



Cessna 172S Emergency Checklist

INTRODUCTION

This document provides checklist and amplified procedures for coping with emergencies that may occur. Emergencies caused by airplane or engine malfunctions are extremely rare if proper preflight inspections and maintenance are practiced. Enroute weather emergencies can be minimized or eliminated by careful flight planning and good judgment when unexpected weather is encountered. However, should an emergency arise, the basic guidelines described in this section should be considered and applied as necessary to correct the problem. Emergency procedures associated with standard avionics, the ELT, or any optional systems can be found in the Supplements, Section 9.

Information in BLACK is taken from the original manufacturer's Pilot Information Handbook.

Information in GREEN is Aspen Flying Club's recommendations for high altitude operations.

AIRSPEEDS

AIRSPEEDS FOR EMERGENCY OPERATION

Engine Failure After Takeoff:

Wing Flaps Up 70 KIAS
Wing Flaps Down..... 65 KIAS

Maneuvering Speed:

2550 Lbs..... 105 KIAS
2200 Lbs 98 KIAS
1900 Lbs 90 KIAS

Maximum Glide..... 68 KIAS

Precautionary Landing With Engine Power 65 KIAS

Landing Without Engine Power:

Wing Flaps Up 70 KIAS
Wing Flaps Down..... 65 KIAS

EMERGENCY PROCEDURES CHECKLIST

Procedures in the Emergency Procedures Checklist portion of this section shown in **bold faced** type are immediate action items which should be committed to memory.

ENGINE FAILURES

ENGINE FAILURE DURING TAKEOFF ROLL

1. **Throttle -- IDLE.**
2. **Brakes-- APPLY.**
3. Wing Flaps-- **RETRACT.**
4. Mixture-- **IDLE CUT OFF.**
5. Ignition Switch -- **OFF.**
6. Master Switch-- **OFF.**

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

1. **Airspeed-- 70 KIAS (flaps UP).
65 KIAS (flaps DOWN).**
2. Mixture-- **IDLE CUT OFF.**
3. Fuel Shutoff Valve -- **OFF (Pull Full Out).**
4. Ignition Switch-- **OFF.**
5. Wing Flaps -- **AS REQUIRED.**
6. Master Switch -- **OFF.**
7. Cabin Door-- **UNLATCH.**
8. Land -- **STRAIGHT AHEAD.**

ENGINE FAILURE DURING FLIGHT (Restart Procedures)

1. **Airspeed -- 68 KIAS.**
2. **Fuel Shutoff Valve -- ON (push full in).**
3. **Fuel Selector Valve -- BOTH.**
4. **Auxiliary Fuel Pump Switch -- ON.**
5. **Mixture -- RICH (if restart has not occurred).**
6. Ignition Switch-- **BOTH (or START if propeller is stopped).**

NOTE

If the propeller is windmilling, the engine will restart automatically within a few seconds. If the propeller has stopped (possible at low speeds), turn the ignition switch to **START**, advance the throttle slowly from idle and lean the mixture from full rich as required for smooth operation.

7. **Auxiliary Fuel Pump Switch -- OFF.**

NOTE

If the fuel flow indicator immediately drops to zero (indicating an engine-driven fuel pump failure), return the Auxiliary Fuel Pump Switch to the **ON** position.

FORCED LANDINGS

EMERGENCY LANDING WITHOUT ENGINE POWER

1. Passenger Seat Backs-- MOST UPRIGHT POSITION.
2. Seats and Seat Belts-- SECURE.
3. Airspeed -- 70 KIAS (flaps UP).
65 KIAS (flaps DOWN).
4. Mixture-- IDLE CUT OFF.
5. Fuel Shutoff Valve -- OFF (Pull Full Out).
6. Ignition Switch-- OFF.
7. Wing Flaps --AS REQUIRED (30° recommended).
8. Master Switch -- OFF (when landing is assured).
9. Doors-- UNLATCH PRIOR TO TOUCHDOWN.
10. Touchdown-- SLIGHTLY TAIL LOW.
11. Brakes-- APPLY HEAVILY.

PRECAUTIONARY LANDING WITH ENGINE POWER

1. Passenger Seat Backs -- MOST UPRIGHT POSITION.
2. Seats and Seat Belts-- SECURE.
3. Airspeed -- 65 KIAS.
4. Wing Flaps-- 20°.
5. Selected Field -- FLY OVER, noting terrain and obstructions, then retract flaps upon reaching a safe altitude and airspeed.
6. Avionics Master Switch and Electrical Switches-- OFF.
7. Wing Flaps-- 30° (on final approach).
8. Airspeed -- 65 KIAS.
9. Master Switch -- OFF.
10. Doors-- UNLATCH PRIOR TO TOUCHDOWN.

11. Touchdown-- SLIGHTLY TAIL LOW.
12. Ignition Switch -- OFF.
13. Brakes --APPLY HEAVILY.

DITCHING

1. Radio -- TRANSMIT MAYDAY on 121.5 MHz, giving location and intentions and SQUAWK 7700.
2. Heavy Objects (in baggage area) -- SECURE OR JETTISON (if possible).
3. Passenger Seat Backs -- MOST UPRIGHT POSITION.
4. Seats and Seat Belts-- SECURE.
5. Wing Flaps-- 20° to 30°.
6. Power-- ESTABLISH 300FT/MIN DESCENT AT 55 KIAS.

NOTE

If no power is available, approach at 70 KIAS with flaps up or at 65 KIAS with 10° flaps.

7. Approach-- High Winds, Heavy Seas--INTO THE WIND.
Light Winds, Heavy Swells-- PARALLEL TO SWELLS.
8. Cabin Doors-- UNLATCH.
9. Touchdown-- LEVEL ATTITUDE AT ESTABLISHED RATE OF DESCENT.
10. Face-- CUSHION at touchdown with folded coat.
11. ELT-- Activate.
12. Airplane -- EVACUATE through cabin doors. If necessary, open window and flood cabin to equalize pressure so doors can be opened.
13. Life Vests and Raft-- INFLATE WHEN CLEAR OF AIRPLANE.

FIRES

DURING START ON GROUND

1. **Ignition Switch -- START, Continue Cranking** to get a start which would suck the flames and accumulated fuel into the engine.

If engine starts:

2. Power-- 1800 RPM for a few minutes.
3. Engine -- SHUTDOWN and inspect for damage.

If engine fails to start:

4. **Throttle-- FULL OPEN.**
5. **Mixture-- IDLE CUT OFF.**
6. **Cranking-- CONTINUE.**
7. **Fuel Shutoff Valve-- OFF (Pull Full Out).**
8. **Auxiliary Fuel Pump Switch --OFF.**
9. Fire Extinguisher-- ACTIVATE.
10. Engine -- SECURE.
 - a. Master Switch-- OFF.
 - b. Ignition Switch -- OFF
11. Parking Brake -- RELEASE.
12. Airplane -- EVACUATE.
13. Fire -- EXTINGUISH using fire extinguisher, wool blanket, or dirt.
14. Fire Damage -- INSPECT, repair damage or replace damaged components or wiring before conducting another flight.

ENGINE FIRE IN FLIGHT

1. **Mixture-- IDLE CUT OFF.**
2. **Fuel Shutoff Valve-- Pull Out (OFF).**
3. **Auxiliary Fuel Pump Switch-- OFF.**
4. **Master Switch-- OFF.**
5. Cabin Heat and Air-- OFF (except overhead vents).
6. Airspeed -- 100 KIAS (If fire is not extinguished, increase glide speed to find an airspeed - within airspeed limitations - which will provide an incombustible mixture).
7. Forced Landing -- EXECUTE (as described in Emergency Landing Without Engine Power).

ELECTRICAL FIRE IN FLIGHT

1. **Master Switch -- OFF.**
2. **Vents, Cabin Air, Heat -- CLOSED.**
3. **Fire Extinguisher-- ACTIVATE.**
4. Avionics Master Switch-- OFF.
5. All Other Switches (except ignition switch)-- OFF.

WARNING

AFTER DISCHARGING FIRE EXTINGUISHER AND ASCERTAINING THAT FIRE HAS BEEN EXTINGUISHED, VENTILATE THE CABIN.

6. Vents/Cabin Air/Heat-- OPEN when it is ascertained that fire is completely extinguished.

If fire has been extinguished and electrical power is necessary for continuance of flight to nearest suitable airport or landing area:

7. Master Switch-- ON.
8. Circuit Breakers-- CHECK for faulty circuit, do not reset.
9. Radio Switches-- OFF.
10. Avionics Master Switch -- ON.
11. Radio/Electrical Switches -- ON one at a time, with delay after each until short circuit is localized.

CABIN FIRE

1. **Master Switch -- OFF.**
2. **Vents/Cabin Air/Heat-- CLOSED** (to avoid drafts).
3. **Fire Extinguisher-- ACTIVATE.**

WARNING

AFTER DISCHARGING FIRE EXTINGUISHER AND ASCERTAINING THAT FIRE HAS BEEN EXTINGUISHED, VENTILATE THE CABIN.

4. Vents/Cabin Air/Heat -- Open when it is ascertained that fire is completely extinguished.
5. Land the airplane as soon as possible to inspect for damage.

WING FIRE

1. **Landing/Taxi Light Switches-- OFF.**
2. **Navigation Light Switch-- OFF.**
3. **Strobe Light Switch -- OFF.**
4. **Pitot Heat Switch -- OFF.**

NOTE

Perform a sideslip to keep the flames away from the fuel tank and cabin. Land as soon as possible using flaps only as required for final approach and touchdown.

ICING

INADVERTENT ICING ENCOUNTER

1. **Turn pitot heat switch ON.**
2. **Turn back or change altitude** to obtain an outside air temperature that is less conducive to icing.
3. **Pull cabin heat control full out and open defroster outlets** to obtain maximum windshield defroster airflow. Adjust cabin air control to get maximum defroster heat and airflow.
4. Watch for signs of engine-related icing conditions. An unexplained loss in engine speed could be caused by ice blocking the air intake filter, or, in extremely rare instances, ice completely blocking the fuel injection air reference tubes. Change the throttle position to obtain maximum RPM. This may require either advancing or retarding the throttle, dependent on where ice has accumulated in the system. Adjust mixture, as required, for maximum RPM.
5. Plan a landing at the nearest airport. With an extremely rapid ice build up, select a suitable "off airport" landing site.
6. With an ice accumulation of 1/4 inch or more on the wing leading edges, be prepared for significantly higher stall speed and a longer landing roll.

7. Leave wing flaps retracted. With a severe ice build up on the horizontal tail, the change in wing wake airflow direction caused by wing flap extension could result in a loss of elevator effectiveness.
8. Open left window and, if practical, scrape ice from a portion of the windshield for visibility in the landing approach.
9. Perform a landing approach using a forward slip, if necessary, for improved visibility.
10. Approach at 65 to 75 KIAS depending upon the amount of the accumulation.
11. Perform a landing in level attitude.

STATIC SOURCE BLOCKAGE (Erroneous Instrument Reading Suspected)

1. **Static Pressure Alternate Source Valve-- PULL ON.**
2. Airspeed -- Consult appropriate calibration tables in Section 5.

LANDING WITH A FLAT MAIN TIRE

1. Approach -- NORMAL.
2. Wing Flaps-- 30°.
3. Touchdown --GOOD MAIN TIRE FIRST, hold airplane off flat tire as long as possible with aileron control.
4. Directional Control -- MAINTAIN using brake on good wheel as required.

LANDING WITH A FLAT NOSE TIRE

1. Approach -- NORMAL.
2. Flaps-- AS REQUIRED.
3. Touchdown -- ON MAINS, hold nose wheel off the ground as long as possible.

4. When nose wheel touches down, maintain full up elevator as airplane slows to stop.

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS

AMMETER SHOWS EXCESSIVE RATE OF CHARGE (Full Scale Deflection)

1. Alternator-- OFF.

CAUTION

WITH THE ALTERNATOR SIDE OF THE MASTER SWITCH OFF, COMPASS DEVIATIONS OF AS MUCH AS 25° MAY OCCUR.

2. Nonessential Electrical Equipment-- OFF.
3. Flight-- TERMINATE as soon as practical.

LOW VOLTAGE ANNUNCIATOR (VOLTS) ILLUMINATES DURING FLIGHT (Ammeter Indicates Discharge)

NOTE

Illumination of "VOLTS" on the annunciator panel may occur during low RPM conditions with an electrical load on the system such as during a low RPM taxi. Under these conditions, the annunciator will go out at higher RPM. The master switch need not be recycled since an overvoltage condition has not occurred to deactivate the alternator system.

1. Avionics Master Switch-- OFF.
2. Alternator Circuit Breaker (ALT FLD) --CHECK IN.
3. Master Switch-- OFF (both sides).
4. Master Switch -- ON.
5. Low Voltage Annunciator (VOLTS) --CHECK OFF.
6. Avionics Master Switch-- ON.

If low voltage annunciator (VOLTS) illuminates again:

7. Alternator-- OFF.
8. Nonessential Radio and Electrical Equipment-- OFF.
9. Flight-- TERMINATE as soon as practical.

VACUUM SYSTEM FAILURE

Left Vacuum (L VAC) Annunciator or Right Vacuum (VAC R) Annunciator Illuminates.

CAUTION

IF VACUUM IS NOT WITHIN NORMAL OPERATING LIMITS, A FAILURE HAS OCCURRED IN THE VACUUM SYSTEM AND PARTIAL PANEL PROCEDURES MAY BE REQUIRED FOR CONTINUED FLIGHT.

1. Vacuum Gage -- CHECK to ensure vacuum within normal operating limits.