Fuel – CHECK quantity, fuel on BOTH, primer LOCKED
8) Seats & seatbelts – ADJUSTED
9) Doors & windows – CLOSED & LATCHED
10) Radios – SET & CONTACT TOWER

Normal Takeoff

1) Flaps – UP, visually confirm
2) Throttle – Smoothly to FULL FWD
3) Engine instruments – CHECK
4) Elevator – Lift nosewheel at 60 MPH
5) Climb – 75 to 85 MPH until clear of obstacles, then climb at V_Y 91 MPH

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Enroute Climb (at 1000' AGL & clear of obstacles)
1) Airspeed – 80 to 90 MPH (climb at 90+ on hot days)
2) Engine instruments – MONITOR
3) Mixture – RICH***

Cruise
1) Throttle – 2100 to 2400 RPM (below 70% power)
2) Engine instruments – CHECK
3) Mixture – If engine temp normal, LEAN for altitude
4) Trim – SET for cruise airspeed
5) Fuel selector – BOTH
6) Flight instruments – CHECK

Descent
1) ATIS/AWOS/ASOS – CHECK
2) Flight instruments – CHECK & SET
3) Radios – SET, report 10 miles out
4) Approach/pattern entry briefing – COMPLETE
5) Carb heat – ON if required
6) Throttle – REDUCE for descent
7) Mixture – ADJUSTED for altitude
8) Seats & seatbelts – ADJUSTED

Before Landing
1) Lights – AS NEEDED
2) Fuel – CHECK quantity, fuel on BOTH, primer LOCKED
3) Carb Heat – ON before closing throttle
4) Mixture – RICH
5) Airspeed – 75 to 80 MPH flaps UP
6) Airspeed – 70 to 75 MPH flaps DOWN

After Landing (stop once clear of runway)
1) Radio – Switch to GROUND when advised
2) Flaps – UP, visually confirm
3) Mixture – LEAN for taxi
4) Carb Heat – COLD
5) Lights – AS NEEDED
6) Trim – SET FOR TAKEOFF
7) Transponder – ALT & 1200
8) Radios – CONTACT GROUND

Shutdown
1) Avionics and electrical switches – OFF
2) Throttle – 1000 RPM
3) Mixture – IDLE CUTOFF
4) Ignition – OFF, key on dash
5) Master switch – OFF
6) Fuel selector – LEFT or RIGHT TANK
7) Control lock & sunshade – INSTALL
8) Pitot cover – INSTALL
9) Hobbs & tach – RECORD
10) Trash – REMOVE & TIDY UP
11) Tiedowns & chocks – INSTALL
12) Doors – LOCK

***__Operating on hot days__: If oil temp and/or EGTs are warmer than normal, do not lean during climb. Use a higher enroute climb speed as soon as possible for better cooling. Mixture may be leaned slightly during climb above 5000' if engine temps are cool.

Soft-field Takeoff
1) Flaps – 10°
2) Elevator – FULL AFT
3) Brakes – Minimize use
4) Throttle – Smoothly to FULL FWD
5) Engine instruments – CHECK
6) Elevator – Maintain nose high/tail low until liftoff
7) Climb – Remain in ground effect until 65 MPH, then begin climb* and accelerate to V_Y 91 MPH
8) Flaps – RETRACT**

* If obstacles are present: climb at 65 MPH until clear, then accelerate to V_Y and retract flaps.

** Minimum flap retraction speed is 70 MPH.

Normal and Soft-field Landing
1) Flaps – 30° (or less, as needed with a crosswind)
2) Airspeed – PITCH for 75 MPH
3) Throttle – ADJUST for descent rate
4) Touchdown – MAIN WHEELS FIRST
5) Elevator – Increase gradually to FULL AFT during deceleration
6) Brakes – Minimize use

Short-field Takeoff
1) Flaps – UP (refer to POH page 2-11 for options)
2) Brakes – HOLD
3) Throttle – Smoothly to FULL FWD
4) Engine instruments – CHECK
5) Brakes – RELEASE
6) Elevator – Lift nosewheel at 60 MPH
7) Climb – 68 MPH until clear of obstacles
8) Accelerate – 80 to 90 MPH

Short-field Landing
1) Flaps – 30°
2) Airspeed – PITCH for 70 MPH
3) Throttle – ADJUST for descent rate
4) Touchdown – MAIN WHEELS FIRST
5) Brakes – APPLY, but do not skid tires!
6) Flaps – RETRACT

N2838Q is a Cessna 172L with a Superhawk Lycoming O-360-A4M conversion. Please refer to Cessna and Lycoming Operating Manuals, as well as Penn Yan Aero Service STC for full operating details.
These adjustments include a flap limitation of 30° and increased fuel consumption with the 180-horsepower engine upgrade.