

## **SPEEDS (KIAS) 172/R (C172R)**

Vso.....	33
Vs.....	44
Vr.....	55
Vx (sea level).....	60
Vx (10,000 ft.).....	65
Vy (sea level).....	79
Vy (10,000 ft.).....	71
Vfe (10° flaps).....	110
Vfe (10° to 30° flaps).....	85
Vno.....	129
Vne.....	163
Va (max gross).....	99
Va (2,100 lbs).....	92
Va (1,600 lbs).....	82
Best Glide (flaps UP).....	65
Best Glide (flaps DN).....	60
Max. Demon. X-Wind.....	15
Approach (Flaps UP).....	65-75
Approach (Flaps DN).....	60-70
Enroute Climb.....	70-85

## **PREFLIGHT**

Weather.....	CHECK
Weight&Balance.....	COMPLETE
Documents(AROW).....	CHECK
Inspection/AD status.....	CHECK
FireExtinguisher.....	CHECK
Hobbs/Tach.....	CHECK
Ignition.....	OFF
Avionics Master.....	OFF
Master Switch.....	ON
Fuel Quantity.....	CHECK
Avionics Master.....	ON
AvionicsCoolingFan.....	CHECK
Avionics Master.....	OFF
Flaps.....	EXTEND
Lights.....	ON/INSPECT/OFF

Alt. Static Source.....	OFF
Annunciator Panel.....	TEST
Fuel Selector.....	BOTH
Fuel Shutoff.....	ON
Master Switch.....	OFF

## **EXTERIOR INSPECTION**

<i>Nose</i>	
Windscreen.....	CLEAN
Fuel Sumps (3).....	CHECK
<b>Oil Quantity</b> .....	CHECK
(8 qt. cap. 6 qt. min.)	
Prop. & Spinner.....	CHECK
Air Filter.....	CHECK
Alternator Belt.....	SECURE
Nose Wheel Tire.....	CHECK
Static Source.....	CHECK
<i>Left Wing</i>	
<b>Fuel Quantity</b> .....	CHECK
Fuel Filler Cap.....	SECURE
Fuel Sumps (5).....	CHECK
Main Wheel.....	CHECK
Pitot Tube.....	CHECK
Fuel Tank Vent.....	CHECK
Stall Warning.....	CLEAR
Tie Down.....	REMOVE
Leading Edge.....	CHECK
Left Aileron.....	CHECK
Left Flap.....	CHECK
<i>Aft Fuselage</i>	
Baggage Door.....	LOCKED
Fuselage.....	CHECK
<i>Empennage</i>	
Horiz.Stabilizer.....	CHECK
Elevator.....	CHECK
Tail Tie-Down.....	REMOVE
Trim Tab.....	CHECK
Rudder.....	CHECK
Antennas.....	CHECK

Horiz.Stabilizer.....	CHECK
<i>Right Wing</i>	
Flap.....	CHECK
Aileron.....	CHECK
Tie Down.....	REMOVE
Leading Edge.....	CHECK
Fuel Sumps (5).....	CHECK
Main Wheel.....	CHECK
<b>Fuel Quantity</b> .....	CHECK
Fuel Filler Cap.....	SECURE

## **PRE-ENGINE START**

Preflight.....	COMPLETE
Seats/Belts.....	SECURE
Cabin Doors.....	SECURE
Parking Brake.....	SET
Circuit Breakers.....	CHECK IN
Electrical Equipment.....	OFF
Avionics Master.....	OFF
Fuel Selector Valve.....	BOTH
Fuel Shutoff Valve.....	ON (IN)
Avionics Circuit Breakers.....	IN

## **ENGINE START**

Throttle.....	OPEN ¼ INCH
Mixture.....	IDLE CUTOFF
Master Switch.....	ON
Beacon.....	ON
Fuel Pump.....	ON
Mixture.....	RICH
Until 3-5 GPH, then IDLE	
Fuel Pump.....	OFF
Propeller Area.....	CLEAR
Ignition.....	START
Mixture.....	RICH
When engine starts	
Throttle.....	1000 RPM
Oil Pressure.....	CHECK
Mixture.....	LEAN for TAXI

(set throttle to 1200 RPM, lean to obtain max RPM increase)  
Nav. Lights (as required).....ON

## **FLOODED START**

Fuel Pump.....	OFF
Mixture.....	IDLE CUTOFF
Throttle.....	OPEN ½ to FULL
Starter.....	ENGAGE

## **TAXI**

Avionics Master.....	ON
Radios.....	ON
Transponder.....	STBY
ATIS/Clearance.....	OBTAIN
Flaps.....	RETRACT
Parking Brake.....	RELEASE
Brakes.....	TEST
Instruments.....	CHECK

## **Radio Frequencies**

### **KGAI**

CTAF.....	123.075
AWOS.....	128.275

### **KFDK**

TOWER/CTAF.....	132.4
GROUND.....	121.975
ATIS.....	124.875

### **KDMW**

CTAF.....	122.7
AWOS.....	121.25

### **Potomac**

CLEARANCE.....	121.6
APPROACH.....	132.775

## **RUNUP**

Parking Brake.....SET  
Seats/Belts.....SECURE  
Doors/Windows.....CLOSED  
Controls...FREE & MOVING  
Fuel Quantity.....CHECK  
Mixture.....RICH  
Fuel Selector Valve.....BOTH  
Throttle.....1800 RPM  
Mixture.....SET for altitude  
Magnetos.....CHECK  
Max drop 150 RPM  
Max differential 50 RPM  
Vacuum Gauge.....CHECK  
Engine  
Instruments.....CHECK  
Ammeter.....CHECK  
Annunciator Panel.....TEST  
Throttle.IDLE then 1000 RPM  
Flight Instruments...CHECK  
Radios and Avionics.....SET  
Autopilot.....OFF  
Electric Trim.....CHECK  
Trim.....SET for TAKEOFF  
Brakes.....RELEASE

## **PRE TAKEOFF**

Master Switch.....CHECK  
Fuel Selector.....BOTH  
Engine Gauges.....CHECK  
Mixture.....SET

## **NORMAL TAKEOFF**

Flaps.....0°-10°  
Throttle.....Full OPEN  
Engine Instruments...CHECK  
Rotate.....55 KIAS  
Climb.....70-80 KIAS  
Flaps.....RETRACT

## **SHORT-FIELD TAKEOFF**

Flaps.....10°  
Brakes.....APPLY  
Throttle.....Full OPEN  
Engine Instruments...CHECK  
Brakes.....RELEASE  
Rotate.....55 KIAS  
Climb.....57 KIAS  
clear obstacle  
Flaps.....RETRACT  
when clear of obstacle

## **CRUISE**

Power.....2000-2400 RPM  
Mixture.....LEAN  
Landing Light.....OFF  
Trim.....ADJUST

## **DESCENT**

Power.....AS DESIRED  
Mixture.....ENRICH  
Altimeter.....SET  
Fuel Selector.....BOTH  
Flaps.....AS DESIRED  
Seat Backs.....UPRIGHT  
Seats/Belts.....SECURE  
Fuel Selector.....BOTH  
Mixture.....SET  
Landing Ligh.....ON (as req.)  
Autopilot.....OFF

## **NORMAL LANDING**

Airspeed...65-75 (Flaps UP)  
Flaps.....AS DESIRED  
Airspeed.....60-70 (Flaps DN)

## **SHORT FIELD LANDING**

Airspeed.....65-75 (Flaps UP)  
Flaps.....DOWN (30°)  
Airspeed.....62 KIAS  
Power.....IDLE  
after clearing obstacle  
Brakes.....APPLY HEAVILY  
Flaps.....RETRACT

## **GO-AROUND**

Throttle.....FULL OPEN  
Flaps.....RETRACT to 20°  
Climb.....55 KIAS  
Flaps.....RETRACT to 10°  
until obstacles are cleared  
Flaps.....RETRACT  
after reaching safe altitude and  
60 KIAS

## **AFTER LANDING**

Flaps.....RETRACT  
Transponder.....STBY  
Landing Light.....OFF  
Strobe Lights.....OFF  
Mixture.....LEAN for taxi

## **SHUTDOWN**

Throttle.....IDLE  
Electrical Equipment.....OFF  
Autopilot.....OFF  
Avionics Master.....OFF  
Mixture.....IDLE cutoff  
Ignition.....OFF  
Master Switch.....OFF  
Beacon.....OFF  
Control Lock.....INSTALL  
Fuel Selector Valve.....L or R  
to prevent cross feeding  
Hobbs/Tach.....RECORD

Doors/Windows.....LOCKED  
Tie-Downs.....SECURE  
Flight Plan.....CLOSED

## **EMERGENCY PROCEDURES**

### **ENGINE FAILURE DURING TAKEOFF ROLL**

Throttle.....IDLE  
Brakes.....APPLY  
Flaps.....RETRACT  
Mixture.....IDLE CUTOFF  
Ignition.....OFF  
Master Switch.....OFF

### **ENGINE FAILURE AFTER TAKEOFF**

Airspeed...65 KTS (Flaps UP)  
60 KTS (Flaps DN)  
Mixture.....IDLE CUTOFF  
Fuel Shutoff Valve.....OFF  
Ignition.....OFF  
Master Switch.....OFF  
Cabin Door.....UNLATCH  
Land....STRAIGHT AHEAD

### **ENGINE FAILURE DURING FLIGHT (RESTART)**

Airspeed.....65 KTS  
Landing Site.....IDENTIFY  
Fuel Shutoff Valve...ON (IN)  
Fuel Selector Valve...BOTH  
Auxiliary Fuel Pump.....ON  
Mixture.....RICH  
Ignition.....BOTH or START  
if propeller has stopped  
Auxiliary Fuel Pump.....OFF

## **EMERGENCY LANDING WITHOUT POWER**

Airspeed.65 KIAS (Flaps UP)  
60 KIAS (Flaps DN)  
Landing Site.....IDENTIFY  
Seat Backs.....UPRIGHT  
Seats/Belts.....SECURE  
Mixture.....IDLE CUTOFF  
Fuel Shutoff Valve.....OFF  
Ignition.....OFF  
Flaps.....AS REQUIRED  
Master Switch.....OFF  
Doors.....UNLATCH  
Touchdown.....TAIL LOW  
Brakes.....APPLY HEAVILY

### **PRECAUTIONARY LANDING WITH POWER**

Seat Backs.....UPRIGHT  
Seats/Belts.....SECURE  
Airspeed.....60 KIAS  
Flaps.....20°  
Selected Field.....OVERFLY  
note terrain  
Avionics Master.....OFF  
Flaps.....30° on final  
Airspeed.....60 KIAS  
Master Switch.....OFF  
Doors.....UNLATCH  
Touchdown.....TAIL LOW  
Ignition.....OFF  
Mixture.....IDLE CUTOFF  
Brakes.....APPLY HEAVILY

## **DITCHING**

Radio.....MAYDAY 121.5  
Transponder.....7700  
Heavy Objects.....SECURE  
or JETTISON  
Seat Backs.....UPRIGHT  
Seats/Belts.....SECURE  
Flaps.....20° to 30°  
Power...300 ft/min DESCENT  
at 55 KIAS or 65 KIAS w/no  
power  
Approach High Winds  
Seas.....INTO WIND  
Light Winds/Seas.PARALLEL  
Touchdown.....LEVEL  
Face.....CUSHION  
ELT.....ACTIVATE  
Airplane.....EVACUATE

## **ELECTRICAL FIRE**

Master Switch.....OFF  
Vents/Air/Heat.....CLOSED  
Fire Extinguisher...ACTIVATE  
Avionics Master.....OFF  
All other electrical.....OFF  
Vents/Cabin Air/Heat....OPEN  
when fire is completely out  
If fire is out and electrical is  
necessary for flight  
Master Switch.....ON  
Circuit Breakers.....CHECK  
do not reset!  
Radios.....OFF  
Avionics Master.....ON  
Radios/Electrical.....ON  
one at a time

## **FIRE DURING ENGINE START**

Cranking.....CONTINUE  
If Engine Starts:  
Power.....1700 RPM  
Engine.....SHUTDOWN  
If Engine Fails to Start:  
Throttle.....FULL OPEN  
Mixture.....IDLE CUTOFF  
Cranking.....CONTINUE  
Fuel Shutoff.....OFF  
Aux. Fuel Pump.....OFF  
Fire Extinguisher.....OBTAIN  
Engine.....SECURE  
Master.....OFF  
Ignition.....OFF  
Parking Brake.....RELEASE  
Airplane.....EVACUATE  
Fire.....EXTINGUISH

## **ENGINE FIRE IN FLIGHT**

Mixture.....IDLE CUTOFF  
Fuel Shutoff Valve.....OFF  
Auxiliary Fuel Pump.....OFF  
Master Switch.....OFF  
Cabin Heat & Air.....OFF  
Airspeed.....100 KIAS  
Forced Landing.....EXECUTE

## **CABIN FIRE**

Master Switch.....OFF  
Vents/Air/Heat.....CLOSED  
Fire Extinguisher.....USE  
Cabin.....VENTILATE  
Land.....ASAP

## EMERGENCY PROCEDURES

### WING FIRE

Landing/Taxi Lights.....OFF  
Navigation Lights.....OFF  
Strobe Lights.....OFF  
Pitot Heat Switch.....OFF  
Sideslip.....FOOT on FIRE  
Land.....ASAP

### LANDING WITH FLAT MAIN TIRE

Approach.....NORMAL  
Wing Flaps.....30°  
Touchdown...GOOD MAIN1st  
Maintain directional control  
using brake on good wheel

### LANDING WITH FLAT NOSE TIRE

Approach.....NORMAL  
Flaps.....AS REQUIRED  
Touchdown.....ON MAINS  
Hold nosewheel off the ground  
as long as possible  
Elevator.....FULL UP  
When nosewheel touches  
down

## LOW VOLTAGE ANNUNCIATOR







Low voltage illumination may occur during low RPM conditions such as taxi  
Avionics Master.....OFF  
Alt.Circuit Breaker.CHECK IN  
Master Switch.....OFF  
Master Switch.....ON  
LowVolt.Annun..CHECK OFF  
Avionics Master.....ON  
\*IF ANNUNCIATOR ILLUMINATES AGAIN\*  
Alternator.....OFF  
Nonessential Equip.....OFF  
Flight.....TERMINATE  
As soon as practical

## AMMETER SHOWS EXCESS RATE OF CHARGE

Alternator.....OFF  
With the alternator side of the master switch off, compass deviations of as much as 25° may occur  
Nonessential Equip.....OFF  
Flight.....TERMINATE  
As soon as practical

## VACUUM SYSTEM FAILURE

If vacuum is not within normal limits, a failure has occurred and partial panel procedures may be required

ATC Light Signals		
GROUND	SIGNAL	AIR
Cleared for Takeoff		Cleared to Land
Cleared to Taxi		Return for Landing
STOP		Give Way Continue Circling
Taxi Clear of Runway		Airport Unsafe DO NOT LAND
Return to Starting Point on Airport		Not Applicable
Exercise EXTREME CAUTION		Exercise EXTREME CAUTION