F-16

Block 50-52 / MLU

Checklists – EMERGENCY Procedures

Not suited for Real Operations
Made for FALCON 4 and suitable for any version*

*Some switches might not work depending on your version.

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USE FOR NOTES

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IN-FLIGHT EMERGENCIES

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IN-FLIGHT EMERGENCIES (CONTINUED)

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PILOT FAULT LIST - ENGINE

FAULT	CAUSES	CORRECTIVE ACTION/REMARKS
ENG A/1 TEMP	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
ENG A/1 FAIL	Engine anti-Ice valve failed in closed position	Avoid areas of known or suspected icing conditions
ENG MACH FAIL	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
ENG A/B FAIL	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.
ENG THST LOW	Loss of redundant FTIT signals received by DEEC	Mil RPM is reduced by 7% by DEEC
ENG BUS FAIL	Communication lost between EDU and MUX bus	Illuminates AVIONICS FAULT caution light. A subsequent engine fault causes a nonresettable ENGINE FAULT caution light
ENG PFL DGRD	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

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USE FOR NOTES

Electrical System Failure

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

ELEC SYS — **PARTIAL ELECTRICAL POWER LOSS .. A-3**

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

FAIL — **AIRCRAFT BATTERY FAILURE …… A-3**
Not implemented in F4

C A / D B — **FLCS BATTERY DISCHARGE …….. A-4**
Not implemented in F4

HYDRAZIN AIR — **EPU MALFUNCTIONS …… A-4**
Not implemented in F4

MAIN GEN — **MAIN GENERATOR FAILURE …….. A-3**
(ground and in flight)

FLCS PMG — **FLCS PMG FAILURE …….. A-4**

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USE FOR NOTES

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. MAIN PWR switch — BATT then MAIN PWR

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. MAIN PWR switch — BATT, then MAIN PWR

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

If essential systems are not powered:

1. EPU switch — ON
2. Consider a gear up landing refer to LANDING WITH LG UNSAFE/UP page E-5
3. Land as soon as possible

AIRCRAFT BATTERY FAILURE

1. EPU switch — ON
2. 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

Uncommanded 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

FLIGHT CONTROL Failure

ELEC SYS — If ELEC SYS is ON, GO TO TAB A

HYD/OIL PRESS — If HYD/OIL PRESS is ON, GO TO TAB D

RUNAWAY OR NO STICK TRIM — TRIM MALFUNCTION B-3

CADC — CADC MALFUNCTION B-3

CADC — ENGINE FAULT CAUTION LIGHT B-3

ENGINE FAULT

LE FLAPS — LEF MALFUNCTION B-4
Symmetric/Asymmetric

OUT OF CONTROL RECOVERY B-5

CONTROLLABILITY CHECK B-3

CUT ALONG THE LINE

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USE FOR NOTES

TRIM MALFUNCTION

1. TRIM/AP DISC switch — DISC then NORM

If Normal operation is not restored:

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. Depress F-ACK button and check for ENG MACH FAIL PFL

After fault acknowledgement 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 favorable, 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. Airspeed	Decelerate to subsonic if supersonic
3. LE FLAPS switch	LOCK (after LG is down)
4. Land as soon as practical	If required
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 uncommanded 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 effect a recovery:

1. Controls	Release
2. Throttle	MIL if in AB
if in an inverted deep stall:	
3. Rudder	Opposite Yaw direction
if still out of control:	
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.

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USE FOR NOTES

ENGINE malfunctions

ENGINE

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

ENGFIRE

OVERHEAT

HYD/OIL PRESS

ENGINE FAULT

SEC

ENGINE malfunctions (Continued Index)

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 C-12

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 reaquire 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 shouldextinguish 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 btn — 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 equipement – OFF

If OVERHEAT caution light still remains ON:

9. TANK INERTING switch — TANK INERTING *(N.I. in F4)*
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 EP-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 airstart
   Refer to airstart procedure page C10

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 flamout landing – refer to FLAMEOUT LANDING page C-12

LOW ALTITUDE ENGINE FAILURE OR FLAMEOUT

1. Zoom
2. Stores — Jettison (if required)
3. Perform airstart (if altitude permits) Refer to AIRSTART PROCEDURE page C-10

Other considerations:

- Below 5000ft AGL, there may be insufficient time to perform an airstart 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 C-7

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 dragchute (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 laning 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 C-12

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 reaquire 250 Kts. Do not descend below min recommended ejection altitude or min safe altitude, whichever is appropriate

AIRSTART PROCEDURE

To accomplish an airstart:

1. Throttle	OFF
2. Airspeed	As required

When RPM is 50-25 % with FTIT below 700°C

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 airstarts:

9. Refer to FLAMOUT LANDING page C-12

If engine responds normally:

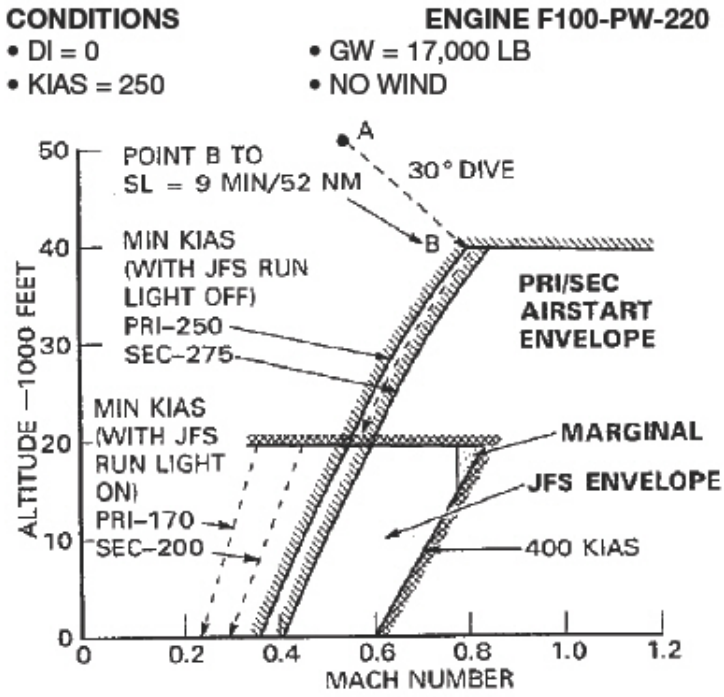
9. JFS – Confirm OFF
10. EPU switch – OFF then NORM
11. ADI – check for OFF and/or AUX flags
12. Throttle – as required
13. Land as soon as possible

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 autorestart 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 C-8

AIRSTART PROCEDURE (CONTINUED)

Airstart enveloppe:



FLAMEOUT LANDING

1. PFD	Check for engine Fire (Eject)
2. Stores	Jettison (If required)
3. EPU switch	ON
4. AIRSource 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	

After touchdown:

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 AGL		KIAS		
WT	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

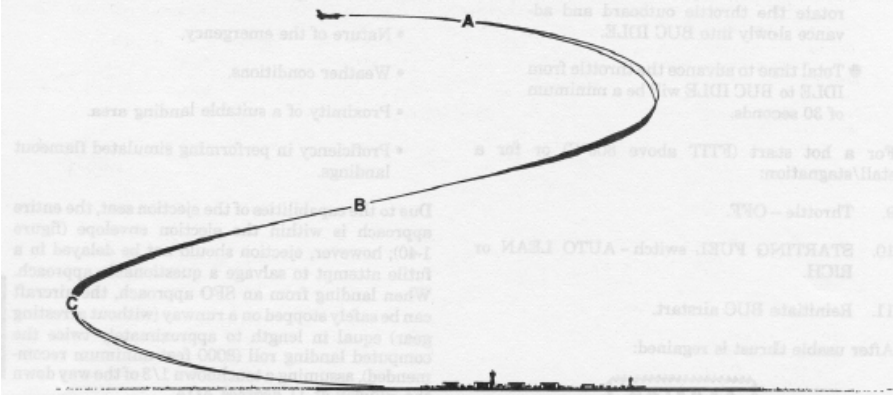
Other considerations:

- 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.

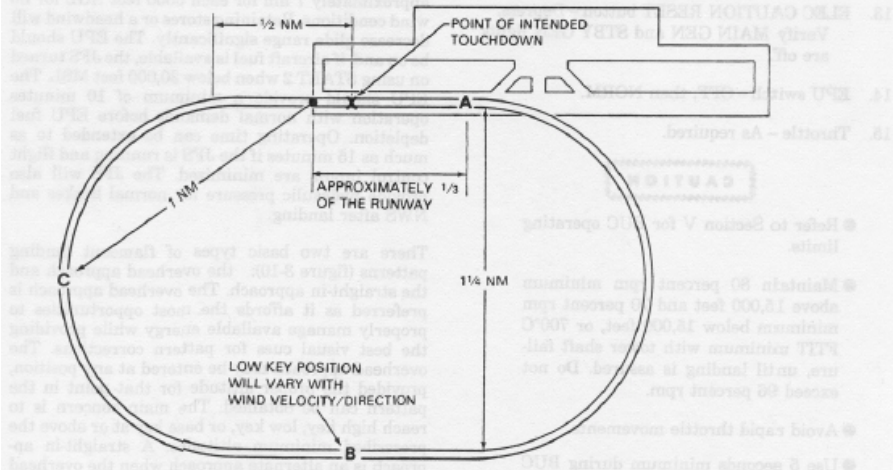
FLAMEOUT LANDING (CONTINUED)

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



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USE FOR NOTES

FUEL/HYDRAULIC Malfunctions

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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 D-6

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 maneuvers.
- Use the FUEL QTY SEL knob to determine if a trapped fuel condition exists. Refer to TRAPPED EXTERNAL FUEL page D-5.
- 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 D-6
If external fuel has not transferred:
6. Go to TRAPPED EXT FUEL p D-5
If forward and aft fuselage fuel is not properly balanced:
7.Go to FUEL IMBALANCE page D-3
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

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 flamout 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. *(N.I. in F4)*
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 D-6.
- 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 malfunctionning, 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 — Maximise

If fuel flow is abnormally high:

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

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 flamout landing
- AFT fuel heavy result in increased susceptibility to departure and deep stall conditions. Limit AOA and avoid max rolling maneuvers.

GRAVITY FEED

If FUEL/OIL HOTcaution light illuminates or gravity feed situation exist:

1. AIR REFUEL switch — Check CLOSE
2. TANK INERTING switch — Check OFF *(N.I. in F4)*
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

Landing Gear Malfunctions

NWS FAIL

NWS FAILURE ..... GO TO F-7

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USE FOR NOTES

LG E

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 E-4

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 E-4

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 E-4

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 E-5

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 favorable:

1. Refer to EJECTION (TIME PERMITTING) page F-6

To accomplish the landing:

1. Retain empty fuel tanks and rack.
2. Armament — Jettison
3. TANK INERTING switch — TANK INERTING *(N.I. in F4)*
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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USE FOR NOTES

Miscellaneous Malfunctions

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USE FOR NOTES

ABORTED TAKE OFF

1.	Speedbrake	Fully Extend
2.	Throttle	Idle
3.	Drag chute	Deploy (F-16AM NE-NO)
4.	Hook	Down
5.	Pitch	Maintain FULL AFT stick
6.	Wheelbrakes	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 *(N.I. in F4)*

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 jettisonning 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 (NE-NO)

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. Nonessential 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 HIS are not required for flight, the 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. Throttle	IDLE
4. 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 TrackIR, a proper ejection body position (head back against the seat headrest) reduces the chance of injury from the track-IR

INS FAILURE

Indication of a total 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 BUS fail

1. INS knob	OFF for 10 seconds.
2. Attitude	Straight, Level and unaccelerated
3. INS knob	IN FLT ALIGN
4. Magnetic heading	Enter
5. Altitude	Straight, Level and unaccelerated until ALIGN appears in the HUD or ADI OFF warning flag goes out of view after approximately 10 sec.

IN FLT align in F4

Maintaining a straight, level and unaccelerated course and entering the magnetic heading is 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, aircrfat tipping, and/or departure from the prepared surface.

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 liter 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 gallon fuel tanks are carried simultaneously, the 300 gallon fuel tank must be separated prior to the 370 gallon fuel tanks

WARNING CAUTION LIGHTS

SEAT NOT ARMED	Ejection safetyLever up (system safe)
STORE CONFIG	Store config switch is in incorrect position Verify STORE CONFIG switch is in proper position for aircraft category
BUC	BUC selected and engine operating in BUC or main fuel pressure is low
ATF NOT ENGAGED	None.
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 acknoledge 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