

# **F-16**

## **Block 50-52 / MLU**

### **Checklists – EMERGENCY Procedures**

**Not suited for Real Operations  
Made for FALCON 4.0 and suitable only for  
BMS 4.34 version**

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**ENG  
FIRE**  
ENGINE

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-----  
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**HYD/OIL  
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-----  
**TF FAIL**

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## PILOT FAULT LIST - ENGINE

FAULT	CAUSES	CORRECTIVE ACTION/REMARKS
<b>ENG A/1 TEMP</b>	Anti-Ice valve failed open and/or bleed air temperature greater than 850°F	Reduce throttle setting to midrange unless required to sustain flight. Operating the engine above midrange with anti-ice system failed on may result in engine stall. Land as soon as practical
<b>ENG A/1 FAIL</b>	Engine anti-Ice valve failed in closed position	Avoid areas of known or suspected icing conditions
<b>ENG MACH FAIL</b>	The CADC supplied Mach number to DEEC is no longer available	Supersonic stall protection is inoperative. Do not retard throttle below MIL while supersonic. If CADC caution light is also on, refer to CADC malfunction page B-3
<b>ENG A/B FAIL</b>	AB system failure detected	AB Reset switch – AB Reset land as soon as practical if fault does not clear. AB operation is partially or fully inhibited.
<b>ENG THST LOW</b>	Loss of redundant FTIT signals received by DEEC	Mil RPM is reduced by 7% by DEEC
<b>ENG BUS FAIL</b>	Communication lost between EDU and MUX bus	Illuminates AVIONICS FAULT caution light. A subsequent engine fault causes a non-resettable ENGINE FAULT caution light
<b>ENG PFL DGRD</b>	Communication lost between EDU and DEEC	Do not retard throttle below MIL while supersonic. Only ENG A/1 TEMP PFL can subsequently be displayed.

## PILOT FAULT LIST

AMUX	BUS	FAIL	NAV mode only if BMUX fails also	sole:Go both:RTB
ACMI	BUS	FAIL	ACMI pod Failure	Go
BLKR	BUS	FAIL	RWR less effective - ECM stays OFF	NoGo RTB
BMUX	BUS	FAIL	NAV mode only if AMUX fails also	sole:Go both:RTB
CADC	BUS	FAIL	No effect unless GPS & INS fail also	sole:Go three:RTB
CMDS	BUS	FAIL	No Chaff and Flares dispense	NoGo - Assess
CMDS	CHAF	FAIL	No Chaff dispense	NoGo - Assess
CMDS	FLAR	FAIL	No Flares dispense	NoGo - Assess
DMUX	BUS	FAIL	HUD and MFD are non-functional	NoGo - Abort
DLNK	BUS	FAIL	IDM Failure - HARM datalink inop	Go
DTE	BUS	FAIL	DTE inoperative	Go
ENG	A/I	FAIL	Ice Buildup on airframe	Go
ENG	A/B	FAIL	No Afterburner	Go - Assess
ENG	FIRE	FAIL	Engine fire	Eject
ENG	HYDR	DEGR	Low Hydraulic - stay under Mach 1	Go - Assess
ENG	RFL	DEGR	Reduced fault detection capability	Go
EPOD	SLNT	FAIL	Can't turn ECM OFF	NoGo - Abort
FCC		FAIL	Weapons can't be launched	NoGo - Abort
FCR	BUS	FAIL	Fire Control Radar inoperative	NoGo - Assess
FCR	SNGL	FAIL	TWS radar mode inoperative	Go
FCR	XMTR	FAIL	Fire Control Radar inoperative	NoGo - Assess
FLCS	DMUX	FAIL	HUD is inoperative	NoGo - RTB
FLCS	DUAL	FAIL	FLCS Failure - Keep speed below M1	NoGo - RTB
FLCS	SNGL	FAIL	First FLCS system failure	Go
FLCS	A/P	FAIL	Autopilot Failure	Go
FMS	BUS	FAIL	No Bingo Warning	Go
GEAR	LDGR	FAIL	Landing gear is broken	NoGo - RTB
GPS	BUS	FAIL	No effect unless CADC&INS fail also	sole:Go three:RTB
HARM	BUS	FAIL	Harm missiles can't be launched	Go
HUD	BUS	FAIL	HUD Failure	NoGo - RTB
IFF		FAIL	IFF system inoperative	Go
INS	BUS	FAIL	No effect unless GPS & CADC fail also	sole:Go three:RTB
ISA	RUD	FAIL	Rudders are inoperative	Go
ISA	ALL	FAIL	Loss of Hydraulic press-stay under M1	NoGo - RTB
MFDS	RFWD	FAIL	Left MFD inoperative	Go - Assess
MFDS	LFWD	FAIL	Right MFD inoperative	Go - Assess
MSL	SLV	FAIL	AIM-9 in UnCage mode only	Go - Assess
RALT	BUS	FAIL	Radar Altimeter Failure	Go
RWR	BUS	FAIL	RWR inoperative	NoGo - Assess
SMS	BUS	FAIL	No weapons release possible	NoGo - RTB
SMS	STA#	FAIL	No weapon release on STA# possible	Go - Assess
TCN	BUS	FAIL	Tacan is inoperative	Go
UFC	BUS	FAIL	UFC is inoperative - switch to Backup	Go
VHF	ANT	DEGR	VHF Radio range degraded	Go
VGf	ABT	DECR	VHF Radio range degraded	Go

## SECTION 1: Electrical System Failure

Note:  
 Most of the Electrical faults are not implemented in Falcon.  
 Whenever you encounter an electrical fault, depress the ELEC CAUTION  
 RESET button and land as soon as possible

**ELEC  
SYS**

### PARTIAL ELECTRICAL POWER LOSS ... 9

1. AOA – 12° max (200kts Min)
2. EPU switch – ON (If EPU run light OFF)

**FAIL**

**AIRCRAFT BATTERY FAILURE ..... 10**  
*Not implemented in F4*

**C A  
D B**

**FLCS BATTERY DISCHARGE ..... 10**  
*Not implemented in F4*

**HYDRAZIN  
AIR**

**EPU MALFUNCTIONS ..... 10**  
*Not implemented in F4*

**MAIN GEN**

**MAIN GENERATOR FAILURE ..... 9**  
**(ground and in flight)**

**FLCS PMG**

**FLCS PMG FAILURE ..... 10**



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## MAIN GENERATOR FAILURE (GROUND)

### ***If main generator failure is indicated:***

- |                      |      |
|----------------------|------|
| 1. Stop the aircraft |      |
| 2. PARKING BRAKE     | SET  |
| 3. OXYGEN            | 100% |
| 4. EPU switch        | OFF  |

### ***If further taxi is required:***

- |                       |         |
|-----------------------|---------|
| 5. ELEC CAUTION RESET | Depress |
|-----------------------|---------|

## MAIN GENERATOR FAILURE (IN FLIGHT)

### ***If MAIN GEN light illuminates:***

- |                       |                              |
|-----------------------|------------------------------|
| 1. AOA                | 12° max (200Kts min)         |
| 2. EPU switch         | ON (If EPU RUN light is off) |
| 3. ELEC CAUTION RESET | Depress                      |

### ***If MAIN GEN goes OFF:***

4. EPU switch OFF then NORM
5. ADI – check for OFF and/or AUX flags
6. Land as soon as practical

### ***If MAIN GEN remains ON:***

4. ADI – check for OFF and/or AUX flags
5. Land as soon as possible

## PARTIAL ELECTRICAL POWER LOSS

1. ELEC CAUTION RESET button – DEPRESS

### ***If power is restored:***

2. land as soon as practical

### ***If power is not restored:***

3. Determine the power status of electrical buses

### ***If one or both emergency AC buses are not powered:***

- |               |    |
|---------------|----|
| 4. EPU switch | ON |
|---------------|----|

### ***If the battery buses and emergency dc bus No2 are not powered:***

5. Consider a gear up landing refer to LANDING WITH LG UNSAFE/UP p E-5
6. Refer to EMERGENCY POWER DISTRIBUTION, BMS-Dash1
7. Land as soon as possible

## AIRCRAFT BATTERY FAILURE

- |                                |                |
|--------------------------------|----------------|
| 1. EPU switch                  | ON             |
| 2. Land as soon as practical   |                |
| <b>If EPU runs abnormally:</b> |                |
| 3. EPU switch                  | OFF, then NORM |
| 4. Land as soon as practical.  |                |

## FLCS PMG FAILURE

**If FLCS PMG light illuminates:**

1. Land as soon as possible

## FLCS BATTERY DISCHARGE

**If one FLCS BATT light comes on in flight:**

1. Land as soon as practical

**If more than one FLCS BATT light comes on in flight:**

1. EPU switch ON

**If FLCS BATT light go OFF:**

2. Land as soon as practical

**If FLCS BATT light remain ON:**

2. Airspeed 200-250 kts  
6-8° AOA and climb

**At the first indication of uncommanded or degraded flight control response:**

3. EJECT

## EPU MALFUNCTION

**Un-commanded EPU operation:**

- |                             |                        |
|-----------------------------|------------------------|
| 1. Throttle                 | Min practical thrust   |
| 2. Stores                   | Jettison (if required) |
| 3. Land as soon as possible |                        |

**If EPU is running with normal indications:**

- |                             |               |
|-----------------------------|---------------|
| 4. EPU                      | Leave running |
| 5. Land as soon as possible |               |

**Abnormal EPU operation:**

- |                             |                            |
|-----------------------------|----------------------------|
| 1. Throttle                 | As required (75 – 80% RPM) |
| 2. EPU Fuel quantity        | Monitor                    |
| 3. Land as soon as possible |                            |



## SECTION 2: FLIGHT CONTROL Failure

**ELEC  
SYS**

If ELEC SYS is ON, GO TO SECTION 1

**HYD/OIL  
PRESS**

If HYD/OIL PRESS is ON, GO TO SECTION 4

RUNAWAY OR  
NO STICK TRIM

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**C ADC**

CADC MALFUNCTION ..... 13

**C ADC**

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**LE FLAPS**

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Symmetric/Asymmetric

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TF FAIL WARNING LIGHT ..... 15

**TF FAIL**



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## TRIM MALFUNCTION

- |   |                |
|---|----------------|
| 1. TRIM/AP DISC switch                      | DISC then NORM |
| <b>If Normal operation is not restored:</b> |                |
| 2. TRIM/AP DISC switch                      | DISC           |
| 3. ROLL and PITCH TRIM wheels               | As required    |

Other considerations:  
Autopilot cannot be engaged

## CADC MALFUNCTION

**If CADC caution light illuminates and ENGINE FAULT caution light is also ON:**

1. FLCS RESET switch – RESET

**If CADC caution light goes off:**

2. Depress F-ACK button and check for ENG MACH FAIL PFL
3. Continue flight and observe throttle limitation.

**After fault acknowledgement with CADC caution light still ON or if ENGINE FAULT caution light was OFF:**

2. AOA Cross-check with airspeed.
3. Land as soon as practical.

## CONTROLLABILITY CHECK

1. Attain safe altitude
2. Gross weight Reduce (as required)
3. LE FLAPS switch Lock (if required – lef damage)
4. Determine optimum configuration available for landing.
5. Stores Selectively jettison (if required)  
Refer to Selective Jettison page F-7
6. Slow only to that AOA/airspeed which allows acceptable handling qualities

Other considerations:

- In the event that structural damage of unknown extent is encountered, consider accomplishing applicable EJECTION (TIME PERMITTING) page F-6 prior to proceeding with CONTROLLABILITY CHECK
- If the aircraft is not controllable down to a reasonable landing speed (given consideration to weather, runway conditions, facilities, pilot experience and fatigue,...) an ejection is recommended.

## LEF MALFUNCTION (ASYMMETRIC)

- |                              |  |
|------------------------------|--|
| 1. AOA                       | 6 to 10°                                   |
| 2. Lateral stick/Roll Trim   | As required                                |
| 3. LE FLAPS switch           | LOCK                                       |
| 4. Store-Jettison            | If required                                |
| 5. Fuel Weight               | Reduce (if feasible/required)              |
| 6. Controllability           | Check                                      |
| 7. Land as soon as practical |  |
| 8. Stick                     | lower the nose immediately after touchdown |

### Other considerations:

- Minimize Rudder input – Do not use rudder trim.
- Lock operating LEF as near symmetrical as possible.
- Consider selective jettison of stores from the heavy wing as a means to reduce roll control requirements
- Prior to landing, consider AC configuration, pilot fatigue and experience, airport facilities, weather, winds and light conditions. If conditions are not favourable, a controlled ejection is recommended.
- If crosswind component is greater than 10kts choose a runway, if possible, which allows landing with the heavy wing upwind.

## LEF MALFUNCTION (SYMMETRIC)

***If LE FLAPS caution light illuminates or a malfunction is suspected (without LE FLAPS caution light ON):***

- |                      |         |
|----------------------|---------|
| 1. AOA               | 12° Max |
| 2. FLCS RESET switch | RESET   |

***If FLCS warning light resets:***

3. Continue flight

***If FLCS warning light does not reset or a malfunction is suspected:***

- |                              |                                      |
|------------------------------|--------------------------------------|
| 2. Airspeed                  | Decelerate to subsonic if supersonic |
| 3. LE FLAPS switch           | LOCK (after LG is down)              |
| 4. Land as soon as practical |                                      |

***During engine shutdown:***

- |                    |   |
|--------------------|---|
| 5. Main PWR switch | Do not place to OFF until engine RPM has reached zero |
|--------------------|---|

### Other considerations:

Lock LEF in landing configuration at final approach airspeed at a safe altitude. This makes final approach as normal as possible and protects against un-commanded LEF excursions close to the ground

## OUT OF CONTROL RECOVERY

***In the event of a departure from controlled flight, accomplish as much of the following as required to execute a recovery:***

- |   |                        |
|---|------------------------|
| 1. Controls                                 | Release                |
| 2. Throttle                                 | MIL if in AB           |
| <b><i>if in an inverted deep stall:</i></b> |                        |
| 3. Rudder                                   | Opposite Yaw direction |
| <b><i>if still out of control:</i></b>      |                        |
| 4. MPO switch                               | OVRD and Hold          |
| 5. Stick                                    | Cycle in phase.        |

### Other considerations:

- Recovery from a deep stall condition will present a low airspeed situation in which the aircraft may require more than 6000ft of altitude to attain level flight
- If other than AB – do not move the throttle.
- Neutralize rudder as rotation stops and then use as required to minimize rotation
- Maintain firm pressure.
- The MPO switch must be held in the OVRD position until the deep stall is positively broken as evidenced by the pitch rate stopping, AOA in the normal range (-5 to 25°) and airspeed increasing above 200Kts. Early release of the MPO may delay recovery.

## TF FAIL WARNING LIGHT

***If TF FAIL warning light illuminates:***

- |                   |                                |
|-------------------|--------------------------------|
| 1. ALTITUDE       | As required                    |
| 2. Paddle Switch  | Depress and hold (if required) |
| 3. PFLD           | Check                          |
| 4. CARA, EGI, MMC | Check for proper operations    |

***If SWIM ATF FAIL, SWIM NVP FAIL, SWIM RALT FAIL or SWIM SCP FAIL PFL is displayed:***

- |                  |         |
|------------------|---------|
| 5. Paddle Switch | Release |
|------------------|---------|

***If SWIM ATF FAIL, SWIM NVP FAIL, SWIM RALT FAIL or SWIM SCP FAIL PFL does not clear or re-occurs:***

6. Discontinue Terrain Following (TF) operations



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USE FOR NOTES**





### SECTION 3: ENGINE (PW) malfunctions

**ENGINE**

If **ENGINE** is ON, check RPM and FTIT indication  
 If RPM and FTIT are normal, land as soon as practical.

**HOT START (GROUND) ..... 19**

**HYD/OIL  
PRESS**

**OIL PRESS (GROUND) ..... 19**

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**OVERHEAT**

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**OIL SYSTEM MALFUNCTION ..... 21**

**ENGINE  
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**ABNORMAL ENGINE RESPONSE ..... 24**

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### SECTION 3: ENGINE (PW) malfunctions (Continued Index)

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---

## HOT START (GROUND)

- |                                     |                              |
|-------------------------------------|------------------------------|
| 1. Throttle                         | OFF ❶ (CUTOFF = idle detent) |
| 2. FTIT Indicator                   | Monitor                      |
| <b>If FTIT remains above 500°C:</b> |                              |
| 3. JFS                              | START 2 ❷                    |

### Other considerations:

- ❶ Hot start – FTIT increasing rapidly past 750° and above 800°C. During engine start, if the FTIT increases at an abnormally rapid rate through 750°C, a hot start can be anticipated.
- ❷ In case where the BMS JFS shuts off, motor engine again with JFS until FTIT reaches 200°C or for maximum 4 minutes (JFS ground operating limit), whichever occurs first.

### **Once FTIT is under 200°C:**

4. Attempt at restarting the engine may be re-initiated.

***If pilot is slow to detect the HOT start developing, engine overheat or fire and engine seizure may develop. Refer to ENGINE FIRE further this section.***

### 4.34 How to avoid Hot Starts:

1. Do not move the throttle to idle before RPM have reached 20%.
  2. Ensure Master fuel is ON and Main Power is set to MAIN before eng. start.
  3. **ALWAYS** monitor FTIT during engine start. As soon as FTIT goes above 750°, Hot start is effective.
- (Normal FTIT temp for eng start is 680° and idle is under 600° (for block 52))

## OIL PRESSURE FAILURE (GROUND)

### Notes:

Contrary to real life, Oil pressure problems In BMS may be cleared and engine restarted.

***If Oil pressure remains below 15PSI at IDLE with HYD/OIL warning light ON after engine start:***

- |                 |                              |
|-----------------|------------------------------|
| 1. Throttle     | OFF (CUTOFF = idle detent)   |
| 2. RPM          | Allow to decrease to 20%     |
| 3. Engine start | Re-initiate with JFS start 2 |

### Other considerations:

- If second attempt still creates oil pressure issues, abort the aircraft.
- Running the engine with a low OIL pressure will seize the engine and induce engine fire.

## JFS DISCHARGE (GROUND)

***In case of JFS discharge (START 2 will not engage) JFS must be recharged manually by ground crew. Operation takes approx. 3 minutes***

ATC menu

Open and request Recharge JFS

Status message will be displayed as the JFS is being recharged.

Once the status message disappears, JFS may be used to start the engine.

Please note: JFS has a ground operating time of max 4 minutes.

## ENGINE FAILURE ON TAKEOFF

***If conditions permit:***

1. ABORT

***If conditions do not permit an abort:***

1. ZOOM

2. Stores

Jettison (If possible)

3. EJECT

## LOW THRUST ON TAKEOFF OR AT LOW ALTITUDE

***If on takeoff and the decision is made to stop:***

1. ABORT

***If takeoff is continued and/or thrust insufficient:***

1. Throttle

AB

***If thrust is still insufficient or AB does not light:***

2. ENG CONT switch

SEC

3. Stores

Jettison (If required)

***If nozzle is failed open, damaged or missing:***

4. Airspeed – Climb to arrive at 250 kts or descend at 250kts to obtain level flight above min recommended ejection altitude or min safe altitude, whichever is appropriate.

5. Throttle

As required to maintain 250 Kts

6. Land as soon as possible.

Plan a flameout landing. Refer to FLAMOUT LANDING page 29

### Other considerations:

- With nozzle loss, catastrophic engine failure and fire are probable with prolonged high power settings above 850°C FTIT while in SEC
- In partial thrust situation, thrust available may increase as altitude decreases. 250 Kts approximates the airspeed at which thrust required for level flight is the lowest.
- With a missing nozzle, Level flight may not be attainable above 5000 ft MSL.
- If airspeed drops below 250 kts, trade altitude to re-acquire 250Kts. Do not descend below min recommended ejection altitude or min altitude whichever is appropriate.

## ENGINE FIRE

### ***If on Take-off and conditions permit:***

1. ABORT

### ***If Take-off is continued:***

1. ZOOM
2. Store Jettison (If required)

### ***At a safe altitude:***

3. Throttle Min practical

### ***If ENG FIRE warning light goes off:***

4. FIRE & OHEAT DETECT button Depress

### ***If FIRE persists:***

5. EJECT

### ***If FIRE indications cease:***

5. Land as soon as possible

#### Other considerations:

If fire occurred in AB, ENG FIRE warning light may not illuminate. Fire should extinguish after throttle is retarded; however, nozzle damage may result in lower than normal thrust

## OIL SYSTEM MALFUNCTION

### ***If an oil pressure malfunction is suspected:***

1. Attain desired cruise altitude
2. Store Jettison (if required)
3. Throttle Approx 80% RPM
4. EPU switch ON
5. Throttle Do not move until landing is assured
6. Land as soon as possible

#### Other indications:

- Below 15 PSI at IDLE
- Below 30 PSI at MIL
- Above 80 PSI

#### Other considerations:

- Throttle movement/RPM change may cause engine seizure.
- Do not start the JFS if engine seizure has occurred or is anticipated. Starting the JFS may result in no brake/JFS accumulator pressure for the brakes.
- Plan a flameout landing

## OVERHEAT CAUTION LIGHT

### ***If OVERHEAT caution light illuminates:***

- |                      |               |
|----------------------|---------------|
| 1. Throttle          | Min practical |
| 2. FIRE&OHEAT DETECT | Depress       |

### ***If OVERHEAT caution light remains ON and EPU is running:***

- |               |     |
|---------------|-----|
| 3. EPU switch | OFF |
|---------------|-----|

### ***If OVERHEAT caution light remains ON:***

- |  |      |
|--|------|
| 4. Oxygen  | 100% |
| 5. AIR SOURCE knob   | OFF  |
| 6. Descend to below 25000ft and reduce airspeed to below 500 Kts |      |

### ***When airspeed is reduced and cockpit is depressurized:***

- |   |                     |
|---|---------------------|
| 7. AIR SOURCE knob                          | RAM (below 25000ft) |
| 8. Non-essential electrical equipment – OFF |                     |

### ***If OVERHEAT caution light still remains ON:***

- |                              |                                     |
|------------------------------|-------------------------------------|
| 9. TANK INERTING switch      | TANK INERTING ( <i>N.I. in F4</i> ) |
| 10. LG Handle                | Down (300 Kts/0.65 Mach max)        |
| 11. Land as soon as possible |                                     |

#### Other considerations:

- If the OVERHEAT caution light goes ON, verify the integrity of the detection circuit by depressing the FIRE & OHEAT DETECT button and land as soon as possible.
- If the EPU was manually turned ON, consider turning it OFF to determine if it is the source of the overheat condition. If the OVERHEAT caution light remains ON, the EPU should be turned back ON.
- External fuel cannot be transferred in OFF or RAM. Consider jettisoning tanks to decrease drag if range is critical.
- If in VMC and the ADI and HSI are not required for flight, the INS should be considered nonessentials

## ENGINE VIBRATIONS

### ***If vibrations persist:***

- |                             |                   |
|-----------------------------|-------------------|
| 1. Throttle                 | Minimum Practical |
| 2. Land as soon as possible |                   |

## ENGINE FAULT CAUTION LIGHT

***If ENGINE FAULT caution light illuminates:***

1. F-ACK button    Depress and note PFL displays

***If ENGINE FAULT caution light does not reset when the fault is acknowledged:***

2. Throttle    Mid-Range  
3. Land as soon as practical

***If ENGINE FAULT caution light resets when the fault is acknowledged:***

2. Refer to FAULT LIST – ENGINE page 5  
3. F-ACK button    Depress for fault recall.

## ENGINE STALL RECOVERY

***If an AB Stall occurs:***

1. Throttle    Snap to MIL

***If AB stalls do not clear or stall(s) occurs below AB:***

2. Throttle - Idle  
3. Anti-Ice switch – OFF *(N.I. in F4)*

***If stall continue at idle and Progress to a stagnation (engine RPM less than 60 percent with RPM response to throttle movement):***

4. Throttle – CUT OFF Initiate air start  
Refer to air start procedure page 27

***If non AB stall clears:***

5. Throttle – Midrange or below  
6. Land as soon as possible

***If AB stall(s) clears:***

2. Throttle    As required

## ABNORMAL ENGINE RESPONSE

### ***If abnormal engine response occurs:***

1. Throttle    Mil if supersonic

### ***If problem still exists:***

2. AB RESET switch                                AB RESET then NORM (*N.I. in F4*)  
 3. Airspeed    250 kts (if thrust is too low to sustain level flight)

### ***If problem still exists:***

4. ENG CONT switch                                SEC

### ***When subsonic:***

5. Throttle    Verify engine response to throttle movement, set as required

### ***If a safe landing can be made with the current thrust:***

6. Land as soon as practical

### ***If landing with low thrust and failed open, damaged or missing nozzle***

7. Refer to NOZZLE FAILURE page C-9

### ***If abnormal engine response is still present:***

6. ENG CONT switch                                PRI, NORM

7. Land as soon as possible

If thrust is too high to permit a safe landing

8. Plan a flame out landing – refer to FLAMEOUT LANDING page 29

## LOW ALTITUDE ENGINE FAILURE OR FLAMEOUT

1. Zoom

2. Stores    Jettison (if required)

3. Perform air start (if altitude permits) Refer to AIR START PROCEDURE page 27

### Other considerations:

- Below 5000ft AGL, there may be insufficient time to perform an air start prior recommended ejection altitude





## SEC CAUTION LIGHT

***If SEC caution light illuminates while supersonic:***

1. Throttle DO NOT retard below Mil until supersonic

***When subsonic or if SEC caution light illuminates while subsonic:***

2. Throttle Verify engine response to throttle movement, set as required
3. ENG CONT switch SEC
4. Land as soon as practical

***If engine is operating abnormally in SEC still exists:***

5. Refer to ABNORMAL ENGINE RESPONSE page 24

Other considerations:

- The ENG CONT switch should not be returned to PRI/ NORM after landing in an attempt to open the nozzle and decrease thrust.
- Above 40000ft MSL, minimize throttle movement. Below 15000ft MSL, if RPM is below 70%, slowly advance throttle to achieve 70% RPM. Maintain 70% RPM min until landing is assured.
- During landing in SEC, idle thrust is approximately twice that in PRI with a normal nozzle. Consider using the drag chute (NE-NO) if available.

## NOZZLE FAILURE

### ***If thrust is low with a failed open, damaged, or missing nozzle***

1. ENG CONT switch Confirm in SEC

### ***If within gliding distance of Suitable landing field:***

2. Throttle – min practical
3. Land as soon as possible  
Plan a flame out landing  
Refer to FLAMEOUT LANDING  
page C-12

### ***If not within gliding distance of a Suitable landing field:***

2. Stores – Jettison
3. Throttle – Maintain 850°C FTIT  
and 250 Kts until level flight can  
***If level flight cannot be maintained  
By 1000ft above minimum  
recommended ejection altitude or  
min safe altitude, whichever is  
appropriate:***
4. Throttle – As required to maintain  
250Kts in level flight above min  
recommended ejection altitude or min  
safe altitude whichever is appropriate
5. Land as soon as possible, Plan a  
flameout landing  
Refer to FLAMEOUT LANDING page  
29

### Other considerations:

- With Nozzle loss, catastrophic engine failure and fire are probable with prolonged high power settings above 850°C FTIT while in SEC
- If airspeed drops below 250 Kts, trade altitude to re-acquire 250 Kts. Do not descend below min recommended ejection altitude or min safe altitude, whichever is appropriate

## AIRSTART PROCEDURE

### ***To accomplish an air start:***

- |   |                    |
|---|--------------------|
| 1. Throttle   | OFF                |
| 2. Airspeed   | As required        |
| <b><i>When RPM is 50-25 % with FTIT below 700°C</i></b> |                    |
| 3. Throttle   | IDLE, then advance |
| 4. Idle detent  | Toggle             |
| 5. RPM  | Check increasing   |

### ***If RPM below 20% with FTIT below 700°C:***

- |                |                                     |
|----------------|-------------------------------------|
| 3. Attitude    | Below 20.000 feet and < 400 kts     |
| 4. JFS         | START 2                             |
| 5. Throttle    | RPM at 20% min - IDLE, then advance |
| 6. Idle detent | Toggle                              |
| 7. RPM         | Check increasing                    |
| 8. Throttle    | Idle                                |

### ***If Engine does not respond***

#### ***Normally after air starts:***

9. Refer to FLAMOUT LANDING page C-12

### ***If engine responds normally:***

9. JFS – Confirm OFF
10. EPU switch – OFF then NORM
11. ADI – check for OFF and/or AUX flags
12. Throttle – as required
13. Land as soon as possible

#### Other considerations:

- FTIT should decrease rapidly when throttle is OFF. If FTIT does not decrease rapidly, verify that throttle is OFF.
- Maintain max range or max endurance airspeed (200 or 170 Kts respectively, plus 5 kts per 1000 lbs of fuel/store weights over 3000 lbs)
- If warning flags are in view, refer to TOTAL INS FAILURE page F-6
- If only AUX flags are in view, pitch and roll attitude information is likely to be erroneous due to INS auto restart in the attitude mode when other than straight and level unaccelerated flight conditions existed.
- If SEC caution light is ON, refer to SEC CAUTION LIGHT page 25
- Since 4.34, JFS does not turn automatically OFF after an air start.

## AIRSTART PROCEDURE (CONTINUED)

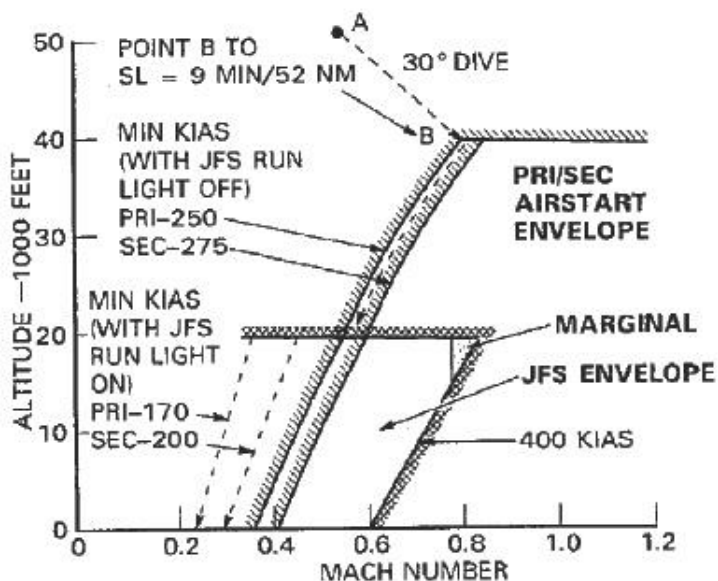
### Air start envelope:

**CONDITIONS**

- DI = 0
- KIAS = 250

**ENGINE F100-PW-220**

- GW = 17,000 LB
- NO WIND





## FLAMEOUT LANDING

- |                           |                                      |
|---------------------------|--------------------------------------|
| 1. PFD                    | Check for engine Fire (Eject)        |
| 2. Stores                 | Jettison (If required)               |
| 3. EPU switch             | ON                                   |
| 4. AIR Source knob        | RAM                                  |
| 5. Glide AoA              | 6°AoA (Glide Ratio: 1,4Nm/1000Ft)    |
| 6. Best Glide Speed       | 210 Kts (add 4Kts for every 1000Lbs) |
| 7. Radio Tower            | Declare Emergency                    |
| 8. Glide Path             | Between 11 and 17°                   |
| 9. LG Handle              | Down                                 |
| 10. ALT GEAR handle       | Pull (if required)                   |
| 11. Flare                 | Decrease Airspeed to 160kts          |
| 12. Final Approach Checks |                                      |
| <b>After touchdown:</b>   |                                      |
| 13. Drag chute (NE- NO)   | Deploy                               |
| 14. Hook switch           | Down (if required)                   |

***If brakes/JFS accumulator braking is used:***

15. Stop straight ahead and set parking brake

FUEL/ STORE	ALTITUDE – FEET		KIAS		
	HI	LOW	LG-UP	LG-DN	MIN
3000	7000	3000	200	190	180
4000	7500	3250	205	195	185
5000	8000	3500	210	200	190
6000	8500	3750	215	205	195
7000	9000	4000	220	210	200
8000	9500	4250	225	215	205
9000	10000	4500	230	220	210
10000	10500	4750	235	225	215

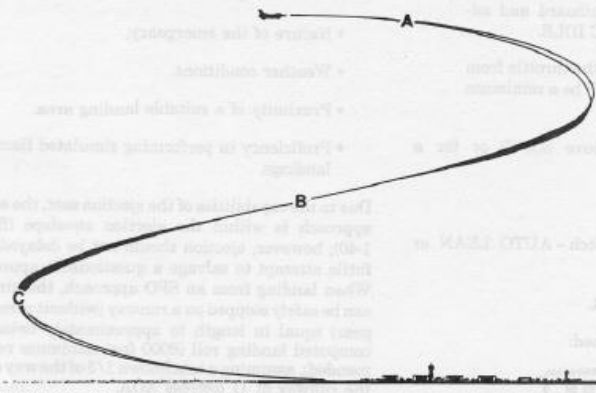
Other considerations:

- Brake pedal deflection of 1/16 inch activates the brakes and bleeds the brake/JFS accumulators. To avoid brake activation and loss of accumulator fluid, do not rest feet on the brake pedals.
- Do not attempt to taxi clear of the runway. Loss of brake/JFS accumulator pressure results in the inability to stop or steer the aircraft.

**FLAMEOUT LANDING (CONTINUED)**

**Flameout Landing Pattern (Typical)**

(OVERHEAD APPROACH)



- A:** HIGH KEY – 6000-9000 feet AGL approximately 1/3 runway length.  
210 knots – CLEAN. 190 Kts optimum (170 Kts MIN) LG down.
- B:** LOW KEY – 3000-5000 feet AGL Abeam touchdown point - Airspeeds same as high key
- C:** BASE KEY – 2000 feet AGL MIN 190 Kts – LG Down

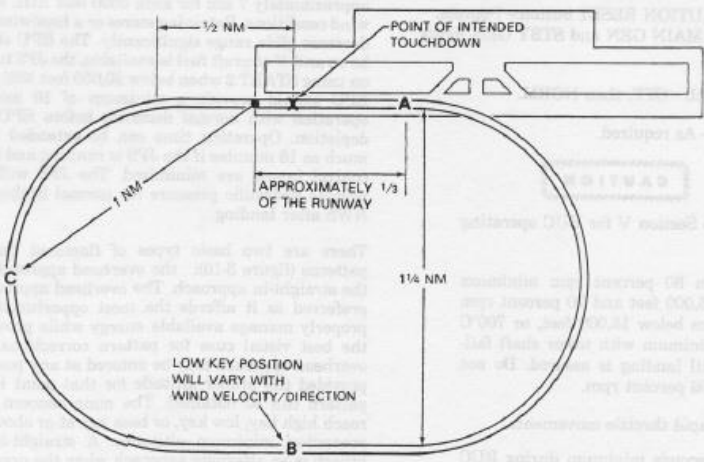


Figure 3-10. (Sheet 1)

1F-16X-1 0110



### SECTION 4 : FUEL/HYDRAULIC Malfunctions

RED ZONE ON ALL POINTERS      **FUEL IMBALANCE** ..... 33

**FWD  
FUEL LOW**

And/or      **FUEL LOW** ..... 34

**AFT  
FUEL LOW**

TOT and POINTERS DO NOT AGREE or TRP FUEL SYMBOL      **TRAPPED FUEL**.....35

Abnormally decreasing Totalizer      **FUEL LEAK** ..... 36

**FUEL/OIL  
HOT**

**HOT FUEL/OIL CAUTION LIGHT** .....36

**FLAMEOUT LANDING GO TO SECTION 3**

**HYD/OIL  
PRESS**

**SINGLE HYDRAULIC FAILURE** ..... 37

**FLCS  
FAULT**

**DUAL HYDRAULIC FAILURE** ..... 38



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USE FOR NOTES**



## FUEL IMBALANCE

***If fuel imbalance is indicated by AL and FR pointers with FUEL QTY SEL knob in NORM:***

- |              |  |
|--------------|--|
| 1. Fuel Flow | Reduce to the min required to sustain flight below 6000 PPH. |
|--------------|--|

***If AFT fuel imbalance exists (AFT CG):***

- |        |         |
|--------|---------|
| 2. AOA | 15° Max |
|--------|---------|

***If a fuel leak is suspected:***

3. Go to FUEL LEAK page 37

***If a fuel leak is not suspected:***

- |                    |            |
|--------------------|------------|
| 4. Fuel Quantities | Check      |
| 5. ENG FEED knob   | FWD or AFT |

***If imbalance is not corrected***

6. Land as soon as possible

***If proper distribution is attained***

- |                           |
|---------------------------|
| 6. ENG FEED knob – NORM   |
| 7. Fuel balance – Monitor |

### Other considerations:

- A fuel imbalance when not carrying an external tank(s) indicates a System malfunction. A fuel imbalance when carrying an external tank(s) may be the result of normal system operating tolerances.
- Limit fuel flow to the min required to sustain flight while the cause is determined. Avoid negative G flight when either reservoir is not full.
- AFT fuel heavy (red portion of the AL pointer showing) result in increased susceptibility to departure and deep stall conditions. Limit AOA and avoid max command rolling manoeuvres.
- Use the FUEL QTY SEL knob to determine if a trapped fuel condition exists. Refer to TRAPPED EXTERNAL FUEL page 36.
- Use only the ENG FEED knob to correct a forward and aft fuselage imbalance and not to correct imbalance between reservoirs. Do not exceed 25000pph fuel flow when balancing fuel
- Beware of landing with an AFT CG, nozzle, speedbrake and ventral fin may contact the runway.

## FUEL LOW

**If FWD FUEL LOW and/or AFT FUEL LOW caution light illuminates:**

- |                      |  |
|----------------------|--|
| 1. Fuel flow         | reduce to the min required to sustain flight below 6000 PPH. |
| 2. ENG FEED knob     | NORM   |
| 3. FUEL QTY SEL knob | RSVR   |

**If either or both reservoir Tanks are low:**

4. Land as soon as possible

**If a fuel leak is suspected:**

5. Go to Fuel Leak page 37

**If external fuel has not transferred:**

6. Go to TRAPPED EXT FUEL p 36

**If forward and aft fuselage fuel is not properly balanced:**

7. Go to FUEL IMBALANCE page 34

**If Fuel is properly balanced**

8. Land as soon as possible

**If reservoirs tanks indicate full:**

4. FUEL QTY SEL knob – TEST

**If AL and/or FR pointers test bad, or FUEL quantity indicator is inop:**

5. Land as soon as possible

**If AL and FR pointers test good:**

6. Individual fuel quantities – Check and compare with totalizer

7. Land as soon as practical

Other indications:

- A fuel low caution light may be caused by a fuel leak, trapped external fuel, a fuel imbalance between the forward and aft systems, prolonged AB operations or a fuel sensing problem.
- The FWD FUEL LOW and AFT FUEL LOW caution lights indicate reservoir tank quantities are less than:  
FWD: 400 Lbs AFT: 250 Lbs
- Fuel gauges may be inaccurate, especially in the low portions.

Other considerations:

- Limit fuel flow to the min required to sustain flight while the cause is determined. Avoid negative G flight when either reservoir is not full.
- Leave FUEL QTY SEL knob out of NORM if FUEL quantity indicator displays erroneous information.
- Consider stores jettison if range is critical. Consider a flameout landing.

## TRAPPED EXTERNAL FUEL

**Accomplish steps 1 through 7 and 8 (if required) without delay:**

- |                          |  |
|--------------------------|--|
| 1. Fuel Flow             | Minimize   |
| 2. AIR REFUEL switch     | Confirm in CLOSE   |
| 3. AIR SOURCE knob       | Confirm in NORM or DUMP  |
| 4. TANK INERTING switch  | TANK INERTING to reduce internal tank Pressurization. <i>(N.I. in F4)</i>            |
| 5. EXT FUEL TRANS switch | Wing First   |
| 6. ENG FEED knob         | NORM   |
| 7. Stick                 | Pulse aircraft in pitch several times by applying differential G forces of approx 2G |

**If the AIR REFUEL switch was initially found in CLOSE, perform step 8, if the AIR REFUEL switch was initially found in OPEN, omit step 8.**

- |                                |                         |
|--------------------------------|-------------------------|
| 8. AIR REFUEL switch           | OPEN (1 sec) then CLOSE |
| 9. External tank fuel quantity | Monitor                 |
| 10. Store                      | Jettison (If required)  |

### Other considerations:

- A TRP FUEL indication in the HUD may be a symptom of an external fuel leak. If a fuel leak is suspected (indicated by abnormally high fuel flow, by totalizer decreasing at abnormally rate) refers to FUEL LEAK page 37.
- With trapped external fuel, the totalizer does not indicate total usable fuel. Usable fuel is the totalizer quantity less the external fuel quantity
- Selecting Wing First bypasses electrical components that, if malfunctioning, can prevent fuel transfer from external wing tanks, the centreline tank, or all three tanks.
- The time required to observe fuel transfer if the malfunction is corrected can vary from 1-3 minutes (for a full centreline tank) to 10-12 minutes (for three external tanks with 500lbs fuel in each)
- If a trapped external fuel condition is not discovered until either reservoir tank is less than full or a fuel low light is on, sufficient fuel transfer from the external tank(s) may not occur even if the problem is corrected. Consider fuselage fuel to be the only usable fuel.

## FUEL LEAK

### ***If a fuel leak is suspected:***

1. Range

### ***If fuel flow is abnormally high:***

2. ENG FEED knob – OFF
3. Land as soon as possible

Maximise

### ***If fuel flow is normal:***

2. ENG FEED knob – NORM

### ***If leak is from the forward system:***

3. FUEL QTY SEL knob – Out of NORM

### ***If external tank contains fuel:***

4. Tank inerting switch to TANK INERTING  
Reduce tank pressurisation

### ***If external tanks are not installed or when they are empty:***

5. AIR REFUEL switch – OPEN

6. Land as soon as possible

### ***If AFT fuel imbalance exists (AFT CG):***

7. AOA – 15° max.

### Other considerations:

- A fuel leak is indicated by abnormally high fuel flow, by totalizer decreasing at abnormal rate, or visually.
- If a suitable landing field is not within gliding distance, consider increasing airspeed and altitude (without the use of AB) to maximize range by using fuel which would otherwise be lost.
- Consider stores jettison if range is critical. Consider a flameout landing
- AFT fuel heavy result in increased susceptibility to departure and deep stall conditions. Limit AOA and avoid max rolling manoeuvres.

## GRAVITY FEED

### ***If FUEL/OIL HOT caution light illuminates or gravity feed situation exist:***

- |                         |  |
|-------------------------|--|
| 1. AIR REFUEL switch    | Check CLOSE  |
| 2. TANK INERTING switch | Check OFF ( <i>N.I. in F4</i> )                                    |
| 3. Altitude             | 10000ft MAX (if practical)   |
| 4. Fuel Flow            | 4000 PPH Min until landing is assured when in a hot fuel situation |

### ***If FUEL/OIL HOT caution light goes off:***

5. Land as soon as practical

### ***If FUEL/OIL HOT caution light remains ON or gravity feed situation exists:***

5. Land as soon as possible

## SINGLE HYDRAULIC FAILURE

### Other indications:

A hydraulic failure is indicated by illumination of the HYD/PRESS, FLT  
CONT SYS lights

### **System A failure:**

- |                                 |         |
|---------------------------------|---------|
| 1. Land as soon as practical    |         |
| 2. System B HYD PRESS indicator | Monitor |
| 3. Fuel Balance                 | Monitor |

### **System B failure:**

- |                              |                    |
|------------------------------|--------------------|
| 1. Land as soon as practical |                    |
| 3. ALT GEAR handle           | Pull (Max 190 kts) |
| 4. LG Handle                 | Down               |
| 5. Hookswitch                | Down (if required) |

### **After landing:**

Stop straight ahead and engage parking brake

### Inoperative equipment:

- HYD SYS A: Speedbrake, FFR
- HYD SYS B: Normal braking, NWS, AR door, gun, Normal LG extension.

### Other considerations:

- If hydraulic failure is due to structural damage, the other system may be damaged and failure can occur with little warning. The HYD PRESS indicator may show normal pressure until system fluid is depleted.
- Make smooth control inputs and plan on a straight-in approach.
- Fuel distribution must be controlled manually.
- Do not depress the ALT GEAR reset button while pulling the ALT GEAR handle. This action may preclude successful LG extension.
- Brake pedal deflection of 1/16 inch activates the brakes and bleeds the brake/JFS accumulators. To avoid brake activation and loss of accumulator fluid, do not rest feet on the brake pedals.
- Do not attempt to taxi clear of the runway. Loss of brake/JFS accumulator pressure results in the inability to stop or steer the aircraft

## DUAL HYDRAULIC FAILURE

- |                                 |                              |
|---------------------------------|------------------------------|
| 1. EPU Switch                   | ON (if EPU run light is OFF) |
| 2. System A HYD PRESS indicator | Check pressure increasing.   |

***If hydraulic pressure does not increase or control response is lost:***

3. Eject

***If system A hydraulic pressure is restored:***

- |                             |                               |
|-----------------------------|-------------------------------|
| 1. EPU RUN light            | Check light ON at IDLE thrust |
| 2. Land as soon as possible |                               |
| 3. ALT GEAR handle          | PULL (190 Kts max)            |
| 4. LG Handle                | DOWN                          |
| 5. Hook switch              | DOWN                          |

***After landing:***

5. Stop straight ahead and engage parking brake.

### Other indications

- Sluggishness or lack of response to flight controls inputs, decreasing hydraulic pressures

### Inoperative equipment:

- HYD SYS B: Normal braking, NWS, AR door, gun, Normal LG extension.

### Other considerations:

- Makes smooth control inputs and plan a straight-in approach
- NWS is not available following alternate LG extension.
- If LG does not lower, select ALT FLAPS witch to EXTEND. Nozzle remains closed resulting in higher than normal landing thrust.
- Brake pedal deflection of 1/16 inch activates the brakes and bleeds the brake/JFS accumulators. To avoid brake activation and loss of accumulator fluid, do not rest feet on the brake pedals.
- Do not attempt to taxi clear of the runway. Loss of brake/JFS accumulator pressure results in the inability to stop or steer the aircraft



## SECTION 5: Landing Gear Malfunctions

**LG FAILS TO RETRACT..... 41**  
**LG FAILS TO EXTEND..... 41**  
**ALTERNATE LG EXTENSION..... 42**  
**LANDING WITH A LG UNSAFE/UP..... 43**

**NWS FAIL**

**NWS FAILURE ..... GO TO 51  
(SECTION6)**



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## LG FAILS TO RETRACT

1. Airspeed 300 Kts MAX.
2. LG handle DOWN.
- If Landing Gear comes down normally:**
3. Gross Weight reduce prior to landing.
- If landing Gear does not indicate down and locked:**
4. Go to ALTERNATE LG EXTENSION page 42

Other considerations:

Do not cycle the LG handle. Damage to LG or LG doors may result

## LG FAILS TO EXTEND

**If LG handle cannot be lowered normally:**

1. DN LOCK REL button Depress and lower LG handle (*N.I. in F4*)

**If LG handle still cannot be lowered:**

2. ALT FLAPS switch Extend.
3. Go to ALTERNATE LG EXTENSION page 42

**If Landing Gear lowers and one or more LG indicates unsafe:**

1. LG Handle Cycle and monitor LG handle warning light and WHEELS down light.

**If LG handle warning light illuminated when the LG handle was lowered, then went OFF and tests good, or if WHEELS down light operated normally:**

2. Speedbrake Verify opening is less than 43°
3. Land Normally

**If LG handle warning light did not illuminate or remained illuminated after LG handle was lowered, and if one or more WHEELS down light did not illuminate: when the LG handle was lowered, then went OFF and tests good, or if WHEELS down light operated**

4. Go to ALTERNATE LG EXTENSION page 42

## ALTERNATE GEAR EXTENSION

1. LG Handle DOWN
2. Airspeed 190 Kts MAX. (if practical.)
3. ALT GEAR handle PULL

***If Landing Gear indicates safe:***

4. Land normally.
5. Stop straight ahead on runway.

***If landing indicates unsafe:***

4. Stick Apply alternating G forces (-1.0 to +3.0G) to free LG

***If Landing Gear indicates safe:***

5. Land normally.
6. Stop straight ahead on runway.

***If landing Gear still indicates unsafe:***

5. Speedbrake Verify Opening is less than 43°
6. Go to Landing with LG UNSAFE/UP page 43

Other considerations:

- Alternate LG extension can be used up to 300 Kts. However, the NLG may not fully extend until 190 Kts. Time above 190 Kts should be minimized in case there is a leak in the pneumatic lines.
- Do not depress the ALT GEAR button while pulling the ALT GEAR handle. This action may preclude successful LG extension.
- If possible get a visual confirmation of LG position.
- Consider a go-around capability in the event the brakes are found to be inoperative after touchdown.
- NWS is not available following alternate gear extension.

## LANDING WITH LG UNSAFE/UP

***If conditions are not favourable:***

1. Refer to EJECTION (TIME PERMITTING) page 50

***To accomplish the landing:***

- |                                      |                                   |
|--------------------------------------|-----------------------------------|
| 1. Retain empty fuel tanks and rack. |                                   |
| 2. Armament                          | Jettison                          |
| 3. TANK INERTING switch              | TANK INERTING <i>(N.I. in F4)</i> |
| 4. AIR REFUEL switch                 | OPEN                              |
| 5. FCR                               | OFF                               |
| 6. ST STA/ HDPT/ECM power            | OFF                               |

Other considerations:

- Prior to landing with any of the LG unsafe or up, consider the airfield facilities, crosswind component, Runway conditions.
- If time permits, delay landing until external fuel tanks are empty. If an immediate landing is required, jettison all external fuel tanks.
- Failure to depressurize the tanks significantly increases the probability of tank explosion and fire.
- Delay placing the AIR REFUEL switch to OPEN until all external tanks are empty.



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## SECTION 6: Miscellaneous Malfunctions

ABORTED TAKE-OFF .....	47
ACTIVATED EPU .....	47
CANOPY MALFUNCTION .....	47
DRAG CHUTE DEPLOYED IN FLIGHT .....	48

---

**CABIN  
PRESS**

COCKPIT PRESSURE MALFUNCTION ..	48
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---

**EQUIP  
HOT**

EQUIP HOT CAUTION LIGHT.....	49
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EMERGENCY JETTISON .....	49
EJECTION .....	50
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**OBOGS**

OBOGS / OXYGEN MALFUNCTION .....	51
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---

**NWS  
FAIL**

NWS FAILURE/ HARDOVER .....	51
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SELECTIVE JETTISON .....	51
WARNING / CAUTION LIGHTS .....	52



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## ABORTED TAKE OFF

- |                  |                         |
|------------------|-------------------------|
| 1. Speedbrake    | Fully Extend            |
| 2. Throttle      | Idle                    |
| 3. Drag chute    | Deploy (if available)   |
| 4. Hook          | Down                    |
| 5. Pitch         | Maintain FULL AFT stick |
| 6. Wheel brakes  | Apply if required       |
| 7. A/C           | Stop                    |
| 8. Runway        | Vacate ASAP             |
| 9. Caution Panel | Check, Exit A/C if REQ  |

If on FIRE: Throttle OFF & FUEL MASTER switch OFF

## ACTIVATED EPU

***If landing with an activated EPU:***

- |           |      |
|-----------|------|
| 1. Oxygen | 100% |
|-----------|------|

***When on the ground:***

- |  |     |
|--|-----|
| 2. AIR SOURCE  | OFF |
| 3. Taxi to an isolated parking area and park the aircraft with left wing into the wind if possible |     |
| 4. EPU switch  | OFF |
| 5. Shut down the engine  |     |

Other considerations:

If AIR SOURCE knob is placed to OFF, also turn off nonessential avionic equipment as electronic equipment may overheat.

## CANOPY MALFUNCTION

***If CANOPY warning light illuminates:***

- |                  |                                   |
|------------------|-----------------------------------|
| 1. Canopy handle | Push Outboard <i>(N.I. in F4)</i> |
|------------------|-----------------------------------|

***If CANOPY warning light remains ON:***

- |                             |              |
|-----------------------------|--------------|
| 2. Airspeed                 | 180 Kts MAX. |
| 3. ALT FLAPS switch         | EXTEND       |
| 4. Land as soon as possible |              |

## COCKPIT PRESSURE MALFUNCTION

***If the cockpit pressure is lost, proceed as follows:***

- |                    |                             |
|--------------------|-----------------------------|
| 1. OXYGEN          | 100%                        |
| 2. Altitude        | Max 25000ft                 |
| 3. Airspeed        | 500 Kts MAX                 |
| 4. AIR SOURCE knob | OFF (10 – 15 sec) then NORM |

***If cockpit pressure is not regained but all other systems dependent on the ECS are operational:***

5. Flight may be continued below 25000ft.

***If ECS has failed :***

- |                                       |       |
|---------------------------------------|-------|
| 5. AIR SOURCE knob                    | OFF   |
| 6. Non-essential electronic equipment | – OFF |
| 7. Land as soon as practical.         |       |

Other indications:

CABIN PRESS Caution light

Other considerations:

- External Fuel cannot be transferred with the AIR SOURCE knob in OFF or RAM. Consider jettisoning tanks to decrease drag if range is critical and ECS cannot be turned ON for short period to transfer fuel.

## DRAG CHUTE DEPLOYED IN FLIGHT

***If the DRAG CHUTE is deployed in flight below 190 Kts:***

- |                      |         |
|----------------------|---------|
| 1. DRAG CHUTE switch | RELEASE |
|----------------------|---------|

***If the DRAG CHUTE does not release:***

- |             |        |
|-------------|--------|
| 2. Throttle | MAX AB |
|-------------|--------|

Other considerations:

If the Drag chute is deployed below approx 190 Kts, it will not break away from the aircraft.



## EQUIP HOT CAUTION LIGHT

### ***If EQUIP HOT caution light illuminates:***

1. AIR SOURCE knob                      Confirm in NORM
2. Throttle                                80 percent RPM min. (in flight)

### ***If EQUIP HOT caution light remains ON after 1 minute:***

3. Non-essential avionics              OFF
4. Land as soon as practical

#### Other considerations:

- Certain ECS equipment malfunctions result in temporary shutdown of the ECS and illumination of the EQUIP HOT caution light.
- If in VMC and the ADI and HSI are not required for flight, the EGI/INS should be considered nonessential.

## EMERGENCY JETTISON

1. GND JETT ENABLE switch              ENABLE (if LG is down)
2. EMER STORES JETTISON button      Depress (1 sec.)

#### Other considerations:

- Use EMER STORE JETTISON on the ground only as a last resort.
- Emergency Jettison is not available if a MMC FAIL PFL message is present. Emergency jettison can be restored by placing the MMC switch to OFF
- If the initial actuation of the EMER STORE JETTISON button fails to jettison all aircraft stores, subsequent attempts may successfully release the remaining stores

## EJECTION

### **Ejection (IMMEDIATE):**

1. Ejection Handle PULL

### **Ejection (Time Permitting):**

- |                          |         |
|--------------------------|---------|
| 1. IFF MASTER knob       | EMERG   |
| 2. MASTER ZEROIZE switch | ZEROIZE |
| 3. VISOR                 | Down    |
| 4. Throttle              | IDLE    |
| 5. Ejection Handle       | PULL    |

#### Other considerations:

- Slow to lowest practical airspeed before ejecting.
- Failure to remove Track-IR prior to ejection may cause injury. If unable to remove Track-IR, a proper ejection body position (head back against the seat headrest) reduces the chance of injury from the track-IR.

## EGI / INS FAILURE

#### Indication of a total EGI / INS failure:

- Avionics Fault caution light
- ADI AUX warning flag
- ADI OFF warning flag
- HSI compass card frozen
- ADI frozen/tumbled
- HUD pitch ladder, heading scale, Roll scale and FPM also blank
- PFL code: INS / EGI BUS fail

- |                    |   |
|--------------------|---|
| 1. EGI / INS knob  | OFF for 10 seconds.   |
| 2. Attitude        | Straight, Level and unaccelerated flight  |
| 3. EGI / INS knob  | IN FLT ALIGN (AUTO IFA)   |
| 4. Altitude        | Straight, Level and unaccelerated until ALIGN appears in the HUD or ADI OFF warning flag goes out of view after approximately 10 sec. |
| 5. IFA             | Accomplish, maintain attitude   |
| 6. EGI / INS knob  | Back to NAV once IFA is completed.<br>Max G replaces ALIGN in HUD & RDY is removed from DED.  |
| 7. ADI, HUD & EHSI | Verify accuracy of navigation data.   |

#### IN FLT align in F4

Maintaining a straight, level and unaccelerated course and entering the magnetic heading in the DED is not mandatory in F4

## NWS FAILURE/HARDOVER

- |                      |             |
|----------------------|-------------|
| 1. NWS               | Disengage   |
| 2. AR/NWS light      | Verify OFF  |
| 3. Rudder and Brakes | As required |

Other considerations:

NWS malfunctions at any speed may cause an abrupt turn, tire skidding or blowout, aircraft tipping, and/or departure from the prepared surface.

## OBOGS (OXYGEN) MALFUNCTION

***If OXY LOW caution light illuminates:***

- |                              |             |
|------------------------------|-------------|
| 1. Cockpit pressure altitude | 10000ft Max |
|------------------------------|-------------|

***If unable to descend immediately:***

- |                     |            |
|---------------------|------------|
| 2. Emergency Oxygen | Activate   |
| 3. Oxygen Hose      | Disconnect |

Other considerations:

- OXY LOW caution light indicates oxygen quantity below 0.5 litre or pressure below 42 PSI.

## SELECTIVE JETTISON

- |                              |                                   |
|------------------------------|-----------------------------------|
| 1. GND JETT ENABLE switch    | ENABLE (if LG is down)            |
| 2. MASTER ARM                | ARM                               |
| 3. MFD                       | SMS format                        |
| 4. S-J OSB (MFD)             | Depress                           |
| 5. S-J Page (MFD)            | Select Store desired for jettison |
| 6. WPN REL or ALT REL button | Depress                           |

Other considerations:

- Selective jettison of stores while the main landing gear is down may cause LG and store collision.
- When 300 gallons and 370 gallons fuel tanks are carried simultaneously, the 300 gallons fuel tank must be separated prior to the 370 gallons fuel tanks

## WARNING CAUTION LIGHTS

### SEAT NOT ARMED

Ejection safety Lever up (system safe)

### STORE CONFIG

Store config switch is in incorrect position. Verify STORE CONFIG switch is in proper position.

### BUC

BUC selected and engine operating in BUC or main fuel pressure is low

### ATF NOT ENGAGED

If in Terrain Following, climb to a safe altitude and verify ATF operations.

### RADAR ALT

Move RDR ALT switch to OFF.

### IFF

MODE 4 REPLY switch in OUT with C&I switch in BACKUP or RF switch in QUIET or SILENT

### AVIONIC FAULT

Depress F-ACK to acknowledge fault and reset Avionic Fault caution light

### HOOK

Hook not up and locked.

### NUCLEAR

Malfunction in the NUCLEAR circuit

### TO/LDG CONFIG

All LG not down and locked or TEF's not fully down with LG handle down

### PROBEHEAT

Probe heaters system failure – avoid areas of known or suspected icing conditions.

### WARN in hud

Check for specific illuminated warning light

### TRP FUEL in hud

A trapped external fuel condition is detected