C-172 R/S — NORMAL PROCEDURES

VNE	163	Vso	40
VNO	129	Vs	48
VA	105	Vx	62
VFE	85	Vy	74

All Speeds are in Knots

One 180 BHP, Lycoming, Fuel Injected, 4 cylinder, Direct Drive, Air cooled, Horizontally Opposed, 53 gals usable fuel, 8qts (5 min) Oil.

Max Ramp: 2558 Empty (general): 1663
Max Land: 2550 Useful Load: 887

PREFLIGHT CHECK:
Cabin Preparation:
Aircraft documents – AROW
Avionics – Off
Ignition switch – Off
Battery Switch – On
Fuel quantity – Check
Flaps – Extend
Pitot Heat – Check
Battery Switch – Off
Electrical Equipment – All Off
Alt Static Source – Check
Fuel Selector – On Both
Controls – Free and Correct
Outside Cabin:
Left Wing:
Fuel Quantity – Verified
Fuel Cap – Closed
Pitot Tube – Check
Stall Warning – Check
Main Gear – Check
Fuel Sump – Drain
Wing Aileron/ Flap – Check
Empennage:
Baggage Door – Closed
Elevator – Check
Rudder – Check
Right Wing:
Wing Aileron/ Flap – Check
Main Gear – Check
Fuel Sump – Drain
Fuel Quantity – Verified
Fuel Cap – Closed
Nose:
Engine Oil – Check
Fuel Sump – Drain
Nose Gear – Check
Propeller – Check
Alternator Belt – Check
Static Port – Check

BEFORE STARTING ENGINE:
Passenger Briefing – Complete
Seat Belts – Fasten/ Adjust
Fuel – On Both
Fuel Shutoff Valve – Check In
Circuit Breakers – In

STARTING ENGINE:
Mixture – Rich
Throttle – Full Open
Battery Switch – On
Fuel Pump – On (2-3 SECONDS MAX)
Fuel Pump – Off
Mixture – Idle Cutoff
Throttle – 1/8" Open
Propeller – Clear
Starter – Engage
Mixture – Advance to Rich
Throttle – BELOW 1000 RPM
Mixture – Lean
Oil Pressure – Check
Alternator – On/ Check Output
Alternator Light – Check Out
Avionics – On
Beacon – On
Transponder – Alt
Flaps – Retract

FLOODED START:
If engine has been primed too much, turn off fuel pump, place mixture to idle cutoff, open throttle to full, engage starter. When engine starts, set mixture to full rich and close throttle promptly and continue checklist.

HOT START:
If engine is warm do not prime, open throttle ½ inch, mixture idle cutoff, engage starter. Slowly advance mixture to full rich. If engine does not start, flood the system with full mixture and full throttle while turning on the fuel pump for longer than normal. Then use the flooded start proceedure.

TAXI CHECK:
Brakes – Test (With Engine Idle)
Turn Coordinator – Direction of Turn
Attitude Indicator – Upright & Erect

BEFORE TAKEOFF:
Brakes – Hold
Fuel – On Both
Trim – Set for Takeoff
Throttle – 1800 RPM
Mixture – Set (Best Power)
Magnetos – Check
(Max drop 150 RPM/ Min drop 50 RPM)
Alternator Output – Check
Engine Gauges – Check
Fuel Gauges – Check
Gyro Source Gauge – Check
Throttle – Idle
Annunciator Panel – Test
Flight Instruments – Set
Radios – Set
Flight Controls – Free and Correct
Seats/ Seat belts – Secure
Cabin Doors/ Windows – Latched

CLEARED TAKEOFF/ POS. & HOLD:
Lights – As Required
Flaps – 0° to 10°
Time – Note

TAKEOFF:
Normal Takeoff:
Flaps – 0° to 10°
Throttle – Smoothly to Max Pwr
Gauges – Check Green
Rotate – 55 KIAS
Airspeed – 70 to 80 KIAS
Short Field Takeoff:
Flaps – 10°
Brakes – Hold
Throttle – Smoothly to Max Pwr
Gauges – Check Green
Brakes – Release
Rotate – 55 KIAS
Airspeed – 56 KIAS Through 50'
Airspeed – 70 to 80 KIAS
Flaps – 0°

1000' AGL CHECK:
Cruise Climb – 70 to 85 KIAS
Throttle – Set
Mixture – Set
Lights – As Required

CRUISE CHECK:
Throttle – Set
Mixture – Set
Engine Gauges – Check

DESCENT:
Flaps – Retract
Mixture – Richen
Throttle – As Required
Lights – As Required
Altimeter – Set

APPROACH:
Fuel – On Both
Flaps – As Required
Mixture – Set
Throttle – As Required
Lights – As Required
Autopilot – Off
Seat Backs – Erect
Seat Belts – Fasten

NORMAL PROCEDURES

Normal Landing:
Flaps – As Required
Airspeed – 60 to 70 KIAS
Aim Point – Runway Numbers
Touchdown – Mains First
Short Field Landing:
Airspeed – 65 to 75 KIAS
Flaps – 30°
Airspeed – 61 KIAS (Short Final)
Aim Point – Runway Numbers
Touchdown – Mains First
Brakes – Apply

BALKED LANDING:
Throttle – Full Open
Flaps – 20°
Airspeed – 60 KIAS
Establish Positive Rate
Flaps – 10°
Airspeed – 65 KIAS
Flaps – 0°

AFTER LANDING:
Clear of Runway:
Flaps – Retract
Throttle – Idle/ 1000 RPM
Lights – As Required

SHUTDOWN:
ELT 121.50 – Check/ Monitor
Avionics – Off
Electrical Equipment – All Off
Throttle – Idle
Mixture – Idle Cutoff
Magnetos – Off
Battery & Alternator Switches – Off
Record Hobbs and Tach Time

PARKING:
Controls – Locked
Tiedowns – Secure
Fuel Selector– Left or Right

EMERGENCY PROCEDURES

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All Speeds are in Knots

One 180 BHP, Lycoming, Fuel Injected, 4 Cylinder, Direct Drive, Air Cooled, Horizontally Opposed, 53 gals usable fuel, 8qts (6 min) Oil.

Max Ramp: 2558   Empty (general): 1663
Max Land: 2550   Useful Load: 887

ENGINE FAILURES:

DURING TAKEOFF RUN:
Throttle – *Idle*
Brakes – *Apply*
Flaps – *Retract*
Mixture – *Idle Cutoff*
Ignition Switch – *Off*
Battery Switch – *Off*

IMMEDIATELY AFTER TAKEOFF:
Airspeed – *65 KIAS (Flaps Down)*
70 KIAS (Flaps Up)
IDENTIFY LANDING AREA
Fuel Selector – *Off*
Mixture – *Idle Cutoff*
Flaps – *As Required*
Ignition – *Off*
Battery Switch – *Off*
Doors – *Unlatch*
Land Straight Ahead

DURING FLIGHT:
Airspeed – *68 KIAS*
IDENTIFY LANDING AREA
Fuel Selector – *Both*
Fuel Shutoff Valve – *Push In*
Mixture – *Rich*
Fuel Pump – *On*
Ignition – *Both*

FORCED LANDINGS:

NO POWER:
Airspeed – *65 KIAS (Flaps Down)*
70 KIAS (Flaps Up)
Seats/ Seat Belts – *Secure*
Fuel Shutoff Valve – *Pull Out*
Mixture – *Idle Cutoff*
Flaps – *As Required*
Ignition – *Off*
Battery Switch – *Off*
Doors – *Unlatch*
Touchdown – *Slightly Tail Low*
Brakes – *Apply Heavily*

WITH POWER:
Airspeed – *65 KIAS*
Seats/ Seat Belts – *Secure*
Flaps – *20°*
Landing Area – *Terrain and Obstacles*
Radios/ Electrical – *Off*
Flaps – *30°*
Battery Switch – *Off*
Doors – *Unlatch*
Touchdown – *Slightly Tail Low*
Ignition – *Off*
Brakes – *Apply Heavily*

DITCHING:
Radio – *121.5*
Squawk – *7700*
Heavy Objects – *Stow*
Seats/ Seat Belts – *Secure*
Flaps – *20° to 30°*
Power – *300 FPM/ 55 KIAS*
Doors – *Unlatch*
Touchdown – *Level*
Airplane – *Evacuate*

AIRCRAFT FIRES:

FIRE DURING START:
Continue Cranking
IF ENGINE STARTS:
Power – *1800 RPM*
Engine – *Shutdown/ Inspect*
IF ENGINE FAILS TO START:
Continue Cranking
Fuel Shutoff Valve – *Pull Out*
Mixture – *Idle Cutoff*
Throttle – *Full Open*
Ignition – *Off*
Battery Switch – *Off*
Fire Extinguisher – *Obtain*
Fire – *Extinguish*
Fire Damage – *Inspect*

FIRE DURING FLIGHT:
Fuel Shutoff Valve – *Pull Out*
Mixture – *Idle Cutoff*
Cabin Heat/ Air – *Closed*
Battery Switch – *Off*
Airspeed – *100 KIAS*
Forced Landing – *Execute*

ELECTRICAL FIRES:
Battery Switch – *Off*
Vents/ Cabin Heat/ Air – *Closed*
Fire Extinguisher – *Activate*
Avionics – *Off*
Electrical Switches – *Off*
Vent Cabin – *Open Windows*
Battery Switch – *On*
Circuit Breakers – *Do Not Reset*
Avionics – *On (one at a time)*

CABIN FIRE:
Battery Switch – *Off*
Vents/ Cabin Heat/ Air – *Closed*
Fire Extinguisher – *Activate*
Flight – *Terminate ASAP*

WING FIRE:

Perform a Sideslip to keep flames away from fuel tanks/ cabin
Exterior Lights – *Off*
Pitot Heat – *Off*
Flight – *Terminate ASAP*

ABNORMAL PROCEDURES:

LANDING WITH FLAT MAIN TIRE:
Approach – *Normal*
Flaps – *As Required*
Touchdown – *Good Tire First*
Brakes – *Apply (Differential Braking)*

LANDING WITH FLAT NOSE TIRE:
Approach – *Normal*
Flaps – *As Required*
Touchdown – *Mains First*
Maintain Full Up Elevator

AMMETER EXCESSIVE CHARGE:
Alternator – *Off*
Alternator Circuit Breaker – *Pull*
Nonessential Equipment – *Off*
Flight – *Terminate ASAP*

LOW VOLTAGE LIGHT:
Avionics Power Switch – *Off*
Alternator Circuit Breaker – *Off*
Battery/ Alternator – *On*
Low Voltage Light – *Check Off*
Avionics Power Switch – *On*
IF LIGHT ILLUMINATES AGAIN:
Alternator – *Off*
Nonessential Radios – *Off*
Flight – *Terminate ASAP*