

Challenge	Response
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AIRCRAFT ACCEPTANCE

Certificates, Documents & Placards	AR(R)OW & AS REQUIRED
Maintenance Status/Tachometer	CHECKED
Hobbs	RECORDED
Landing Gear Lever	DOWN
Control Wheel Lock	REMOVE
Ignition Switch	OFF
Avionics Power Switch	OFF
Master Switch	ON
Fuel Quantity Indicators	CHECK QUANTITY
Landing Gear Position Light (green)	ILLUMINATED
Master Switch	OFF
Fuel Selector Valve	BOTH
Static Pressure Alternate Source Valve	OFF
Baggage Door	CHECKED

BEFORE STARTING ENGINE

Preflight Inspection	COMPLETE
Passenger Briefing	COMPLETE
Seats, Belts, Shoulder Harnesses	ADJUST AND LOCK
Avionics Power Switch	OFF
Circuit Breakers	CHECKED IN
Electrical Equipment	OFF
Landing Gear Lever	DOWN
Brakes	TEST AND SET
Cowl Flaps	OPEN
Fuel Selector Valve	BOTH

STARTING ENGINE

Mixture	RICH
Propeller	HIGH RPM
Carburetor Heat	COLD
Throttle	PUMP ONCE OR TWICE; LEAVE OPEN 1/4 INCH
If engine is hot, turn auxiliary fuel pump ON during start	
Propeller Area	CLEAR
Master Switch	ON
Flashing Beacon and Navigation Lights	ON AS REQUIRED
Ignition Switch	START (RELEASE WHEN ENGINE STARTS)
Oil Pressure	CHECK
Avionics Power Switch	ON
Radios	ON
Mixture	LEAN FOR TAXI

TAXI

Exterior Lights	AS REQUIRED
Brakes / Steering	CHECKED
Instruments	CHECKED
Transponder	VERIFY ALT

BEFORE TAKEOFF

Parking Brake	SET
Cabin Doors	CLOSED AND LOCKED
Flight Controls	FREE AND CORRECT
Flight Instruments	SET
Fuel Selector Valve	BOTH
Cowl Flaps	OPEN
Mixture	RICH (BELOW 3000 FEET)
Aux Fuel Pump	ON (CHECKED FOR RISE IN FUEL PRESSURE), THEN OFF
Elevator and Rudder Trim	TAKEOFF
Throttle	1800 RPM

Challenge	Response
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BEFORE TAKEOFF (continued)

Magnetos (Max. 150RPM/50RPM difference)	CHECK
Propeller	CYCLE; RETURN TO HIGH RPM
Carburetor Heat	CHECK (FOR RPM DROP)
Engine Instruments and Ammeter	CHECK
Suction Gage	CHECK
Throttle	IDLE/1000 RPM
Throttle Friction Lock	ADJUST
Radios and Avionics	SET
Departure Briefing	COMPLETE
Parking Brake	RELEASE

LINE UP

Trim Tabs	SET
Wing Flaps	SET (NORMALLY 0°)
Mixture Control	RICH (below 3,000' pressure altitude)
Propeller	FULL FORWARD
Carburetor Heat	COLD
Pitot Heat, Strobe & Landing Light	ON AS REQUIRED
Transponder	ALT

CLIMB

Landing Gear	UP
Wing Flaps	UP
Airspeed	V_Y (84) UNTIL 1000' THEN 85-95 KIAS
Power	25 INCHES HG AND 2500 RPM
Mixture	AS REQUIRED
Cowl Flaps	OPEN AS REQUIRED

CRUISE

Power	15-25 INCHES HG, 2100-2700 RPM
Elevator and Rudder Trim	ADJUST
Mixture	LEAN
Cowl Flaps	CLOSED
Landing Light	AS REQUIRED
Heading Indicator / Compass	CHECKED

DESCENT

Fuel Selector Valve	BOTH
Cowl Flaps	CLOSED
Power	AS DESIRED
Carburetor Heat	FULL HEAT AS REQUIRED
Mixture	ENRICHEN AS REQUIRED
Landing Light	ON

BEFORE LANDING

Passenger Briefing	COMPLETE
Seat, Belts, Shoulder Harnesses	ADJUST AND LOCK
Landing Gear	DOWN (BELOW 140 KIAS)
Landing Gear	CHECK (GREEN LIGHT & IN THE WINDOW)
Wing Flaps	AS DESIRED
Mixture	AS REQUIRED
Propeller	FULL FORWARD
Carburetor Heat	ON (APPLY FULL HEAT BEFORE CLOSING THROTTLE)
Autopilot	OFF

Challenge Response

BALKED LANDING

Power..... **FULL THROTTLE AND 2700 RPM**
 Carburetor Heat..... **COLD**
 Wing Flaps..... **RETRACT TO 20°**
 Climb Speed **55 KIAS**
 Wing Flaps..... **RETRACT SLOWLY AFTER REACHING 65 KIAS**
 Landing Gear **UP**
 Cowl Flaps..... **OPEN**

AFTER LANDING - CLEAR OR RUNWAY

Strobe, Landing & Taxi Lights **AS REQUIRED**
 Carburetor Heat..... **COLD**
 Propeller Control..... **FORWARD**
 Mixture Control **LEAN FOR TAXI**
 Wing Flaps..... **CONFIRM HANDLE THEN UP**
 Trim Tabs..... **RESET**
 Cowl Flaps..... **OPEN**

POSTFLIGHT SHUTDOWN AND SECURING

Brakes..... **HOLD**
 Throttle..... **1000 RPM**
 Avionics Power Switch, Electrical Equipment **OFF**
 Magnetos..... **GROUND CHECK**
 Mixture..... **IDLE CUT-OFF**
 Ignition Switch / Keys **OFF & OUT**
 Master Switch..... **OFF**
 Fuel Selector..... **LEFT or RIGHT**
 Control Lock **INSTALL**
 Aircraft **SECURE AS REQUIRED**
 Postflight Inspection & Paperwork **COMPLETE**

Challenge

Response

ENGINE FAILURE DURING TAKEOFF RUN

Throttle..... **IDLE**
 Brakes..... **APPLY**
 Wing Flaps..... **RETRACT**
 Mixture..... **IDLE CUT-OFF**
 Ignition & Master Switches..... **OFF**

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

Airspeed..... **70 KIAS (FLAPS UP)/ 65 KIAS (FLAPS DOWN)**
 Mixture..... **IDLE CUT-OFF**
 Fuel Shutoff Valve..... **OFF**
 Ignition Switch..... **OFF**
 Wing Flaps..... **AS REQUIRED (30° RECOMMENDED)**
 Master Switch..... **OFF**

ENGINE FAILURE DURING FLIGHT

Airspeed..... **73 KIAS**
 Carburetor Heat..... **ON**
 Fuel Selector Valve..... **BOTH**
 Mixture..... **RICH**
 Auxiliary Fuel Pump..... **ON AS REQUIRED**
 Ignition Switch..... **BOTH (OR START IF PROPELLER IS STOPPED)**
 Primer..... **IN AND LOCKED**

EMERGENCY LANDING WITHOUT ENGINE POWER

Airspeed..... **70 KIAS (FLAPS UP)/ 65 KIAS (FLAPS DOWN)**
 Mixture..... **IDLE CUT-OFF**
 Fuel Selector Valve..... **OFF**
 Ignition Switch..... **OFF**
 Landing Gear..... **DOWN (UP IF TERRAIN IS ROUGH OR SOFT)**
 Wing Flaps..... **AS REQUIRED (30° RECOMMENDED)**
 Doors..... **UNLATCH PRIOR TO TOUCHDOWN**
 Master Switch..... **OFF WHEN LANDING IN ASSURED**
 Touchdown..... **SLIGHTLY TAIL LOW**
 Breaks..... **APPLY HEAVILY**

FIRE DURING START ON GROUND

Cranking..... **CONTINUE**
if engine starts:
 Power..... **1700 RPM FOR A FEW MINUTES**
 Engine..... **SHUTDOWN AND INSPECT FOR DAMAGE**
if engine fails to start:
 Throttle..... **FULL OPEN**
 Mixture..... **IDLE CUT-OFF**
 Cranking..... **CONTINUE**
 Fire Extinguisher..... **OBTAIN**
 Engine..... **SECURE**
 Ignition & Master Switches..... **OFF**
 Fuel Selector Valve..... **OFF**
 Fire..... **EXTINGUISH**
 Fire Damage..... **INSPECT**

Highlighted Items Should be Committed to Memory

Challenge

Response

ENGINE FIRE IN FLIGHT

Mixture..... **IDLE CUT-OFF**
 Fuel Selector Valve..... **OFF**
 Master Switch..... **OFF**
 Cabin Heat and Air..... **OFF (EXCEPT OVERHEAD VENTS)**
 Airspeed..... **105 KIAS**
 (if fire is not extinguished, increase glide speed to find an airspeed which will provide an incombustible mixture)
 Forced Landing..... **EXECUTE**
 (As described in Emergency Landing Without Engine Power)

WING FIRE

Landing & Taxi Light Switches..... **OFF**
 Pilot Heat Switch..... **OFF**
 Navigation Light Switch..... **OFF**
 Strobe Light Switch..... **OFF**
 (NOTE - Perform a sideslip to keep the flames away from the fuel tank and cabin, and land as soon as possible using flaps only as required for final approach and touchdown.)

ELECTRICAL OR CABIN FIRE IN FLIGHT

Master Switch..... **OFF**
 Avionics Power Switch..... **OFF**
 All Other Switches (except ignition switch)..... **OFF**
 Vents/Cabin Air/Heat..... **CLOSED**
 Fire Extinguisher..... **ACTIVATE**

(WARNING - After discharging an extinguisher within a closed cabin, ventilate the cabin)

If fire appears out & electrical power is necessary for continuance of flight:

Master Switch..... **ON**
 Circuit Breakers..... **CHECK FOR FAULTY CIRCUIT, DO NOT RESET**
 Radio Switches..... **OFF**
 Avionics Power Switch..... **ON**
 Radio/Electrical Switch..... **ON**

(One at a time, with delay after each until short circuit is localized)

Vents/Cabin Air/Heat..... **OPEN**

(When it is ascertained that fire is completely extinguished)

Land the airplane as soon as possible to inspect damage after cabin fire

LANDING GEAR FAILS TO EXTEND

Master Switch..... **ON**
 Landing Gear Lever..... **DOWN**
 Landing Gear and Gear Pump Circuit Breakers..... **IN**
 Emergency Hand Pump..... **EXTEND HANDLE AND PUMP**
 (Perpendicular to handle until resistance becomes heavy - about 35 cycles)
 Gear Down Light..... **ON**
 Pump Handle..... **STOW**

Highlighted Items Should be Committed to Memory

GEAR UP LANDING

Landing Gear Lever **UP**
Landing Gear and Gear Pump Circuit Breakers **IN**
Runway **SELECT**
(Longest hard surface or smooth sod runway available)
Wing Flaps **30° (ON FINAL APPROACH)**
Airspeed **65 KIAS**
Doors **UNLATCH PRIOR TO TOUCHDOWN**
Avionics Power and Master Switches **OFF (LANDING ASSURED)**
Touchdown **SLIGHTLY TAIL LOW**
Mixture **IDLE CUT-OFF**
Ignition Switch **OFF**
Fuel Selector Valve **OFF**
Airplane **EVACUATE**

LANDING w/o POSITIVE GEAR LOCKING INDICATION

Before Landing Check **COMPLETE**
Approach **NORMAL (FULL FLAP)**
Landing Gear and Gear Pump Circuit Breakers **IN**
Landing **TAIL LOW AS SMOOTHLY AS POSSIBLE**
Braking **MINIMUM NECESSARY**
Taxi **SLOWLY**
Engine **SHUTDOWN BEFORE INSPECTING GEAR**

AMMETER SHOWS EXCESSIVE RATE OF CHARGE

(Full Scale Deflection)

Alternator **OFF**
Alternator Circuit Breaker **PULL**
Nonessential Electrical Equipment **OFF**
Flight **TERMINATE AS SOON AS PRACTICAL**

LOW-VOLTAGE LIGHT ILLUMINATES DURING FLIGHT

(Ammeter Indicates Discharge - Not associated with low RPM)

Avionics Power Switch **OFF**
Alternator Circuit Breaker **CHECK IN**
Master Switch **OFF (both sides)**
Master Switch **ON**
Low Voltage Light **CHECK OFF**
Avionics Power Switch **ON**

If low-voltage light illuminates again:

Alternator **OFF**
Non-Essential Radio and Electrical Equip. **OFF**
Flight **TERMINATE AS SOON AS PRACTICAL**

 Highlighted Items Should be Committed to Memory