

<u>SPEEDS (KIAS)</u>	<u>INTERIOR (CONT.)</u>
Vso.....55	Ignition Switches.....OFF
Vmc.....56	Trim.....NEUTRAL
Vr.....75	Flaps.....EXTEND
Vs1.....57	Cowl Flaps.....OPEN
Vx82	Master Switch.....ON
Vxse.....82	Gear Lights.....3 GREEN
Vy.....88	Fuel Quantity.....CHECK
Vyse.....88	Lights.....ON/INSPECT/OFF
Vlo (gear up).....109	Pitot/Static System.....DRAIN
Vlo (gear down).....140	Empty Seats.....FASTEN BELTS
Vle.....140	Emerg. Exit...CLOSED/LOCKED
Vfe.....111	Turn Coordinator.....AUDIBLE
Vno.....169	
Vne.....202	<u>EXTERIOR</u>
Va (3800 lbs).....135	<u>RIGHT WING:</u>
Va (2700 bs).....112	Fuel Sump Drains.....DRAIN
Max. Demon. X-Wind.....17	Flap & Aileron.....CHECK
Short Field Ldg. (Flaps 40°)....75	Wingtip.....CHECK
Enroute Climb.....105	Leading Edge.....CHECK
	Strut/Tire/Brake.....CHECK
<u>PREFLIGHT</u>	Tie Down.....REMOVE
Crew.....FIT for FLIGHT	Fuel Quantity.....CHECK
Weather.....CHECK	Fuel Cap.....SECURE
Weight & Balance.....COMPLETE	Scupper Drain.....CHECK
Documents (AROW).....CHECK	Oil Qty. (6 qts.).....CHECK
Inspection/AD status.....CHECK	Propeller.....CHECK
Performance Data.....CHECK	Cowl Flap.....OPEN/SECURE
	<u>FORWARD FUSELAGE:</u>
<u>INTERIOR</u>	Windshield.....CLEAN
Fire Extinguisher.....CHARGED	Nose Section.....CHECK
Hobbs/Tach.....CHECK	Strut/Tire/Brake.....CHECK
Gear Selector.....DOWN	Landing Light.....CHECK
Avionics Master.....OFF	

<u>EXTERIOR (CONT.)</u>	<u>STARTING ENGINE</u>
<u>LEFT WING:</u>	Fuel Selector.....ON
Flap & Aileron.....CHECK	Mixture.....RICH
Wingtip.....CHECK	Throttle.....OPEN ¼ INCH
Leading Edge.....CHECK	Propeller.....FULL FORWARD
Strut/Tire/Brake.....CHECK	Master Switch.....ON
Tie Down.....REMOVE	Anti-Collision Lights.....ON
Fuel Quantity.....CHECK	Fuel Pump.....ON
Fuel Cap.....SECURE	Ignition Switches.....ON
Scupper Drain.....CHECK	Propeller Area.....CLEAR
Oil Qty. (6 qts.).....CHECK	Primer.....AS REQUIRED
Propeller.....CHECK	Starter.....ENGAGE
Cowl Flap.....OPEN/SECURE	Throttle.....800-1000 RPM
Stall Warning Vanes.....CHECK	Oil Pressure.....CHECK
Pitot Tube/Static Ports.....CHECK	Mixture.....LEAN for TAXI
	Ammeter.....CHECK
<u>AFT FUSELAGE/EMPENNAGE:</u>	REPEAT FOR OPPOSITE ENGINE
Left Aft Fuselage.....CHECK	Fuel Pumps.....OFF
Antennas.....CHECK	Avionics Master.....ON
Horizontal Stabilator.....CHECK	Radios.....ON
Vertical Stabilizer.....CHECK	Transponder.....STBY
Tie Down.....REMOVE	Flaps.....RETRACT
Right Aft Fuselage.....CHECK	Parking Brake.....RELEASE
Baggage Door.SECURE/LOCKED	
	<u>TAXI</u>
<u>BEFORE STARTING ENGINES</u>	Taxi Area.....CLEAR
Preflight Inspection....COMPLETE	Throttle.....APPLY SLOWLY
Passenger Briefing....COMPLETE	Brakes.....CHECK
Seats.....ADJUSTED	Steering.....CHECK
Seat Belts/Harnesses...SECURED	Flight Instruments.....CHECK
Parking Brake.....SET	Heater/Defroster.....CHECK
Circuit Breakers.....CHECK IN	Fuel Selector.....ON
Radios/Electrical.....OFF	Crossfeed.....CHECK
Cowl Flaps.....OPEN	one at a time
Alternators.....ON	

<u>BEFORE TAKEOFF</u>	<u>NORMAL TAKEOFF</u>
Parking Brake.....SET	Emerg. Procedures.....REVIEW
Flight Controls...FREE/CORRECT	Lights.....AS REQUIRED
Flaps.....CHECK & SET	Doors/Windows.....CLOSED
Trim.....SET	Flaps.....UP
Cabin Door.....LATCHED	Throttles.....FULL OPEN
Seats/Belts/Harnesses...SECURE	Instruments.....CHECK/GREEN
Empty Seats.....BELTS SECURE	Rotate.....75 KIAS
Auto Pilot.....OFF	Climb.....88 KIAS
Mixtures.....RICH	Landing Gear.....RETRACT
Throttles.....1500 RPM	
Propellers.....CHECK FEATHER	
500 RPM max drop	
Throttles.....2000 RPM	
Mixtures.....SET for ALTITUDE	
Propellers.....EXERCISE 3x	
Propellers.....1900 RPM	
Throttles.....INCREASE	
check gov. for proper operation	
Propellers.....FULL FWD	
Throttles.....2000 RPM	
Engine Gauges.....CHECK	
Carburetor Heat.....CHECK	
Magnetos.....CHECK	
175 RPM max drop	
50 RPM max differential	
Alternators.....CHECK	
Annunciator Panel.....TEST	
Gyro Suction.....4.8 to 5.2 in. Hg.	
Circuit Breakers.....CHECK IN	
Throttles.....IDLE then 1000 RPM	
Flight Instruments.....CHECK/SET	
Radios.....SET	
Transponder.....ALT	
Fuel Pumps.....ON	
Fuel Selectors.....ON	
Parking Brake.....RELEASE	
	<u>SHORT FIELD TAKEOFF</u> <u>(Flaps UP)</u>
	Flaps.....UP
	Trim.....SET
	Brakes.....SET and HOLD
	Throttles.....FULL OPEN
	Brakes.....RELEASE
	Rotate.....70 KIAS
	Climb.....75 KIAS through 50 ft.
	Accelerate.....82 KIAS (Vx)
	88 KIAS (Vy)
	Landing Gear.....RETRACT
	<u>SHORT FIELD TAKEOFF</u> <u>(Flaps 25°)</u>
	Flaps.....25°
	Trim.....SET
	Brakes.....SET and HOLD
	Throttles.....FULL OPEN
	Brakes.....RELEASE
	Rotate.....63 KIAS
	Climb.....67 KIAS through 50 ft.
	Landing Gear.....RETRACT
	Flaps.....RETRACT

<u>CRUISE</u>	<u>SHUTDOWN</u>
Enroute Climb.....105 KIAS	Avionics Master.....OFF
Throttles.....SET	Throttles.....IDLE
Propellers.....SET	Mixtures.....IDLE CUTOFF
Fuel Pumps.....OFF	Magnetos.....OFF
Mixtures.....SET	Anti-Collision Lights.....OFF
Engine Gauges.....CHECK	Alternators.....OFF
Landing Light.....OFF	Master Switch.....OFF
Cowl Flaps.....AS REQUIRED	Hobbs/Flight Ticket.....RECORD
	Trash.....REMOVE
	Doors/Windows.....LOCKED
	Tie-Downs.....SECURE
	Flight Plan.....CLOSE
	<u>Vmc DEMO (4,000 ft. AGL)</u>
	RPM.....INCREASE
	Landing Gear.....RETRACT
	Flaps.....UP
	Airspeed.....at/above 82 KIAS
	Propellers.....FULL FORWARD
	Throttle (sim. INOP).....IDLE
	Throttle (other eng.)....full OPEN
	Slowly reduce airspeed
	approximately 1 knot/second
	until:
	1) loss of directional control or
	2) stall
	Recovery...IDLE on good engine
	Pitch....DOWN to obtain 82 KIAS
	Throttle (good eng.)...ADVANCE
	Airspeed.....88 KIAS (Vyse)
<u>BEFORE LANDING</u>	
Seat Backs.....ERECT	
Belts/Harnesses.....FASTENED	
Cowl Flaps.....AS REQUIRED	
Fuel Selectors.....ON	
Fuel Pumps.....ON	
Mixtures.....ENRICHEN	
Propellers.....FULL FORWARD	
Landing Gear.....DOWN	
below 140 KIAS	
Heater.....OFF	
Landing Light.....AS REQUIRED	
	<u>AFTER LANDING</u>
Flaps.....UP	
Cowl Flaps.....OPEN	
Carburetor Heat.....OFF	
Mixtures.....LEAN for TAXI	
Transponder.....STBY	
Fuel Pumps.....OFF	
Landing Light.....OFF	

**EMERGENCY PROCEDURES
ENGINE INOP. PROCEDURES****DETECTING DEAD ENGINE**

Loss of Thrust

Yaw in direction of dead engine

ENGINE SECURING PROCEDURE

Min. Controllable Speed...56 KIAS

Vyse.....88 KIAS

Direction/Airspeed....abv 82 KIAS

Mixtures.....FULL FORWARD

Propellers.....FULL FORWARD

Throttles.....FULL FORWARD

Flaps.....RETRACT

Gear.....RETRACT

IDENTIFY INOPERATIVE ENGINE

Throttle.....RETARD to verify

ATTEMPT TO RESTORE POWER

Mixtures.....AS REQUIRED

Fuel Selector.....ON

Primers.....LOCKED

Magnetos...LEFT or RIGHT ONLY

Fuel Pumps.....ON

Carburetor Heat.....ON

FEATHERING PROCEDURE

Prop. (INOP eng.).....FEATHER

Above 950 RPM

Mixture (INOP eng.).....IDLE

Trim.....AS REQUIRED

3°-5° bank toward operating eng.

Fuel Pump (INOP eng.).....OFF

Magnetos (INOP eng.).....OFF

Cowl Flaps (INOP eng.)..CLOSED

As required on good engine

Alternator (INOP eng.).....OFF

Electrical Load.....REDUCE

Fuel Selector (INOP eng.).....OFF

Fuel Pump (good eng.).....OFF

**EMERGENCY PROCEDURES
AIR START (UNFEATHER)**

Fuel Selector (INOP eng.).....ON

Fuel Pump (INOP eng.).....ON

Propeller.....FWD to cruise RPM

Mixture.....RICH

Throttle.....TWO full strokes
& OPEN ¼ INCH

Magneto Switches.....ON

Starter.....ENGAGE

until propeller windmills

Throttle.....REDUCE POWER

until engine is warm

Alternator.....ON

***IF ENGINE DOES NOT START
PRIME AS REQUIRED*****ENGINE FAILURE DURING
TAKEOFF****BELOW 76 KIAS**Throttles.....CLOSE both immed.
STOP straight ahead**INADEQUATE RUNWAY REMAIN.**

Throttles.....CLOSED

Brakes.....APPLY (MAX.)

Master Switch.....OFF

Fuel Selectors.....OFF

Continue straight ahead, turn to
avoid obstacles**75 KIAS or ABOVE*****If engine failure occurs
during takeoff ground roll or
after lift-off with gear still
down and 75 KIAS has been****EMERGENCY PROCEDURES***If adequate runway remains CLOSE
both throttles immediately, land if
airborne and stop straight ahead*If runway remaining is inadequate for
stopping, decide whether to abort or
continue. If decision is made to
continue, maintain heading and when
climb is established retract landing
gear, accelerate to 88 KIAS, and
feather inoperative engine prop (see
Engine Securing Procedure).WARNING: in certain combinations of
aircraft weight, configuration, ambient
conditions and speed, negative climb
performance may result. Refer to
One Engine Inoperative Climb
Performance Chart, figure 5-25 in
POH.**ENGINE FAILURE (blw. 56 KTS)**

Inop Engine Prop.....FEATHER

Throttles (BOTH).....RETARD

to stop turn

Pitch...lower, accel above 56 KIAS

Operative Engine..Increase power

As speed increases above 56 KTS

**IF ALTITUDE PERMITS, A
RESTART MAY BE ATTEMPTED, IF
RESTART FAILS OR IF ALTITUDE
DOWN NOT PERMIT, SEE ENGINE
SECURING****PROPELLER OVERSPEED**

Throttle.....RETARD

Oil Pressure.....CHECK

Propeller.....FULL AFT

Airspeed.....REDUCE

Throttle..as reqd below 2700 RPM

attained:**EMERGENCY PROCEDURES
EMERG. GEAR EXTENSION*****CHECK the following first***

Circuit Breakers.....CHECK

Master Switch.....ON

Alternators.....CHECK

Nav. Lights (DAY).....OFF

To EXTEND proceed as follows

Airspeed.....below 100 KIAS

Gear Selector.....DOWN

Emergency Extender.....PULL

Indicator Lights.....3 GREEN

Leave emergency gear extension
knob out**ENGINE FIRE IN FLIGHT
AFFECTED ENGINE**

Fuel Selector.....OFF

Throttle.....CLOSE

Propeller.....FEATHER

Mixture.....IDLE CUTOFF

Cowl Flap.....OPEN

If terrain permits land immed.

**ENGINE FIRE ON GROUND
IF ENGINE HAS NOT STARTED**

Mixture.....IDLE CUTOFF

Throttle.....OPEN

Starter.....CRANK ENGINE

If engine has already started and is
running, continue operating to try pulling
the fire into the engine. If fire continues,
extinguish with best available means.**IF EXTERNAL FIRE
EXTINGUISHER IS TO BE
APPLIED**

Fuel Selector Valves.....OFF

Mixture.....IDLE CUTOFF