

EMERGENCY PROCEDURES C-295M VT01										
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GENERAL

SMOKE OR FIRE AT THE COCKPIT OR CARGO CABIN

1. **Masks and Goggles** **ON / ADJUSTED / 100% / EMERGENCY** **ALL**
 Select NORMAL Oxygen when the masks and goggles are cleared of smoke or steam.
2. **MASK Pushbutton** **PRESS** **ALL**
3. Crew status.....**REPORT** **ALL**
4. Cockpit Door..... **CLOSE** **2**
5. Recirculation and Avionics Fans..... **OFF** **2**
6. Passengers Signs..... **ON** **2**
7. Pressurization Mode selector.....**MAN** **2**
8. Manual Rate of Change selector**FULL INCREASE** **2**
9. Manual Cabin Altitude selector**UP** **2**
 If there is not oxygen enough for all passengers, maximum cabin altitude of 10000 ft or MEA (whichever higher).
10. ATC / Loadmaster..... **NOTIFY** **1/2**
11. Descent**A.R.** **1**

CAUTION

If any on-board inflammable material is likely to fire dangerously, consider Cargo Jettison recommendations in AFM section 3. Refer to "CENTER OF GRAVITY LIMITATIONS" in Section I.

12. Whether the smoke has dissipated or not, land at the nearest suitable airport. If it is possible, apply <E.P.-4> "SMOKE EVACUATION".

CAUTION

Bear in mind that if the fire has not been extinguished, ramp opening might intensify it.

NOTE

If it is necessary to continue the flight for a considerable time with the aircraft depressurized, refer to "Fixed Oxygen System - Maximum Duration" table in "Chapter 35 - Oxygen" (Volume I - Systems Description).

SMOKE EVACUATION

- | | | | |
|--|--------------------------------------|---------------|---|
| 1. | Loadmaster..... | NOTIFY | 1 |
| 2. | Pressurization Mode selector..... | MAN | 2 |
| 3. | Manual Rate of Change selector | FULL INCREASE | 2 |
| 4. | Manual Cabin Altitude selector | KEEP UP | 2 |
| <p>If there is not oxygen enough for all passengers, maximum cabin altitude of 10000 ft or MEA (whichever higher).</p> | | | |
| 5. | ATC | NOTIFY | 2 |
| 6. | Descent | A.R. | 1 |
| <p>A. <u>If the smoke goes-off:</u></p> | | | |
| <p>7. Restore normal operation. (END)</p> | | | |
| <p>B. <u>If the smoke does not go-off:</u></p> | | | |
| <p>7. PRESS DUMP Switch</p> | | | |
| | | ON | 2 |
| <p>8. IAS</p> | | | |
| | | MAX 200 KIAS | 1 |

- | | | |
|---------------------|--------|-----|
| 9. Headphones | ADJUST | 1/2 |
| 10. RH window | OPEN | 2 |

NOTE

If the smoke is cargo cabin mainly located, C/M-2 will open the cockpit door and C/M-1 will order to the Loadmaster to open the cargo door after warning the passengers (if any) about it.

WARNING

Before opening the cargo door, the Loadmaster must fit his Safety Harness / Parachute.

11. Re-establish normal conditions once the smoke has been evacuated.
12. Land at nearest suitable airport.

LAVATORY SMOKE / FIRE

- | | | |
|--|-------|---|
| 1. SMK DETECT C/B (R, A5) | PULL | 2 |
| 2. Cockpit Door | CLOSE | 2 |
| 3. Avionic Fan | ON | 2 |
| 4. Extinguish the fire with portable extinguisher..... | | 2 |
| 5. Apply <E.P.-4> "SMOKE EVACUATION" if necessary. | | |
| 6. Whether or not smoke has dissipated, if it cannot be visually verified that the fire has been extinguished, land immediately at the nearest suitable airport. | | |

LANDING WITH ABNORMAL LANDING GEAR CONFIGURATION

- | | | |
|--------------------------------|---------|-----|
| 1. ATC / TWR..... | NOTIFY | 1/2 |
| 2. Crew Briefing | IMPART | 1 |
| 3. Landing gear condition..... | CONFIRM | 1/2 |

A. If the nose wheel is not locked down:

After touchdown, keep the nose up with the elevator and the trim. Retract the flaps and use reverse thrust. Minimize the use of brakes. Lower the nose gently onto the runway while there is still effective elevator control.

After the nose contact, keep control with differential braking.

Continue with point 4.

B. If one main landing gear leg is not locked down:

It is recommended to land with all the landing gear up.

Nevertheless, if it is necessary to land with asymmetric main landing gear:

- Try to consume as much fuel as possible from the side with the insecure landing gear (XFEED and pump) without exceeding the fuel unbalance limits.
- Once the aircraft has touched down, keep the wings levelled as long as possible.
- Once the aircraft has banked, use both reverse thrust and brakes on the safe leg side.
- Try to keep runway-alignment with rudder, available brakes (without antiskid) and the nose wheel steering.

Continue with point 4.

C. If both main landing gear legs are not locked down:

It is recommended to land with all the landing gear up.

If it is nevertheless necessary to land with the landing gear insecure:

- Make initial contact with the rear landing gear fairing at an angle of 8-10° nose up.
- Try to keep runway-alignment with rudder, available brakes and nose wheel steering.

Continue with point 4.

D. If all the landing gear is up:

Try to keep runway-alignment with rudder and asymmetric power.

Hold the nose up as long as possible.

- | | | | |
|----|---|---------|-----|
| 4. | Cargo cabin and Cockpit | PREPARE | ALL |
| 5. | Move the centre of gravity (if required). | | |

Before entering the circuit:

- | | | | |
|-----|-------------------------------------|---------------------|-----|
| 6. | V _{ref} | CALCULATE | 2 |
| 7. | Passengers Signs | ON | 2 |
| 8. | Crew Oxygen | CLOSE | 2 |
| 9. | Landing Data | CONFIRM | 1/2 |
| 10. | Exterior Lights | A.R. | 1 |
| 11. | Emergency and Entrance Lights | ON | 2 |
| 12. | Altimeters / Radioaltimeter | ADJUST __ & X-CHECK | 1/2 |
| 13. | Cabin Report | RECEIVE | 1/2 |
| 14. | N.P. "APPROACH" | PERFORM | ALL |

Before landing:

15. Flaps.....	23° (DN)	2
16. LDG GR PDS C/B (U3, A3)	PULL	2
17. TERR INHB, GPWS INHB and AUDIO INHB Pb.....	PRESS	2
18. Bleed switches.....	OFF	2
19. PRESS DUMP Switch	ON	2
20. PSHR DSARM Pushbutton.....	A.R.	1
21. V _{ref}	MAINTAIN	1
22. N.P. "BEFORE LANDING"	PERFORM	ALL

At 150 ft:

23. "Brace for impact"	ORDER	2
------------------------------	-------	---

With aircraft stopped:

24. Parking Brake (if required).....	SET	1
25. FFLs	DIRECTLY TO OFF	2
26. Fire Handles	PULL AND TURN BOTH TO DISCH 1	2
27. Fuel Pumps	OFF	2
28. Evacuation.....	ORDER	1
29. MSTR ELEC (BAT and GEN) Switches.....	OFF	1

FORCED LANDING

Preparation (if time enough):

NOTE

Wherever possible, all passengers must sit together leaving no spaces in between each other and at the forward part of the cargo cabin.

1.	Loadmaster.....	NOTIFY	1/2
2.	ATC	NOTIFY	2
3.	IFF (if no other code is required).....	7700	2
4.	Altimeters / Radioaltimeters	ADJUST __ & X-CHECK	1/2
5.	Fuel Reduction / Transfer	CONSIDER	1
6.	V _{ref}	CALCULATE	1/2
7.	Pressurization	ADJUST	2
8.	Oxygen	CLOSE / OFF	2
9.	Cargo cabin and Cockpit	PREPARE	ALL
10.	Exterior lights	A.R.	1
11.	Emergency and Entrance Lights.....	ON	2
12.	Cabin report.....	RECEIVE	1/2
13.	Final memory actions.....	REVIEW	1/2

Approach:

14.	Passengers signs	ON	2
15.	Landing Gear	A.R.	2

Consider, depending on the chosen field for landing, convenience to land with the landing gear extended or retracted.

16. Flaps.....	23° (DN)	2
17. LDG GR PDS C/B (U3, A3)	A.R.	2
18. TERR INHB, GPWS INHB and AUDIO INHB Pb.....	PRESS	2
19. Bleed switches.....	OFF	2
20. PRESS DUMP Switch	ON	2
21. Last ATC Message	TRANSMIT	2
22. ELT	ON	2
23. PSHR DSARM.....	PRESS	2
24. Vref	MAINTAIN	1
25. Fuel Pumps.....	OFF	2
26. Harness	LOCK	1/2

Imminent contact:

27. "Brace for impact"	ORDER	2
------------------------------	-------	---

Upon contact:

28. FFLs	DIRECTLY TO OFF	2*
29. Fire Handles	PULLED	2

When the aircraft stops:

30. Fire Handles	TURN BOTH TO DISCH 1	2
31. Evacuation.....	ORDER	1
32. Portable ELT.....	REMOVE	LM
33. MSTR ELEC (BAT and GEN) Switch.....	OFF	1

DITCHING

Preparation (if time enough)

NOTE

Wherever possible, all passengers must sit together leaving no spaces in between each other and at the forward part of the cargo cabin.

1. Loadmaster.....	NOTIFY	1/2
2. ATC	NOTIFY	2
3. IFF (if no other code required)	7700	2
4. Altimeters / Radio altimeter	ADJUST ___ & X-CHECK	1/2
5. Reduction / Transfer of Fuel	CONSIDER	1
6. V _{REF}	CALCULATE	1/2
7. Pressurization	ADJUST	2
8. Oxygen	CLOSE / OFF	2
9. Cargo cabin and Cockpit	PREPARE	ALL
10. Exterior lights	A.R.	1
11. Emergency and Entrance Lights.....	ON	2
12. Cabin Report.....	RECEIVE	1/2
13. Final memory actions.....	REVIEW	1/2

Approach:

14. Passengers signs	ON	2
15. Landing gear.....	UP / THREE "UP"	2
16. Flaps.....	23° (DN)	2
17. LDG GR PDS C/B (U3, A3)	PULL	2
18. TERR INHB, GPWS INHB and AUDIO INHB Pb.....	PRESS	2

19. Bleed switches.....	OFF	2
20. PRESS DUMP Switch	ON	2
21. Last ATC Message	SEND	2
22. ELT	ON	2
23. PSHR DSARM Pushbutton.....	PRESS	1
24. V _{REF} (rate of descent as low as possible)	MAINTAIN	1
25. Fuel Pumps.....	OFF	2
26. Harness	LOCK	1/2

Imminent ditching:

27. "Brace for impact"	ORDER	2
28. Nose Up Attitude.....	10° APPROXIMATELY	1

Upon contact:

29. FFLs	DIRECTLY TO OFF	2*
30. Fire Handles	PULLED	2

When the aircraft stops:

31. Fire Handles	TURN BOTH TO DISCH 1	2
32. Evacuation.....	ORDER	1
33. Portable ELT.....	REMOVE	LM
34. MSTR (BAT and GEN) Switches	OFF	1

WARNING

Do not open any doors if (even partially) under water.

ON GROUND EMERGENCIES

ENGINE FIRE OR SEVERE DAMAGE ON GROUND

- | | | |
|--|-----------------|----|
| 1. PLs (both) | GI | 1 |
| 2. Parking Brake (with aircraft stopped) | SET | 1 |
| 3. FFL (affected engine)..... | DIRECTLY TO OFF | 2* |

NOTE

Consider delaying foregoing action on non-affected engine until airplane is safely positioned.

- | | | |
|---------------------------------------|--------------------|----|
| 4. Fire Handle (affected engine)..... | PULL / CHECK READY | 2* |
|---------------------------------------|--------------------|----|

A. If all the fire indications go off:

- | | | |
|--|--|--|
| 5. Apply <E.P.-15> "ENGINE SHUTDOWN ON GROUND".
(END) | | |
|--|--|--|

B. If any fire indication persists:

- | | | |
|--|-------------------------------|----|
| 5. Fire Handle (affected engine) | TURN TO DISCH 1 / CHECK EMPTY | 2* |
|--|-------------------------------|----|

- | | | |
|---------------|---------|---|
| 6. Clock..... | RUNNING | 2 |
|---------------|---------|---|

B.1. If all fire indications go off before 30 seconds:

- | | | |
|--|--|--|
| 7. Apply <E.P.-15> "ENGINE SHUTDOWN ON
GROUND". (END) | | |
|--|--|--|

B.2. If any fire indication persists after 30 seconds:

- | | | |
|--|-------------------------------|----|
| 7. Fire Handle (affected engine) | TURN TO DISCH 2 / CHECK EMPTY | 2* |
|--|-------------------------------|----|

- | | | |
|-------------------------|-----|---|
| 8. Bleed switches | OFF | 2 |
|-------------------------|-----|---|

- | | | |
|--------------------|-----|---|
| 9. Fuel Pumps..... | OFF | 1 |
|--------------------|-----|---|

10. GPU Switch..... OFF 2
11. Apply <E.P.-18> "GROUND EVACUATION".

ENGINE FAILURE AT TAKEOFF

If an engine failure occurs before reaching the decision speed at takeoff (V_1), apply <E.P.-14> "ABORTED TAKEOFF".

If an engine failure occurs above V_1 , the takeoff must be continued. The corresponding procedure will not be applied until the takeoff is complete, except in case of:

- ENGINE FIRE OR SEVERE DAMAGE or
- ENGINE FAILURE WITH AUTOFEATHER FAILURE

ABORTED TAKEOFF

1. PLs GI 1

WARNING

If Take-Off is aborted due to engine fire or severe damage, do not use reverse power.

2. Brakes A.R. 1
3. Control Column SLIGHT FORWARD FORCE 2
4. Corresponding Emergency Procedure APPLY 1/2

Once the Aircraft is stopped the corresponding Emergency Procedure shall be applied.

ENGINE SHUTDOWN ON GROUND

- | | | |
|--|-----------------|----|
| 1. PLs (both) | GI | 1 |
| 2. Parking Brake (with aircraft stopped)..... | SET | 1 |
| 3. FFL (affected engine) | DIRECTLY TO OFF | 2* |
| 4. Fuel PUMP pushbutton (affected engine)... | PRESS / CHECK | 2 |
| 5. Electrical System | CHECK BUS TIE | 2 |
| 6. Generator (affected engine)..... | OFF | 2 |
| 7. Reduce electrical loads below 400A. Refer to <E.P.-28>
"DUAL DC GENERATORS FAILURE". | | |

NOTE

Park and/or apply <E.P.-18> "GROUND EVACUATION".

EMERGENCY BRAKING

- | | | |
|--|-------|---|
| 1. Brakes Pressure | CHECK | 2 |
| A. <u>If pressure is available at the normal brakes accumulator:</u> | | |

NOTE

With 3000 PSI at the BKR PRESS Indicator, the accumulator allows at least six normal brakes full operations.

- | | | |
|---|----------------|---|
| 2. AntiSkid | OFF | 2 |
| <i>With the aircraft firmly grounded:</i> | | |
| 3. Normal Brakes..... | APPLY SMOOTHLY | 1 |

CAUTION

Do not pump the brakes to avoid accumulator pressure fast discharging.

4. If there is no more pressure in the Normal Brakes accumulator, continue with section B.

B. If there is no pressure available at the normal brakes accumulator:

NOTE

Before using the emergency brakes, completely release the pressure on normal brakes pedals.

NOTE

With 3000 psi at the EMER BKR PRESS indicator, the accumulator allows at least six emergency brake full operations, if correctly used.

NOTE

Antiskid is unavailable.

With the aircraft firmly grounded:

2. Emergency Brake APPLY SMOOTHLY

1

CAUTION

Do not pump the brakes to avoid accumulator pressure fast discharging.

3. If there is no more pressure in the emergency brakes accumulator, continue with section C.

C. If there is no pressure available at the normal brakes accumulator and the emergency brakes accumulator:

2. Use reverse judiciously for braking, as well as for directional control in conjunction with rudder control, and if available, with nosewheel steering.

NOTE

If necessary, as braking aid, consider to retract the landing gear.

ELECTRICAL SMOKE OR FIRE ON GROUND

- | | | |
|---|------------------------|------------|
| 1. Tower / Loadmaster / Ground Personnel..... | NOTIFY | 1/2 |
| 2. MSTR ELEC BAT and GEN Switches (and GPU)..... | OFF | 2 |
| 3. Both PLs | GI | 1 |
| 4. Parking Brake (with aircraft stopped) | SET | 1 |
| 5. Both FFLs | DIRECTLY TO OFF | 2 |
| 6. If necessary, apply <E.P.-18> "GROUND EVACUATION". | | |

GROUND EVACUATION

WARNING

If a hot brake is suspected or main wheel well fire exists, use reverse thrust to stop the aircraft, once the aircraft is stopped do not use parking brake.

If a main wheel well fire exists, or if hot brakes are suspected, chock the nose wheel only.

Do not approach the main wheel area when extreme temperatures due to excessive braking are suspected. All personnel other than the fire department should evacuate the immediate area. The area on both sides of the wheel will be cleared of personnel and equipment for at least 300 feet. If conditions require personnel to be close to any overheated wheel or tire assembly, the approach should only be from the fore or aft of the wheel area.

- | | | |
|---|------------------------|------------|
| 1. Parking Brake (with aircraft stopped) | SET | 1 |
| 2. Tower, Loadmaster, Ground Personnel | NOTIFY | 1/2 |
| 3. FFLs | DIRECTLY TO OFF | 2 |
| 4. Both Fire Handles | PULL | 2 |
| 5. Both Fire Handles (if required) | TURN TO DISCH 1 | 2 |
| 6. Emergency Lights | ON | 2 |
| 7. PRESS DUMP switch | ON | 2 |
| 8. Ramp | A.R. | 2 |
| 9. Evacuation | ORDER | 1 |
| 10. MSTR ELEC BAT and GEN Switches (and GPU) | OFF | 1 |
| 11. Leave the aircraft | | ALL |

ENVIRONMENTAL CONTROL

AIR-CONDITIONING SMOKE

1. **Masks and Goggles** **ON / ADJUSTED / 100% / EMERGENCY** **ALL**

Select NORMAL Oxygen when the masks and goggles are cleared of smoke or steam.

2. **MASK Pushbutton** **PRESS** **ALL**

3. Crew status **REPORT** **ALL**

4. Recirculation Fans **OFF** **2**

5. ATC / Loadmaster **NOTIFY** **1/2**

6. Corresponding Bleed Switch **OFF** **2**

A. If the smoke decreases or does not increase (after 2 minutes):

The smoke was coming from the disconnected pack. If necessary, apply <E.P.-4> "SMOKE EVACUATION". (END)

B. If the smoke continues to increase:

7. Bleed Switch previously turned off **ON** **2**

8. Other Bleed Switch **OFF** **2**

B.1. If the smoke decreases or does not increase (after 2 minutes):

The smoke was coming from the disconnected pack. If necessary, apply <E.P.-4> "SMOKE EVACUATION". (END)

B.2. If the smoke continues to increase:

9. Bleed Switch previously turned off **ON** **2**

10. Land at the nearest suitable airport.

11. If necessary, apply <E.P.-4> "SMOKE EVACUATION".

PCKG BLEED

1. PCKG BLEED pushbutton PRESS 2
- A. If the "PCKG BLEED" light goes off:
2. Check that the corresponding Bleed Magnetic Indicator is in line. The normal system conditions have been re-established. (END)
- B. If the "PCKG BLEED" light remains on:
2. Corresponding Bleed Switch OFF 2

O.TEMP LIGHT ON

1. Recirculation Fan CHECK / ON 2
- A. If the "O.TEMP" light goes off:
2. Keep flying in normal operation. (END)
- B. If the "O.TEMP" light remains on:
2. Corresponding Temp. Sel. knob ROTATE TO COLD 2
- B.1. If the "O.TEMP" light goes off:
3. Continue with the Temperature Control in Automatic Mode. (END)
- B.2. If the "O.TEMP" light remains on:
3. O.TEMP Pushbutton PRESS 2

B.2.1. If the "O.TEMP" light goes off:

4. Continue with the Temperature Control in Manual Mode. (END)

B.2.2. If the "O.TEMP" light remains on:

4. Corresponding Bleed Switch OFF 2

RAPID DEPRESSURIZATIONA. If flying altitude is over 15000 ft:

1. **Masks** **ON / 100%** **ALL**
2. **MASK Pushbutton** **PRESS** **ALL**
3. Crew statusREPORT **ALL**

Proceed to Section B.

B. If flying altitude is below 15000 ft:

1. Passengers Signs ON 2
2. ATC / Loadmaster NOTIFY 2
3. IFF (if no other code required).....7700 2
4. Automatic Pilot DISENGAGE 1
5. PLs FI 1
6. PRS TOGA 1
7. FI SEL PushbuttonA.R. 1
8. Descent (MAX V_{MO}).....INITIATE 1

NOTE

Descend to 10000 ft or MEA, whichever higher.

CAUTION

If structural integrity is suspected, reduce airspeed as much as possible (min. V_{REF} / max. V_{FE}). Extend flaps 23° and landing gear.

CAUTION

The Loadmaster will supply oxygen to those passengers requiring it.

EXCESSIVE CABIN DIFFERENTIAL PRESSURE

- | | | |
|--|---------------|---|
| 1. Pressurization Mode selector..... | MAN | 2 |
| 2. Manual Rate of Change selector..... | FULL INCREASE | 2 |
| 3. Manual Cabin Altitude selector | KEEP UP | 2 |
| A. <u>If it is not possible to keep the differential pressure in the green zone:</u> | | |
| 4. Bleed Switches..... | OFF | 2 |
| 5. PRESS DUMP Switch (with aircraft depressurized) | ON | 2 |

NOTE

After landing, while reaching the parking position, open a window. (END)

A.1. If the CABIN warning comes on:

6. Apply <E.P.-23> "LOSS OF PRESSURIZATION".

LOSS OF PRESSURIZATION

- | | | |
|---------------------------|-----------|-----|
| 1. Masks | ADJUSTED | ALL |
| 2. MASK Pushbutton | PRESS | ALL |
| 3. Crew status | REPORT | ALL |
| 4. Passengers Signs | ON | 2 |
| 5. ATC / Loadmaster | NOTIFY | 2 |
| 6. Automatic Pilot | DISENGAGE | 1 |
| 7. Descent | INITIATE | 1 |

Descent will be performed until the CABIN annunciator goes off or until MEA, whichever higher.

CAUTION

If structural integrity is suspected, reduce airspeed as much as possible (min. V_{REF} / max. V_{FE}). Extend flaps 23° and landing gear.

CAUTION

The Loadmaster will supply oxygen to those passengers requiring it.

- | | | |
|---|-------|---|
| 8. Pressurization | RESET | 2 |
| A. <u>Pressurization panel "FAULT" light off:</u> | | |

(END)

B. Pressurization panel "FAULT" light on:

- | | | |
|------------------------|------------------|---|
| 9. Pressurization..... | OPERATE MANUALLY | 2 |
|------------------------|------------------|---|

NOTE

If it is not possible to maintain a Cabin Altitude lower than 10000 ft, refer to "Fixed Oxygen System - Maximum Duration" table in "Chapter 35 - Oxygen" (Volume I - Systems Description).

WINDSHIELD/WINDOW CRACKED

- | | | |
|-----------------------------------|----------|-----|
| 1. Harnesses and seat-belts | LOCK | ALL |
| 2. Layer with the crack..... | IDENTIFY | 1/2 |

Identify by any possible mean if the inner layer is cracked. A good way to identify if the inner layer is cracked is to try to touch the crack with the finger nail or with a pen.

A. Inner layer is cracked:

CAUTION

Outer layer integrity cannot be guaranteed.

- | | | |
|--------------------------------------|----------------|-----|
| 3. Helmet / Goggles..... | DON | ALL |
| 4. SEAT BELTS Pb | ON | 2 |
| 5. Pressurization Mode Sel | MAN | 2 |
| 6. Manual Cabin Alt | A.R. (0.6) | 2 |
| 7. Altitude | 10000 FT / MEA | 1 |
| 8. Land at nearest suitable airport. | | |

3000 ft above landing airfield altitude:

9. Pressurization.....AUTO / ADJUST 2
(END)

B. Inner layer is not cracked:

3. Continue flight normally. (END)

DOOR UNLOCKED

1. Passengers Signs (No Smoke and Seat Belts)..... ON 2

A. If the crew door/ramp door light is on:

2. The aircraft will depressurize automatically. Apply <E.P.-21> "RAPID DEPRESSURIZATION" and land at the nearest suitable airport". (END)

B. If the emergency door/paratroops door light is on:

2. Aircraft..... LEVEL AND STABILIZE 2

3. Safety Harness / Parachute..... FIT LM

4. Door Closed CHECK LM

B.1. The light goes off:

5. Continue flight normally. (END)

B.2. If the light remains on, or both door and locking device cannot be checked:

5. Cabin Differential Pressure MAINTAIN POSITIVE 2

6. Assess whether it is advisable to keep flying or land at the nearest suitable airport. 1

AUTO FLIGHT

ELEVATOR MISTRIM

1. Control ColumnsHOLD FIRMLY 1/2
2. Elevator re-trimA.R. 1
3. If necessary, autopilot can be reengaged after manually trimming the airplane.

PITCH TRIM FAILURE

1. Control ColumnsHOLD FIRMLY 1/2
2. Elevator re-trimA.R. 1
3. If necessary, autopilot can be reengaged after manually trimming the airplane.

AILERON / RUDDER MISTRIM

A. If "MISTRIM (L WING DN)" or "MISTRIM (R WING DN)" is displayed:

- | | | |
|----|--------------------------------|-----|
| 1. | Control Wheels.....HOLD FIRMLY | 1/2 |
| 2. | Normal Trim.....A.R. | 1 |

B. If "MISTRIM (TRIM NOSE LEFT)" or "MISTRIM (TRIM NOSE RIGHT)" is displayed:

- | | | |
|----|-------------------------|-----|
| 1. | PedalsHOLD FIRMLY | 1/2 |
| 2. | Normal Trim.....A.R. | 1 |

AUTOPILOT FAILURE WARNING

- | | | |
|----|---------------------------------------|-----|
| 1. | Automatic Pilot.....DISENGAGE / CHECK | 1/2 |
| 2. | Automatic Pilot.....A.R. | 1/2 |

ELECTRICAL

DUAL DC GENERATORS FAILURE

1. BAT BUS TIE Selector OFF 2
2. Generators RESET / ON (MAX 2 ATTEMPTS) 2

A. If no generator is recovered:

CAUTION

When the TRU selector is not in OFF position, LH and RH miscellaneous buses are lost.

3. TRU Selector 1 (if M.I. not in line, rotate to 2) 2
4. BAT BUS TIE Selector ON 2
5. Hydraulic Pumps MAN / A.R. 2

When necessary, use only the hydraulic pump corresponding to the operative TRU (1 or 2).

6. GEN Switches (1 and 2) OFF 2
7. Land at the nearest suitable airport. Reduce electrical loads below 300 A. Refer to "LIST OF ELECTRICAL LOADS" at the end of this procedure. (END)

B. If only one generator is recovered:

3. Unrecovered Generator OFF 2
4. BAT BUS TIE Selector AUTO 2

If the BAT BUS TIE magnetic indicator is not in line, the BUS UNTIE warning will come on. Set the BAT BUS TIE selector to ON. If the magnetic indicator is still not in line, set it to OFF and press the GEN BUS TIE pushbutton.

5. Hydraulic PumpsMAN / A.R. 2

When necessary, use only the hydraulic pump corresponding to the operative generator (1 or 2).

6. Reduce electrical loads below 400 A. Refer to "LIST OF ELECTRICAL LOADS" at the end of this procedure.
(END)

C. If both generators are recovered:

3. BAT BUS TIE SelectorAUTO 2
(END)

LIST OF ELECTRICAL LOADS

Hydraulic pump #1 or #2 (under load)	60 (130) A
Windshield Heating (1)	44 A
Recirculation fan (1)	35 A

BUS UNTIE

1. Bus bar RESET button (once only)..... PRESS 2
 - A. If the BAT-GEN magnetic indicator goes to in-line position:
 Continue normal operation. (END)
 - B. If the BAT-GEN magnetic indicator remains in crossline position:
2. BAT BUS TIE Selector ON 2
 - B.1. If the BAT BUS TIE Magnetic Indicator moves to in-line position:
 3. Reduce electrical loads to below 400 A. Refer to "LIST OF ELECTRICAL LOADS" in <E.P.-28> "DUAL DC GENERATORS FAILURE". (END)
 - B.2. If the BAT BUS TIE Magnetic Indicator does not go to in-line position:
3. BAT BUS TIE Selector OFF 2
4. GEN BUS TIE Pushbutton PRESS 2
5. Land at nearest suitable airport. If the battery has been disconnected or discharged, V/UHF and pitot heating on the affected side will not be available. Autopilot disconnection will occur. Consequently:
 - Transfer the functions between C/M-1 and C/M-2 if No. 1 Battery bus has failed.
 - Avoid icing zones.
 - Match the PL without indication with the other.

Other systems requiring special actions will have also been lost:

- If BAT bus 1 has been lost:

CAUTION

Ice Detector has been lost. If ice conditions are suspected, apply the next step to recover the system.

- A. **Inverters:** Main inverter has been lost;
Apply <E.P.-35> "INVERTER FAILURE".
- B. **Communications:** IOP 1 has been lost;
Apply <E.P. -84> "IOP FAILURE".
- C. **Flaps:** Land with the available flaps (according to cut-off level) with $V_{REF} + 1kt$ for each degree below 25°. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to "LANDING DISTANCES TABLE" to ensure that the selected airport is landing convenient.
- D. **Landing Gear:** Apply <E.P.-63> "LANDING GEAR EMERGENCY LOWERING". There is a valid landing gear indication.
- E. **Trim:** Only normal rudder, standby aileron and standby elevator trims are operative.
- F. **Engines:** The igniters in both engines are inoperative. Then, in flight, the engines cannot be restarted and autoignition is not operative.
- G. **Hydraulic Pumps:** Hydraulic pumps No. 1 and No. 3 have been lost. Use the remaining hydraulic pump for braking. Nose wheel steering is lost.
- H. **Ice Protection:** Left windshield heating has been lost.

- I. **EFIS:** C/M-1 PFD and C/M-2 ND have been lost. In C/M-1 side, to display PFD information in ND, switch off PFD in EFIS control panel.

(END)

- If BAT bus 2 has been lost:
 - A. **Flaps:** Land with the available flaps (according to cut-off level) with $V_{REF} + 1kt$ for each degree below 25°. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to "LANDING DISTANCES TABLE" to ensure that the selected airport is landing convenient.
 - B. **Trim:** Only standby rudder, normal aileron and normal elevator trims are operative. Trim indication is lost.
 - C. **Pressurization:** Automatic mode is lost, operate manually.
 - D. **Engines:** The engines cannot be started in-flight.
 - E. **Hydraulic Pumps:** Hydraulic pumps No.2 and No.3 have been lost. Use the remaining hydraulic pump for landing gear extension and normal braking (without brake pressure, hydraulic pressure and hydraulic quantity indications) and for nosewheel steering.

Apply <E.P.-63> "LANDING GEAR EMERGENCY LOWERING".

DC GEN & BUS UNTIE

1. Affected Generator RESET / ON (MAX 2 ATTEMPTS) 2

A. If the "GEN" magnetic indicator goes to in-line position and the annunciator goes off:

(END)

B. If the "GEN" magnetic indicator goes to in-line position and the "BUS UNTIE" annunciator persists:

2. Apply <E.P.-30> "BUS UNTIE". (END)

C. If the "GEN" magnetic indicator remains at crossline position and both annunciators persist:

2. Affected Generator OFF 2

C.1. If the BAT BUS TIE Magnetic Indicator is at in-line position:

3. Corresponding bus RESET button PRESS 2

C.1.1. If the BAT-GEN Magnetic Indicator goes to in-line position:

4. Proceed to step 7 of section C.2.2.

C.1.2. If the BAT-GEN Magnetic Indicator remains at crossline position:

The corresponding generator bus and its associated equipment have been lost:

- If GEN bus 1 has been lost: Engine Air Inlet De-Icing, Fuel Indication, Windshield Wiper, propeller deicing, AOA heater and Pack have been lost on the left side. Front Anti-Skid, ramp operation, Weather Radar and Wing and Tail De-Icing AUTO Mode have also been lost.

- If GEN bus 2 has been lost: Engine Air Inlet De-Icing, Fuel Indication, Windshield Wiper, propeller deicing, AOA heater, aux pitot and Pack have been lost on the right side. Rear Anti-Skid, Hydraulic Pump No. 3, and both Wing and Tail De-Ice MAN Mode have also been lost.

4. Proceed to step 7 of section C.2.2.

C.2. If the BAT BUS TIE Magnetic Indicator is at crossline position:

3. BAT BUS TIE Selector ON 2

C.2.1. If the BAT BUS TIE Magnetic Indicator goes to in-line position:

4. Proceed to section C.1.2.

C.2.2. If the BAT BUS TIE Magnetic Indicator remains at crossline position:

NOTE

The related BAT BUS has been lost. After finishing this procedure, proceed to step 5 of section B.2. in <E.P.-30> "BUS UNTIE".

4. BAT BUS TIE Selector..... OFF 2

5. GEN BUS TIE Pushbutton..... PRESS 2

6. Hydraulic PumpsMAN / A.R. 2

When necessary, connect only the hydraulic pump corresponding to the operative generator (1 or 2).

7. Reduce electrical loads below 400 A. Refer to "LIST OF ELECTRICAL LOADS" in <E.P.-28> "DUAL DC GENERATORS FAILURE".

GEN HOT

1. Affected Generator OFF 2
2. Bat Bus Tie Magnetic IndicatorCHECK IN LINE 2
 If the BAT BUS TIE magnetic indicator is not in line, set the selector to ON. If still not in line, set the BAT BUS TIE selector to OFF and press the GEN BUS TIE pushbutton.
3. Hydraulic Pumps.....MAN / A.R. 2
 When necessary, connect only the hydraulic pump corresponding to the operative generator (1 or 2).
4. Reduce electrical loads below 400 A. Refer to "LIST OF ELECTRICAL LOADS" in <E.P.-28> "DUAL DC GENERATORS FAILURE".

If the "GEN HOT" warning goes off (after a few minutes):

5. Affected Generator (once only)..... RESET / ON 2
6. Disconnected Electrical Loads.....REPLACE 2
7. Hydraulic Pumps.....AUTO 2

NOTE

If the GEN HOT warning comes on again, apply the procedure again only up to step 4.

INVERTER FAILURE

1. MAIN Inverter Pushbutton PRESS 2
2. STBY Inverter Pushbutton PRESS 2

BAT HOT/WARM

A. "BAT HOT" warning on:

1. Affected Battery (above 150 °F) OFF 2
(END)

B. If only "BAT WARM" warning is on:

1. Monitor the battery rate of recharge 2

B.1. If the batteries recharging rate is normal:

Monitoring the batteries rate of recharge (each 2 minutes at least) and temperature. (END)

B.2. If the batteries rate of recharge is abnormal:

2. Affected Battery OFF 2
3. Let the affected battery cool down for 5 minutes after the WARM light has gone off.
4. Affected Battery ON 2

NOTE

If the WARM light comes on again, disconnect the affected battery for the rest of the flight.

AC GEN

NOTE

The display of the AC GEN annunciator in the IEDS, below 70% N_P is normal as the alternator is not connected up to this value.

CAUTION

After finishing this procedure, continue monitoring the engine of the affected AC GEN for the rest of the flight. If smoke or sparks are detected, immediately follow up <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN".

"1 AC GEN" WITH ICE PROTECTION OFF:

- | | | |
|-------------------------------|-------------------|---|
| 1. Left Propeller | CHECK UNFEATHERED | 2 |
| 2. MISC XFR..... | PRESS | 2 |
| 3. 1 MISC Master Switch | OFF / ON | 2 |

A. If "1 AC GEN" does not come on again:

- | | | |
|---|-------|---|
| 4. MISC XFR | PRESS | 2 |
| 5. Continue flight in normal operation. | | |

(END)

B. If "1 AC GEN" comes on again:

- | | | |
|-------------------------------|-----|---|
| 4. 1 MISC Master Switch | OFF | 2 |
|-------------------------------|-----|---|

(END)

"1 AC GEN" WITH ICE PROTECTION ON:

- | | | |
|---|-------------------|---|
| 1. Left Propeller | CHECK UNFEATHERED | 2 |
| 2. MISC XFR..... | PRESS | 2 |
| 3. 1 MISC Master Switch | OFF | 2 |
| 4. L ENG AIR INLET and/or L PROPELLER pushbutton
..... | RESET | 2 |

A. If "1 AC GEN" and "1 P/D-ICE" and / or "1 E/D-ICE" comes on again:

- | | | |
|----|--|---------|
| 5. | Apply <E.P.-60> "PROPELLER DE-ICE" and / or <E.P.-59> "ENGINE DE-ICING". | |
| 6. | 1 MISC Master Switch | ON 2 |
| 7. | MISC XFR | PRESS 2 |

NOTE

If the other AC Generator also fails and cannot be recovered, the Distributor Valves heaters of the Wing and Tail De-Icing system will be lost as well as the Propeller De-Icing system.

(END)

B. If "1 AC GEN" does not come on again:

- | | | |
|----|----------------------------|---------|
| 5. | 1 MISC Master Switch | ON 2 |
| 6. | MISC XFR | PRESS 2 |

B.1. If "1 AC GEN" comes on again:

- | | | |
|----|--|---------|
| 7. | MISC XFR | PRESS 2 |
| 8. | 1 MISC Master Switch | OFF 2 |
| 9. | L ENG AIR INLET and/or L PROPELLER pushbutton
..... | RESET 2 |

(END)

B.2. If "1 AC GEN" does not come on again:

7. Continue flight in normal operation.

(END)

"2 AC GEN" WITH ICE PROTECTION OFF:

- | | | |
|-------------------------------|-------------------|---|
| 1. Right Propeller | CHECK UNFEATHERED | 2 |
| 2. 2 MISC Master Switch | OFF / ON | 2 |

A. If "2 AC GEN" does not come on again:

- | | |
|---|--|
| 3. Continue flight in normal operation. | |
|---|--|

(END)

B. If "2 AC GEN" comes on again:

- | | | |
|-------------------------------|-----|---|
| 3. 2 MISC Master Switch | OFF | 2 |
|-------------------------------|-----|---|

(END)

"2 AC GEN" WITH ICE PROTECTION ON:

- | | | |
|--|-------------------|---|
| 1. Right Propeller | CHECK UNFEATHERED | 2 |
| 2. 2 MISC Master Switch | OFF | 2 |
| 3. R ENG AIR INLET and/or R PROPELLER pushbutton | RESET | 2 |

A. If "2 AC GEN" and "2 P/D-ICE" and / or "2 E/D-ICE" comes on again:

- | | |
|---|--|
| 4. Apply <E.P.-60> "PROPELLER DE-ICE" and / or <E.P.-59> "ENGINE DE-ICING". | |
|---|--|

- | | | |
|-------------------------------|----|---|
| 5. 2 MISC Master Switch | ON | 2 |
|-------------------------------|----|---|

NOTE

If the other AC Generator also fails and cannot be recovered, the Distributor Valves heaters of the Wing and Tail De-Icing system will be lost as well as the Propeller De-Icing system.

(END)

B. If "2 AC GEN" does not come on again:

- | | | |
|-------------------------------|----|---|
| 4. 2 MISC Master Switch | ON | 2 |
|-------------------------------|----|---|

B.1. If "2 AC GEN" comes on again:

- | | | | |
|-------|--|-------|---|
| 5. | 2 MISC Master Switch..... | OFF | 2 |
| 6. | R ENG AIR INLET and/or R PROPELLER
pushbutton | RESET | 2 |
| (END) | | | |

B.2. If "2 AC GEN" does not come on again:

- | | | |
|-------|--------------------------------------|--|
| 5. | Continue flight in normal operation. | |
| (END) | | |

DC GEN

- | | | | |
|----|--------------------------|-----------------------------|---|
| 1. | Affected Generator | RESET / ON (MAX 2 ATTEMPTS) | 2 |
|----|--------------------------|-----------------------------|---|

A. If the GEN magnetic indicator is in line:

Operate normally. (END)

B. If the GEN magnetic indicator is in the crossline position:

- | | | | |
|----|----------------------------|------------|---|
| 2. | Affected Generator | OFF | 2 |
| 3. | BAT BUS TIE Selector | CHECK AUTO | 2 |

Check that the BAT BUS TIE magnetic indicator is in line. If not in line, the IEDS BUS UNTIE annunciator is on. Set the BAT BUS TIE Selector to ON. If still not in line, set it to OFF and press the GEN BUS TIE Pushbutton.

- | | | | |
|--|--|------------|---|
| 4. | Hydraulic Pumps | MAN / A.R. | 2 |
| When necessary, connect only the hydraulic pump corresponding to the operative generator (1 or 2). | | | |
| 5. | Reduce electrical loads below 400 A. Refer to "LIST OF ELECTRICAL LOADS" in <E.P.-28> "DUAL DC GENERATORS FAILURE" | | |

ELECTRICAL SMOKE OR FIRE IN FLIGHT

1. **Masks and Goggles** **ON / ADJUSTED / 100% / EMERGENCY** **ALL**
 Select NORMAL Oxygen when the masks and goggles are cleared of smoke or steam.

2. **MASK Pushbutton** **PRESS** **ALL**

3. Crew status.....**REPORT** **ALL**

4. Recirculating Fans **OFF** **2**

5. Automatic Pilot (if engaged)..... **DISENGAGE** **2**

6. BAT BUS TIE Selector..... **OFF** **2**

7. BAT and GEN switches (at the pilot's choice)..... **OFF** **2**

- A. *If the smoke or fire signs go out:*
 8. Leave the battery and generator off for the rest of the flight. (END)

- B. *If the smoke or fire signs persist:*
 8. BAT and GEN switches disconnected **ON** **2**
 9. BAT and GEN switches (opposite side) **OFF** **2**
 10. Land at the nearest suitable airport.
 11. Apply <E.P.-3> "SMOKE OR FIRE AT THE COCKPIT OR CARGO CABIN".

FLIGHT CONTROL

ELEVATOR JAMMING

NOTE

If possible, maintain both flap and speed configuration at the failure moment.

- | | | |
|---|-----------------------|-----|
| 1. Automatic Pilot (if engaged) | DISENGAGE | 1 |
| 2. Control Columns..... | FORCE AGAINST JAMMING | 1/2 |
| A. <u>If the jamming goes out:</u> | | |
| 3. Continue normal operation. (END) | | |
| B. <u>If the jamming persists:</u> | | |
| 3. Control Columns | HOLD FIRMLY | 1/2 |
| 4. PITCH Control Disengage Selector | UNTIE | 2* |
| 5. Pilots Functions (depending on free column) | A.R. | 1/2 |
| 6. Configuration and Normal Trim | A.R. | PF |

NOTE

Hold both Control Columns for the rest of the flight.

- Land at nearest suitable airport with less crosswind and turbulence, with flaps at 15° and $V_{REF} + 10$ kts or at minimum V_{TH} , whichever higher. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to LANDING DISTANCE TABLE.

AILERON JAMMING

1. Automatic Pilot (if engaged) **DISENGAGE** **1**
2. IAS (if possible)..... **MAX 150 kts** **1**
- A. If the jamming goes out:
3. Continue normal operation. (END)
- B. If the jamming persists:
3. Control Wheels **HOLD FIRMLY** **1/2**
4. ROLL Control Disengage Selector **UNTIE** **2***
5. Pilots functions (depending on free column) **A.R.** **1/2**
6. Normal Trim **A.R.** **PF**

CAUTION

Hold both wheels during the rest of the flight. Limit bank angle to 15°. Use the rudder as necessary.

7. Land at nearest suitable airport with less crosswind and turbulence, with flaps at 15° and $V_{REF} + 10$ kts or at minimum V_{TH} , whichever higher. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to LANDING DISTANCE TABLE.

RUDDER JAMMING

1. Automatic Pilot (if engaged)..... **DISENGAGE** **1**
2. Use asymmetrical power to counteract sideslip **A.R.** **1**
3. Land at nearest suitable airport with less crosswind and turbulence. Check crosswind, land on the most suitable runway.

AILERON FLOTATION

- | | | |
|--------------------------------------|-------------|---|
| 1. Automatic Pilot (if engaged)..... | DISENGAGE | 1 |
| 2. IAS..... | MAX 150 kts | 1 |
| 3. Hydraulic Pressure | CHECK | 2 |
| 4. Flaps..... | 10° or 15° | 2 |

WARNING

Do not use the aileron trim tabs.

5. Land at nearest suitable airport with less crosswind and turbulence. If landing in crosswind, it is advisable that it be on the side of the floating aileron. Use flaps at 15° and $V_{REF} + 10$ kts or minimum V_{TH} , whichever higher. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to "LANDING DISTANCE TABLE".

RUDDER FLOTATION

- | | | |
|--------------------------------------|-----------|---|
| 1. Automatic Pilot (if engaged)..... | DISENGAGE | 1 |
| 2. Control with banking | A.R. | 1 |

NOTE

Do not use the rudder trim.

PITCH TRIM RUNAWAY

- | | | |
|---|------|---|
| 1. R, L ELEV Selectors guard on STBY TRIMS panel .. | LIFT | 1 |
| 2. R, L ELEV Selectors on STBY TRIMS panel | A.R. | 1 |

AILERON TRIM RUNAWAY

- | | | |
|---|------|---|
| 1. AILERON Selector guard on STBY TRIMS Panel | LIFT | 1 |
| 2. AILERON Selector on STBY TRIMS Panel | A.R. | 1 |

RUDDER TRIM RUNAWAY

- | | | |
|---|------|---|
| 1. RUDDER Selector guard on STBY TRIMS Panel..... | LIFT | 1 |
| 2. RUDDER Selector on STBY TRIMS Panel..... | A.R. | 1 |

RTCS FAILURES

A. If the "RTCS EXP" caution comes on:

- For landing, choose a runway with less than 20 kts of crosswind and land with flaps 15° at $V_{REF} + 10$ or minimum V_{TH} , whichever higher. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to "LANDING DISTANCE TABLE".

B. If the "RTCS MAN" caution comes on:

- Continue flight normally.

B.1. If "RTCS AUTO" caution comes on:

Proceed from point 4 of section C.1.

C. If the "RTCS AUTO" caution comes on:

- | | | |
|--------------------------------|------|---|
| 1. AIRSPEED SEL Selector | A.R. | 2 |
|--------------------------------|------|---|

SPEED	SELECTOR POSITION
Below 140 KIAS	LOW
Between 140 and 200 KIAS	MED
Above 200 KIAS	HIGH

NOTE

Avoid rudder pedals sudden or big displacements as well as sideslip.

- For landing, choose a runway with less than 20 kts of crosswind and land with flaps 15° at $V_{REF} + 10$ or minimum V_{TH} , whichever higher. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to LANDING DISTANCE TABLE.

C.1. If the "RTCS MAN" caution comes on next:

- AIRSPEED SEL selector.....AUTO 2
- Rudder travel limits (with IAS < 140 kts)CHECK 1/2
- Land with flaps 15° and $V_{REF} + 10$ or minimum V_{TH} , whichever higher. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to LANDING DISTANCE TABLE.

RBS FAILURE

- ACTR Pushbutton.....PRESS / OFF 2
- IAS (until landing secured).....MIN $V_{REF} + 35$ KIAS 1

RBS HEATER FAILURE

1. STBY HEATER pushbutton PRESS / SEC 2

If the "RUD HT" caution comes on again:

2. Decrease the aircraft altitude below the icing level. If this is not possible, make frequent Rudder movements to avoid jamming of the actuator due to ice build up.

ELEVATOR TRIM

If the RTCS AUTO caution also comes on, all the Auto trim Modes have been lost, along with Normal Trimming from the control columns PITCH TRIM selectors.

1. Normal Trim CHECK 1
2. R, L ELEV Selectors on STBY TRIMS panelA.R. 1

CAUTION

Operate both elevator trim selectors symmetrically.

RUDDER TRIM

If the "RTCS AUTO" caution also displays, all the Auto trim Modes have been lost, along with Normal Trimming from the pedestal RUDDER TRIM selector.

1. Normal Trim CHECK 1
2. RUDDER Selector on STBY TRIMS PanelA.R. 1

NOTE

If an engine fails at high power, the force on pedals will be noticeably greater.

SWRS FAILURE

Avoid flight conditions close to stall.

1. PSHR DSARM pushbutton PRESS 2

If both "1 SWRS" and "2 SWRS" cautions are displayed in the IEDS:

The Stick-Pusher, both Stick-Shakers and acoustic stall warning have been lost.

FLAPS FAIL

If the "FLAP ASYM" warning comes on at the same time, apply <E.P.-49> "FLAPS ASYM". (END)

1. Hydraulic Pressure CHECK 2
2. Flaps RESET switch RESET 2

A. If caution goes off:

3. Continue flight operating normally. (END)

B. If caution comes on again:

3. Flaps Lever..... ACCORDING TO THE INDICATOR 2
4. Land at the nearest suitable airport at $V_{REF} + 1\text{kt}$ for each flaps degree estimated below 25° , or at minimum V_{TH} , whichever higher. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Do not land with tail wind if the flaps setting is below 15° . Refers to LANDING DISTANCE TABLE.

FLAPS ASYM

1. Automatic Pilot (if engaged)..... DISENGAGE 1
2. IAS..... MAX 175 kts 1
- A. If the flaps lever has been operated without hydraulic power:
 3. Flaps Lever..... ACCORDING TO THE INDICATOR 2
 4. FLAPS SYS C/B (U1, A5) (one attempt only).....PULL 1
 5. Hydraulic Pumps MAN / ON 2

30 seconds after pulling out the circuit breaker:

WARNING

Be prepared for possible losses of lateral trim due to real asymmetry.

6. FLAPS SYS C/B (U1, A5) PRESS 1
- If the FLAP ASYM warning goes off, continue normal operation.

If it does not go off, continue at Section B.

- B. If the flaps lever has been operated with hydraulic power:
 3. Land at the nearest suitable airport at $V_{REF} + 1\text{kt}$ per flaps degree below 25° , or at minimum V_{TH} , whichever higher. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to LANDING DISTANCE TABLE.

FUEL

FUEL LOW

- | | | |
|--|-------|---|
| 1. Corresponding Fuel PUMPS pushbutton | CHECK | 2 |
| 2. Fuel Quantity | CHECK | 2 |

CAUTION

Perform periodical checking of the fuel indications.

CAUTION

In case of potential leakage, detected or not by the crew, take every caution while using reverse thrust during landing to prevent any potential fire.

CAUTION

Avoid sudden manoeuvres, limiting both maximum pitch and sideslip.

The minimum fuel quantity permitted for a Baulked Landing and the following Go Around and Landing is 180 lb (80 kg) in each main tank.

- A. If a fuel leakage is suspected:

CAUTION

If the leakage is big-enough follow up <E.P.-71> "ENGINE SHUTDOWN IN-FLIGHT".

- | | | |
|--|-------|---|
| 3. Corresponding Fuel PUMPS pushbutton | PRESS | 2 |
|--|-------|---|

WARNING

When flying in suction mode above the altitudes stated in the "FUEL SUCTION FEEDING ALTITUDE" table below, be ready for a possible engine flameout.

USED FUEL	Maximum Flight Altitude
JP-8 / Jet A / Jet A-1 / JP-5	13000 ft
JP-4 / Jet B	6000 ft

WARNING

Engine flameout is highly probable to occur using JP-4 or Jet B fuel types when operating in suction mode above 13000 ft.

4. Proceed to 4 of section B.2.

B. If no fuel leakage is suspected:

3. Fuel Quantity CHECK 2

B.1. If crossfeed is possible:

4. X-FEED pushbutton PRESS 2

10 seconds later:

5. Corresponding Fuel PUMPS pushbutton PRESS 2

6. Land at the nearest suitable airport. (END)

B.2. If crossfeed is not possible:

4. While possible, hold a level flight attitude, monitor the fuel quantity on the affected side and be ready for a possible engine flameout.
5. Land at the nearest suitable airport.

FUEL PRESS

CAUTION

Be ready for a possible engine flameout.

- | | | | |
|----|---|-------|---|
| 1. | Corresponding Fuel PUMPS Pushbutton | CHECK | 2 |
| 2. | Fuel Quantity | CHECK | 2 |

CAUTION

If a fuel leakage is detected, disconnect the corresponding fuel pump. If the leakage is big-enough apply <E.P.-71> "ENGINE SHUTDOWN IN-FLIGHT". (END)

CAUTION

In case of a possible fuel leakage that has not been detected by the crew, take extreme care while using the reverse thrust during landing to prevent any potential fire.

- | | | | |
|---|---|-------|---|
| 3. | X-FEED Pushbutton | PRESS | 2 |
| <i>10 seconds later:</i> | | | |
| 4. | Corresponding Fuel PUMPS Pushbutton | PRESS | 2 |
| A. <u>If the "FUEL P" warning remains on:</u> | | | |
| 5. | Corresponding Fuel PUMPS Pushbutton | PRESS | 2 |

10 seconds later:

6. X-FEED Pushbutton PRESS

2

If no fuel leakage is confirmed, disregard the warning. Continue normal operation monitoring engine parameters. (END)

B. If the "FUEL P" warning goes off:

5. X-FEED OperationCONTINUE WHILE POSSIBLE

Keep on mind the maximum allowed asymmetry. Otherwise, press the X-FEED to continue operation using suction, taking note of both time and flight altitude if the recommended operational altitude for this type of operation is overcome.

WARNING

When flying in suction mode above the altitudes stated in the "FUEL SUCTION FEEDING ALTITUDE" table below, be ready for a possible engine flameout.

USED FUEL	Maximum Flight Altitude
JP-8 / Jet A / Jet A-1 / JP-5	13000 ft
JP-4 / Jet B	6000 ft

WARNING

Engine flameout is highly probable to occur using JP-4 or Jet B fuel types when operating in suction mode above 13000 ft.

FUEL COLD

1. Fuel Temperature CHECK 2
 - A. If the fuel temperature is 3°C or above:
 2. Continue normal operation monitoring both engines operation. (END)
 - B. If the fuel temperature is below 3°C:
 2. Corresponding PL ADVANCE 1
If possible, descent to warmer altitudes.
 3. Check the FUEL COLD annunciator 2
If the annunciator remains on, the affected engine indications become abnormal, apply <E.P.-71> "ENGINE SHUTDOWN IN-FLIGHT".

HYDRAULIC

HYDRAULIC HOT

CAUTION

Complete the change of flap configuration if initiated.

- | | | |
|-------------------------|---------|---|
| 1. Hydraulic Pumps..... | MAN/OFF | 2 |
|-------------------------|---------|---|

When the annunciator has gone out:

- | | | |
|--|-------|---|
| 2. Hydraulic Pumps (one at each time)..... | CHECK | 2 |
|--|-------|---|

NOTE

Do not use any pump which gives an overpressure reading (yellow arc) during rest of flight.

When hydraulic pressure is necessary:

- | | | |
|--|----------|---|
| 3. Hydraulic Pump Operative (only one) | MAN / ON | 2 |
|--|----------|---|

NOTE

Do not operate both Flaps and Landing Gear simultaneously.

If the "HYD HOT" annunciator comes on again:

CAUTION

Complete the change of flap configuration if initiated.

- | | | |
|-------------------------|-----------|---|
| 4. Hydraulic Pump | MAN / OFF | 2 |
|-------------------------|-----------|---|

If the Hydraulic System gets out of order due to the "HYD HOT" caution:

5. Apply <E.P.-63> "LANDING GEAR EMERGENCY LOWERING"
6. Land at the nearest suitable airport at $V_{REF} + 1\text{kt}$ for each degree the flaps are below 25° , or at minimum V_{TH} , whichever is higher. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to LANDING DISTANCE TABLE.

CAUTION

Nose wheel steering will not be available.

7. Apply <E.P.-15> "EMERGENCY BRAKING"

HYDRAULIC QUANTITY LOSS

CAUTION

Complete the change of flap configuration if initiated.

- | | | |
|--|---------|---|
| 1. Hydraulic Pumps | MAN/OFF | 2 |
| 2. Antiskid | OFF | 2 |
| 3. Apply <E.P.-63> "LANDING GEAR EMERGENCY LOWERING" (when necessary) | | |
| 4. Land at the nearest suitable airport at $V_{REF} + 1\text{ kt}$ per flaps degree below 25° , or at minimum V_{TH} , whichever higher. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to "LANDING DISTANCE TABLE". | | |

CAUTION

Nose wheel steering will not be available. Antiskid will not be available. Hydraulic pressure at normal brakes accumulator will normally start to decrease progressively. Hydraulic pressure at emergency brakes accumulator will be available until being used.

5. Apply <E.P.-15> "EMERGENCY BRAKING"

HYD PRESS

- A. If all three "HYD P" annunciators come on:

1. Apply <E.P.-56> "HYDRAULIC QUANTITY LOSS".
(END)

- B. If one or two "HYD P" annunciators come on:

1. Operative Hydraulic Pumps..... MAN / ON 2

NOTE

Do not operate both Flaps and Landing Gear simultaneously with only one Hydraulic Pump operative.

2. Affected Hydraulic Pump/sCHECK DISCONNECTED 2

- B.1. If both Pressure and Quantity of Hydraulic Fluid are decreasing:

3. Apply <E.P.-56> "HYDRAULIC QUANTITY LOSS".
(END)

- B.2. If both Pressure and Quantity of Hydraulic Fluid remain normal:

When hydraulic pressure is not required:

3. Hydraulic Pumps Operative OFF 2

ICE AND RAIN PROTECTION

WING AND TAIL DE-ICING FAILURE

A. If the "W&T D-ICE" caution comes on with/without "W&T DGRD":

1. SOV Pushbutton (under guard) PRESS 1

NOTE

The Wing and Tail De-icing System has been lost, as well as the Pressurization System Automatic Control.

2. Pressurization System... OPERATE IN MANUAL MODE 2
3. Leave the icing conditions as soon as possible.

Maintain the limitations of the "MINIMUM AIRSPEEDS IN ICE FORMATION CONDITIONS".

With ice accretion on aircraft surfaces, landing with 23° must be performed at $V_{REF} + 30$ KIAS or at $V_{TH} + 5$ KIAS, whichever is higher. The landing distances shown in the "LANDING DISTANCE TABLE" will increase in 35% over the corresponding values.
(END)

B. If only the "W&T DEGRD" caution comes on:

1. De-Icing Mode SelectorMAN 1
2. De-Icing Supervision Switch..... MON 1
3. Wing and Tail De-Icing .. OPERATE IN MANUAL MODE 1

Press each Manual De-Icing Pushbutton for 6 seconds in a sequential way leaving a 1 to 3 minutes break, depending on the icing accretion observed visually. (END)

B.1. If any ON light does not come on or stays permanently on:

4. Do not operate the faulty pushbutton.
5. Leave the icing conditions as soon as possible.

Maintain the limitations of the "MINIMUM AIRSPEEDS IN ICE FORMATION CONDITIONS".

With ice accretion on aircraft surface, landing with 23° flaps must be performed at $V_{REF} + 30$ KIAS or at $V_{TH} + 5$ KIAS, whichever higher. Landing distances shown in the "LANDING DISTANCES TABLE" will increase in 35% over the corresponding values with 23° flaps and ice-free aircraft.

ENGINE DE-ICING

A. If both "E/D-ICE" caution come on simultaneously with the "W&T D-ICE" caution:

1. SOV pushbutton (under guard) PRESS 1

NOTE

The Wing and Tail De-icing system has been lost as well as the Pressurization Automatic Control.

2. Engine Inlet De-icing pushbuttons (sequentially) RESET 1

NOTE

Reset first the related to one engine and make sure that de-icing and engine operate correctly before doing the same on the other side.

3. Leave icing conditions as soon as possible.

Maintain the limitations of the "MINIMUM AIRSPEEDS IN ICE FORMATION CONDITIONS".

With ice accretion detected on aircraft surfaces, landing with 23° flaps must be performed at $V_{REF} + 30$ KIAS or at $V_{TH} + 5$ KIAS, whichever higher. Landing distances shown in the "LANDING DISTANCES TABLE" will be increased by 35% over the corresponding values with 23° flaps and aircraft ice-free.

4. Pressurization System... OPERATE IN MANUAL MODE 2

A.1. If any "E/D-ICE" annunciator comes on again:

Proceed to section C.

B. If both "E/D-ICE" annunciator come on:

1. Leave icing condition as soon as possible. (END)

C. If only one "E/D-ICE" caution comes on:

1. Corresponding Engine Inlet De-Icing PushbuttonPRESS 1
2. Leave icing conditions as soon as possible.

PROPELLER DE-ICE

A. If both "1P/D-ICE" and "2P/D-ICE" come on simultaneously:

1. Propeller de-icing pushbuttons PRESS 1
2. Leave icing conditions as soon as possible. (END)

B. If only one "P/D-ICE" caution comes on:

1. Corresponding Propeller De-icing pushbutton.... PRESS 1
2. Leave icing conditions as soon as possible.
3. If excessive vibrations are denoted, feather the propeller and, if persist, apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN". Do not unfeather, or restart, until leaving Icing Conditions and visually confirm ice has gone out.

WINDSHIELD HEATING

NOTE

The crew is not required to perform any action if only one FAIL light comes on in one WINDSHIELD pushbutton and no WSHLD caution light is IEDS displayed, since heating is automatically provided from the other system.

- | | | |
|--|-------|---|
| 1. L and R WINDSHIELD Pushbuttons..... | PRESS | 2 |
|--|-------|---|

While at approach phase:

- | | | |
|------------------------------------|-------|-----|
| 2. Vision through the glasses..... | CHECK | ALL |
|------------------------------------|-------|-----|

A. If the vision is acceptable:

(END)

B. If the vision is not acceptable:

- | | | |
|----------------------------------|--------|---|
| 3. Passengers / Loadmaster | NOTIFY | 1 |
|----------------------------------|--------|---|

- | | | |
|------------------|--------------|---|
| 4. Aircraft..... | DEPRESSURIZE | 2 |
|------------------|--------------|---|

When differential Pressure is zero:

- | | | |
|----------------------|-------|---|
| 5. Cockpit Door..... | CLOSE | 2 |
|----------------------|-------|---|

- | | | |
|--------------|--------------|---|
| 6. IAS | MAX 200 KIAS | 1 |
|--------------|--------------|---|

- | | | |
|-----------------|------|---|
| 7. Window | OPEN | 2 |
|-----------------|------|---|

PITOT HEATING

1. Corresponding PITOT pushbutton PRESS 1

Avoid icing conditions. If icing or high humidity conditions appear, the following equipment may turn inoperative:

PITOT HEATING DISCONNECTED	INOPERATIVE SYSTEMS	REQUIRED ACTION
LEFT	C/M-1 Anemometer	Select ADS-2
	Modes FD, IAS, ALT, ALT SEL and VS	AP Disengage
RIGHT	C/M-2 Anemometer	Select ADS-1
	Modes FD, IAS, ALT, ALT SEL and VS	AP Disengage
AUXILIARY	IAS and ALT of the IESI (Reserve Instrument)	Use IAS, ALT information primary systems
	Pressurization Automatic Control, Cabin Altimeter and Differential Pressure Indicator	Avoid climbout/descent above 600/400 fpm respectively. Apply Pressurization Manual Control
	V _{MO} and Flaps Overspeed Warnings	Avoid flight or configuration close to these condition

LANDING GEAR

ABNORMAL LANDING GEAR INDICATION

1. Landing gear pins on board CHECK 2
2. IAS..... MAX 175 kts 1
3. Landing Gear Lever DOWN 2
4. Land at nearest suitable airport.
- A. If all landing gear visual indicators are green (down and locked):
5. Perform normal landing procedure. (END)
- B. If one or more landing gear visual indicators are not green:
5. Apply <E.P.-63> "LANDING GEAR EMERGENCY LOWERING" Emergency Procedure.

LANDING GEAR EMERGENCY LOWERING

1. IAS..... MAX 150 kts 1
2. Lateral Safety Pin PULL AND MAINTAIN 2
3. Landing Gear Emergency Lowering Cover LIFT 2
Keep the cover lifted until the end of flight.
4. Landing Gear Emergency Lowering Lever PULL FULLY OUT 2
- When all three visual viewers have been positioned (green or not):
5. Landing Gear Lever DOWN 1/2
6. Landing Gear Lever CHECK 1/2

A. If the landing gear lever is flashing:

One or more landing gear legs are not DOWN and LOCKED.

7. Apply <E.P.-6> "LANDING WITH ABNORMAL LANDING GEAR CONFIGURATION". (END)

B. If the landing gear lever is not flashing:

All landing gear legs are DOWN and LOCKED.

7. LDG GR C/B (U1, A4)PULL 1

ANTISKID FAILURE

A. If only the "A-SKD DGD" caution comes on:

1. Antiskid.....RESET (OFF / ON) 2

A.1. If caution goes off:

Keep on normal operation. (END)

A.2. If caution remains on:

2. Antiskid KEEP CONNECTED
3. Brake smoothly to avoid wheel bursting at touch down.

NOTE

It is not advisable to taxi with one Main Landing Gear wheel not inflated. (END)

B. If both cautions come on simultaneously:

1. Antiskid.....RESET (OFF / ON)

2

B.1. If both cautions go off:

Keep on normal operation. (END)

B.2. If both cautions remain on:

Antiskid, as well as all its protections, has been lost. Use reverse power carefully only during landing run initial phase. Once the aircraft is firmly grounded, operate brakes smoothly and intermittently to prevent wheels from locking. However, if both tires on Main Landing Gear same side burst only operate brakes at the opposite side.

NOTE

Do not taxi if both tires on the Main Landing Gear same side are not inflated.

The required landing distance depends on both braking technique and runway conditions. This should be considered while runway selecting for landing. See the table below for Landing Distances without Antiskid.

LANDING DISTANCE WITHOUT ANTISKID

(SL, OAT Std. From 50 ft over threshold. No factor with reverse thrust)

		LANDING DISTANCE FROM 50FT									
FLAP	RUNWAY	LANDING WEIGHT (x 1000 kg)									
		12	14	16	17	18	19	20	21	22	23.2
23°	DRY	2720	2720	2825	2920	3000	3085	3179	3275	3375	3500
	WET	2965	2965	3085	3210	3310	3430	3545	3660	3790	3960
15°	DRY	2990	2990	3105	3210	3295	3395	3500	3600	3715	3850
	WET	3305	3305	3450	3575	3680	3810	3960	4070	4299	4355
10°	DRY	3125	3125	3250	3355	3445	3545	3655	3770	3885	4020
	WET	3470	3470	3625	3760	3885	4005	4125	4295	4425	4590
0°	DRY	3395	3395	3525	3645	3750	3855	3965	4095	4220	4380
	WET	3825	3825	3980	4120	4270	4395	4525	4665	4895	5065

Correction over SL Std. OAT.

ALTITUDE: Add 50 ft. for each 1000 ft. of altitude.

OAT: Add 50 ft. for each 10°C above 15°C

Without Reverse: add 200 ft.

PNEUMATIC

BLEED O.TEMP

NOTE

Wait a few seconds before resetting the system.

- | | | | |
|----|-------------------------------|-------|---|
| 1. | BLEED O.TEMP Pushbutton | PRESS | 2 |
|----|-------------------------------|-------|---|

CAUTION

If it comes on again, do not touch the BLEED O.TEMP pushbutton as it would open the HPSOV Valve again.

WING OVERHEAT

- | | | | |
|---|---|---------------------------|-----|
| 1. | Engine parameters | CHECK | 1/2 |
| 2. | Affected PL (Crossed M. I. side) (if necessary) . | RETARD | 1/2 |
| 3. | Clock..... | RUNNING | 2 |
| A. <u>If only one magnetic indicator is at the cross-line position:</u> | | | |
| 4. | Corresponding Bleed Switch | OFF | 2 |
| A.1. <u>If the "WING OVHT" warning goes off before 2 minutes:</u> | | | |
| 5. | Affected PL | OPERATE KEEPING LIGHT OFF | 1 |
| (END) | | | |
| A.2. <u>If the "WING OVHT" warning remains on after 2 minutes:</u> | | | |
| 5. | Bleed Magnetic Indicators..... | CHECK | 2 |

A.2.1. If only one magnetic indicator is at the cross-line position:

6. Apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN"

A.2.2. If both magnetic indicators are at the cross-line position:

6. Proceed to section B.

B. If both magnetic indicators are at the cross-line position:

CAUTION

If both magnetic indicators are at the cross-line position, Cabin pressure loss will start immediately. Get ready for an Emergency Descent.

4. Bleed Switches..... OFF 2

After "WING OVHT" warning has gone off:

5. Left Bleed Switch..... ON 2

B.1. If the "WING OVHT" warning comes on:

6. Left Bleed Switch OFF 2

7. Right Bleed Switch ON 2

8. Continue flight with left bleed switch off.

(END)

B.2. If the "WING OVHT" remains off:

6. Continue flight with right bleed switch off.

POWERPLANT

ENGINE FIRE OR SEVERE DAMAGE IN FLIGHT

WARNING

If performing a Continued Takeoff, wait until a positive rate of climb is reached, operate the landing gear lever up and wait until V_2 is reached before going on with the procedure.

- | | | |
|---------------------------------------|------------------------|------------|
| 1. FFL (affected engine) | DIRECTLY TO OFF | 2 * |
| 2. Fire Handle (affected engine)..... | PULLED | 2 * |
| 3. Clock..... | RUNNING | 2 |

A. If all fire indications go off before 10 seconds:

4. Land immediately in the nearest suitable airport.
5. Apply <E.P.-71> "ENGINE SHUTDOWN IN-FLIGHT". (END)

B. If any fire indication persists after 10 seconds:

- | | | |
|--|------------------------|------------|
| 4. Fire Handle (affected engine) | TURN TO DISCH 1 | 2 * |
|--|------------------------|------------|

B.1. If all fire indication go off before 40 seconds:

5. Land immediately in the nearest suitable airport.
6. Apply <E.P.-71> "ENGINE SHUTDOWN IN-FLIGHT". (END)

B.2. If any fire indication persists after 40 seconds:

- | | | |
|-------------------------------------|------------------------|------------|
| 5. Fire Handle (affected engine)... | TURN TO DISCH 2 | 2 * |
|-------------------------------------|------------------------|------------|
6. Land immediately at the nearest suitable airport.
 7. Apply <E.P.-71> "ENGINE SHUTDOWN IN-FLIGHT".

ENGINE FLAMEOUT

- | | | |
|---|-----------------|----|
| 1. PL (affected engine) | FI | 1 |
| 2. FFL (affected engine, <u>NH < 30%</u>) | DIRECTLY TO OFF | 2* |
| 3. Apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN". | | |

DUAL ENGINE FAILURE

- | | | |
|---|-----------------|----|
| 1. Automatic Pilot (if connected) | DISENGAGE | 1 |
| 2. PLs | FI | 1 |
| 3. FFLs (NH < 30%) | DIRECTLY TO OFF | 2* |
| 4. AOA (in clean configuration) | 0.66 units | 1 |
| 5. NP (both engines) | CHECK NPs < 3% | 2 |
| 6. ATC | NOTIFY | 2 |
| 7. Hydraulic Pumps | MAN / A.R. | 2 |
| 8. Non-essential electrical loads | DISCONNECT | 2 |

CAUTION

The minimum altitude to achieve re-starting and apply maximum power is 800 ft AGL.

WARNING

Do not restart an engine if previously has been shutdown due to fire or severe damage.

- | | | |
|--|---------|---|
| 9. Engine Starting (in BAT Mode) | PERFORM | 2 |
|--|---------|---|

If neither engine starts:

- | | | |
|--|------------|---|
| 10. Non-essential electrical loads | DISCONNECT | 2 |
|--|------------|---|

- | | | |
|---|------|---|
| 11. Flaps (use only one hydraulic pump) | A.R. | 2 |
| 12. Landing Gear Emergency Lowering | A.R. | 2 |

CAUTION

Do not extend the landing gear if there is no convenient ground to land on.

ENGINE SHUTDOWN IN-FLIGHT

CAUTION

Note that if any battery is disconnected or inoperative, the engine cannot be restarted.

- | | | |
|--------------------------------------|-----------------|-----|
| 1. PL (affected engine) | FI | 1 |
| 2. FFL (affected engine) | DIRECTLY TO OFF | 2 * |
| 3. NP (affected engine) | CHECK NP < 3% | 2 |
| 4. PRS Selector | MCT | 2 |
| 5. Fuel PUMP (affected engine) | A.R. | 2 * |

CAUTION

If the engine shutdown is a result of the <E.P.-69> "ENGINE FIRE OR SEVERE DAMAGE IN FLIGHT", press-out the affected engine Fuel PUMP Pushbutton.

- | | | |
|--------------------------------------|---------------|---|
| 6. Electrical System | CHECK BUS TIE | 2 |
| 7. Generator (affected engine) | OFF | 2 |
| 8. Hydraulic Pumps | MAN / A.R. | 2 |

When necessary, connect only the hydraulic pump corresponding to the operative generator (1 or 2).

9. Reduce electrical loads to below 400 A. Refer to "LIST OF ELECTRICAL LOADS" in <E.P.-28> "DUAL DC GENERATORS FAILURE".

10. Bleed switch (affected engine)..... OFF

2

A. If restarting is advisable:

WARNING

Do not restart an engine if previously shutdown due to fire or severe damage.

11. Apply <E.P.-73> "ENGINE RESTART IN-FLIGHT".
(END)

B. If restarting is not advisable:

11. Monitor fuel imbalance. If required, apply fuel crossfeed only if there are no fire indications.

12. Land at the nearest suitable airport with flaps at 15° and $V_{REF} + 15$ or minimum V_{TH} , whichever higher. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to LANDING DISTANCE TABLE.

GO-AROUND (1 ENGINE)

1. **GO-AROUND** **ANNOUNCE**

1

2. **PL (operative engine)** **MAX AUTO**

1

3. **Bleed switches** **OFF**

2

4. **Speed** **$V_{REF} + 12$ KIAS**

1

5. **Flaps** **T/OFF**

2

6. **Landing Gear (positive rate of climb)** **RETRACT**

2

7. **Continue operation as if performing a normal takeoff.**

ENGINE RESTART IN-FLIGHT

WARNING

Do not restart an engine if previously shutdown due to fire or severe damage.

CAUTION

Do not attempt an engine restart in flight with the autofeather system armed.

NOTE

Before applying this procedure, complete <E.P.-71> "ENGINE SHUTDOWN IN-FLIGHT".

NOTE

The Engine Restart in Flight is only guaranteed within the envelope shown in the QRD.

- | | | |
|---|-------------------|-----|
| 1. Batteries | CHECK ON | 2 |
| 2. Fuel PUMP pushbutton (affected engine) | RUN | 2 |
| 3. MODE SEL Selector | X-START | 2 |
| 4. ENGINE SEL Selector | TO ENGINE STOPPED | 2 |
| 5. Corresponding IGN Pushbutton | PRESS / ARM | 2 |
| 6. Corresponding START Pushbutton | PRESS | 2 |
| 7. Corresponding FFL (at 10% minimum NH) | START | 2 |
| 8. Relight | OBSERVE | 1/2 |
| A. <u>If the engine is started successfully:</u> | | |
| 9. Oil Pressure and Temperature (affected engine) | CHECK | 2 |
| 10. FFL (affected engine) | RUN | 2 |
| 11. PRS | A.R. | 2 |

- | | | |
|--|-------------|---|
| 12. PLs | A.R. | 1 |
| 13. ENGINE START Panel..... | REESTABLISH | 2 |
| 14. Generator (affected engine) | RESET / ON | 2 |
| 15. Bleed switch (affected engine) | ON | 2 |
| 16. Disconnected Electrical Loads | RESET | 2 |
| 17. Hydraulic Pumps | AUTO | 2 |
| (END) | | |

B. If the engine is not started successfully:

- | | | |
|--|-------------|---|
| 9. FFL..... | OFF | 2 |
| 10. ENGINE START Panel..... | REESTABLISH | 2 |
| 11. Fuel PUMP Pushbutton (affected engine) | A.R. | 2 |
| 12. Land at the nearest suitable airport with Flaps at 15° and $V_{REF} + 15$ or minimum V_{TH} , whichever higher. Press the EGPWS FLAP OVRD pushbutton to avoid a nuisance warning. Refer to "LANDING DISTANCE TABLE". | | |

AUTOFEATHER FAILURE

- | | | |
|-------------------------|-----|---|
| 1. Autofeather/APR..... | OFF | 2 |
|-------------------------|-----|---|

If an engine fails:

- | | | |
|---|------------------------|-----|
| 2. FFL (affected engine) | DIRECTLY TO OFF | 2 * |
| 3. PL (operative engine) | ADVANCE ABOVE MAX AUTO | 1 |
| 4. Apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN". | | |

NL OVERSPEED

- | | | |
|---------------------------|--------|---|
| 1. Corresponding PL | RETARD | 1 |
|---------------------------|--------|---|

If NLs decreasing is not possible below 106.5%, apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN".

LOW OIL PRESSURE

A. Oil pressure between 40 and 54 PSI (lower yellow band):

1. Corresponding PLADJUST 1

If reaching the green range is not possible, keep on normal operation monitoring the oil temperature and ITT. If abnormal indications are confirmed and power is not required, apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN". (END)

B. Oil pressure below 40 PSI (lower red band):

1. If power is not required, immediately apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN".

HIGH OIL PRESSURE

A. Oil pressure between 66 and 100 PSI (upper yellow band):

1. PL.....RETARD 1

If reaching the green band is not possible, keep on normal operation monitoring both oil temperature and ITT. If abnormal indications and/or engine vibrations are confirmed and power is not required, apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN". (END)

B. Oil pressure above 100 PSI (upper red band):

1. Reduce power if possible, and if power is not required, immediately apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN".

LOW OIL TEMPERATURE

CAUTION

Do not initiate the takeoff with oil temperature below 0°, or below 45°C in icing conditions.

1. Corresponding PL..... ADVANCE 1
If it is not possible to keep the temperature above 45°C, avoid icing conditions.
2. If the temperature drops below -40 °C, apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN".

HIGH OIL TEMPERATURE

1. Corresponding PL..... RETARD 1
 - A. Oil temperature between 126°C and 140°C (upper yellow range):
 2. Monitor oil pressure and any possible engine vibrations.
If the oil temperature stays in the yellow band for up to 20 minutes and power is not required, apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN". (END)

If any time oil pressure oscillations and/or engine vibrations occur, apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN".
 - B. Oil temperature above 140°C (upper red range):
 2. If power is not required, apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN".

EEC FAILURE

WARNING

In case of double EEC failure, apply the following procedure to one engine and, once PL control has been achieved, proceed with the other EEC.

CAUTION

Avoid aggressive PL handling and take a minimum of 10 second for full PL movement especially when above 10000 ft., unless there are other factors requiring the PL to be moved more quickly.

1. Corresponding PL..... FI 1

CAUTION

Do not try reset EEC if the PL is not in FI position.

2. Corresponding EEC.....RESET 2

A. If the "1, 2 EEC" caution does not come on again:

3. Keep flying in normal operation. (END)

B. If the "1, 2 EEC" caution comes on again:

3. PRS Selector..... TOGA 2
4. Corresponding EEC DISCONNECT 2

CAUTION

The EEC disconnection means both autoignition and APR have been lost. The RBS function can be degraded.

5. Corresponding PLA.R.

1

CAUTION

Reverse power on the affected engine will be degraded (asymmetric reverse power).

NOTE

If the affected engine parameters cannot be maintained within the operational limits, apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN".

NOTE

Once landed, if propeller brake is required, do not exceed the NH limits on graph on the page LD-10 for propeller brake operation with the EEC disconnected.

EPC FAILURE

1. PRS Selector TOGA 2
2. Corresponding EPC (once only)RESET 2
- A. If the "1, 2 EPC" caution does not come on again:
 3. Keep flying in normal operation. (END)
- B. If the "1, 2 EPC" caution comes on again:
 3. Corresponding EPC DISCONNECT 2

CAUTION

If OSG is not able enough to keep the propeller NP in flight at $103 \pm 1\%$, it will operate the fuel control to keep the propeller NP at 106% (red band). Even so, the flight can be on in this status ("GET HOME" CAPABILITY).

At Landing:

CAUTION

Do not use reverse thrust on the affected side. Take extreme caution while using reverse thrust on the opposite side.

After Landing and While Taxiing:

4. FFL (affected engine) START 2

FIRE DETECTION SYSTEM FAILURE

1. Land at nearest suitable airport.

UNSAFE PROPELLER BRAKE

1. Left FFLDIRECTLY TO OFF 2 *
2. Propeller Brake (if connected) DISCONNECT 2
3. Apply <E.P.-15 / E.P.-71> "ENGINE SHUTDOWN".

POWER PLANT INDICATION FAILURE

A. The TQ, NH or NP indication box flashes:

Keep flying in normal operation. (END)

B. Fluctuations not displayed at the remaining parameters or the numerical indication displays flashing dashes:

B.1. If the affected reading is TQ, NH, ITT or NP:

1. SWP Pushbutton..... PRESS 2

B.1.1. If the anomaly goes out:

Keep flying while monitoring both engines readings. (END)

B.1.2. If the anomaly persists:

2. SWP Pushbutton PRESS 2
3. Corresponding PL.....EQUALIZE 1

Keep flying monitoring regularly the indications of the same engine. (END)

B.2. If the affected indication is any other:

Keep flying monitoring regularly the indications of the same engine. (END)

C. "FUEL FLOW" with reading failure:

The Fuel Used reading will also be incorrect. Keep flying while taking the remaining fuel indications as a reference. (END)

D. Abnormal TQ, ITT, NP, NH or fuel flow readings from both engines simultaneously:

- | | | |
|-------------------------|-------|---|
| 1. SWP pushbutton | PRESS | 2 |
|-------------------------|-------|---|

D.1. If the anomaly goes out:

Keep flying while monitoring both engines parameters. (END)

D.2. If the anomaly persists:

- | | | |
|-------------------------|-------|---|
| 2. SWP pushbutton | PRESS | 2 |
|-------------------------|-------|---|

- | | | |
|-------------------|------|---|
| 3. Both PLs | A.R. | 1 |
|-------------------|------|---|

(END)

E. Both vertical scale and TQ cursor flashing:

- | | | |
|---------------------------|--------|---|
| 1. Corresponding PL | ADJUST | 1 |
|---------------------------|--------|---|

- | | | |
|----------------------------|-------|---|
| 2. Corresponding EEC | RESET | 2 |
|----------------------------|-------|---|

E.1. If the flashing goes off:

Keep flying in normal operation. (END)

E.2. If the flashing persists:

Avoid sharp changes in the PL position above 10000 ft.

IEDS FAILURE

1. TST pushbutton PRESS 2

NOTE

Press and hold the IEDS TST pushbutton until the test ends.

2. "BIT STATUS" message CHECK 2

A. If the BIT result is "PASSED":

3. SWP pushbutton PRESS 2

A.1. If the anomaly goes off:

4. IEDS operation is still under suspect. Keep flying in this condition. (END)

A.2. If the anomaly persists:

4. SWP pushbutton PRESS 2

5. C Pushbutton PRESS 2

Keep flying using the unaffected display in Composite Mode. (END)

B. If the BIT result is "FAILED":

3. C Pushbutton PRESS 2

Continue flight using the unaffected display in Composite Mode.

AVIONIC SYSTEM FAILURES

ACP FAILURE

NOTE

If C/M-3 ACP or FR10 ACP not responding or communication is not possible through one of these ACPs, proceed to step 2 of section B.

NOTE

In case of ACP power drop, the ACP backlight will be removed and control will be disabled.

NOTE

In case of REU failure, related ACP normal operation is lost.

1. EMG pushbutton..... PRESS / CHECK 1/2
 - A. If EMG pushbutton light is on:
Integrated audio control system is already in emergency mode.
 2. Communications..... CHECK 1/2
 - A.1. If communication is possible:
Continue operation in emergency mode.
(END)
 - A.2. If communication is not possible:
Proceed to step 2 of section B.
 - B. If EMG pushbutton light is off:
2. Affected ACP C/B..... OUT / IN 1/2

NOTE

This step will reset the failed ACP. If communications through failed ACP is not possible, failed ACP is lost.

DISPLAY UNIT FAILURE

A. In case of PFD or ND failure:

1. Corresponding Bright Selector OFF 1/2
2. Corresponding Bright Selector (after some minutes). ON 1/2

If the display has been reset correctly. (END)

If the display does not reset, set the selector back to OFF. (END)

B. White "DU HOT" annunciator displayed:

1. Bright Selector..... REDUCE TO A MINIMUM 1/2

If the annunciation changes to amber, the display will disconnect automatically.

NOTE

If the display is not required, leave it off for a while to reduce its temperature.

IOP FAILURE

A. If all the NAV/COM indications are lost (except RA):

The "MASTER" IOP is failed.

1. RAD PRCSR Selector
.....SELECT THE OPERATIVE SIDE 1/2

Continue flying with the operative side indications.
(END)

B. If DH values and speed marks on the corresponding side are lost:

The "SLAVE" IOP is failed.

1. Continue flying with the operative side indications 1/2

ICP FAILURE

Loss of Altitude Indication, DH and IAS Marks.

1. ADS selector.....SELECT THE OPERATIVE SIDE 1/2

NOTE

Barometric correction will be controlled with the ICP of the selected side.

EFIS CONTROL PANEL FAILURE

Both PFD and ND associated to the failed EFCP change to the following fix modes:

- PFD/ND Bright in 50%
- IMG BRT Radar bright relation in 1/1
- RANGE in 40 NM
- ND FORMAT display mode in ROSE
- IMG radar mode in W_X ON
- TCAS mode in AUTO
- ND OR orientation mode in HEADING UP
- If the failure is at the pilot's side: ADF 1 in needle 1 and VOR 2 in needle 2
- If the failure is at the copilot's side: VOR 1 in needle 1 and ADF 2 in needle 2

HEADING FAILURE

NOTE

The AP is automatically disengaged.

1. AHRS Selector.....SELECT THE OPERATIVE SIDE 1/2
2. HSI/SEL Selector.....SELECT THE OPERATIVE SIDE 1/2

If AHRS1 is the one failed: TCAS, WXR, left FD and left AP fail.

If AHRS2 is the one failed: WXR, right FD and right AP fail.

If both AHRS are failed: TCAS, WXR, FD, AP and EGPWS fail.

HEADING MISMATCH

1. Invalid Heading Source..... IDENTIFY 1/2

WARNING

When the compass is used, ensure that the windshield heating is off.

2. GYROSCOPIC COMPASS.... SYNCHRONIZE MANUALLY 1/2
 - A. If synchronizing is successful:

(END)

B. If synchronizing is not successful:

3. AHRs Selector
SELECT THE VALID HEADING SOURCE 1/2
 The WXR fails.

ATTITUDE FAILURE

NOTE

The AP is automatically disengaged.

1. AHRs Selector.....SELECT THE OPERATIVE SIDE 1/2
2. HSI/SEL Selector.....SELECT THE OPERATIVE SIDE 1/2

If AHRs1 is the one failed: TCAS (intruders not displayed), left FD and left AP fail.

If AHRs2 is the one failed: WXR, right FD and right AP fail.

If both AHRs are failed: TCAS (intruders not displayed), WXR, FD, AP and EGPWS fail.

ATTITUDE MISMATCH

NOTE

The AP is automatically disengaged, and the WXR fails.

1. Invalid Attitude Source..... IDENTIFY 1/2
2. AHRs selector . SELECT THE VALID ATTITUDE SOURCE 1/2

IVSI FAILURE

1. Continue the flight with the operative side indications 1/2

AIRSPEED FAILURE

NOTE

The AP is automatically disengaged.

1. ADS selector.....SELECT THE OPERATIVE SIDE 1/2

AIRSPEED MISMATCH

NOTE

The AP is automatically disengaged.

1. ADS selector..... 1 - 2 1/2
2. ADS selector.....SELECT THE OPERATIVE SIDE 1/2

NOTE

Barometric correction will be controlled with the ICP of the selected side.

WARNING

Pilots must be aware of standby airspeed indication error when flying with sideslip.

ALTITUDE FAILURE

NOTE

The AP is automatically disengaged.

1. ADS selector.....SELECT THE OPERATIVE SIDE 1/2

ALTITUDE MISMATCH

NOTE

The AP is automatically disengaged.

- | | | |
|----------------------|---------------------------|-----|
| 1. ADS selector..... | 1 - 2 | 1/2 |
| 2. ADS selector..... | SELECT THE OPERATIVE SIDE | 1/2 |

NOTE

Barometric correction will be controlled with the ICP of the selected side.

WARNING

Pilots must be aware of the standby altitude indication error when flying with sideslip.

CHECK PFD WARNING

- | | | |
|---|-------|-----|
| 1. Displays | CHECK | 1/2 |
| 2. Bright selector on the corresponding PFD | OFF | 1/2 |

AVIONIC DATA LOST

A. If EFIS is lost:

Wait until IOP PBIT finishes.

- | | | |
|--------------------------|-----------|-----|
| 1. EFIS parameters | RE-SELECT | 1/2 |
| (END) | | |

B. If FMS is lost:

Wait until FMS2 and MCDUs PBIT finish.

- 1. FMS1 fail messages.....
..... RESET ALL (EXCEPT CROSSTALK) 1
- 2. FMS1 CTK key PRESS 1
(END)

C. If IRS/GPS is lost:

Wait 10-15 minutes until IRS/GPS2 alignment procedure finishes.
(END)

D. If navigation is lost:

Wait until IOP and MCDUs PBIT finish. (END)

E. If AFCS is lost:

Wait until AFCS PBIT finishes.

- 1. Flight Director Mode/Automatic PilotA.R. 1