Emergency Checklists

Engine Failure During Takeoff Roll

Throttle	IDLE
Brakes	APPLY
Flaps	RETRACT
Mixture	CUT-OFF
Magnetos	OFF
Standby battery	OFF
Master (ALT and BAT)	OFF

Engine Failure Immediately After Takeoff

Airspeed	Flaps up: 70 KIAS Flaps 10°-FULL: 65 KIAS
Mixture	CUT-OFF
Fuel shutoff valve	OFF (pull full out)
Magnetos	OFF
Flaps	AS REQUIRED (FULL recommended)
Standby battery	OFF
Master (ALT and BAT)	OFF
Door	UNLATCH
Land	STRAIGHT AHEAD

Engine Failure During Flight (Restart Procedures)

Airspeed	68 KIAS (best glide speed)
Fuel shutoff valve	ON (push full in)
Fuel selector valve	BOTH
Fuel pump	ON
Mixture	RICH (if restart has not occurred)
Magnetos	BOTH
If propeller stopped: START, advance throttle slowly, lean mixture as required	
Fuel pump	OFF
If fuel flow drops to zero, turn fuel pump back on	

Emergency Landing Without Engine Power

Seats, seatbelts	UPRIGHT, SECURE
Airspeed	Flaps up: 70 KIAS Flaps 10°-FULL: 65 KIAS
Mixture	CUT-OFF
Fuel shutoff valve	OFF (pull)
Magnetos	OFF
Flaps	AS REQUIRED (FULL recommended)
Standby battery	OFF
Master (ALT and BAT)	OFF (when landing is assured)
Doors	UNLATCH BEFORE TOUCHDOWN
Touchdown	SLIGHTLY TAIL LOW
Brakes	APPLY HEAVILY

Precautionary Landing With Engine Power

Seats, seatbelts	UPRIGHT, SECURE
Airspeed	65 KIAS
Flaps	20°
Selected field	FLY OVER, noting terrain and obstructions
Flaps	FULL (on final approach)
Airspeed	65 KIAS
Standby battery	OFF
Master (ALT and BAT)	OFF (when landing assured)
Doors	UNLATCH BEFORE TOUCHDOWN
Touchdown	SLIGHTLY TAIL LOW
Mixture	CUT-OFF
Magnetos	OFF
Brakes	APPLY HEAVILY

Ditching

Radio	MAYDAY on 121.5 MHz (Give location, intentions)
Transponder	SQUAWK 7700
Heavy objects (in baggage area)	SECURE or JETTISON (if possible)
Seats, seatbelts	UPRIGHT, SECURE
Flaps	20°-FULL
Power	300 FT/MIN DESCENT AT 55 KIAS
If no power available, approach flaps up 70 KIAS or flaps 10° 65 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 folded coat
ELT	ACTIVATE
Airplane	EVACUATE THROUGH CABIN DOORS
If necessary, open window and flood cabin to equalize pressure so doors can be opened.	
Life vests, raft	INFLATE WHEN CLEAR OF AIRPLANE

Fire During Start on Ground

Magnetos switch	START (continue cranking to start the engine)
If engine starts:	
Power	1800 RPM for a few minutes
Engine	SHUTDOWN
If engine fails to start:	
Throttle	FULL
Mixture	CUT-OFF
Magnetos switch	START (continue cranking)
Fuel shutoff valve	OFF (pull)
Fuel pump	OFF
Magnetos	OFF
Standby battery	OFF
Master (ALT and BAT)	OFF
Engine	SECURE
Parking brake	RELEASE
Fire extinguisher	OBTAIN
Airplane	EVACUATE
Fire	EXTINGUISH via fire extinguisher, wool blanket, or dirt
Both cases: inspect and repair damage before conducting another flight.	

Engine Fire in Flight

Mixture	CUT-OFF
Fuel shutoff valve	OFF (pull)
Fuel pump	OFF
Master (ALT and BAT)	OFF
Cabin heat and air	OFF (except overhead vents)
Airspeed	100 KIAS
If fire not extinguished, increase speed to find an airspeed, within airspeed limitations, which provides an incombustible mixture	
Forced landing	EXECUTE
Refer to Emergency Landing Without Engine Power checklist	

Electrical Fire in Flight

Standby battery	OFF
Master (ALT and BAT)	OFF
Vents/cabin air/heat	CLOSE
Fire extinguisher	USE
Avionics (BUS 1 and BUS 2)	OFF
All switches (except magnetos)	OFF
Vents/cabin air/heat	OPEN When sure fire is completely extinguished
If fire extinguished and electrical power necessary to continue flight:	
Circuit breakers	CHECK, do not reset
Master (ALT and BAT)	ON
Standby battery	ON
Avionics (BUS 1)	ON
Avionics (BUS 2)	ON

Cabin Fire

Standby battery	OFF
Master (ALT and BAT)	OFF
Vents/cabin air/heat	CLOSE (to avoid drafts)
Fire extinguisher	USE
Vents/cabin air/heat	OPEN When sure fire is completely extinguished
Land	ASAP to inspect for damage

Emergency Checklists

Wing Fire

Landing, taxi lights	OFF
Nav, strobe lights	OFF
Pitot heat	OFF
NOTE: Sideslip to keep flames away from fuel tanks and cabin. Land ASAP using flaps only as required for final approach and touchdown.	

Inadvertent Icing Encounter During Flight

Pitot heat	ON
Turn or change altitude to obtain an OAT less conducive to icing.	
Cabin heat	FULL ON
Defrosters	OPEN
Cabin air	ADJUST
Maximize defroster heat and airflow	
Induction icing	MONITOR
Adjust throttle to hold RPM. Adjust mixture as needed for any change in power settings	
Land	NEAREST AIRPORT
With an extremely rapid ice build-up, select suitable off-airport landing site	
With ≥ 1/4 inch of 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
Avoid missed approaches if possible	
Missed approaches should be avoided whenever possible	

Static Source Blockage (Erroneous Instrument Reading Suspected)

Alternate static	PULL ON
Cabin heat/air	PULL ON
Vents	CLOSED
Airspeed	Consult calibration table Section 5, Figure 5-1 of POH

Excessive Fuel Vapor (Fuel Flow Stabilization Procedures)

If flow fluctuates ≥ 1 GPH or power surges occur	
Fuel pump	ON
Mixture	ADJUST as necessary for smooth operation
Fuel selector valve	SELECT OTHER TANK (if symptoms continue)
Fuel pump	OFF (after fuel flow stabilized)

Landing With a Flat Main Tire

Approach	NORMAL
Flaps	FULL
Touchdown	GOOD MAIN TIRE FIRST
Keep flat tire in air as long as possible with aileron control	
Directional control	MAINTAIN using brake on good wheel as required

Landing With a Flat Nose Tire

Approach	NORMAL
Flaps	AS REQUIRED
Touchdown	ON MAINS
Hold nosewheel off ground as long as possible, maintain full up elevator as airplane slows to stop	

HIGH VOLTS or M Bat Amps > 40

Master (ALT only)	OFF
Reduce Electrical Load checklist	RUN

LOW VOLTS Annunciator Comes On < 1000 RPM

Throttle	1000 RPM
Low voltage annunciator	VERIFY OFF
If annunciator remains on, run "LOW VOLTS Annunciator On ≥ 1000 RPM" checklist, and have electrical system inspected before next flight	

LOW VOLTS Annunciator On ≥ 1000 RPM

Master (ALT only)	OFF
ALT FIELD breaker	CHECK IN
Master (ALT and BAT)	ON
LOW VOLTS annunciator)	VERIFY OFF
M Bus volts	VERIFY 27.5V minimum
M Bat amps	VERIFY POSITIVE
If LOW VOLTS annunciator remains on:	
Reduce Electrical Load checklist	RUN

Reduce Electrical Load

Avionics (BUS 1)	OFF
Pitot heat	OFF
Beacon, taxi, nav, strobe lights	OFF
Landing light	OFF (use as req'd for landing)
Cabin power 12V	OFF
Note: When M bus volts drops below 20V, the standby battery will supply power to the essential bus for at least 30 minutes	
COM1, NAV1	TUNE
COM1 MIC and NAV1	SELECT
If COM2 MIC and NAV2 are selected when avionics bus 2 is off, the radios cannot be tuned	
Avionics (BUS 2)	OFF if clear of clouds
The following items will not operate: autopilot, COM2, transponder, audio panel, NAV2, MFD	
Land	AS SOON AS PRACTICAL
Make sure a successful landing is possible before extending flaps. Flap motor is a large electrical load.	

Red X - PFD Airspeed Indicator

ADC/AHRS circuit breakers (ESS BUS and AVN BUS 1)	CHECK IN
If open, reset circuit breaker. If circuit breaker opens again, do not reset	
Standby airspeed indicator	USE for airspeed information

Red X - PFD Altitude Indicator

ADC/AHRS circuit breakers (ESS BUS and AVN BUS 1)	CHECK IN
If open, reset circuit breaker. If circuit breaker opens again, do not reset	
Standby altimeter	CHECK current barometric pressure SET. USE for altitude information

Red X - PFD Attitude Indicator

ADC/AHRS circuit breakers (ESS BUS and AVN BUS 1)	CHECK IN
If open, reset circuit breaker. If circuit breaker opens again, do not reset	
Standby attitude indicator	USE for attitude information

Red X - Horizontal Situation Indicator

ADC/AHRS circuit breakers (ESS BUS and AVN BUS 1)	CHECK IN
If open, reset circuit breaker. If circuit breaker opens again, do not reset	
Magnetic compass	USE for heading information

PFD1 COOLING or MFD1 COOLING Annunciator(s)

Cabin heat	REDUCE (minimum preferred)
Forward avionics fan	CHECK (feel for airflow from screen on glareshield)
If forward avionics fan failed:	
Standby battery	OFF unless needed for emergency power
If PFD1 COOLING or MFD1 COOLING annunciator does not go off within 3 minutes or if both annunciators come on:	
Standby battery	OFF (land as soon as practical)

LOW VACUUM Annunciator Comes On

Vacuum indicator	CHECK EIS ENGINE page to make sure vacuum pointer is within green arc
If vacuum pointer not in green arc or gyro flag shows on standby attitude indicator, do not use standby attitude indicator	

High Carbon Monoxide (CO) Level

Cabin heat	OFF (push full in)
Cabin air	ON (pull full out)
Cabin vents	OPEN
Windows	OPEN (163 KIAS maximum windows open speed)
If high CO level remains:	
Land	AS SOON AS PRACTICAL