# EMERGENCY PROCEDURES

## CESSNA-172S


REGISTRATION MARKING:

## LY-BAK

# ENGINE FAILURE DURING TAKEOFF ROLL

1. **Throttle Control** - **IDLE** (pull full out)
2. **Brakes** - **APPLY**
3. **Wing Flaps** - **RETRACT**
4. **Mixture Control** - **IDLE CUTOFF** (pull full out)
5. **MAGNETOS** Switch - **OFF**
6. **STBY BATT** Switch - **OFF**
7. **MASTER** Switch (ALT and BAT) - **OFF**

# ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

1. **Airspeed** - **70** KIAS – with Flaps UP
   **65** KIAS – with Flaps 10° - FULL
2. **Mixture Control** - **IDLE CUTOFF** (pull full out)
3. **FUEL SHUTOFF** Valve - **OFF** (pull full out)
4. **MAGNETOS** Switch - **OFF**
5. **Wing Flaps** - **AS REQUIRED (FULL recommended)**
6. **STBY BATT** Switch - **OFF**
7. **MASTER** Switch (ALT and BAT) - **OFF**
8. **Cabin Door** - **UNLATCH**
9. **Land** - **STRAIGHT AHEAD**

# ENGINE FAILURE DURING FLIGHT

**(Restart Procedures)**

1. **Airspeed** - **68** KIAS (best glide speed)
2. **FUEL SHUTOFF** Valve - **ON** (push full in)
3. **FUEL SELECTOR** Valve - **BOTH**
4. **FUEL PUMP** Switch - **ON**
5. **Mixture Control** - **RICH** (if restart has not occurred)
6. **MAGNETOS** Switch - **BOTH** (or START if propeller is stopped)
7. **FUEL PUMP** Switch – **OFF (ON - If the indicated fuel flow drops to 0)**

# EMERGENCY LANDING WITHOUT ENGINE POWER

1. **Pilot and Passenger Seat Backs** - **MOST UPRIGHT POSITION**
2. **Seats and Seat Belts** - **SECURE**
3. **Airspeed** - **70** KIAS – with Flaps **UP**
   **65** KIAS – with Flaps **10° - FULL**
4. **Mixture Control** - **IDLE CUTOFF** (pull full out)
5. **FUEL SHUTOFF** Valve - **OFF** (pull full out)
6. **MAGNETOS** Switch - **OFF**
7. **Wing Flaps** - **AS REQUIRED (FULL recommended)**
8. **STBY BATT** Switch - **OFF**
9. **MASTER** Switch (ALT and BAT) - **OFF** (when landing is assured)
10. **Doors** - **UNLATCH PRIOR TO TOUCHDOWN**
11. **Touchdown** - **SLIGHTLY TAIL LOW**
12. **Brakes** - **APPLY HEAVILY**

# PRECAUTIONARY LANDING WITH ENGINE POWER

1. **Pilot and 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)
6. **Wing Flaps** - **FULL** (on final approach)
7. **Airspeed** - **65** KIAS
8. **STBY BATT** Switch - **OFF**
9. **MASTER** Switch (ALT and BAT) - **OFF** (when landing assured)
10. **Doors** - **UNLATCH PRIOR TO TOUCHDOWN**
11. **Touchdown** - **SLIGHTLY TAIL LOW**
12. **Mixture Control** - **IDLE CUTOFF** (pull full out)
13. **MAGNETOS** Switch - **OFF**
14. **Brakes** - **APPLY HEAVILY**

# DITCHING

1. **Radio** - **TRANSMIT MAYDAY** on **121.5** MHz, (give location, intentions and **SQUAWK 7700**)
2. **Heavy Objects** (in baggage area) - **SECURE OR JETTISON** (if possible)
3. **Pilot and Passenger Seat Backs** - **MOST UPRIGHT POSITION**
4. **Seats and Seat Belts** - **SECURE**
5. **Wing Flaps** - **20° - FULL**
6. **Power** - **ESTABLISH 300 FT/MIN DESCENT AT 55 KIAS**
7. **If no power is available** - speed **70** KIAS with **Flaps UP**,
   **65** KIAS with **Flaps 10°**
8. **Approach** - High Winds, Heavy Seas - INTO THE WIND
   Light Winds, Heavy Swells - PARALLEL TO SWELLS
9. **Cabin Doors** – **UNLATCH**
10. **Touchdown** - LEVEL ATTITUDE AT ESTABLISHED RATE OF DESCENT
11. **Face** - CUSHION AT TOUCHDOWN (with folded coat)
12. **ELT** – **ACTIVATE**
13. **Airplane** - **EVACUATE THROUGH CABIN DOORS**
14. **Life Vests and Raft** - **INFLATE WHEN CLEAR OF AIRPLANE**

# FIRE DURING START ON GROUND

1. **MAGNETOS** Switch - **START** (continue cranking to start the engine)

**IF ENGINE STARTS:**

2. **Power** - **1800 RPM** (for a few minutes)
3. **Engine** - **SHUTDOWN** (inspect for damage)

**IF ENGINE FAILS TO START:**

2. **Throttle Control** - **FULL** (push full in)
3. **Mixture Control** - **IDLE CUTOFF** (pull full out)
4. **MAGNETOS** Switch - **START** (continue cranking)
5. **FUEL SHUTOFF** Valve - **OFF** (pull full out)
6. **FUEL PUMP** Switch - **OFF**
7. **MAGNETOS** Switch - **OFF**
8. **STBY BATT** Switch - **OFF**
9. MASTER Switch (ALT and BAT) - **OFF**
10. **Engine** - **SECURE**
11. **Parking Brake** - **RELEASE**
12. **Fire Extinguisher** - **OBTAIN**
13. **Airplane** - **EVACUATE**
14. **Fire** - **EXTINGUISH** (using fire extinguisher, wool blanket, or dirt)
15. **Fire Damage** - **INSPECT** (repair or replace damaged components and/or wiring before conducting another flight)

# ENGINE FIRE IN FLIGHT

1. **Mixture Control** - **IDLE CUTOFF** (pull full out)
2. **FUEL SHUTOFF** Valve - **OFF** (pull full out)
3. **FUEL PUMP** Switch - **OFF**
4. **MASTER** Switch (ALT and BAT) - **OFF**
5. **Cabin Vents** - **OPEN** (as needed)
6. **CABIN HT** and **CABIN AIR** Control Knobs - **OFF** (push full in)
7. **Airspeed** - **100** KIAS
8. **Forced Landing** - **EXECUTE** (refer to EMERGENCY LANDING WITHOUT ENGINE POWER)

# ELECTRICAL FIRE IN FLIGHT

1. **STBY BATT** Switch - **OFF**
2. **MASTER** Switch (ALT and BAT) - **OFF**
3. **Cabin Vents** - **CLOSED** (to avoid drafts)
4. **CABIN HT** and **CABIN AIR** Control Knobs - **OFF** (push full in)
5. **Fire Extinguisher** - **ACTIVATE** (if available)
6. **AVIONICS** Switch (**BUS 1** and **BUS 2**) - **OFF**
7. **All Other Switches** (except MAGNETOS switch) – **OFF**

**AFTER THE FIRE EXTINGUISHER HAS BEEN USED, MAKE SURE THAT THE FIRE IS EXTINGUISHED**

8. **Cabin Vents** - **OPEN**
9. **CABIN HT** and **CABIN AIR** Control Knobs - **ON** (pull full out)

**IF FIRE HAS BEEN EXTINGUISHED AND ELECTRICAL POWER IS NECESSARY FOR CONTINUED FLIGHT**

10. **Circuit Breakers** - **CHECK** (for OPEN circuit(s), do not reset)
11. **MASTER** Switch (ALT and BAT) - **ON**
12. **STBY BATT** Switch - **ARM**
13. **AVIONICS** Switch (**BUS 1**) - **ON**
14. **AVIONICS** Switch (**BUS 2**) – **ON**

# CABIN FIRE

1. **STBY BATT** Switch - **OFF**
2. **MASTER** Switch (ALT and BAT) - **OFF**
3. **Cabin Vents** - **CLOSED** (to avoid drafts)
4. **CABIN HT** and **CABIN AIR** Control Knobs - **OFF** (push full in)
5. **Fire Extinguisher** - **ACTIVATE** (if available)

**AFTER THE FIRE EXTINGUISHER HAS BEEN USED, MAKE SURE THAT THE FIRE IS EXTINGUISHED**

6. **Cabin Vents** - **OPEN**
7. **CABIN HT** and **CABIN AIR** Control Knobs - **ON** (pull full out)
8. **Land the airplane as soon as possible** to inspect for damage.

# WING FIRE

1. **LAND** and **TAXI Light** Switches - **OFF**
2. **NAV Light** Switch - **OFF**
3. **STROBE Light** Switch - **OFF**
4. **PITOT HEAT** Switch - **OFF**

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

# ABNORMAL LANDINGS

**LANDING WITH A FLAT MAIN TIRE**

1. **Approach** - **NORMAL**
2. **Wing Flaps** - **FULL**
3. **Touchdown** - **GOOD MAIN TIRE FIRST**
4. **Directional Control** - **MAINTAIN**

**LANDING WITH A FLAT NOSE TIRE**

1. **Approach** - **NORMAL**
2. **Wing Flaps** - **AS REQUIRED**

   **85** to **110** KIAS - Flaps **UP - 10°**

   Below **85** KIAS - Flaps **10° - FULL**

3. **Touchdown** - **ON MAINS** (hold nosewheel off the ground as long as possible)
4. When nosewheel touches down, maintain full up elevator as airplane slows to stop.

# INADVERTENT ICING ENCOUNTER DURING FLIGHT

1. **PITOT HEAT** Switch - **ON**
2. **Turn back or change altitude**
3. **CABIN HT** Control Knob - **ON** (pull full out)
4. **Defroster** Control Outlets - **OPEN**
5. **CABIN AIR** Control Knob - **ADJUST** (to obtain maximum defroster heat and airflow)
6. **Watch for signs of induction air filter icing**. A loss of engine RPM could be caused by ice blocking the air intake filter. Adjust the throttle as necessary to hold engine RPM. Adjust mixture as necessary for any change in power settings.
7. **Plan a landing at the nearest airport.** With an extremely rapid ice build-up, select a suitable off airport landing site.
8. With an ice accumulation of 0.25 inch or more on the wing leading edges, **be prepared for significantly higher power requirements, higher approach and stall speeds, and a longer landing roll.**
9. **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.
10. Open left window and, if practical, scrape ice from a portion of the windshield for visibility in the landing approach.
11. Perform a landing approach using a forward slip, if necessary, for improved visibility.
12. **Approach at 65 to 75 KIAS** depending upon the amount of ice accumulation.
13. **Perform landing in level attitude**.
14. **Missed approaches should be avoided** whenever possible because of severely reduced climb capability.

# STATIC SOURCE BLOCKAGE

(ERRONEOUS INSTRUMENT READING SUSPECTED)

1. **ALT STATIC AIR Valve** - **ON** (pull full out)
2. **Cabin Vents** - **CLOSED**
3. **CABIN HT** and **CABIN AIR** Control Knobs - **ON** (pull full out)
4. **Airspeed** - Refer to table

| **Flaps UP** | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KIAS | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 |
| KCAS | 56 | 62 | 68 | 76 | 85 | 95 | 105 | 115 | 125 | 134 | 144 | 154 |
| **Flaps 10°** | | | | | | | | | | | | | |
| KIAS | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | --- | --- | --- | --- |
| KCAS | 51 | 55 | 60 | 68 | 77 | 86 | 96 | 105 | --- | --- | --- | --- |
| **Flaps FULL** | | | | | | | | | | | | | |
| KIAS | 40 | 50 | 60 | 70 | 80 | 85 | --- | --- | --- | --- | --- | --- |
| KCAS | 49 | 54 | 61 | 69 | 78 | 83 | --- | --- | --- | --- | --- | --- |

# EXCESSIVE FUEL VAPOR

**FUEL FLOW STABILIZATION PROCEDURES**

(If flow fluctuations of 1 GPH or more, or power surges occur.)

1. **FUEL PUMP** Switch - **ON**
2. **Mixture Control** - **ADJUST** (as necessary for smooth engine operation)
3. **Fuel Selector Valve** - **SELECT OPPOSITE TANK** (if vapor symptoms continue)
4. **FUEL PUMP** Switch - **OFF** (after fuel flow has stabilized)

# ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS

## HIGH VOLTS ANNUNCIATOR COMES ON OR M BATT AMPS MORE THAN 40

1. **MASTER** Switch (ALT Only) - **OFF**
2. **Electrical Load** - **REDUCE IMMEDIATELY** as follows:
   a. **AVIONICS** Switch (**BUS 1**) - **OFF**
   b. **PITOT HEAT** Switch - **OFF**
   c. **BEACON Light** Switch - **OFF**
   d. **LAND Light** Switch - **OFF** (use as required for landing)
   e. **TAXI Light** Switch - **OFF**
   f. **NAV Light** Switch - **OFF**
   g. **STROBE Light** Switch - **OFF**
   h. **CABIN PWR 12V** Switch - **OFF**

The main battery supplies electrical power to the main and essential buses until M BUS VOLTS decreases below 20 volts. When M BUS VOLTS falls below 20 volts, **the standby battery system will automatically supply electrical power to the essential bus for at least 30 minutes.**

   i. **COM1** and **NAV1** - **TUNE TO ACTIVE FREQUENCY**
   j. **COM1 MIC** and **NAV1** - **SELECT** (COM2 MIC and NAV2 will be inoperative once AVIONICS BUS 2 is selected to OFF)
   **NOTE:** When AVIONICS BUS 2 is set to OFF, the following items will not operate: Autopilot; Audio Panel; COMM 2 NAV 2; transponder; MFD.
   k. **AVIONICS** Switch (**BUS 2**) - **OFF** (KEEP ON if in clouds)

3. **Land as soon as practical**.

# ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS

**LOW VOLTS ANNUNCIATOR COMES ON OR DOES NOT GO OFF AT HIGHER RPM**

1. **MASTER** Switch (ALT Only) - **OFF**
2. **ALT FIELD** Circuit Breaker - **CHECK IN**
3. **MASTER** Switch (ALT and BAT) - **ON**
4. **LOW VOLTS** Annunciator - **CHECK OFF**
5. **M BUS VOLTS** - **CHECK 27.5 V** (minimum)
6. **M BATT AMPS** - **CHECK CHARGING** (+)

**IF LOW VOLTS ANNUNCIATOR REMAINS ON**

7. **MASTER** Switch (ALT Only) - **OFF**
8. **Electrical Load** - **REDUCE IMMEDIATELY** as follows:
   a. **AVIONICS** Switch (**BUS 1**) - **OFF**
   b. **PITOT HEAT** Switch - **OFF**
   c. **BEACON Light** Switch - **OFF**
   d. **LAND Light** Switch - **OFF** (use as required for landing)
   e. **TAXI Light** Switch - **OFF**
   f. **NAV Light** Switch - **OFF**
   g. **STROBE Light** Switch - **OFF**
   h. **CABIN PWR 12V** Switch – **OFF**

**IF LOW VOLTS ANNUNCIATOR REMAINS ON**

The main battery supplies electrical power to the main and essential buses until M BUS VOLTS decreases below 20 volts. When M BUS VOLTS falls below 20 volts, **the standby battery system will automatically supply electrical power to the essential bus for at least 30 minutes.**

   i. **COM1** and **NAV1** - **TUNE TO ACTIVE FREQUENCY**
   j. **COM1 MIC** and **NAV1** - **SELECT** (COM2 MIC and NAV2 will be inoperative once AVIONICS BUS 2 is selected to OFF)
   **NOTE:** When AVIONICS BUS 2 is set to OFF, the following items will not operate: Autopilot; Audio Panel; COMM 2 NAV 2; transponder; MFD.
   k. **AVIONICS** Switch (**BUS 2**) - **OFF** (KEEP ON if in clouds)

3. **Land as soon as practical**.

# ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS

### LOW VOLTS ANNUNCIATOR COMES ON BELOW 1000 RPM

1. **Throttle Control** - **1000 RPM**
2. **LOW VOLTS** Annunciator - **CHECK OFF**

**LOW VOLTS ANNUNCIATOR REMAINS ON AT 1000 RPM**

3. Authorized maintenance personnel must do electrical system inspection prior to next flight.

# AIR DATA SYSTEM FAILURE

### RED X - PFD AIRSPEED INDICATOR

1. **ADC/AHRS Circuit Breakers** - **CHECK IN** (ESS BUS and AVN BUS 1). If open, reset (close) circuit breaker. If circuit breaker opens again, do not reset.
2. **Standby Airspeed Indicator** - **USE FOR AIRSPEED INFORMATION**

### RED X - PFD ALTITUDE INDICATOR

1. **ADC/AHRS Circuit Breakers** - **CHECK IN** (ESS BUS and AVN BUS 1). If open, reset (close) circuit breaker. If circuit breaker opens again, do not reset.
2. **Standby Altimeter** - **CHECK** current barometric pressure SET. USE FOR ALTITUDE INFORMATION.

# ATTITUDE AND HEADING REFERENCE SYSTEM (AHRS) FAILURE

**RED X - PFD ATTITUDE INDICATOR**

1. **ADC/AHRS Circuit Breakers** - **CHECK IN** (ESS BUS and AVN BUS 1). If open, reset (close) circuit breaker. If circuit breaker opens again, do not reset.
2. **Standby Attitude Indicator** - **USE FOR ATTITUDE INFORMATION**

**RED X - HORIZONTAL SITUATION INDICATOR (HSI)**

1. **ADC/AHRS Circuit Breakers** - **CHECK IN** (ESS BUS and AVN BUS 1). If open, reset (close) circuit breaker. If circuit breaker opens again, do not reset.
2. **Non-Stabilized Magnetic Compass** - **USE FOR HEADING INFORMATION**

# AUTOPILOT OR ELECTRIC TRIM FAILURE

**AP OR PTRM ANNUNCIATOR(S) COME ON**

1. **Control Wheel** - **GRASP FIRMLY** (regain control of airplane)
2. **A/P TRIM DISC Button** - **PRESS** and **HOLD** (throughout recovery)
3. **Elevator Trim Control** - **ADJUST MANUALLY** (as necessary)
4. **AUTO PILOT Circuit Breaker** - **OPEN** (pull out)
5. **A/P TRIM DISC Button** - **RELEASE**

**WARNING:** FOLLOWING AN AUTOPILOT, AUTOTRIM OR MANUAL ELECTRIC TRIM SYSTEM MALFUNCTION, DO NOT ENGAGE THE AUTOPILOT UNTIL THE CAUSE OF THE MALFUNCTION HAS BEEN CORRECTED.

# DISPLAY COOLING ADVISORY

**PFD1 COOLING OR MFD1 COOLING ANNUNCIATOR(S) COME ON**

1. **CABIN HT Control Knob** - **REDUCE** (push in) (minimum preferred)
2. **Forward Avionics Fan** - **CHECK** (feel for airflow from screen on glareshield)

**IF FORWARD AVIONICS FAN HAS FAILED**

3. **STBY BATT Switch** - **OFF** (unless needed for emergency power)

IF PFD1 COOLING OR MFD1 COOLING ANNUNCIATOR DOES NOT GO OFF WITHIN 3 MINUTES OR IF BOTH PFD1 COOLING AND MFD1 COOLING ANNUNCIATORS COME ON

3. **STBY BATT Switch** - **OFF** (land as soon as practical)

# VACUUM SYSTEM FAILURE

**LOW VACUUM ANNUNCIATOR COMES ON**

1. **Vacuum Indicator** (VAC) - **CHECK EIS ENGINE PAGE** (make sure vacuum pointer is in green band limits)

**CAUTION:**

IF VACUUM POINTER IS OUT OF THE GREEN BAND DURING FLIGHT OR THE GYRO FLAG IS SHOWN ON THE STANDBY ATTITUDE INDICATOR, THE STANDBY ATTITUDE INDICATOR MUST NOT BE USED FOR ATTITUDE INFORMATION.

# HIGH CARBON MONOXIDE (CO) LEVEL ADVISORY

**CO LVL HIGH ANNUNCIATOR COMES ON**

1. **CABIN HT** Control Knob - **OFF** (push full in)
2. **CABIN AIR** Control Knob - **ON** (pull full out)
3. **Cabin Vents** - **OPEN**
4. **Cabin Windows** - **OPEN** (163 KIAS maximum windows open speed)

**CO LVL HIGH ANNUNCIATOR REMAINS ON**

5. **Land as soon as practical.**