

PREFLIGHT (CABIN)

Inspections / AROW docs / Hobbs
Compass corr. cardLEGIBLE
Fuel selectors..... ON
Cowl flaps..... OPEN
Mixtures IDLE CUT-OFF
Throttles IDLE
Alternate static source..... OFF
Landing gear selector DOWN
Parking brake SET
Avionics/electrical switches. OFF
Magneto switches..... OFF
Flight controlsFREE & CORRECT
Static system..... DRAIN
Emergency exit.....CHECK
Battery master switch ON
Landing gear lights.....3 GREEN
Fuel quantity gauges.....CHECK
Electric fuel pumps.....CHECK
Ext. lights / pitot heatCHECK
Battery master switch OFF
Flaps40°

PREFLIGHT (EXTERIOR)

Fuel sumps DRAIN
Wings / flaps / ailerons.....CHECK
Tie-down & chocksREMOVE
Fuel vents / quantityCHECK
Main gear / tires (55 psi)...CHECK
Brakes blocks & discsCHECK
Main gear struts inflation.....2.6"
Nose gear / tire (50 psi)CHECK
Nose gear strut inflation2.7"
Battery vents CLEAR
Propellers / spinnersCHECK
Cowl flaps.....OPEN & SECURE
Oil level6-8 QTS.
Emergency exitCHECK
Baggage..... SECURED
Baggage door..... LOCKED
Windshield..... CLEAN
Stall warning vanesCHECK
Pitot/static headCHECK
Air inlets CLEAR
Empennage / Stabilator.....CHECK
Dorsal fin air scoopCHECK
Antennas SECURE
General inspectionWALK AROUND

BEFORE ENGINE START

Flaps RETRACT
Crew & passengersBRIEF
Seats ADJUST & LOCK
Seat belts & harnesses .. FASTEN
Parking brake SET
Circuit breakers IN

Cowl flaps..... OPEN
Carb. heat controls.....OFF

STARTING ENGINES

Fuel selectors ON
*Mixtures FULL RICH
Propellers FULL FORWARD
Battery master switch ON
Alternators ON
Anti-collision light..... ON
**Throttle1/4" OPEN
***Electric fuel pump ON
****Primer..... AS REQUIRED
Propeller area CLEAR
Magneto switches ON
Starter ENGAGE
Throttle 1000-1200 RPM
Oil pressure CHECK
Electric fuel pumpOFF
Fuel pressure CHECK
Repeat for opposite engine
*ICO for FLOODED START
**1/2" OPEN FOR HOT START
**FULL OPEN for FLOODED start
***OFF for FLOODED start
****omit for FLOODED/HOT start

AFTER ENGINE START

Ammeters CHECK
Gyro vacuum.....CHECK
Mixture AS REQUIRED
Avionics master/radios ON
ATIS/Clearance RECORD
Flight instruments SET/CHECK
GNS 430 CHECK/SET

TAXIING

Parking brake.....RELEASE
Brakes/flight instruments CHECK
Heater / defroster.....AS DESIRED
Fuel selectors .. check X-feed/ON

ENGINE RUNUP

Parking brake.....SET
Fuel selectors ON
Mixtures RICH
Propellers FULL INCREASE
Throttles1500 RPM
Propellers CHECK FEATHER
..... max. drop 500 RPM
Throttles2000 RPM
Magnetos.....max 175 drop/50 diff.
Propellers EXERCISE
..... max. 300 RPM drop
Governors CHECK
Propellers FULL INCREASE
Carburetor heat CHECK

Alternator output..... CHECK
Gyro suction gauge 4.8"-5.2"
Engine gauges CHECK
Throttles IDLE CHECK
Throttles 1000 RPM

BEFORE TAKEOFF

Seat backsERECT
Seat belts & harnesses..FASTEN
Fuel selectors ON
Trim / flaps / cowl flaps..... SET
Primers LOCKED
Carburetor heat OFF
Quadrant frictionADJUST
Mixtures SET
Propellers SET
Engine gauges CHECK
Oil pressure ON
Flight controlsFREE & CORRECT
Autopilot CHECK then OFF
Flight instruments..... SET
Annunciator panel..... CHECK
Avionics / Transponder SET
Circuit breakers IN
Window / Door CLOSED
Takeoff briefing GIVEN

HOLDING SHORT / LINEUP

Flaps SET
Takeoff Time NOTED
Pitot heat AS REQUIRED
Mixture SET
Fuel pumps ON
Lights AS NEEDED
Transponder ALT

AFTER TAKEOFF / CLIMB

500 ft AGL
Flaps UP
Gear UP
Engine gauges CHECK

1000 ft AGL
Power..... 75%
Fuel pumps OFF
Fuel pressure CHECK
Cowl flaps AS REQUIRED
Climb speed 105

CRUISE CHECK

Power / Mixture..... SET
Cowl flaps / lights.AS REQUIRED

DESCENT

Power..... SET
Mixture.....ADJUST with descent
Cowl flaps AS REQUIRED

APPROACH & LANDING

ATISRECORD
Approach briefing GIVEN
Seat backs ERECT
Cowl flaps / lights AS REQUIRED
Electric fuel pumps ON
Autopilot OFF
Heater OFF / AS REQ.
(G)Fuel selectors..... ON
(U)Gear DOWN
(M)Mixtures SET
(P)Propellers..... FULL FORWARD
(S)Seat belts & harnessesFASTEN

AFTER LANDING

Flaps RETRACT
Cowl flaps OPEN
Carburetor heat OFF
Electric fuel pumps OFF
TransponderSTANDBY/OFF

ENGINE SHUTDOWN

Heater (if ON)FAN, 2 min then OFF
Avionics master/radios OFF
Throttle..... CLOSED
Mixture IDLE CUT-OFF
Magnetos OFF
Electrical switches OFF
Battery master switch..... OFF

EMERGENCIES

ENGINE FIRE DURING START
Starter CRANK ENGINE
Mixture IDLE CUT-OFF
Throttle..... OPEN
Fuel pump OFF
Fuel selector OFF

ENGINE ROUGHNESS

Carburetor heat ON
If roughness continues after 1 min:
Carburetor heat OFF
Mixture ADJUST
Electric fuel pump ON
Engine gauges CHECK
Magneto switches CHECK
Continue on good magneto at lower power and full RICH mixture.

ENGINE FAILURE IN FLIGHT

V_{YSE} 88 KTS
Mixtures FORWARD
Propellers FORWARD
Throttles FORWARD
Flaps / Gear RETRACT
Inop. engine...IDENTIFY / VERIFY

Troubleshooting:

Mixture AS REQUIRED
Fuel selector..... ON / X-FEED
Primers LOCKED
Magnetos L / R ONLY
Electric fuel pump..... ON
Carburator Heat ON
Air start ATTEMPT

Feathering:

Propeller (≥950 RPM) .. FEATHER
Throttle CLOSED
Mixture IDLE CUT-OFF
Bank 2°-3° into operative engine
Climb speed 88 KIAS
Trim AS REQUIRED
Electric fuel pump..... OFF
Alternator OFF
Magnetos OFF
Electrical load REDUCE
Fuel selector inop. engine OFF
Oper. engine. consider crossfeed
Cowl flaps inop. engine CLOSED
Cowl flaps oper. engine .AS REQ.
Electric fuel pump oper. eng OFF

AIR START-UNFEATHERING

Fuel selector..... ON
Magneto switches..... ON
Electric fuel pump..... ON
Mixture RICH
Throttle 1/4" OPEN
Prop control FULL FORWARD
Starter AS NEEDED
Throttle REDUCE
If start failed, prime and repeat
Alternator..... ON

ENGINE FIRE

Affected engine:
Fuel selector..... OFF
Throttle IDLE
Propeller FEATHER
Mixture IDLE CUT-OFF
Cowl flap..... OPEN
Engine secure proc. . COMPLETE
If fire persists, increase airspeed

ELECTRICAL FAILURES

Single alternator failure (0 amps or
ALT inop light illuminated):
AmmetersVERIFY failure
Electr. load .. REDUCE ≤ 60 amps
Failed ALT switch OFF
Failed ALTcircuit breaker RESET
Failed ALT switch .. ON (after 1sec)

If power not restored:

Failed ALT switchOFF
Electrical load ≤ 60 amps

Dual alternator failure (0 amps both ammeters):

AmmetersVERIFY failure
Electrical loadMINIMUM
ALT switchesOFF
ALT circuit breakers.....RESET
ALT switches ON (after 1sec,
..... one at a time)

If only one alternator resets:

Operating ALT switch ON
Failed ALT switchOFF
Electrical load ≤ 60 amps

If neither alternator resets:

Both ALT switchesOFF
Land as soon as practical.
Compass error might exceed 10°
with both alternators inoperative
If the battery is depleted, use
emergency gear extension
procedure. Gear position lights
will not illuminate.

VACUUM SYSTEM FAILURE

(Suction pressure below 4.5")
RPM.....INCREASE to 2700 RPM
Descend to maintain 4.5" suction

PROPELLER OVERSPEED

Throttle RETARD
Oil pressure CHECK
PropellerLOW RPM then SET
Airspeed REDUCE
ThrottleAS REQ. <2700 RPM

MANUAL EXTENSION OF LANDING GEAR

Circuit breakers CHECK
Master switch CHECK ON
Alternators ON
Navigation lights(daytime)OFF
Day/night dimmer(daytime).. DAY
Gear indicator bulbs CHECK
Airspeed below 100 KIAS
Landing gear selector DOWN
Emerg. gear extend knob ... PULL
Gear indicator lights3 GREEN

OPEN DOOR

Airspeed below 82 KTS
Cabin vents CLOSE
Storm WindowOPEN
Side latch then top latch...LATCH

	V _{S0}55	V _{R,NORM}75	V _{LO(EXTEND)}140	V _A (3,800 lbs)135
Airspeeds	V _{S1}57	V _X82	V _{LE}140	V _{F,APP} (NORM)80-90
KIAS	V _{MC}56	V _Y = V _{YSE}88	V _{FE (40°)}111	V _{F,APP} (SH.FIELD).....75
	V _{R,SH.FLD}70	V _{LO(RETRACT)}109	V _{ENROUTE CLIMB}105	V _{F,APP} (SE).....90
				V _{WINDOW}129

Max. ramp weight: 3,816 lbs	Usable Fuel, gal:
Max. T/O & ldg weight: 3800 lbs	Stand. tanks: 2 x 54 = 108
Max. baggage weight: 200 lbs	Max. crosswind: 17 kts