PREFLIGHT

1. Parking Brake ..... SET
2. Controls ..... FREE AND CORRECT
3. Landing Gear Knob ..... DOWN
4. Electrical Equipment ..... OFF
5. Avionic Master ..... OFF
6. Ignition Switches ..... OFF
7. Fuel Pumps ..... OFF
8. BATT Switch ..... ON
9. Landing Gear Lights ..... 3 GREENS
10. Fuel quantity ..... CHECK
11. BATT Switch ..... OFF
12. Pitot and Static System ..... DRAIN
13. Mixtures ..... CUT OFF
14. Cowl Flaps ..... OPEN
15. Flaps ..... FULL DOWN/UP
16. Trimmers ..... CHECK/SET NEUTRAL
17. Fuel Selectors ..... ON
18. Aircraft Documents ..... ON BOARD

EXTERIOR INSPECTION

1. Fuel Cap ..... SECURED
2. Fuel Drains ..... DRAIN
3. Engine oil (max 6-min 4 QTS) ..... CHECK
4. Baggage door ..... CLOSE/LOCKED

BEFORE STARTING ENGINE

1. Exterior inspection ..... COMPLETED
2. Doors, windows ..... CLOSED
3. Seat belts/Harness .. FASTENED/ADJUSTED
4. Circuit breakers ..... ALL IN
5. Prop Sync ..... MANUAL
6. Carburetor ..... OFF
7. Alternators ..... ON
8. BATT Switch ..... ON
9. Avionic Master ..... ON
10. ATIS/Take-off data ..... RECEIVED
11. Altimeters ..... SET/COMPARED
12. Start up clearance ..... RECEIVED
13. Avionic master ..... OFF
14. Mixtures/Propellers ..... FULL FORWARD
15. Anti-collision light ..... ON

ENGINES START

1. Throttles ..... ¼ inch OPEN
2. Fuel Pump ..... ON
3. Magneto switches ..... ON
4. Starter/Primer ..... ENGAGE/PRIME ≤ 2 sec
5. Throttle ..... 1000 RPM
6. Oil press, Alternator, Suction ..... CHECKED
7. Cowl flap ..... CLOSE

Repeat marked items for the second engine.

STARTER MAX 30 SEC THEN 2 MIN REST

ENGINE START/HOT

1. Throttles ..... 1/2 inch OPEN
2. Fuel Pump ..... ON
3. Magneto switches ..... ON
4. Starter ..... ENGAGE
5. Throttle ..... 1000 RPM
6. Oil press, Alternator, Suction ..... CHECKED
7. Cowl flap ..... CLOSE

Repeat marked items for the second engine.

STARTER MAX 30 SEC THEN 2 MIN REST

CHECKLISTS MARKED WITH THE THICK VERTICAL LINE ON THE LEFT SHOULD BE MEMORAIZED

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ENGINE START/FLOODED

1. Mixtures ..... CUT OFF
2. Throttles ..... FULL OPEN
3. Magneto switches ..... ON
4. Starter ..... ENGAGE
5. Throttle ..... RETARD
6. Mixture ..... ADVANCE
7. Throttle ..... 1000 RPM
8. Oil press, Alternator, Suction ..... CHECKED
9. Cowl flap ..... CLOSE

Repeat marked items for the second engine.

STARTER MAX 30 SEC THEN 2 MIN REST

STARTING WITH GPU

1. BATT Switch ..... OFF
2. All Electrical Equipment ..... OFF
3. GPU ..... CONNECT
4. Left Engine start ..... USE CHECKLIST
5. Throttle ..... IDLE
6. GPU ..... DISCONNECT
7. BATT Switch ..... ON
8. Ammeter ..... CHECK
9. Throttle ..... 1000 RPM

AFTER STARTING ENGINES

1. Fuel pumps ..... OFF
2. NAV lights ..... AS REQUIRED
3. Avionic master ..... ON
4. Heater, fan ..... AS REQUIRED
5. Directional gyros ..... CHECK SLAVING/SET
6. Radio/Nav ..... SET

TAXI

1. Clearance ..... RECEIVED
2. Parking Brake ..... RELEASE
3. Transponder ..... ON
4. Brakes ..... TEST
5. Steering ..... TEST
6. Fuel Selector ..... CROSSFEED THEN ON
7. Flight Instruments ..... CHECKED

RUN UP POSITION

1. Parking brakes ..... SET
2. Mixtures/Propellers ..... FORWARD
3. Annunciator panel ..... PRESS TO TEST
4. Throttle ..... 1500 RPM
5. Propeller ..... CHECK FEATHER
6. Throttle ..... 2000 RPM
7. Propeller ..... CHECK GOVERNOR
8. Carburator heat ..... CHECK/OFF
9. Magnetos ..... CHECK (DROP 175 DIFF±50)
10. Throttle ..... CHECK IDLE THEN 1000 RPM
11. Eng gauges, Alt's, Suction ..... CHECKED
12. Cowl flaps ..... AS REQUIRED
13. Prop De-ice ..... CHECKED
14. Take-off briefing ..... COMPLETED

Repeat marked items for the second engine.

LINE UP

1. Parking Brake ..... RELEASE
2. Fuel selectors ..... ON
3. Trimmers ..... SET FOR TAKE-OFF
4. Flaps ..... 0° NORMAL/25° SHORT
5. Mixtures/Propellers ..... FULL FORWARD
6. Transponder ..... ALT
7. RWY heading, Directional Gyros ..... SET
8. Pitot Heat ..... AS REQUIRED
9. Landing Light ..... ON
10. Fuel Pumps ..... ON
11. Time ..... CHECKED

TAKE OFF

1. Take off power ..... SET
2. Over Boost ..... CHECK
3. Speed ..... INCREASE
4. Rotation ..... 75 NORMAL/63 SHORT

AFTER TAKE OFF

1. Gear ..... UP
2. Climb PWR ..... SET (32 inHg/2400 RPM)
3. Landing Light ..... OFF
4. Fuel Pumps ..... OFF
5. Flaps ..... UP
6. Engine gauges ..... MONITOR
7. Cowl flaps ..... AS REQUIRED

CRUISE

1. Cruise Power ..... SET (27 inHg/2200)
2. Fuel Pumps ..... OFF (ON above FL100)
3. Altimeters ..... SET/CROSS CHECKED
4. Mixtures ..... ADJUST
5. Engine gauges ..... MONITOR
6. Cowl Flaps ..... AS REQUIRED

DESCENT

1. Altimeters ..... CHECKED/COMPARED
2. NAV setting ..... SET
3. Approach briefing ..... COMPLETED
4. Directional gyros ..... CHECKED
5. Carburetor heat ..... AS REQUIRED
6. Fuel selectors ..... BOTH ON
7. Mixtures ..... RICH
8. Cowl flaps ..... CLOSED
9. Circuit breakers ..... ALL IN

FINAL

1. Mixtures/Propellers ..... FULL FORWARD
2. Prop Sync ..... MANUAL
3. Flaps ..... SET FOR LANDING
4. Gear ..... DOWN/3 GREEN
5. Landing Lights ..... ON
6. Fuel Pumps ..... ON
7. Airspeed ..... 90 KIAS

GO AROUND

1. Throttles ..... MAX POWER
2. Flaps ..... RETRACT
3. Gear ..... UP
4. Cowl flaps ..... AS REQUIRED

RUNWAY VACATED

1. Landing light ..... OFF
2. Pitot Heater ..... OFF
3. Transponder ..... STBY
4. Cowl flaps ..... OPEN
5. Carburetor heat ..... OFF
6. Flaps ..... UP
7. Fuel Pumps ..... OFF

SHUT DOWN POSITION

1. Parking brakes ..... SET
2. Avionic Master ..... OFF
3. Throttles ..... IDLE
4. Engines ..... COOLING (3 MIN)
5. Mixtures ..... CUT OFF
6. Anti-collision light ..... OFF
7. Magnetos ..... OFF
8. Alternators ..... OFF
9. BATT Switch ..... OFF

ENGINE SECURING PROCEDURE

1. Dead Mixture ..... CUT OFF
2. Rudder Trim ..... ADJUST
3. Dead Cowl Flap ..... CLOSED
4. Operating Engine Cowl Flap ..... OPEN
5. Dead Fuel Pump ..... OFF
6. Dead Magnetos ..... OFF
7. Dead Alternator ..... OFF
8. Dead Fuel Selector ..... OFF
9. Crossfeed ..... AS REQUIRED
10. Electrical Load ..... REDUCE

ENGINE FAILURE DURING TAKE OFF DECISION TO ABORT

1. Throttles ..... IMMEDIATELY CLOSE
2. Brakes ..... AS REQUIRED

IF INSUFFICIENT RUNWAY REMAINS

3. Mixtures ..... CUT OFF
4. Fuel Selectors ..... OFF
5. Magnetos ..... OFF
6. Fuel Pumps ..... OFF
7. BATT Switch ..... OFF
8. Alternators ..... OFF
9. Brakes ..... AS REQUIRED

ENGINE FAILURE DURING TAKE OFF DECISION TO CONTINUE

1. Mixtures/Propellers ..... FULL FORWARD
2. Throttles ..... MAX POWER
3. Flaps/Gear ..... UP
4. Inoperative Engine ..... VERIFY
5. Inoperative Engine ..... CLOSE THROTTLE
6. Dead Prop ..... FEATHER (≥ 950 RPM)
7. Bank into Operat. Engine ..... 3-5°
8. Climb Speed ..... 88 KIAS (BLUE LINE)
9. Trim ..... ½-¾ BALL SLIP
10. Engine Securing Procedure ..... APPLY

ENGINE FAILURE DURING FLIGHT

1. Airspeed ..... MIN 88 KIAS
2. Directional Control ..... MAINTAIN
3. Mixtures/Propellers ..... FULL FORWARD
4. Throttles ..... 36,5 inHg MAX
5. Flaps/Gear ..... UP
6. Inoperative Engine ..... .VERIFY
7. Inoperative Engine ..... CLOSE THROTTLE
8. Dead Prop ..... FEATHER (≥ 950 RPM)
9. Engine Securing Procedure ..... APPLY

ONE ENGINE INOP LANDING

1. Engine Securing Procedure ..... COMPLETE
2. Fuel Selectors (Oper Eng) ..... ON
3. Fuel Pump (Oper. Eng) ..... ON
4. Mixture/Prop (Oper. Eng) ..... FULL FORWARD
5. Cowl Flap (Oper. Eng) ..... AS REQUIRED
6. Altitude & Airspeed ..... NORMAL APPROACH

IF LANDING IS ASSURED

7. Gear ..... DOWN
8. Flap ..... 25°
9. Airspeed ..... 90 KIAS

ONE ENGINE INOP GO AROUND

1. Throttle (Oper. Engine) ..... 36,5 inHg MAX
2. Flaps/Gear ..... UP
3. Airspeed ..... 88 KIAS
4. Trim Bank into Oper. Engine ..... 3-5°
5. Cowl Flap (Oper. Eng) ..... AS REQUIRED

ENGINE FIRE SECURE CHECKLIST

IF FIRE EXIST

1. Airspeed ..... INCREASE (V_{NE} 202 KIAS)

LAND AS SOON AS POSSIBLE

MANUAL GEAR EXTENSION

1. Circuit Breakers ..... CHECKED
2. BATT Switch ..... CHECK ON
3. Navigation Lights ..... OFF
4. Gear Lights ..... CHECK

PROCEEDING MANUAL EXTENSION

5. Airspeed ..... ≤100 KIAS
6. Landing Gear Knob ..... DOWN
7. Emergency Gear Knob ..... PULL
8. Gear Lights ..... 3 GREEN

AIR START DEAD ENGINE

1. Dead Fuel Selector ..... ON
2. Dead Fuel Pump ..... ON
3. Dead Throttle ..... ¼ INCH OPEN
4. Dead Mixture ..... RICH
5. Dead Magnetos ..... ON
6. Dead Primer ..... PRIME ≤ 2 sec
7. Dead Propeller ..... FULL FORWARD
8. Dead Starter ..... ENGAGE

IF ENGINE DOES NOT START

9. Dead Primer ..... AS REQUIRED (≤ 2 sec)
10. Dead Alternator ..... ON

AFTER START UP

11. Throttle ..... REDUCE POWER until warm
12. Alternator ..... ON
13. Engine Instrument ..... CHECK
14. Throttle ..... ADJUST
15. Propellers ..... MANUAL SYNC

SINGLE ALTERNATOR FAILURE

1. Verify Failure ..... CHECK AMMETER
2. Electrical Load (less than 60A) ..... REDUCE
3. Failed Alternator ..... OFF
4. Failed Alternator Circuit Breaker ..... CHECK
5. Failed Alternator ..... ON

IF POWER NOT RESTORED

6. Failed Alternator ..... OFF
7. Amperage (maintain < 60A) ..... MONITOR

DUAL ALTERNATOR FAILURE

1. Verify Failure ..... CHECK AMMETER
2. Electrical Load (minimum) ..... REDUCE
3. Alternators ..... OFF
4. Alternators Circuit Breakers ..... CHECK & RESET
5. Alternators (after >1s) ..... ON

IF ONLY ONE RESETS

6. Operating Alternator ..... ON
7. Failed Alternator ..... OFF
8. Electrical Load (< 60A) ..... MAINTAIN
9. Amperage ..... MONITOR

IF NEITHER ALTERNATOR RESETS

10. Alternators ..... OFF
11. Electrical Load ..... MINIMUM

ON BAT COMPAS ERROR MAY EXCEED 10°

ENGINE DRIVEN FUEL PUMP FAILURE

1. Throttle ..... RETARD
2. Fuel Pump ..... ON
3. Throttle ..... RESET

IF POWER NOT RESTORED

4. Fuel Pump ..... OFF

STARTER ON LIGHT

If light remains illuminated after the starter switch is released:

5. BUS ISO (60A) circuit breakers ..... PULL
6. BATT Switch ..... OFF
7. Electrical loads ..... REDUCE

LAND AS SOON AS PRACTICAL

CHECKLISTS MARKED WITH THE THICK VERTICAL LINE ON THE LEFT SHOULD BE MEMORAIZED

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GEAR UP LANDING

SELECT SUITABLE LANDING AREA

1. Ground Personnel ..... INFORM
2. Fuel ..... BURN OFF
3. Seatbelts ..... FASTEN/ADJUST
4. Normal Landing Checklist ..... COMPLETE

WHEN LANDING IS ASSURED

5. Mixtures ..... CUT OFF
6. Propellers ..... FEATHER
7. Fuel Selectors ..... OFF

TOUCH DOWN AT MINIMUM AIRSPEED

8. BATT Switch ..... OFF

CROSSFEED

CRUISING CROSSFEED:

1. Fuel Selector Oper. Engine ..... CROSSFEED
2. Fuel Selector Inop. Engine ..... OFF

USE CROSSFEED IN LEVEL FLIGHT ONLY
DO NOT LAND WITH FUEL ON CROSSFEED
COMING OUT OF CROSSFEED

3. Fuel Pump Oper. Engine ..... ON
4. Fuel Selector Oper. Engine ..... ON
5. Fuel Selector Inop. Engine ..... OFF
6. Fuel Pump Inop Engine ..... OFF

LANDING

7. Fuel Selector Oper. Engine ..... ON
8. Fuel Selector Inop. Engine ..... OFF
9. Fuel Pump Oper. Engine ..... ON

ENGINE FIRE DURING START UP

1. Fuel Selectors ..... OFF
2. Mixture ..... CUT OFF
3. Throttle ..... FULL FORWARD
4. Starter ..... CONTINUE TO CRANK

IF FIRE EXIST

5. Fuel Selectors ..... OFF
6. Fuel Pump ..... OFF
7. Mixture ..... CUT OFF
8. Throttle ..... FULL FORWARD
9. Airplane ..... EVACUATE

ENGINE FIRE IN-FLIGHT

1. Affected Engine Fuel Selector ..... OFF
2. Affected Engine Throttle ..... CLOSE
3. Affected Engine Propeller ..... FEATHER
4. Affected Engine Mixture ..... CUT OFF
5. Affected Engine Cowl Flap ..... OPEN
6. Heater ..... OFF
7. Defroster ..... OFF

EMERGENCY DESCENT

1. Carburetor heat ..... ON
2. Throttles ..... CLOSED
3. Propellers ..... FULL FORWARD
4. Mixtures ..... AS REQUIRED
5. Gear (below 140 KIAS) ..... DOWN
6. Airspeed ..... PITCH FOR 140 KIAS

AIRSPEED FOR SAFE OPERATION

Gear Up ..... MAX 109 KIAS
Gear Down ..... MAX 140 KIAS
Max Flaps Extended Speed (V_{FE}) ..... 111 KIAS
Normal Operating Speed (V_{NO}) ..... 170 KIAS
Turbulent Air Operation Speed ..... 137 KIAS
Landing Final App Speed (Flaps 40°) ..... 90 KIAS
One Eng. Inop. Air Min. (V_{MCA}) ..... 57 KIAS
One Eng. Inop. (V_{YSE}) / V_Y ..... 88 KIAS
One Eng. Inop (V_{XSE}) / V_X 82KIAS
Maneuvering (V_A) ..... 112-137 KIAS
Never Exceed (V_{NE}) ..... 202 KIAS
Manual Gear Extension ..... MAX 100 KIAS