

COLUMBIA 350 — EMERGENCY PROCEDURES

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EMERGENCY PROCEDURES – LANDING & TAKEOFF

ENGINE FAILURE DURING TAKEOFF

1. Throttle Control — SET TO IDLE
2. Brakes — APPLY STEADY PRESSURE (Release momentarily if skidding occurs.)
3. Wing Flaps — IN THE CRUISE POSITION
4. Mixture Control — SET TO IDLE CUT OFF
5. Ignition Switch — SET TO OFF
6. Left and Right Bus Switches — SET TO OFF
7. Fuel Selector Valve — SET TO OFF

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF (Below 400 Feet AGL)

1. Airspeed — 90 KIAS (with flaps in the cruise position)*
90 KIAS (with flaps in the takeoff position)*
2. Mixture Control — SET TO IDLE CUT OFF
3. Fuel Selector Valve — SET TO OFF
4. Ignition Switch — SET TO OFF
5. Wing Flaps — IN THE LANDING POSITION (If airspeed and AGL permit.)
6. Left and Right Bus Switches — SET TO OFF

* Obtain this airspeed if altitude permits; otherwise lower the nose, maintain current airspeed and land straight ahead.

ENGINE FAILURE DURING CLIMB TO CRUISE ALTITUDE

1. Airspeed — 106 KIAS (flaps in the cruise position)
2. Fuel Selector Valve — SET TO THE FULLER TANK
3. Mixture Control — SET TO RICH
4. Throttle Control — SET TO FULL OPEN
5. Backup Boost Pump — CHECK IN ARMED POSITION
 - 5.1. Engine Does Not Restart — Use *Emergency Landing Without Engine Power* checklist.
 - 5.2. Engine Restarts — Use *Procedures After an Engine Restart* checklist.

ENGINE FAILURE DURING FLIGHT

1. Airspeed — 106 KIAS (flaps in the cruise position)
2. Fuel Selector Valve — SET TO THE FULLER TANK
3. Mixture Control — SET TO RICH
4. Throttle Control — SET TO FULL OPEN
5. Backup Boost Pump — SWITCH SET TO ARMED POSITION
6. Ignition Switch — VERIFY SET TO BOTH (Proceed to 6.2 or 6.1 as applicable.)
 - 6.1. Engine Restarts — Use *Procedures After an Engine Restart* checklist.
 - 6.2. Engine Does Not Restart — Use *Emergency Landing Without Engine Power* checklist.

ENGINE FAILURE DURING DESCENT (Fuel Annunciator Illuminated)

1. Airspeed — 80 to 106 KIAS
2. Mixture — SET TO RICH
3. Throttle — ADVANCED ABOUT ONE THIRD
4. Fuel Selector — Switch Tanks
5. Vapor Suppression — SET TO ON
 - 5.1. Engine Restarts — CLIMB TO SAFE ALT. (See *Procedures After an Engine Restart.*)
 - 5.2. Engine Does Not Restart – Do steps 6 and 7
6. Throttle — SET TO FULL OPEN
7. Backup Boost Pump — SET TO ARMED POSITION
 - 7.1. Engine Restarts — CLIMB TO SAFE ALTITUDE (Use the *Procedures After an Engine Restart* checklist)
 - 7.2. Engine Does Not Restart — Use *Emergency Landing Without Engine Power* checklist if altitude permits.

PROCEDURES AFTER AN ENGINE RESTART

1. Airspeed — APPROPRIATE TO THE SITUATION
2. Throttle Control — REDUCE AS REQUIRED
3. Failure Analysis — DETERMINE CAUSE (Proceed to 3.1 or 3.2 as applicable)
 - 3.1. Improper Fuel Management — Unarm the backup boost pump and resume flight.
 - 3.2. Engine Driven Fuel Pump Failure — Reduce power to 75%/land as soon as practicable.

EMERGENCY LANDING WITHOUT ENGINE POWER

1. Approach Airspeed — 90 KIAS (Full Flaps – or T/O Flaps)
2. Seat Belts and Shoulder Harnesses — FASTENED AND SECURE
3. Loose objects — SECURE
4. Backup Boost Pump and Vapor Suppression — BOTH SET TO OFF
5. Mixture Control — SET TO IDLE CUT OFF
6. Fuel Selector Valve — SET TO OFF
7. Electrical and Avionics Master Switches — SET TO OFF
8. Ignition Switch — SET TO OFF
9. Wing Flaps — AS REQUIRED (Full flaps recommended for landing.)
10. SpeedBrake™ Switch — OFF/DOWN POSITION
11. Left and Right Bus Switches — SET TO OFF*
12. Nav/Com Bypass Switch — VERIFY OFF
13. Landing Flare — INITIATE AT APPROPRIATE POINT TO ARREST DESCENT RATE, AND TOUCHDOWN AT NORMAL LANDING SPEEDS
14. Stopping — APPLY HEAVY BRAKING

* ENSURE FLAPS ARE EXTENDED AS DESIRED

EMERGENCY LANDING WITH THROTTLE STUCK AT IDLE POWER

1. Approach Airspeed — 90 KIAS (Full Flaps – or T/O Flaps.)
2. Seat Belts and Shoulder Harnesses — FASTENED AND SECURE
3. Loose Objects — SECURE
4. Electrical and Avionics Master Switches — SET TO OFF
5. Backup Boost Pump and Vapor Suppression — BOTH SET TO OFF
6. Wing Flaps — AS REQUIRED (Full flaps recommended.)
7. Engine Shutdown — DELAY AS LONG AS PRACTICABLE (Then follow steps 8-13.)
8. Left and Right Bus Switches — SET TO OFF*
9. Fuel Selector Valve — SET TO OFF
10. Mixture Control — SET TO IDLE CUT OFF
11. Ignition Switch — SET TO OFF
12. Landing Flare — INITIATE AT APPROPRIATE POINT TO ARREST DESCENT RATE, AND TOUCHDOWN AT NORMAL LANDING SPEEDS
13. Stopping — APPLY HEAVY BRAKING

* ENSURE FLAPS ARE EXTENDED AS DESIRED

PRECAUTIONARY LANDING WITH ENGINE POWER

1. Seat Belts/Shoulder Harnesses and Loose Objects — FASTENED AND SECURE
2. Wing Flaps — SET TO TAKEOFF POSITION
3. Airspeed — 95 to 105 KIAS
4. Select a Landing Area — FLY OVER AREA (Determine wind direction and survey terrain.)
5. Avionics Master Switch — SET TO OFF
6. Wing Flaps — SET TO LANDING POSITION (when on final approach)
7. Airspeed — 78 KIAS
8. Left and Right Bus Switches — SET TO OFF (just before touchdown)
9. Landing — LAND AS SLOW AS PRACTICABLE IN A NOSE UP ATTITUDE
10. Ignition Switch — SET TO OFF
11. Stopping — APPLY HEAVY BRAKING

ENGINE DRIVEN FUEL PUMP (EDFP) — PARTIAL FAILURE

(Fuel pressure too high to activate backup pump. Intermittent power - No fuel pump annunciator)

1. Backup Pump and Throttle — ARMED AND FULL
2. Primer Button — ENGAGE AND DISENGAGE (If holding in primer switch restores fuel flow/power, the partial EDFP failure is confirmed. Release switch and proceed to Step 3.)
3. Mixture — TOWARDS IDLE CUTOFF (At a fuel pressure of $5.5 \pm$ psi, the backup pump should engage, which will restore fuel flow and engine power.)
4. Mixture — TOWARDS RICH (Degree of richness depends on altitude; see AFM/POH.)

DITCHING

1. Radio — MAKE DISTRESS TRANSMISSION (Set transponder code 7700 and transmit a mayday distress condition. Give estimated position and intentions.)
2. Loose Objects — SECURE
3. Seat Belts and Shoulder Harnesses — FASTENED AND SECURE
4. Wing Flaps — SET TO LANDING POSITION
5. SpeedBrake™ Switch — OFF/DOWN POSITION
6. Descent — ESTABLISH MINIMUM DESCENT (65 KIAS and use power to establish minimum descent rate)
7. Approach — In high winds/heavy swell conditions, approach into the wind. In light winds/heavy swell conditions, approach parallel to the swell. With no swells, land into the wind.
8. Touchdown Alternatives
 - 8.1. Touchdown (**Engine power available**) — Maintain minimum descent attitude, apply power as necessary. To land, reduce power and settle into the water in a nose up attitude.
 - 8.2. Touchdown (**No engine power available**) — Use an 85 to 90 KIAS approach speed to flare-out point and glide to get a feel for the surface. Settle into the water in a nose up.
9. Evacuation of Airplane — Evacuate the airplane through the pilot or passenger doors. If the doors are inoperative, activate the emergency exit door release.
10. Flotation Devices — DEPLOY FLOTATION DEVICES

EMERGENCY PROCEDURES – FIRES

ENGINE FIRE ON THE GROUND DURING STARTUP

If flames are observed during starting, use the following procedures:

1. Mixture Control — SET TO IDLE CUT OFF
2. Throttle Control — SET TO FULL OPEN
3. Ignition Switch — HOLD IN START POSITION (until fire is extinguished)
4. Parking Brake — RELEASE (if parking brake is engaged)
5. Fire Extinguisher — OBTAIN FROM CABIN AND EVACUATE AIRPLANE
6. Follow-up — If fire is present, extinguish it. Inspect for damage and make the appropriate repairs or replacements.

ENGINE FIRE IN FLIGHT

1. Throttle Control — SET TO CLOSED
2. Mixture Control — SET TO IDLE CUT OFF
3. Fuel Selector Valve — SET TO OFF
4. Heating and Ventilation System — SET TO OFF
5. Left and Right Bus Switches — SET TO OFF
6. Nav/Com Bypass Switch — SET TO ON (As desired for emergency transmission.)
7. Airspeed — 179 KIAS (If fire is not out, increase speed to level that extinguishes the fire.)
8. Landing — PERFORM AN EMERGENCY LANDING WITHOUT POWER
9. Nav/Com Bypass Switches — SET TO OFF

ELECTRICAL FIRE IN FLIGHT

1. All Heating and Ventilating Controls — SET TO OFF
2. Left and Right Bus Switches — SET TO OFF
3. All Avionics and Electrical Switches — SET TO OFF
4. Trim System Switch — SET TO OFF
5. Fire Extinguisher — DISCHARGE IN AREA OF THE FIRE
6. Post Fire Details — REOPEN VENTILATION SYSTEM (If fire is extinguished.)
7. Nav/Com Bypass Switch — SET TO ON (As desired for emergency transmission.)
8. Phased System Power-up — If electrical power is necessary, proceed with steps 9-11 below.
9. Left and Right Bus Switches — SET TO ON
10. Nav/Com Bypass Switch — SET TO OFF
11. Land as soon as possible.

CABIN FIRE IN FLIGHT (Fuel / Hydraulic Fluid)

1. All Heating and Ventilating Controls — SET TO OFF
2. Left and Right Bus Switches — SET TO OFF
3. Fuel Selector — SET TO OFF
4. Fire Extinguisher — DISCHARGE IN AREA OF THE FIRE
5. When Fire is Extinguished — VENTILATE CABIN (master and fan on, open vents, door seals off)
6. Post Fire Details — FOLLOW *EMERGENCY LANDING WITHOUT ENGINE POWER* CHECKLIST

WING FIRE IN FLIGHT

1. Navigation Lights Switch — SET TO OFF
2. Pitot Heat Switch — SET TO OFF
3. Strobe/Position Lights Switch — SET TO OFF
4. Landing/Taxi Light — SET TO OFF
5. Flight Action — INTENSE SIDESLIP (Keep flames away from fuel tank and cabin. The sideslip may put out fire. Land as soon as possible. Use flaps if essential for a safe landing.)

EMERGENCY PROCEDURES – ICING

INADVERTENT ICING

1. Pitot Heat — SET TO ON
2. Course — REVERSE COURSE
3. Altitude — CHANGE (To a level where the temperature is above freezing.)
4. Defroster — Divert all heated air to the defroster.
5. Propeller Control — INCREASE (Higher propeller speeds will mitigate ice accumulation.)
6. Manifold Pressure — MONITOR (A drop in manifold pressure may be an indication of induction icing; increase throttle settings as required.)
7. Heated Induction Air — SET TO ON (Operate if induction icing is evident or suspected.)
8. Alternate Static Source — OPEN as required
9. Flight Characteristics — ADD MARGIN OF SAFETY (To approach and landing speeds.)
10. Approach Speed — Appropriate for the amount of ice accumulation and flap setting
11. Landing Attitude — LIMITED FLARE (Land at a higher speed and in a flat attitude.)

EMERGENCY PROCEDURES – FLAT TIRES

LANDING WITH A FLAT MAIN TIRE

1. Approach — NORMAL
2. Wing Flaps — SET TO LANDING POSITION
3. Touchdown — Touchdown on the inflated tire first, maintain full aileron towards the good tire as long as possible. Be prepared for abnormal yaw in the direction of the flat tire.

LANDING WITH A FLAT NOSE TIRE

1. Approach — NORMAL
2. Wing Flaps — SET TO LANDING POSITION
3. Touchdown — Touchdown on the main landing gear tires first. Maintain sufficient back elevator deflection to keep the nose tire off the ground for as long as possible.

EMERGENCY PROCEDURES – ELECTRICAL

ELECTRICAL SYSTEM OVERCHARGING (Both alternators stay on-line, ammeter shows excessive charge, and voltmeter has high voltage indication.)

1. Defective Alternator Switch — SET TO OFF
2. Crosstie Switch — SET TO ON
3. Flight — If electrical system is restored, continue with flight. If electrical system is not restored, the flight shall be terminated as soon as possible or practicable.

ALTERNATOR FAILURE—ELECTRICAL SYSTEM DISCHARGING (Ammeter shows a discharging condition on left or right bus, and alternator annunciator indicates “L Alt Off” or “R Alt Off”. Ensure SpeedBrake™ Switch is down and pull the SpeedBrake™ circuit breaker)

1. Crosstie Switch — SET TO OFF
2. Affected Alternator Bus Switch — SET TO OFF
3. Affected Alternator Bus Switch — SET TO ON
4. Alternator annunciator Light Alternatives (Follow either 4.1 or 4.2 below.)
 - 4.1. Annunciator Condition (**Light is off**) — If after recycling the system, the alternator annunciator stays off, set the avionics master to ON and proceed with normal operations.
 - 4.2. Annunciator Condition (**Light is on**) — If after recycling the system, the alternator annunciator stays on or trips the alternator off-line, follow steps 5 through 8 below.
5. Affected Alternator Bus Switch — SET TO OFF
6. Crosstie Switch — SET TO ON

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ALTERNATOR FAILURE — ELECTRICAL SYSTEM DISCHARGING (CONTINUED)

7. Good Alternator—ENSURE PROPER OPERATION (If “Alt Off” annunciator is illuminated, reduce loads or increase RPM until annunciator goes off and batteries are in charging state.)
8. If electrical system is not restored, the flight shall be terminated as soon as practicable.

LEFT OR RIGHT BUS FAILURE / CROSSTIE DISCHARGES WORKING BUS

(Activating the crosstie switch causes the ammeter of the working bus to discharge significantly, e.g., the left bus was showing a positive charge prior to activating the crosstie switch.)

1. Crosstie Switch — SET TO OFF
2. Bus Switch of the Failed Bus — SET TO OFF
3. Review table below for items that are on the failed bus and make the appropriate allowances.

ITEMS UNAVAILABLE WITH A BUS FAILURE	
LEFT BUS ITEMS	RIGHT BUS ITEMS
Aileron Trim	Strobe Lights
Pitot Heat	Taxi Light
Engine Instruments	Right Voltage Regulator
Rudder Limiter	Door Seal
Position Lights	Power Point
Landing Light	Elevator Trim
Left Voltage Regulator	Speed Brakes
Cabin Fan	

4. Depending on which bus failed (left or right) and the dictates of the current conditions—i.e., day, night, IMC, VMC—land the airplane as soon as practicable or possible.

EMERGENCY PROCEDURES – RUDDER LIMITER

RUDDER LIMITER MALFUNCTION (System will not disengage and/or annunciator is lit.)

1. Left Rudder Pedal — VERIFY RUDDER LIMITER IS ENGAGED (If the system is not engaged, the annunciator is faulty. In this situation, proceed to Step No. 5 below.)
2. Rudder Limiter Circuit Breaker — PULLED (Wait for approximately 30 seconds.)
3. Rudder Limiter Circuit Breaker — IN (If still engaged, do Step 4. If disengages, Step 5.)
4. Rudder Limiter Test Switch — SET TO TEST POSITION
5. Rudder Limiter Circuit Breaker — PULLED (Follow step 6 or 7 as applicable.)
6. Rudder Limiter Engaged — LAND AS SOON AS POSSIBLE
7. Rudder Limiter Disengaged — LAND AS SOON AS PRACTICABLE
8. Landing (**Rudder Limiter Disengaged**) — Make a normal landing above stalling speed.
9. Landing (**Rudder Limiter Engaged**) — A crosswind from the left is preferable. The maximum demonstrated right crosswind component with the system engaged is 6 knots.

IN-FLIGHT RUDDER LIMITER FAILURE (The system is inoperative.)

1. Rudder Limiter Circuit Breaker — CHECK IN (If the breaker is out, reset and test system. If system is normal, continue as planned. If the circuit breaker is IN, proceed to Step 2.)
2. Rudder Limiter Circuit Breaker — PULLED
3. Flight — LAND AS SOON AS PRACTICABLE
4. Landing With the Rudder Limiter Disengaged — Make a normal landing above stalling speed.

EMERGENCY PROCEDURES – TRIM TAB SYSTEM

RUNAWAY TRIM (Sudden and unexplained changes in control pressures.)

1. Trim Tab System On/Off Switch — SET TO OFF TO DISABLE THE SYSTEM
2. Power Settings — REDUCE TO 50% BHP OR LESS (Depending on conditions)
3. Airspeed — 100 to 110 KIAS (Depending on conditions)
4. Flaps — SET AS APPROPRIATE (Extending flaps may mitigate control forces.)
5. Circuit Breakers — PULL BOTH TRIM BREAKERS TO THE OFF POSITION
6. Flight Plan — TERMINATE AS SOON AS PRACTICABLE OR POSSIBLE (This depends on the magnitude of control pressure(s) required to maintain a normal flight attitude.)
7. Landing — PREPARE FOR CONTROL PRESSURE CHANGES (When power is reduced and airspeed decays, there can be substantial changes in the required control pressures.)

PARTIAL RESTORATION OF A DISABLED TRIM SYSTEM

1. Trim Tab On/Off Switch — SET TO THE ON POSITION
2. Malfunction Analysis — DETERMINE AXIS OF MALFUNCTION
3. Circuit Breaker(s) — SET PROPERLY FUNCTIONING AXIS BREAKER TO ON

EMERGENCY PROCEDURES

BROKEN OR STUCK THROTTLE CABLE

BROKEN OR STUCK THROTTLE CABLE (with enough power for continued flight)

1. Continued Flight — LAND AS SOON AS POSSIBLE
2. Airport Selection — ADEQUATE FOR POWER OFF APPROACH
3. Descent — CONTROL WITH MIXTURE (Avoid extended power off descents.)
4. Fuel Selector — FULLER TANK
5. Approach Airspeed — 100 KIAS (With flaps in the cruise position)
 - a. 90 KIAS (With flaps in the landing position)
6. Seat Belts — FASTENED AND SECURE
7. Loose Objects — SECURE
8. Flaps — AS REQUIRED (Use full flaps only when reaching the runway is assured.)
9. Mixture (Reaching runway is assured) — MIXTURE IDLE CUT-OFF
10. Touchdown — MAIN WHEELS FIRST, GENTLY LOWER NOSE WHEEL
11. Braking — AS REQUIRED

SPEEDBRAKE™ SYSTEM MALFUNCTION

1. SpeedBrake™ Switch — OFF/DOWN POSITION
2. SpeedBrake™ Circuit Breaker — PULL

EVACUATING THE AIRPLANE

1. Seat Belts — REMOVE (Do not remove seat belts until the airplane comes to a complete stop, unless there is a compelling reason to do otherwise. If the onset of the emergency is anticipated, ensure the seat belt is as tight as possible.)
2. Doors — USE BOTH IF POSSIBLE AND REQUIRED (Do not open doors in flight.)
3. Crash Ax — USE AS REQUIRED (If the cabin doors are inoperable, break out a cabin door window.)
4. Exiting the Airplane — AS APPROPRIATE (If possible, use both doors. Generally, it is best to go aft unless there are compelling reasons to do otherwise.)
5. Assistance — AS APPROPRIATE (If possible, necessary, and not life threatening, render assistance to others in the airplane.)
6. Congregating Point — DESIGNATE (Pilot and passengers should have a designated congregating point, say 100 feet aft of the airplane.)

CIRCUIT BREAKER PANEL LAYOUT



Left Bus	Aileron Trim	Pitot Heat	Speed Brakes	Engine Inst	Rudder Limiter	•	•					
Left Bus	Position Lights	Landing Lights	Left Volt Reg	Clock Fan	•	•	•	•				
Right Bus	Strobe Lights	Taxi Lights	Right Volt Reg	Door Seal P/P	•	•	•	•	•	Elevator Trim		
Essential	Attitude Horizon	Turn Coordinator	Panel Lights	Annunciators	L Bus Relays	Fuel Pump	Stall Warn	Flaps	R Bus Relays	•		
Avionics	Audio Voice	GPS 1	GPS 2	Com 1	Com 2	Xponder Enc/Fan	HSI	Autopilot	MAP	WX	•	
<p>Note 1: A • indicates that the circuit breaker position is unused, but reserved for future optional equipment.</p> <p>Note 2: The actual arrangement may vary slightly depending on the optional equipment installed.</p>												

NOTE

This checklist is not part of any revision cycle and is not FAA approved. While this checklist is similar to the one contained in the FAA approved Airplane Flight Manual/Pilot's Operating Handbook (AFM/POH), it is not a substitute for the FAA approved document. The pilot is responsible for updating this checklist when changes to the checklist are made in the AFM/POH.