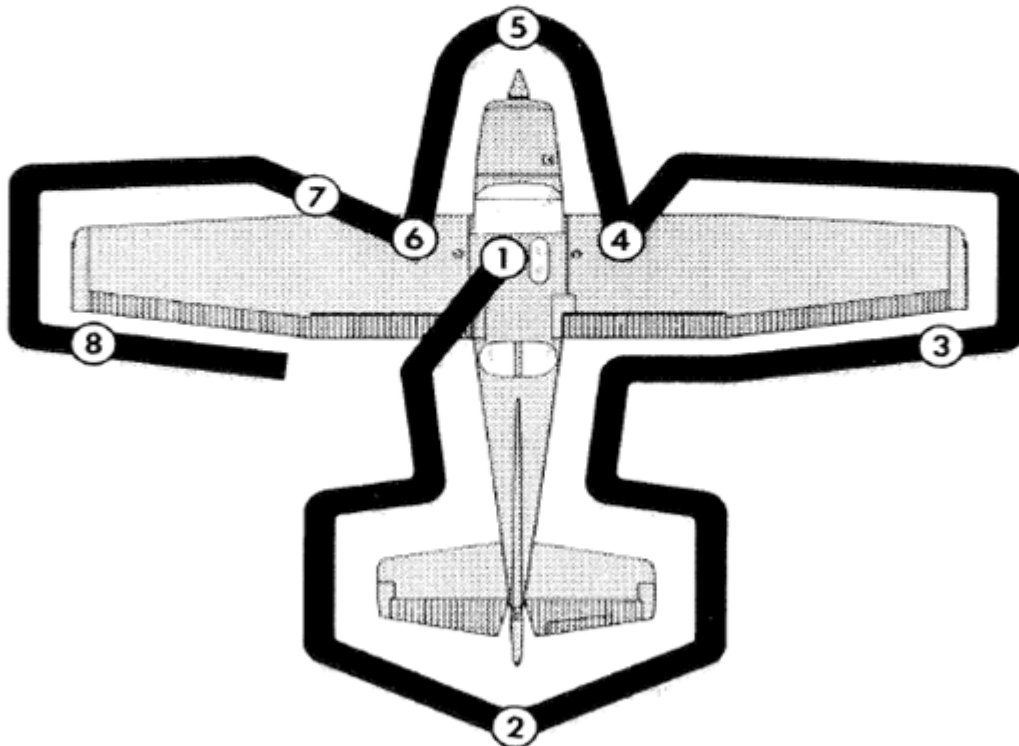


PREFLIGHT

Visually check aircraft for general condition during walkaround inspection. In cold weather, remove even small accumulations of frost, ice or snow from wing, tail and control surfaces. Also, make sure that control surfaces contain no internal accumulations of ice or debris. And, check pitot heat operation.

If night flight is planned, check operation of all lights, and make sure a flashlight is available and within reach in aircraft.

If re-fueling after pre-flight, re-sump fuel tanks after re-fueling to verify quality of fuel and absence of water. Also, visually verify fuel quantity and fuel caps are secure.



(Turn over for pre-flight checklist)

AIRCRAFT INFO (Cessna 172M)

Engine: Lycoming O-320-E2D (4 Cylinders)
 Output: 150 HP @2700 RPM
 Usable Fuel: 38 gals (42 gal tanks)
 Oil Capacity: 8 qts
 Max Take-off Weight: 2300 lbs
 Empty Weight: 1421.9 lbs
 Useful Load: 878.1 lbs
 Empty C.G.: 38.56 in

PILOT DOCUMENTATION

Logbook (student) Present
 Medical Cert Present
 ID Present
 License (FAA) Present

AIRCRAFT DOCUMENTATION

Airworthiness Cert Present
 Registration Present
 Radio License If applicable
 Operating Handbook Present
 Weight & Balance Present

INTERIOR (1)

Control Lock Remove
 Ignition Switch Off
 All Switches Off
 Master Switch On
 Fuel Gauges Check
 Bcn/Nav/Ldg Lights On
 Inspect Lights Check Operating
 Bcn/Nav/Ldg Lights Off
 Flaps Extend
 Master Switch Off

Inspect antennas, screws and rivets
 as you walk around the aircraft

EXTERIOR (2)

Baggage Door Closed
 Rudder Gust Lock Remove if installed
 Tail Tie-down Remove
 Tail Control Surfaces
 Check hinges and freedom of movement

EXTERIOR (3)

Flap hinges/rods Check
 Aileron
 Check hinges and freedom of movement

EXTERIOR (4)

Wing Tie-down Remove
 Door Hinges Check
 Main Wheel
 Check wear and proper inflation (29 psi)
 Check brake hydraulic line for leaks
 Fuel & Fuel Cap Sump, Check visually

EXTERIOR (5)

Oil Level No less than 6 qts
 Fuel strainer (1st flight) ... Pull for 3-4 secs
 Cowl Plugs Remove
 Propeller & Spinner Check
 Alternator Belt Check
 Air Filter Check
 Nose Wheel & Strut Check (31 psi)
 Wheel Chocks Remove

EXTERIOR (6)

Static Port Check
 Door Hinges Check
 Main Wheel
 Check wear and proper inflation (29 psi)
 Check brake hydraulic line for leaks
 Fuel & Fuel Cap Sump, Check visually
 Wing Tie-down Remove

EXTERIOR (7)

Pitot Tube Check Openings
 Fuel Vent Check Opening
 Stall Warning Vent Check Opening

EXTERIOR (8)

Aileron
 Check hinges and freedom of movement
 Flap hinges/rods Check

PERFORM FINAL WALK-AROUND

BEFORE ENGINE START

Parking Brakes Set
 Passenger Brief
 Seat Back / Belts Secure
 Fuel Selector Both
 Avionics Master Off
 Wing Leveler Off
 Other Elec Switches Off
 Circuit Breakers Check

ENGINE START

Beacon On
 Mixture Full Rich
 Carb Heat Off
 Primer 2-4x as Needed
 Throttle Slight in (1/8")
 Master Switch On
 Clear Area Call "Clear Prop"
 Ignition Start
 Throttle 800 RPM
 Oil Pressure Green within 30s

ENGINE FLOODED START

Ignition Off
 Throttle Full Open
 Mixture Cut-Off
 Ignition Start
Once engine is started:
 Mixture Full Rich
 Throttle 800 RPM

ENGINE FIRE DURING START

Continue cranking. If started:
 Throttle 1700 RPM (2 mins)
 Shutdown, extinguish fire, inspect
If not started:
 Mixture Cut-Off
 Throttle Full Open
 Ignition Crank (2 mins)
 Shutdown, extinguish fire, inspect

AFTER ENGINE START

Flaps Up
 Avionics Master On
 Nav Lights Required at night
 Mixture Lean as Needed
 Radios Set
 Weather Obtain
 Altimeter Set
 Heading Set (match compass)
 Transponder On / ALT

BEFORE TAXI

Taxi Clearance Obtain
 Taxi / Ldg Lights On
 Parking Brakes Release

TAXI

Brakes Check
 Gyro Instruments Check
 Flight Controls Based on Wind

RUN-UP BEFORE TAKEOFF

Parking Brakes Set
 Flight Controls Check
 Fuel Selector Both
 Mixture Full Rich
 Throttle 1700 RPM
 Magnetos (L/R) Check
 Max 125 RPM drop, 50 RPM between L/R
 Carb Heat Check (RPM Drop)
 Engine Instruments Check
 Ammeter Check
 Vacuum Gage Check (4.6 - 5.4)
 Throttle Idle, then 800 RPM
 Flight Instruments Set
 Trim Set for Takeoff
 Doors / Windows Locked
 Seat Back / Belts Secure
 Takeoff Briefing:
 Runway number and length, takeoff
 configuration and speeds, abort plans
 Parking Brakes Release
 Takeoff Clearance Obtain

NORMAL TAKEOFF		BEFORE LANDING	
Flaps	0°	Fuel Selector	Both
Carb Heat	Off	Mixture	Rich
Throttle	Full Power	Seat Back / Belts	Secure
Engine Instruments	Check	Carb Heat	On
Rotate	63 MPH	Power	2000 RPM
Initial Climb	80 MPH	Airspeed	90 MPH
MAX PERFORMANCE TAKEOFF		Taxi / Ldg Lights	On
Flaps	0°	Flaps 10° / 80 MPH (downwind)	
Carb Heat	Off	Flaps 20° / 75 MPH (base)	
Brakes	Apply	Flaps 30° / 70 MPH (final)	
Throttle	Full Power	Flaps 40° / 65 MPH (final)	
Engine Instruments	Check	GO AROUND (BALKED LANDING)	
Brakes	Release	Throttle	Full Power
Airplane Attitude	Slight Tail Low	Carb Heat	Off
Climb Speed	68 MPH	Flaps	Retract to 20°
Until all obstacles are cleared		Reaching 65 MPH, retract slowly	
CLIMB		Climb Speed	80 MPH
Flaps	Up	AFTER LANDING	
Throttle	Full Power	Flaps	Up
Mixture	Full Rich	Carb Heat	Off
(may be leaned above 3000 ft)		Mixture	Lean as Needed
Airspeed	80 - 90 MPH	Trim	Set for Takeoff
CRUISE		SECURING AIRCRAFT	
Throttle	2200 - 2400 RPM	Throttle	Idle
Elevator Trim	Adjust	Flaps	Up
Mixture	Lean as Needed	Avionics Master	Off
Taxi / Ldg Lights	Off	Wing Leveler	Off
DESCENT / APPROACH		Other Elec Switches	Off
Radios	Set	Mixture	Cut-Off
Weather	Obtain	Ignition	Off
Flight Instruments	Set	Master Switch	Off
Approach Briefing	Complete	Push into hangar	If applicable
Throttle	Adjust	Chocks	Install
Mixture	Adjust	Control Lock	Install
Taxi / Ldg Lights	On	Cowl Plugs	Install
		Pitot Cover	Install
Vr = 63 MPH	Vso = 54 MPH	<u>2300 lbs</u>	<u>2000 lbs</u>
Vx = 74 MPH	Vs1 = 61 MPH	Vg = 80 MPH (flaps up)	Vg = 70 MPH (up)
Vy = 90 MPH	Vfe = 100 MPH	Vg = 75 MPH (flaps dn)	Vg = 65 MPH (dn)
Prairie Winds Aviation			

ENGINE FLOODED START

Ignition Off
 Throttle Full Open
 Mixture Cut-Off
 Ignition Start
Once engine is started:
 Mixture Full Rich
 Throttle 800 RPM

AMMETER READS DISCHARGE

Alternator Off
 Unessential Electrical Off
 ATC Notify
 Land At Nearest Airport

HIGH VOLTAGE LIGHT ON & AMMETER READS OVERCHARGE

Master Switch Off
 Avionics Master Off
 Master Switch On
 Avionics Master On
 Ammeter Check
If Ammeter high and Voltage light on:
 Alternator Off
 Unessential Electrical Off
 ATC Notify
 Battery As Required
 Land At Nearest Airport

HIGH OIL TEMPERATURE

Oil Pressure Check
 Throttle Reduce
 Attitude Level
If high oil temperature persists:
 ATC Notify
 Land At Nearest Airport

LOW OIL PRESSURE

Oil Temperature Check
 Throttle Reduce
 ATC Notify
 Land At Nearest Airport

ROUGH ENGINE OPERATION

Ignition Check L/R Mag
 Mixture Lean
 Carb Heat On then Off (1 min)
If roughness continues:
 ATC Notify
 Land At Nearest Airport

Vx = 74 MPH Vso = 54 MPH
 Vy = 90 MPH Vs1 = 61 MPH
 Vg = 70 - 80 MPH (flaps up)
 Vg = 65 - 75 MPH (flaps dn)

ENGINE FIRE DURING START*Continue cranking. If started:*

Throttle 1700 RPM (2 mins)
 Shutdown, extinguish fire, inspect

If not started:

Mixture Cut-Off
 Throttle Full Open
 Ignition Crank (2 mins)
 Shutdown, extinguish fire, inspect

ENGINE MALFUNCTION PRIOR TO Vr

Throttle Close
 Brakes Apply
 Engine Shutdown* Complete

ENGINE FAILURE AFTER Vr (< 1000 AGL)

Airspeed 80 MPH (flaps up)
 Runway / Field Select
 Flaps Full
 Airspeed 75 MPH (flaps dn)
 ATC Notify

After landing:

Engine Shutdown* Complete

ENGINE FAILURE IN FLIGHT

Airspeed 80 MPH (flaps up)
 Runway / Field Select
 Fuel Quantity Check
 Engine Instruments Check
 Fuel Selector Both
 Mixture Rich
 Carb Heat On
 Ignition Both
 Primer In & Locked
 Ignition Restart

If engine fail to start:

ATC Notify
 Flaps Full
 Airspeed 75 MPH (flaps dn)
 Engine Shutdown* Complete
 Cabin Door Unlatch
 Land Accomplish
 (Paved / Soft / Short Field Landing)

ENGINE FIRE IN FLIGHT

Engine Shutdown* Complete
 Cabin Air / Heat Close
 Runway / Field Select
 Sideslip At 120 MPH
 Cabin Door Unlatch
 Land Accomplish
 (Paved / Soft / Short Field Landing)

ELECTRICAL FIRE IN FLIGHT

Master Switch Off
 Cabin Air / Heat Close
 Electrical Switches Off
 Circuit Breakers Check
 Master Switch On & Check
 Radio On & Check
 Electrical Switches On & Check
 Land At Nearest Airport

*** ENGINE SHUTDOWN**

ATC Notify
 Fuel Selector Off
 Mixture Cut-Off
 Throttle Idle
 Electrical Switches Off
 Avionics Master Off
 Ignition Off
 Master Switch Off

Vx = 74 MPH Vso = 54 MPH
 Vy = 90 MPH Vs1 = 61 MPH
 Vg = 70 - 80 MPH (flaps up)
 Vg = 65 - 75 MPH (flaps dn)