

ABNORMAL PROCEDURES

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AIR CONDITIONING SMOKE/FUMES

Condition: Smoke or fumes coming from air conditioning system.

OXYGEN MASKS / SMOKE GOGGLES	DON
CREW COMMUNICATIONS	ESTABLISH
RECIRCULATION FAN SWITCH	OFF

If fumes stop:

Continue flight with the recirculation fan switch OFF

If fumes continue:

ISOLATION VALVE SWITCH	CLOSE
R PACK SWITCH	OFF

If fumes stop:

Continue flight with the R PACK switch OFF and the ISOLATION valve CLOSED.

If fumes continue:

R PACK SWITCH	AUTO
L PACK SWITCH	OFF

If fumes stop:

Continue flight with the R PACK switch OFF and the ISOLATION valve CLOSED.

If fumes continue:

L PACK SWITCH	AUTO
>>>>DECLARE EMERGENCY	
>>>>LAND NEAREST SUITABLE AIRPORT	

AIRSPEED UNRELIABLE

Condition: Pitch attitude not consistent with existing phase of flight, altitude, thrust and weight or noise and or low frequency buffeting.

AIRPLANE ATTITUDE / THRUST		MAINTAIN AIRCRAFT CONTROL
PROBE HEAT		CHECK ON
MACH / AIRSPEED INDICATORS	CROSS CHECK	

AUTO FAIL / UNSCHEDULED PRESSURIZATION CHANGE

Condition: Automatic pressurization mode has failed, cabin altitude warning or the cabin altitude is not under control.

ENGINE BLEED AIR SWITCHES	ON (ONE AT A TIME)
PACK SWITCHES	ON (ONE AT A TIME)

Allow cabin rate to stabilize before placing second switch ON.

If AUT FAIL light is illuminated or pressurization is not under control:

PRESSURIZATION MODE SELECTOR	ALTN
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Verify the AUTO FAIL light extinguishes.

If the AUTO FAIL light remains illuminated or the ALTN mode cannot maintain cabin pressurization:

PRESSURIZATION MODE SELECTOR	MAN
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OUTFLOW VALVE SWITCH	AS REQUIRED
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Operate the outflow valve to maintain proper cabin altitude.

EMERGENCY DESCENT

Condition: Unable to control cabin pressurization with airplane above 14,000MSL or conditions require a rapid descent.

EMERGENCY DESCENT	ANNOUNCE
THRUST LEVERS	CLOSE
SPEED BRAKE	FLIGHT DETENT
DESCENT	INITIATE
TARGET SPEED	Mmo/Vmo

If structural integrity is in doubt, limit speed as much as possible.

LEVEL-OFF ALTITUDE	LOWEST SAFE ALTITUDE or 10,000MSL
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SPEED BRAKE	DOWN
ENGINE START SWITCHES	AS REQUIRED

LOSS OF THRUST ON BOTH ENGINES

Condition: Loss of all thrust on both engines accompanied by illumination of both ENG FAIL alerts.

ENGINE START SWITCHES	FLT
ENGINE START LEVERS	CUTOFF

EGT decreasing:

ENGINE START LEVERS	IDLE
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APU	START and ON BUS
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Do not wait for successful engine starts prior to starting APU.

If neither restart is successful and N2 is below 11%:

WING ANTI-ICE SWITCH	OFF
PACK SWITCHES	OFF
APU BLEED AIR SWITCH	ON
IGNITION SELECT SWITCH	BOTH
EITHER ENGINE START SWITCH	GRD
APU BLEED AIR SWITCH	OFF
ENGINE START SWITCH	FLT
THRUST LEVER	ADVANCE
GENERATOR SWITCH	ON
PACK SWITCH	AUTO
Start Second Engine	

BLEED TRIP OFF

Condition: A BLEED TRIP OFF light illuminated indicates the related engine bleed air temperature or pressure is excessive.

WING ANTI-ICE SWITCH	OFF
TRIP RESET SWITCH	PUSH

If BLEED TRIP OFF light remains illuminated:

PACK SWITCH (Affected side)	OFF
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>>>>Avoid Icing Conditions

If the BLEED TRIP-OFF light extinguishes:

WING ANTI-ICE SWITCH	AS REQUIRED
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DUAL BLEED

Condition: The DUAL BLEED light illuminated indicates the APU bleed valve open and the Engine 1 BLEED air switch ON, or the Engine 2 BLEED air switch ON with APU bleed air valve and isolation valve open..

Limit engine thrust to idle while the light is illuminated to prevent damage to APU.

APU BLEED AIR SWITCH OFF

DUCT OVERHEAT

Condition: A DUCT OVERHEAT light illuminated indicates air temperature in the related duct has exceeded limits.

CABIN TEMPERATURE SELECTOR COOLER TEMPERATURE
 TRIP RESET SWITCH PUSH

If duct temperature increases rapidly or the air mix valve indicator moves toward full hot:

TEMPERATURE SELECTOR MANUAL

Adjust the air mix valve position as required.

EQUIPMENT COOLING OFF

Condition: The Equipment Cooling Supply or Exhaust OFF light illuminated indicates a loss of airflow from the selected cooling fan.

EQUIPMENT COOLING SUPPLY/EXHAUST SWITCH (As required) ALTERNATE

No further action is necessary in flight if the light does not extinguish.

OFF SCHEDULE DESCENT

Condition: The OFF SCHEDULE DESCENT light illuminated indicates the airplane descended before reaching the planned cruise altitude set in the FLT ALT indicator.

No action is necessary if the airplane is returned to the airport of departure for landing.

If not landing at airport of departure:

FLIGHT ALTITUDE INDICATOR RESET / CORRECT

PACK

Condition: A PACK light illuminated indicates both primary and standby pack controls have failed or the related pack valve is closed due to temperature exceeding limits.

ALL TEMPERATURE SELECTORS	WARMER TEMPERATURE
TRIP RESET SWITCH	PUSH

If one PACK light remains illuminated:

ISOLATION VALVE SWITCH	CLOSE
PACK SWITCH	OFF

If cabin altitude increases:

DESCENT	ACCOMPLISH
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Monitor cabin altitude and rate. Descend to lowest safe altitude or 10,000feet.

At level off:

AIRSPEED	290 KNOTS MINIMUM
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PRESSURIZATION MODE SELECTOR	MAN
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OUTFLOW VALVE SWITCH	FULL OPEN
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RIGHT RECIRCULATION FAN SWITCH	AUTO
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LEFT RECIRCULATION FAN SWITCH	OFF
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If flight deck and cabin temperatures are excessively warm:

FLIGHT DECK DOOR	OPEN
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CABIN LIGHTING	DIM
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IFE/PAX SEAT POWER SWITCH	OFF
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GALLEY POWER	OFF
--------------	-----

FLIGHT DECK/CABIN SHADES	CLOSED
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PACK TRIP OFF

Condition: A PACK TRIP OFF light illuminated indicates the related pack valve is closed due to temperature exceeding limits.

TEMPERATURE SELECTORS	WARMER TEMPERATURE
TRIP RESET SWITCH	PUSH

If both PACK TRIP OFF lights remains illuminated:

If cabin altitude increases:

DESCENT	ACCOMPLISH
---------	------------

Monitor cabin altitude and rate. Descend to lowest safe altitude or 10,000feet.

At level off:

AIRSPEED	290 KNOTS MINIMUM
----------	-------------------

PRESSURIZATION MODE SELECTOR	MAN
------------------------------	-----

OUTFLOW VALVE SWITCH	FULL OPEN
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If flight deck and cabin temperatures are excessively warm:

FLIGHT DECK DOOR	OPEN
------------------	------

CABIN LIGHTING	DIM
----------------	-----

IFE/PAX SEAT POWER SWITCH	OFF
---------------------------	-----

GALLEY POWER	OFF
--------------	-----

WING BODY OVERHEAT

Condition: A WING BODY OVERHEAT light illuminated indicates a bleed air duct leak.

ISOLATION VALVE SWITCH	CLOSE
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PACK SWITCH (affected side)	OFF
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ENGINE BLEED AIR SWITCH (affected side)	OFF
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WING ANTI-ICE SWITCH	OFF
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Avoid Icing Conditions.

If the left WING-BODY OVERHEAT light remains illuminated:

APU BLEED AIR SWITCH (if APU running)	OFF
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If the light remains illuminated:

APU SWITCH	OFF
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If the light extinguishes:

ISOLATION VALVE SWITCH	AUTO
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ENGINE 1 BLEED AIR SWITCH	ON
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LEFT PACK SWITCH	AUTO
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WING ANTI-ICE SWITCH	AS REQUIRED
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ENGINE COWL ANTI-ICE

Condition: An engine COWL ANTI-ICE light illuminated indicates an overpressure condition in the cowl anti-ice duct.

Flight Conditions permitting:

AUTOTHROTTLE (if engaged)

DISENGAGE

THRUST LEVER (affected engine)

RETRD

Reduce thrust until the COWN ANTI-ICE light extinguishes

PROBE HEAT

Condition: Probe heat lights illuminated indicate related probe is not heated.

Avoid icing conditions.

NOTE: Flight in icing conditions may result in erroneous flight instrument indications.

WINDOW HEAT OFF

Condition: A window heat OFF light illuminated indicates a system failure has occurred.

WINDOW HEAT SWITCH

OFF

Limit airspeed to 250 knots maximum below 10,000 feet due to brittle window and possibility of bird strikes at lower altitudes.

WINDOW OVERHEAT

Condition: A window OVERHEAT light illuminated indicates an overheat condition has been detected.

WINDOW HEAT SWITCH (affected window)

OFF

After 2-5 minutes:

WINDOW HEAT SWITCH

ON

If the window OVERHEAT light re-illuminates:

WINDOW HEAT SWITCH

OFF

Limit airspeed to 250 knots maximum below 10,000 feet due to brittle window and possibility of bird strikes at lower altitudes.

BATTERY DISCHARGE

Condition: The **BAT DISCHARGE** light illuminated indicates excessive battery discharge is detected with the battery switch **ON**.

Correct battery drain problem if possible by bringing an engine generator or APU generator online.

NOTE: A fully charged battery provides approximately 30 minutes of standby power.

DRIVE

Condition: A generator **DRIVE** light illuminated indicates a malfunction in the related generator drive.

GENERATOR DRIVE DISCONNECT SWITCH DISCONNECT

Note: Generator cannot be brought back online in flight.

APU (if available) START & ON BUS

ELEC

Condition: The **ELEC** light illuminated indicates a fault exists in the DC or standby power system.

Note: The ELEC light only illuminates on the ground.

SOURCE OFF

Condition: A **SOURCE OFF** light illuminated indicates the related transfer bus is not powered by the last selected source.

ENGINE GENERATOR SWITCH ON

If SOURCE OFF light remains illuminated:

APU (if available) START & ON BUS

STANDBY POWER OFF

Condition: The STANDBY PWR OFF light illuminated indicates one or more of the following busses are unpowered:

AC STANDBY BUS
 DC STANDBY BUS
 BATTERY BUS
 STANDBY POWER SWITCH

ON

TR UNIT

Condition: The TR UNIT light illuminated indicates one or more TR's have failed.

Do not use the AFDS approach mode as it will be unreliable.

TRANSFER BUS OFF

Condition: A TRANSFER BUS OFF light illuminated indicates the related transfer bus is not powered.

ENGINE GENERATOR SWITCH

ON

If TRANSFER BUS OFF light remains illuminated:

APU (if available)

START & ON BUS

ELECTRICAL SMOKE/FUMES/FIRE

Condition: Electrical smoke/fumes/fire is identified.

OXYGEN MASKS / GOGGLES	DON
CREW COMMUNICATION	ESTABLISH
RECIRCULATION FAN SWITCH	OFF

If smoke/fumes/fire is known:

ELECTRICAL POWER (Affected equipment)	REMOVE
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If practical remove power from affected equipment by switch or circuit breaker .

If smoke/fumes/fire persist or source is unknown:

BUS TRANSFER SWITCH	OFF
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CAB/UTIL POWER SWITCH	OFF
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IFE/PASS SEAT POWER SWITCH	OFF
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EQUIPMENT COOLING SUPPLY/EXHAUST SWITCHES	ALTERNATE
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CABIN READING LIGHTS & GALLEY WORK LIGHTS	ON
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>>Instructed flight attendants to turn on cabin reading lights/galley lights.

CABIN EQUIPMENT	OFF
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>>Instruct flight attendants to turn off galley power switches
cabin fluorescent light switches and IFE.

>>>>DECLARE EMERGENCY.

>>>>LAND AT NEAREST SUITABLE AIRPORT

LOSS OF BOTH ENGINE DRIVE GENERATORS

Condition: All TRANSFER BUS OFF, SOURCE OFF, and GEN OFF BUS lights illuminated indicate the loss of both engine driven generators.

NOTE: With main tank fuel pumps inoperative above 30,000 feet, thrust deterioration or engine flameout may occur.

ENGINE GENERATOR SWITCHES ON

If only one SOURCE OFF light extinguishes:

APU (if available) START & ON BUS

If both SOURCE OFF lights remain illuminated:

If APU is available:

BUS TRANSFER SWITCH OFF

ELECTRICAL HYDRAULIC PUMP SWITCHES OFF

Note: APU start attempts above 25,000 MSL are not recommended.

APU START & ON BUS

BUS TRANSFER SWITCH AUTO

ELECTRIC HYDRAULIC PUMP SWITCHES ON (ONE AT A TIME)

If both SOURCE OFF lights remain illuminated:

Avoid icing conditions.

Note: Flight in icing conditions may result in erroneous flight instrument indications.

Plan to land at nearest suitable airport.

ENGINE FAILURE/SHUTDOWN

Condition: Loss of all thrust on an engine accompanied by illumination of the ENG FAIL alert or abnormal engine indications

Accomplish an engine shutdown only when flight conditions permit.

AUTOTHROTTLE (if engaged)	DISENGAGE
THRUST LEVER (affected engine)	IDLE
ENGINE START LEVER	CUTOFF
APU (if available)	START & ON BUS
PACK SWITCH (affected side)	OFF
FUEL	BALANCE
If wing anti-ice is required:	
ISOLATION VALVE SWITCH	AUTO

Plan to land at the nearest suitable airport.

ACCOMPLISH ONE ENGINE INOPERATIVE LANDING CHECKLIST (BELOW)

ENGINE OIL FILTER BYPASS

Condition: An engine OIL FILTER BYPASS alert illuminated indicates an impending bypass of the scavenge oil filter.

AUTOTHROTTLE (if engaged)	DISENGAGE
THRUST LEVER	RETARD

Retard until the OIL FILTER BYPASS alert extinguishes.

If the OIL FILTER BYPASS alert extinguishes:

Operate the engine at reduced thrust to keep the alert extinguished.

If the OIL FILTER BYPASS alert remains illuminated:

ACCOMPLISH ENGINE FAILURE/SHUTDOWN CHECKLIST

ENGINE OVERHEAT

Condition: An ENG OVERHEAT light illuminated indicates an overheat is detected on the related engine.

THRUST LEVER	IDLE
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If the ENGINE OVERHEAT light remains illuminated:

ACCOMPLISH ENGINE FAILURE/SHUTDOWN CHECKLIST

ONE ENGINE INOPERATIVE LANDING

Condition: Landing must be accomplished with one engine inoperative.

NOTE: Plan a FLAPS15 LANDING!

Set VREF 15.

If any of the following conditions apply, set VREF to VREF 15 +10 knots:

->Engine anti-ice will be used during landing

->Wing Anti-Ice has been used any time during the flight

->Icing conditions were encountered during the flight/before landing.

NOTE: When VREF15 + 10 Knots is required, the wind additive should not exceed 10.

FOLLOWING DESCENT APPROACH CHECKLIST THAT FOLLOWS SHOULD BE USED:

ANTI-ICE	AS REQUIRED
AIR CONDITIONING AND PRESSURIZATION	SET
ALTIMETERS AND INSTRUMENTS	SET & CROSS CHECKED
N1 & IAS BUGS	CHECKED & SET VREF 15

GO AROUND PROCEDURE	REVIEW
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Accomplish normal go-around procedure EXCEPT:

Use FLAPS1

Maintain VREF15+5 to flap retraction altitude

Limit bank angle to 15 degrees until reaching VREF15+15

Accelerate to flaps1 speed prior to flap retraction.

FOLLOWING LANDING CHECKLIST THAT FOLLOWS SHOULD BE USED:

ENGINE START SWITCH	ON
RECALL	CHECKED
SPEED BRAKE	ARMED
LANDING GEAR	DOWN, 3 GREEN
FLAPS	15 FINAL FLAP SETTING

ENGINE FIRE, SEVERE DAMAGE OR SEPARATION

Condition: Fire is detected in the engine or severe vibration which is associated with the engine or abnormal indications which occur as a result of engine separation from airplane.

AUTOTHROTTLE(if engaged) DISENGAGE
 (Allows throttle levers to remain where manually positioned)

THRUST LEVER CLOSE

FUEL CONTROL LEVER (throttle console) CUTOFF

ENGINE FIRE WARNING SWITCH PULL – ROTATE

TIMER START

(Time for 30 seconds)

If after 30 seconds the engine fire warning remains active, or:
 the ENG OVERHEAT light remains illuminated)

ENGINE FIRE WARNING SWITCH ROTATE TO REMAINING BOTTLE

(NOTE: If Fire indication is not extinguished within 30 seconds of discharging second bottle, assume fire is NOT CONTAINED. EVEN IF VISUAL INDICATIONS OF FIRE DO NOT EXIST. >>>>> LANDING IS URGENT<<<<<)

ISOLATION VALVE SWITCH CLOSE

PACK SWITCH (Affected side) OFF

APU BLEED AIR SWITCH OFF

APU (if available) START

APU GENERATOR SELECT ON WHEN ABLE

FUEL MAINTAIN BALANCE USING CROSSFEED

TRANSPONDER MODE SELECTOR TA

(Prevents climb commands resulting from TCAS that may exceed single engine climb capability.)

If wing anti-ice is required:

ISOLATION VALVE SWITCH (after fire has been extinguished) AUTO

Accomplish the ONE ENGINE INOPERATIVE LANDING checklist (page 6-15)

APU FIRE

Condition: A Fire has been detected in the APU.

APU FIRE WARNING SWITCH

PULL / ROTATE

Rotate the switch to the first position to discharge first fire bottle.

APU START SWITCH

MOVE SWITCH TO OFF POSITION

Do not restart APU as risk of uncontained fire exists.