

Ground Checklists and Information

Preflight		
Fluids		
Magnetos		OFF
Fuel quantity	CHECK VISUALLY	
Fuel sumps	DRAIN	
Left wing, right wing, fuel strainer. Inspect for contamination.		
Fuel filler caps	SECURE	
Engine oil level	CHECK	
Minimum 6 quarts		
Cabin		
Pitot cover	REMOVE	
POH	VERIFY PRESENT	
Master	ON	
Flaps	EXTEND	
Fuel gauges	CHECK QUANTITY	
Lights	CHECK	
Tach time	RECORD	
Pitot heat	TEST	
Master	OFF	
Fire extinguisher	SECURE	
Control lock	REMOVE	
Empennage		
Rudder gust lock	REMOVE	
Control surfaces	CHECK	
Freedom of movement and security		
Right		
Main wheel tire	CHECK INFLATION	
Aileron	CHECK	
Freedom of movement and security		
Nose		
Propeller, spinner	CHECK	
For nicks and security		
Landing light	CHECK CLEAR	
Air filter	CHECK CLEAR	
Nosewheel & strut	CHECK INFLATED	
Static source	CHECK CLEAR	
Left		
Main wheel tire	CHECK INFLATION	
Fuel tank vent	CHECK CLEAR	
Pitot tube	CHECK CLEAR	
Stall warning	TEST	
Aileron	CHECK	
Freedom of movement and security		
Final		
FlightCircle	DISPATCH	
Baggage door	LOCK	
Chocks	REMOVE	
Tie-downs	REMOVE	

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Securing	
Control lock	INSTALL
Tie-downs, chocks	APPLY
Vents, windows	CLOSE
Pitot cover	APPLY
Tach, Hobbs times	RECORD
FlightCircle	CHECK IN
Doors	LOCK

Operating Checklists

Start	
Before Start	
Preflight inspection	COMPLETE
Passenger briefing	COMPLETE
Brakes	TEST and SET
Seats, belts, harnesses	SECURE
Fuel valve	BOTH
Radios, electrical equipment	OFF
Circuit breakers	CHECK IN
Beacon switch	ON
Engine Start	
Mixture	RICH
Carburetor heat	COLD
Prime	AS REQUIRED
Throttle	OPEN 1/8 INCH
Master	ON
Propeller area	CLEAR
Ignition switch	START
Release when engine starts	
Oil pressure	CHECK
If no pressure in 30 seconds, shutdown	
Mixture	GROUND LEAN
Before Taxi	
Avionics	ON
Headset	ON
Flaps	RETRACT
Weather	OBTAIN
Altimeter	SET
EFB Setup	AS DESIRED
Navigation, landing lights	ON

Run-up	
Instruments	CHECK and SET
VOR Check	IF NEEDED
Brakes	SET
Doors and windows	CLOSED, LOCKED
Flight controls	FREE and CORRECT
Fuel valve	BOTH
Mixture	RICH
Below 3000 feet	
Throttle	1700 RPM
Magnetos	CHECK
Max drop 125 RPM, max diff. 50 RPM	
Engine gauges, ammeter	CHECK
Vacuum gauge	CHECK
Carburetor heat	TEST
Idle	TEST
Mixture	GROUND LEAN
Throttle friction	ADJUST

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Before Takeoff	
Radios	SET
Instruments	SET
Takeoff briefing	COMPLETE
Beacon, navigation, landing lights	ON
Carburetor heat	AS REQUIRED
Flaps	0-10°
Trim	TAKEOFF
Fuel valve	BOTH
Fuel quantity	CHECK
Mixture	RICH
Below 3000 feet	

Climb	
Airspeed	70-90 KIAS
Throttle	FULL
Mixture	RICH
May lean above 3000 feet	

Cruise	
Power	2200-2700 RPM
No more than 75%	
Trim	ADJUST
Mixture	LEAN

Descent	
Mixture	RICH
Power	AS DESIRED
Carburetor heat	AS REQUIRED
To prevent carburetor icing	

Before Landing	
Fuel valve	BOTH
Mixture	RICH
Carburetor heat	ON
Apply full heat before closing throttle	
Airspeed	60-70 KIAS (flaps UP)
Flaps	AS DESIRED
Airspeed	55-65 KIAS (flaps DOWN)

Balked Landing	
Throttle	FULL
Carburetor heat	COLD
Flaps	20°
Airspeed	55 KIAS
Flaps	RETRACT slowly

After Landing	
Flaps	UP
Caburetor heat	OFF
Mixture	GROUND LEAN

Shutdown	
Brakes	SET
Tach time	RECORD
Radios, electrical equipment	OFF
Mixture	CUT-OFF
Magnetos	OFF
Master	OFF

Emergency Checklists

Engine Failure During Takeoff Run	
Throttle	IDLE
Brakes	APPLY
Flaps	RETRACT
Mixture	CUT-OFF
Magnetos	OFF

Engine Failure Shortly After Takeoff	
Airspeed	Flaps up: 65 KIAS Flaps down: 60 KIAS
Mixture	CUT-OFF
Fuel valve	OFF
Magnetos	OFF
Flaps	AS REQUIRED
Master	OFF

Engine Failure During Flight	
Airspeed	65 KIAS
Carburetor heat	ON
Fuel valve	BOTH
Mixture	RICH
Magnetos	BOTH (or START if prop stopped)
Primer	IN and LOCKED

Forced Landing Without Engine Power	
Airspeed	Flaps up: 65 KIAS Flaps down: 60 KIAS
Mixture	CUT-OFF
Fuel valve	OFF
Magnetos	OFF
Flaps	AS REQUIRED 40° recommended
Master	OFF
Doors	UNLATCH BEFORE TOUCHDOWN
Touchdown	SLIGHTLY TAIL LOW
Brakes	APPLY HEAVILY

Precautionary Landing	
Flaps	20°
Airspeed	60 KIAS
Selected field	FLY OVER Note terrain/obstructions. Retract flaps upon reaching a safe altitude and airspeed.
Radios, electrical switches	OFF
Flaps	40° (on final approach)
Airspeed	60 KIAS
Master	OFF
Doors	UNLATCH BEFORE TOUCHDOWN
Touchdown	SLIGHTLY TAIL LOW
Magnetos	OFF
Brakes	APPLY HEAVILY

Ditching	
Radio	MAYDAY on 121.5 MHz Give location, intentions
Heavy objects	SECURE or JETTISON
Flaps	20°-40°
Power	300 FT/MIN DESCENT AT 55 KIAS If no power available, approach flaps up 65 KIAS or flaps 10° 60 KIAS
Strong wind, heavy seas:	LAND INTO WIND
Light wind, heavy swells:	LAND PARALLEL TO SWELLS
Doors	UNLATCH
Touchdown	LEVEL ATTITUDE at established rate of descent
Face	CUSHION at touchdown with coat
Airplane	EVACUATE
Life vests/raft	INFLATE

Engine Fire During Start On Ground	
Cranking	CONTINUE
If engine starts:	
Power	1700 RPM for a few minutes
Engine	SHUTDOWN
If engine fails to start:	
Throttle	FULL OPEN
Mixture	CUT-OFF
Cranking	CONTINUE for 2-3 minutes
Fire extinguisher	OBTAIN
Master	OFF
Magnetos	OFF
Fuel valve	OFF
Fire	EXTINGUISH
Using fire extinguisher, seat cushion, wool blanket, or dirt. If practical try to remove air filter if it is ablaze.)	
Both cases: inspect and repair damage before conducting another flight.	

Engine Fire in Flight	
Mixture	CUT-OFF
Fuel valve	OFF
Master	OFF
Cabin heat & air	OFF (except overhead vents)
Airspeed	100 KIAS
If fire is not extinguished, increase glide speed to find an airspeed which will provide an incombustible mixture	
Forced Landing Without Engine	EXECUTE
Power checklist	

Emergency Checklists

Electrical Fire in Flight	
Master	OFF
All other switches (except magnetos)	OFF
Vents/cabin air/heat	CLOSE
Fire extinguisher	USE
If fire appears out and electrical power necessary to continue flight:	
Master	ON
Circuit breakers	CHECK (do not reset faulty circuit)
Radio/electrical switches	ON
One at a time with delay after each until short circuit is localized	
Vents/cabin air/heat	OPEN (when fire is completely extinguished)

Cabin Fire	
Master	OFF
Vents/cabin air/heat	CLOSED (to avoid drafts)
Fire extinguisher	USE
WARNING: After discharging extinguisher within a closed cabin, ventilate cabin	
Land ASAP, inspect for damage	

Wing Fire	
Nav lights	OFF
Pitot heat	OFF
NOTE: Sideslip to keep flames away from fuel tanks and cabin. Land ASAP using flaps only as required.	

Inadvertent Icing Encounter	
Pitot heat	ON
Turn back or change altitude to obtain an OAT less conducive to icing.	
Cabin heat	FULL ON
Defroster	OPEN
Cabin air	ADJUST Maximize defroster heat and airflow
Throttle	OPEN
Carburetor and air filter icing	MONITOR
Apply carb heat as required, lean mixture for maximum RPM if used continuously	
Land	NEAREST AIRPORT
With very rapid ice build-up, select suitable off-airport landing site	
With ≥ 1/4 inch ice on the leading edges, prepare for significantly higher stall speed	
Flaps	LEAVE RETRACTED
Open left window and scrape ice from windshield, if necessary for visibility	
Forward slip if necessary for visibility	
Approach speed	65-75 KIAS Depending on level of accumulation
Landing	Perform in level attitude

Static Source Blockage	
Alternate static source valve	PULL ON
Airspeed	Use calibration table in POH section 5

Landing With a Flat Main Tire	
Approach	NORMAL
Touchdown	GOOD TIRE FIRST
Hold airplane off flat tire as long as possible	

Over-Voltage Light Illuminates	
Master	OFF (both sides)
Master	ON
If over-voltage light illuminates again:	
Flight	TERMINATE ASAP

Ammeter Shows Discharge	
Alternator	OFF
Nonessential electrical equipment	OFF
Flight	TERMINATE as soon as practical