at max gross weight: Vne 163 Vno 129 Va 105 Vfe 85 Vy 74 Vg 68 Vx 62 Vs 48 Vso 40

C172 R/S | *Max Ramp Weight: 2558lb*
IO-360 L2A: 180 BHP at 2700 RPM
Lycoming, Horizontally-opposed, Air-cooled,
Naturally-aspirated, Direct-drive
53 gal Useable fuel, 5 qts min oil

PREFLIGHT INSPECTION: POH 4-7

*1. Airframe.....OVERALL VISUAL
*2. Fuel in tanks.....CHECK & top off if needed
INSIDE CABIN:
3. Aircraft documents.....ARROW
4. Ignition.....OFF
5. Avionics.....OFF
6. Battery.....ON - limited time
Lights.....CHECK
Flaps.....EXTEND
Fuel Quantity..CHECK GAUGE
Pitot Heat.....CHECK if needed
7. Lights and all electrical.....OFF
8. Battery.....OFF
9. Alt Static Source.....CHECK
10. Fuel Selector.....BOTH
11. Control Lock.....OUT
12. HOBBS/TACH times.....VERIFY CORRECT

OUTSIDE THE CABIN: follow a "flow"
*1. **Left Wing**: remove tie down*
Main Gear.....CHECK
Fuel Sumps.....DRAIN (5)
Fuel Quantity.....VERIFY
Fuel Cap.....CLOSED/SEAL GOOD
Pitot Tube.....CHECK
Stall Horn.....CHECK
Aileron/Flap.....CHECK
Static Wicks.....CHECK
*2. **Empennage**: remove tie down*
Baggage Door.....CLOSED/LOCKED
Elevator.....CHECK
Rudder.....CHECK
*3. **Right Wing**: remove tie down*
Main Gear.....CHECK
Fuel Sumps.....DRAIN (5)
Fuel Quantity.....VERIFY
Fuel Cap.....CLOSED/GOOD SEAL
Aileron/Flap.....CHECK
Static Wicks.....CHECK
*4. **Nose***
Oil Quantity.....CHECK, min 5qt max 8qt
Fuel Sumps.....DRAIN (3)
Nose Gear.....CHECK
Propeller.....CHECK
Alternator Belt.....CHECK
Static Ports.....CHECK
Air Filter.....CHECK CLEAR

BEFORE STARTING ENGINE:

1. Passenger Briefing...."SAFETY"
2. Crew Briefing.....GOAL(S) OF FLIGHT & DISCUSS POSITIVE EXCHANGE OF CONTROLS
3. Seat Belts.....ON
4 Fuel Selector.....BOTH
5. Fuel Shutoff Valve.....IN
6. Circuit Breakers.....IN
➜ TAXI BRIEF with airport diagram

STARTING ENGINE: DO NOT crank more than 10 sec

1. Throttle.....1/4" - 1/2" if needed
2. Mixture.....IDLE CUTOFF
3. Master Switch.....ON (ALT/BATT)
4. Beacon.....ON
5. Propeller....."CLEAR!"
****If engine is **warm**, omit priming procedure: steps **6,7,8***
*If hot start unsuccessful - use FLOODED start****
6. Aux Fuel Pump....ON
7. Mixture.....FULL RICH until stable fuel flow indicated (usually 3 - 5 seconds)
8. Mixture.....IDLE CUTOFF
9. Aux Fuel Pump.....OFF
10. **Magnetos/ignition....START** (release when engine starts)
& Mixture.....ADVANCE RICH @ ignition

****If engine **floods** (primed too much):*
Aux Fuel Pump OFF. Mixture IDLE CUTOFF.
*Throttle 1/2" to full, crank engine. When engine starts set mixture to full rich and promptly close throttle****
**how to FLOOD ENGINE: mixture full, throttle full aux pump ~8-10 sec*

11. Throttle.....IDLE to 1000 RPM &
12. Mixture.....LEAN FOR TAXI ~ 1"
13. Oil Pressure.....CHECK
14. Avionics.....ON, transponder: 1200 ALT
15. Nav & Taxi Lights.....ON
16. Flaps.....RETRACT

TAXI CHECK:

➜ Taxi Brief with airport diagram & get ATIS
1. Brakes.....TEST BOTH SIDES/PEDALS
2. Turn Coordinator....DIRECTION OF TURN,BALL OPP
3. Attitude Indicator....STABLE & ERECT
4. Altimeter.....WITHIN 75' FIELD ELEV w/ current BARO
5. Directional Gyro.....MATCHES MAG COMPASS
6. VSI.....ZERO/NOTED
7. Airspeed Indicator.....ZERO
8. Magnetic Compass....MOVES FREELY w/ FLUID

BEFORE TAKEOFF/RUNUP: allow engine to warm

1. Brakes.....HOLD
2. Seats and Seat Belts.....CHECK SECURE
3. Cabin Doors.....CHECK SECURE
4. Flight Controls.....FREE and CORRECT
5. Flight Instruments.....SET Altimeter & DG
6. Fuel Quantity.....CHECK
7. Fuel Selector Valve.....RECHECK on BOTH
8. Elevator Trim.....SET for takeoff
9. Throttle.....FULL RPM
Mixture.....SET (see POH for perf.)
10. Throttle.....1800 RPM
Magnetos.....CHECK (max drop 150 RPM, min drop 50 & 50 RPM diff between mags)
Vacuum Gage (gyro).....CHECK
Alternator/Ammeter.....CHECK OUTPUT
All Engine Gauges.....CHECK
11. Throttle.....IDLE to 1000 RPM
12. Annunciator Panel.....TEST/CHECK LIGHTS
13. Radios and Avionics.....SET
➜ ***TAKEOFF BRIEFS** then CONTACT GROUND 121.8*

CLEARD TO LUAW or CLEARED TO TAKEOFF:

1. Lights.....SET
2. Camera.....1200 ALT, LOOK DOWN SHORT FINAL
3. Action.....GO, NEED FLAPS?

NORMAL TAKEOFF:

1. Flaps.....0-10°
2. Throttle.....SMOOTH to FULL
3. Airspeed....."*ALIVE*"
4. Gauges....."*IN THE GREEN*"
➜*5. Rotate*.....55 KIAS
6. Climb.....Vx or Vy

1000' AGL: (enroute climb 70-85)

1. Fuel Selector.....BOTH
2. Flaps.....RETRACT if needed
3. Mixture.....SET
4. Throttle.....SET for climb
5. Lights.....AS NEEDED

CRUISE: pitch, power, trim

1. Fuel Selector.....BOTH
2. Flaps.....RETRACT if needed
3. Mixture.....SET/LEAN for cruise? (POH 4-27)
4. Throttle.....SET per POH
5. Lights.....AS NEEDED
6. Gauges.....MONITOR/CHECK

DESCENT: get ATIS

1. Fuel Selector.....BOTH
2. Mixture.....RICHEN if LEANED EN EROUTE
3. Throttle.....AS DESIRED, STABLE DESCENT
4. Altimeter.....SET

APPROACH:

1. Seats and Seatbelts.....SECURE
2. Fuel Selector.....BOTH
3. Lights.....LANDING/TAXI ON

GO AROUND: "CCCCC"

1. Throttle.....FULL OPEN
2. Climb.....PROPER PITCH ATTITUDE, Vx or Vy
3. Flaps.....RETRACT to 20° or 1 NOTCH ASAP
4. Flaps.....CONTINUE TO CLEAN

NORMAL LANDING:

1. Airspeed.....65-75 KIAS (flaps up)
2. Flaps.....AS DESIRED, 0°-30°
3. Airspeed.....60-70 KIAS (flaps down)
4. Touchdown.....MAIN WHEELS FIRST
5. Landing Roll....LOWER NOSE WHEEL GENTLY
6. Braking.....MINIMUM REQUIRED - GENTLY

AFTER LANDING: clear of runway

1. Flaps.....UP
2. Throttle.....~1000RPM
3. Mixture.....LEAN for taxi
4. Lights.....BCN/Taxi/Nav ON

SHUTDOWN:

1. ELT 121.5.....MONITOR/CHECK
2. Avionics.....OFF
3. ALL Electrical.....OFF
4. Throttle.....IDLE
5. Mixture.....IDLE CUTOFF
6. Magnetos.....OFF
7. Battery & Alternator.....OFF
8. Control Lock.....INSTALL
9. Fuel Selector.....LEFT/RIGHT

RECORD HOBBS and TACH TIME . TIEDOWN and ensure BATTERY is OFF. P L E A S E SQUWAK DISCREPENCIES

BASIC, ANYTIME FLOW:
fuel, flaps, mixture, throttle, lights, gauges

SHORT FIELD TAKEOFF: use FULL runway

1. FLAPS.....10°
2. Brakes.....APPLY
3. Throttle.....FULL OPEN
4. Gauges.....CHECK GREEN & STABLE RPM
5. Brakes.....RELEASE
6. Elevator control....SLIGHTLY TAIL LOW
➜7. Rotate.....50 KIAS (POH 5-14 - 5-16)
Climb at 62 KIAS until 50' CLEARED
8. Airspeed.....74 KIAS
9. Flaps.....AT 150'AGL 10°-5°-0°

SHORT FIELD LANDING: choose landing spot

1. Airspeed.....65-75 KIAS FLAPS UP
2. Flaps.....30°
3. Airspeed.....~60 KIAS on short final
4. Touchdown Point.....SMOOTH PWR REDUCN to LAND
5. Braking.....MAXIMUM BRAKING
6. Flaps.....UP

SOFT FIELD TAKEOFF:

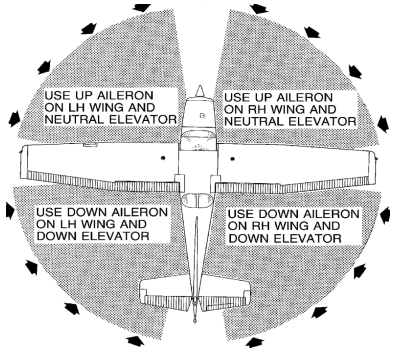
1. Flaps.....10°
2. Brakes.....MINIMUM USE
3. Elevator control...BACK PRESSURE!!
➜4. Rotate.....AS SOON AS PRACTICAL
5. Airspeed.....INCREASE IN GROUND EFFECT until 62-74 KIAS, climb 50' if obstacle
6. Flaps.....0° SLOWLY

SOFT FIELD LANDING

1. Airspeed.....65-75 KIAS FLAPS UP
2. Flaps.....30°
3. Airspeed.....~60 KIAS on short final
4. Touchdown.....MAIN WHEELS FIRST
5. Landing roll.....LOWER NOSE GENTLY
6. Braking.....MINIMUM REQUIRED

KAPA FREQUENCIES

120.3	ATIS
121.8	GROUND
118.9	TOWER 1
123.7	TOWER 2
124.6	TOWER 3
122.75	SE/SW PRAC AREA
132.75	DEN DEP/FF
121.0	BUCKLEY TOWER



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SQUWAK CODES:

7500 hijack | 7600 lost comms | 7700 emergency | 1200 VFR

Vne 163 Vno 129 Va 105 Vfe 85 Vy 74 Vx 62 Vs 48 Vso 40

****UNDERLINED BOLD ITEMS ARE MEMORY ITEMS****

ENGINE FAILURES:

ON THE RUNWAY, during takeoff roll:

1. Throttle.....IDLE
2. Brakes.....APPLY
3. Flaps.....RETRACT
4. Mixture.....IDLE CUTOFF
5. Ignition Switch/Mags.....OFF
6. Master Switch.....OFF

IMMEDIATELY AFTER TAKEOFF, runway remains:

1. Airspeed.....65 (flaps down) - 70 (flaps up)
2. LAND.....STRAIGHT AHEAD
3. Mixture.....IDLE CUTOFF
4. Fuel Selector.....OFF
5. Ignition Switch/Mags....OFF
6. Flaps.....RETRACT
7. Master Switch.....OFF
8. Doors.....UNLATCH

DURING FLIGHT - TRY RESTART?:

1. Airspeed.....Vg 68 KIAS + ID BEST SPOT
2. Fuel Shutoff Valve.....ON (push in)
3. Fuel Selector.....BOTH
4. Auxilary Fuel Pump.....ON
5. Mixture.....RICH (if no restart occured)
6. Ignition/Mags.....BOTH **or** START if no windmill
7. Auxilary Fuel Pump.....OFF
If FFLOW GPH drops to zero, AUX fuel pump ON
8. FORCED LANDING CHECKLIST if no start....

DURING FLIGHT - FORCED LANDING NO ENGINE:

1. Seats and seatbelts.....SECURE
2. Airspeed.....65-70 KIAS
3. Mixture.....IDLE CUTOFF
4. Fuel Shutoff Valve.....OFF (pull)
5. Ignition Switch/Mags.....OFF
6. Flaps.....AS REQUIRED, 30° recommended
7. Master Switch.....OFF when landing assured
8. Doors.....UNLATCH
9. Touchdown.....NOSE HIGH,TAIL LOW,MAINS 1st
10. Brakes.....APPLY HEAVILY

LOSS OF ELEVATOR CONTROL:

1. TRIM.....65 KIAS and FLAPS 20°
2. USE THROTTLE & TRIM FOR HORIZONTAL FLT
3. DO NOT CHANGE ELEVATOR TRIM
4. FLARE.....ADJUST TRIM FOR FULL NOSE UP
5. THROTTLE.....ADJUSTED FOR NOSE UP

DURING FLIGHT - FORCED LANDING w/ ENGINE:

1. Seats and seatbelts.....SECURE
2. Airspeed.....65 KIAS
3. Flaps.....20°
4. Select landing sport.....note terrain/obstacles
5. Avionics and All Electrical.....OFF
6. Flaps.....30° on final
7. Airspeed.....65 KIAS
8. Master Switch.....OFF
10. Touchdown.....NOSE HIGH,TAIL LOW,MAINS 1st
11. MIXTURE, Ignition Switch/Mags.....IDLE & OFF
12. Brakes.....APPLY HEAVILY

A V I A T E, NAVIGATE, COMMUNICATE

***A-** airspeed Vg, pitch and trim ASAP*
***B-** best landing spot*
***C-** checklist? above or below 1000' AGL*
***D-** declare mayday 121.5 sqwak 7700*
***E-** exit away from prop/fire, crack doors*

ROUGH ENGINE:

1. SPARK PLUG FOULING:
-try a leaner mixture, richer mixture

2. MAGENTO MALFUNCTION:
-switch to either L or R to identify bad mag
-select different power settings and richen mixture to try to continue on BOTH. If not, switch to GOOD MAG

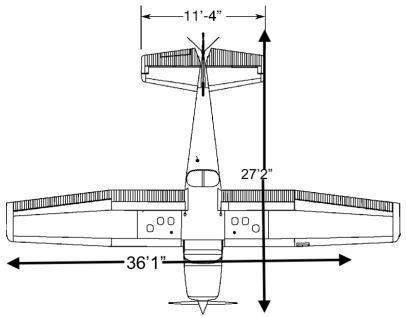
3. ENGINE-DRIVEN FUEL PUMP FAILURE:
-sudden reduction in indicated fuel flow will occur just before loss of engine power
-turn ON AUX FUEL PUMP

4. EXCESSIVE FUEL VAPOR, INFLIGHT:
-turn ON AUX FUEL PUMP
-LEAN mixture and select another fuel tank
-INCREASE airspeed into engine

5. LOW OIL PRESSURE and HIGH OIL TEMP:
-REDUCE POWER and FORCED LANDING
-use minimum power to desired touchdown point

DITCHING:

1. Radio.....MAYDAY 121.5 w/ location, 7700
2. Heavy Objects.....SECURE or JETTISON
3. Seats and seatbelts...SECURE
4. Flaps.....20°-30°
5. Power.....ESTABLISH 300 FT/MIN DESCENT AT 55 KIAS
6. Approach....
High Winds, Heavy Seas -- INTO THE WIND
Light Winds, Heavy Swells -- PARALLEL TO SWELLS
7. Doors.....UNLATCH
8. Touchdown.....LEVEL ATITUDE
9. Face.....CUSHION FACE for impact
10. ELT.....ACTIVATE
11. EVACUATE through doors. Open windows to equalize pressure & open doors if needed
12. Vests/Rafts.....INFLATE WHEN CLEAR OF PLANE



FIRES:

DURING START ON GROUND:

1. Ignition Switch.....START, continue crank
IF ENGINE STARTS:
2. Power.....1800RPM for a few minutes
3. Engine.....SHUTDOWN and inspect
IF ENGINE FAILS TO START:
4. Throttle.....FULL OPEN
5. Mixture.....IDLE CUTOFF
6. Cranking.....CONTINUE
7. Fuel Shutoff Valve.....OFF (pull)
8. Auxilary Fuel Pump.....OFF
9. Fire extinguisher.....ACTIVATE
10. Master Switch.....OFF
11. Ignition Switch/Mags..OFF
12. Extinguish the FIRE

FIRE INFLIGHT:

1. Mixture.....IDLE CUTOFF
2. Fuel Shutoff.....OFF (pull)
3. Auxilary Fuel Pump.....OFF
4. Master Switch.....OFF
5. Cabin Heat and Air.....OFF
6. Airspeed.....100 KIAS, extingish fire
7. Forced Landing.....EXECUTE

ELECTRICAL FIRE INFLIGHT:

1. Master Switch.....OFF
2. Vents, air, heat.....CLOSED
3. Fire Entinguisher.....ACTIVATE
4. Avionics Master.....OFF
5. All other Switches (except ignition).....OFF
6. Vents, air, heat.....OPEN when fire is OUT
If fire has been extinguished and electrical power is necessary for continuance of flight to nearest suitable airport or landing area:
7. Master Switch.....ON
8. Circuit breakers.....CHECK for fault, NO RESET
9. Avionics Master.....ON
10. Radio/electrical.....ON

CABIN FIRE:

1. Master Switch.....OFF
2. Vents, air, heat.....CLOSED
3. Fire Extinguisher.....ACTIVATE
4. Vents, air, heat.....OPEN when fire it OUT
5. Land ASAP

WING FIRE:

1. Landing/taxi lights.....OFF
2. Nav/strobe lights.....OFF
3. Pitot heat switch.....OFF
Perform a sideslip to keep the flames away from the fuel tank and cabin. Land ASAP using flaps only as required for final approach and landing.

ABNORMAL PROCEDURES:

LANDING W FLAT MAIN TIRE:

1. Approach.....NORMAL
2. Flaps.....30°
3. Touchdown.....GOOD MAIN TIRE 1st
4. Directional Control.....MAINTAIN using brake on good wheel as required.

LANDING W FLAT NOSE TIRE:

1. Approach.....NORMAL
2. Flaps.....AS REQUIRED
3. Touchdown.....ON MAINS, hold nose off
4. When nose wheel touches down, maintain full up elevator as airplane slows to stop.

AMMETER EXCESSIVE RATE OF CHARGE:

1. Alternator.....OFF
With the ALT side of the master switch OFF, compass deviation of as much as 25° may occur.
2. Nonessential Electrical.....OFF
3. LAND AS SOON AS PRACTICAL

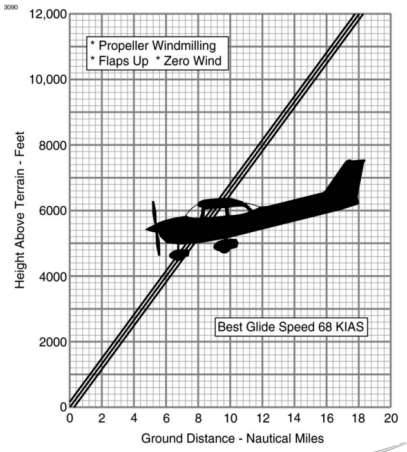
LOW VOLTAGE ANNUNICATOR:

1. Avionics Master Switch.....OFF
2. Alternator Circuit Breaker....CHECK IN
3. Master Switch.....OFF (ALT/BATT)
4. Master Switch.....ON
5. Low Voltage Annunciator.....CHECK OFF
6. Avionics Master Switch.....ON
If low voltage annunciator illuminates again:
7. Alternator.....OFF
8. Nonessential Radio and Electrical....OFF
9. LAND AS SOON AS PRACTICAL

VACUUM SYSTEM FAILURE:

1. Vacuum Gauge....CHECK within normal limits
If VAC is not within normal operating limits, a failure has occured in the VAC system and partial panel procedures may be required for continued flight.

MAXIMUM GLIDE



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