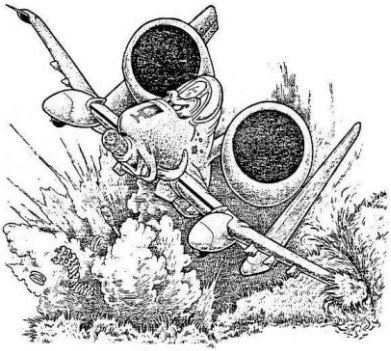

A-10C Thunderbolt II

Created by Snoopy

Checklist – **EMERGENCY PROCEDURES**

NOT SUITED FOR REAL OPERATIONS

MADE FOR DCS A-10C

CONTENTS

ENGINE FIRE (T-Handle Illuminated)

1. Reduce power to affected engine and monitor if the fire light goes out.

If the fire persists…

2. Set the **throttle** of the affected engine to **OFF**.
3. **Pull** the fire **T-Handle** of the affected engine.
4. **Press** the **fire discharge agent switch** left or right.
5. If both presses of the discharge agent switch fail to put out the fire, land as soon as possible.

APU FIRE (T-Handle Illuminated)

1. If the APU is operating, set the **APU** switch to **OFF**.

If the fire persists…

2. **Pull** the fire **T-Handle** of the APU.
3. **Press** the **fire discharge agent switch** left or right.
4. If both presses of the discharge agent switch fail to put out the fire, land as soon as possible.

IN AIR ENGINE START

APU RESTART

1. Move the inoperative engine **throttle** to the **OFF** position.
2. Observer that the shut down engine ITT value cools down rapidly.
3. Aircraft altitude should be below 20,000 ft AGL and increase airspeed.
4. When **below 15,000 ft AGL**, move the **APU** switch to the **PWR** position.
5. Move the still **operating throttle** to **MAX**.
6. Set the **Engine Operate** switch of the affected engine to the **MOTOR** setting.
7. When affected engine **ITT** is **below 100c** when below 15,000 ft AGL, restart the affected engine by moving the throttle from OFF to IDLE.
8. Move the **Engine Operate** switch of the affected engine back to the **NORM** position.
9. If engine restart is successful, reengage the SAS switches and set engine operate switch back to NORM.

IN AIR ENGINE START (Continued)

WINDMILL RESTART

This method will use the bleed air from the operating engine to provide the power to start the affected engine. Using a windmill start will take 6,000 to 8,000 ft to complete because it requires a steep dive of at least 30-degrees. **Given the altitude requirement, this is not an option when below 10,000 ft AGL.**

1. Place the aircraft in a **30-degree dive**.
2. Set the **Bleed Air** switch to **OFF**.
3. Set the **Crossfeed** switch to **Crossfeed**.
4. Once **ITT** of affected engine is **below 150c**, set both throttles to **MAX**.
5. Set the **Engine Operate** switch of the affected engine to **IGN**.
6. Once engine is operating, move **Engine Operate** switch back to **NORM**.
7. Move **Crossfeed** switch to **OFF**.
8. Set **Bleed Air** switch to **ON**.

ENGINE START AFTER FAILED ATTEMPT

If an engine fails to start using the automatic NORM mode, the engine combustion chamber may be flooded with fuel and needs to be purged before it can be restarted or risk a hot start. A failed start can happen if you fail to set the Inverter switch, which fails to provide power to the engine igniters. To purge an engine of fuel:

1. Set the **Throttle** of the affected engine to **OFF**.
2. Set the **Engine Operate** switch of the affected engine to the **MOTOR** position for **30 seconds**.

After completing the purge, you can attempt to restart the engine after correcting what prevented the engine from starting earlier.

APU OVERTEMP

If the APU temperature begins to fluctuate or experiences an over-temperature, shut it down immediately. **If** the APU is needed for engine start or electrical power, you can try to restart the APU and closely monitor it. **Avoid running the APU when one or both engines are running above 80% core RPM as a bleed air failure can cause aircraft damage.**

1. **APU GEN** switch to **OFF**.
2. **APU** switch to **OFF**.

ENGINE OIL MALFUNCTION

Oil pressure for either engine is outside its normal operating limits.
1. Set **throttle** of **affected engine** with oil problem to **minimum** (not IDLE).
2. If **oil pressure** can be **maintained** at **30 psi**, set the affected engine **throttle** to **IDLE**.
3. If **oil pressure** is still **below 30 psi**, set the affected engine **throttle** to **OFF** to avoid engine damage.

FUEL BOOST PUMP FAILURE(S)

MAIN PUMP, L or R caution lights Illuminated.
Assuming wing boost pumps are still operating, the engines will still be provided fuel due to that pressure. If both main and wing boost pumps are not working though, suction-feed will supply the engines below 10,000 ft. Above this altitude, engine operation may suffer.
1. **Crossfeed** switch to **CROSSFEED**.
If this causes rapid fuel transfer between tanks;
2. **Pull** the **Fill Disable** switches.

L or R WING BOOST PUMP caution lights illuminate.
Indicates the fuel in the tank of the boost pump will not transfer until the amount is below 600 lb. If left unchecked, this can lead to a weight imbalance.
1. Select **CROSSFEED** from the **Crossfeed**.
This will allow the tanks to equalize and maintain fuel balance.
If however there is too rapid of a fuel transfer between tanks
2. **Pull** the **Fill Disable switches**.

FUEL PRESSURE LOW or FUEL LEAK

L-FUEL PRESS or **R-FUEL PRESS** caution lights illuminating.
1. **Crossfeed** switch to the **CROSSFEED** position.
If this does not extinguish the light(s),
2. set the **Crossfeed** switch back to **OFF;**
Monitor fuel quantity to determine if a leak exists. If it appears a leak does exist,
3. set the **affected engine throttle** to **OFF** and
4. **Pull** the fire **T-handle** of the **affected engine**.
If the leak still continues from the left system
5. Set the **left boost pump** switches to **OFF**.
If the right system continues to leak,
6. Set the **right boost pump** switches to **OFF**
7. Set the **SAS** switches to **OFF**.

FLIGHT AND FLIGHT CONTROL EMERGENCIES

FLAP ASYMMETRY

If the flaps fail to extend or retract symmetrically, you should attempt the following remedies in order:

1. **Re-select** the flap **position** at which the **asymmetry** first **occurred**.

If that does not work…

2. **Flaps** to **MVR** setting when speed and altitude allow.

If that does not work…

3. On the **Emergency Flight Control Panel**, **enable** the **FLAP EMER RETR**.

SPEED BRAKE ASYMMETRY OR FAILURE

1. On the **Emergency Flight Control Panel**, move the **SPD BK EMER RETR** switch up to **close**.

AILERON / ELEVATOR JAM

AIL, L/R or ELEV, L/R caution panel light Illuminated

One or more aileron or elevator control surfaces have jammed.

1. **Disengage** the **control** and allow normal movement of the controls
2. **Move** the **emergency disengage switch** on the Emergency Flight Control Panel **in** the **direction** of the **jam indicator light**.

NORMAL TRIM FAILURE

1. Set the **PITCH/ROLL TRIM** switch to **EMER OVERRIDE** on the Emergency Flight Control Panel
2. Use the emergency pitch and roll trim switch to set desired trim.

OUT-OF-CONTROL RECOVERY

If the aircraft departs from controlled flight as the result of an un-commanded roll-reversal or spin, it can be easily recovered from after a few control oscillations.

To recover:

1. **Neutralize all controls** until oscillations have ceased. Trying to rush the recovery may only exacerbate the problem.
2. Set **throttles** to **IDLE**.
3. If in a **spin**, **full input of rudder opposite** of **turn** needle.

NOTE:

A spin can take between 4,000 and 10,000 feet to recover from depending on severity.

Emergency Landings and Exiting

SINGLE ENGINE LANDING

When one of the engines has failed and a safe, controlled flight is still possible, a landing can still be performed:

1. Ensure the failed engine will cause no damage to the aircraft due to fire.
2. Use the **rudders** to **compensate** for yaw due to single engine operation. If possible, bank into the direction of the operating engine.
3. Advance the **operating engine** throttle to **MAX**.
4. **Close speedbrakes** if open.
5. Set **flaps** to **MVR** setting.
6. A **straight in approach** should be **used** and all **set up** maneuvering **completed 2** to **3 nm** from touchdown point.
7. **Jeffison external stores**.
8. **Lower** the **landing gear** and compensate for increased drag.
9. **Reduce power slowly** during landing flare with careful and coordinated rudder input to keep aircraft aligned down the runway.

FLAMEOUT LANDING

If an ejection is not possible, a flameout landing should be attempted. A flameout landing is when both engines are not producing any thrust and you must land.

1. Enter landing pattern with a very steep approach using a circular pattern which will result in a low displacement 8,000 ft from the runway. All turns within the pattern should be limited to 30-degrees of bank.
2. Lower landing gear with a minimum airspeed of 160 KIAS. Altitude should be between 7,000 and 6,500 ft AGL.
3. **Maintain 160 KIAS** and **altitude** should be **between 3,500** and **4,000 ft AGL**.
4. On the **base leg**, maintain **160 KIAS** and an **altitude** of **between 2,000** and **2,500 ft AGL**.
5. **Roll out** on final should be **initiated early** due to the slow roll response of the aircraft if in manual reversion mode. Final approach will have aircraft at 150 KIAS wings level above 500 ft AGL. Touchdown should occur 1/3 down the runway. The landing flare should be done at 120 KIAS when 200 to 300 ft AGL over the runway. When 50 ft AGL, shallow the flight path to 1.5 to 2 degrees. Note that pitch response will be greatly degraded when below 50 ft AGL due to the ground effect. Once on the ground, emergency brakes should be used because no anti-skid, flaps, or speed brakes will be available.

LANDING GEAR EXTENSION FAILURE

If moving the landing gear handle to the down position does not result in three down and locked lights:

1. **Press** the **Signal Lights** button to make sure the lights are operating.
2. **Check** that there is **pressure** in the **left hydraulic** system.

If pressure looks good…

3. **Cycle** the landing **gear handle** back **up** and then **down** again.
4. **Increase airspeed** to **200 KIAS** and **pitch** and **roll** the **aircraft** to **shake** loose the **gear**.
5. **If** all this **fails**, use the **Landing Gear Alternative Extension Handle**. To use this handle:

a. **Reduce airspeed** below **200 KIAS**
b. Ensure **landing gear handle** is **down**
c. **Pull AUX LG EXT** handle along the lower left side of the center dash

WHEELS UP LANDING

If you are unable to lower the landing gear as described above, you will need to perform a wheels up landing. To perform a wheels up landing, follow these steps:

1. **Pull** the **AUX LG EXT** handle.
2. **Jettison** all **stores** and **flares**.
3. **Burn off excess fuel**.
4. **Pull** the **EMER BRAKE**.
5. Set **speed brakes to 40%**.
6. Lower **flaps** to **Full Down**.
7. Fly **shallow approach** at 2-degrees at normal airspeed.
8. **Touchdown** at a **minimum sink rate** on **center** of **runway**.
9. After touchdown, open **speed brakes** to **full**.
10. **Reduce throttles** to **IDLE**.
11. Move **control stick** to **full aft**.
12. Once you have **come** to a **stop**, set the **throttles** to **OFF**.

MANUAL REVERSION LANDING

Landing should **only** be attempted in **ideal conditions** and flight controls should not be degraded, **maximum** allowed **crosswind** is **20 knots**, no ECM pods can be loaded on stations 1 and 11, and you must never use pitch trim for flaring the aircraft. **If you cannot meet these conditions, you should eject from the aircraft.** To perform an MRFCS landing:

1. **Jettison** all **stores** and **flares**.
2. **Extend landing gear** either normally or with AUX LG EXT handle.
3. **Pull** the **EMER BRAKE** handle.
4. Fly a **straight** in **approach** at 1.5 to 2 degrees with low sink rate.
5. When below 50 ft AGL, pitch response becomes degraded.
6. **Maintain** minimum **airspeed** around **140 KIAS** to touchdown.

HYDRAULIC FAILURE

The aircraft has both left and right hydraulic systems and the failure of one still allows adequate flight control response. Failure of either the systems can be indicated by the **L** and **R HYD RES** (hydraulic fluid reservoir low) caution light or the **L** and **R HYD PRESS** (hydraulic pressure low) caution light. However, the loss of one hydraulic system will reduce rudder authority.

L**eft hydraulic system** fail, lose the following systems:

- Flaps
- Nosewheel steering
- Normal landing gear operation
- Wheel brakes
- Anti-skid
- Hydraulic control of the left elevator and rudder actuators
- Lose of dual channel pitch and yaw SAS

LEFT SYSTEM FAILURE

1. Set the **FLAP EMER RETR** switch to **EMER RET**R on the Emergency Flight Control Panel.
2. If pressure continues to decrease:
2.1. Set the **SAS/Anti-skid** paddle to **OFF**
2.2. Keep **Pitch SAS OFF**
2.3. Land as soon as possible

Right hydraulic system fails, lose the following systems:

- Slats (will extend with loss of hydraulic power)
- Air refueling slipway and nozzle hatch rollers
- Speed brakes
- Right elevator and rudder actuators
- Lose of dual channel pitch and yaw SAS

RIGHT SYSTEM FAILURE

1. Set the **SP BK EMER RETR** switch to **EMER RETR** on the Emergency Flight Control Panel.
2. If pressure continues to decrease:
a. Set the **SAS/Anti-skid** paddle to **OFF**
b. Keep **Pitch SAS OFF**
c. **Enable Anti-skid** if left hydraulic system is still operable
d. Land as soon as possible

BOTH SYSTEM FAILURE

1. **Maintain 1G flight** between **180** and **210 KIAS**
2. Set **flaps** to full **UP** (use emergency retract if needed)
3. **Jettison stores** to produce symmetrical loading
4. **Enable Manual Reversion** Mode

HYPOXIA

If you are not receiving enough oxygen above 20,000 ft MSL, you may suffer the effects of hypoxia and lose consciousness.

If you start to see visual effects, you must:

1. Ensure **oxygen** lever is set to **ON**.
2. Oxygen **flow indicator** is **blinking**.
3. Oxygen **pressure** is **above 55 psi**.
4. If set correctly and effects are still present, **descend below 13,000 ft**.

EJECTION

Using the ejection seat, you can exit the aircraft at most any speed and altitude, but ejection above 2,000 ft AGL wings level is preferable. If below 2,000 ft AGL, do not delay in making the decision. If in uncontrolled flight, eject at an altitude above 4,000 ft AGL.

If time permits, the following steps should be taken before ejecting from the aircraft:

1. Set **IFF** panel to **EMER** and **set** appropriate **Mode 3/A code**.
2. **Transmit —May Day‖** call on **UHF guard channel**.
3. **Turn** aircraft to **uninhabited area**.
4. **Trim** aircraft for **lowest practical speed** with **wings level**.
5. **Pull** either **ejection handle** and the process will start immediately.

CAUTION LIGHT PANEL INDICATIONS

This section discusses the possible caution light indications you may see and the corrective action to take. (Listed in Alphabetical Order)

AIL, L/R. Either the left or right aileron has jammed.
Set the **aileron emergency disengage switch towards** the affected jam **indicator light** and monitor the AIL DISENG caution light.

AIL DISENG. Either the left or right aileron has been disengaged from the control stick.
To re-engage either aileron, **move** the **disengage switch** back to **center** and then **roll** the **aircraft back and forth** if necessary.

AIL TAB, L/R. This will only happen when in manual reversion mode when the roll servo tab shift actuator has been extended.
Exit out of **manual reversion** mode.

ANTI-SKID. This light will illuminate when either the anti-skid switch is set to OFF while the landing gear is down, or when the switch is set to ON but there is a failure in the circuit.
1. If **switch** is set to **OFF**, **set** it to **ON**.
2. If already on, brake carefully and **avoid locking** the **brakes** when landing.

APU GEN. The APU is not generating power yet the APU generator switch is set to PWR.
Reduce the **electrical load** (shut down some electrical systems) and then **cycle** the **APU generator switch**.

BLEED AIR LEAK. A temperature sensor has detected bleed air leak.
1. Turn the **bleed air** switch to **OFF**
2. Set **APU** switch to **OFF**
3. Land as soon as practical

CADC. The Central Air Data Computer (CADC) has failed. Certain failures of the CADC can cause erroneous data to be displayed. The HUD will display the last valid airspeed and altitude data before the failure and you will see a CADC FAIL and an INS DEGRADED message on the CDU.
Select STBY or **PNEU** on the **altimeter** and **monitor** pitot-static **airspeed indicator**.

CICU. The Central Interface Control Unit (CICU) has failed.
Check status of CDU on CDU Systems (SYS) page.

CONV, L/R. Either the left or right electrical converter has failed.
Land as soon as possible.

EAC. The LASTE Enhanced Attitude Control (EAC) switch has failed.
Cycle the **EAC** button and if that fails, **press** the **MALF** button on the **UFC** by pressing **FUNC** and then **CLR**.

ELEV, L/R. Left or right elevator has jammed.
Set the **elevator emergency disengage** switch **towards** the affected jam **indicator light** and monitor the ELEV DISENG caution light.

ELEV DISENG. Either the left or right elevator has been disengaged from the control stick.
To re-engage either elevator, **move** the **disengage switch back** to **center** and then **pitch** the **aircraft up and down** if necessary.

ENG HOT, L/R. Either Interstage Turbine Temperature (ITT) indication

is exceeding 880-c.
Reduce throttles until ITT temperature returns to normal operating range.

ENG OIL PRESS, L/R. Oil pressure in either engine falls below 34 psi.
See Page 5

ENG START CYCLE. An engine is conducting its automatic startup cycle and the air turbine starter solenoid valve is open with the throttle at IDLE but core engine speed below 56%. This light will also illuminate when either engine operate switch is in the MOTOR position.
Allow engine start cycle to **complete** or **move engine operate** switch to **NORM** position depending on engine start method.

FUEL PRESS, L/R. Indication of fuel pump failure due to either low differential fuel pressure or a clog in the engine feed line.
See Page 5

GCAS. The Ground Collision Avoidance System (GCAS) is inoperative.
Set **radar altimeter** switch on LASTE panel to **NRM** and reset master caution light in UFC.

GEN, L/R. Either the generators are set to OFF/RESET or there is a failure. Such a failure will also lead to the failure of the Main and Wing fuel boost pumps and SAS channels.
1. If **above 10,000** ft AGL, set the **Crossfeed** switch to **CROSSFEED**
2. **Reset** the **failed generator** switch back to **OFF/RESET** and then back to **PWR**
3. If after three attempts the generator does not come back online:
3.1. Set the **failed generator** back to **OFF/RESET**
3.2. **Start APU** when **below 15,000** ft AGL
3.3. Set **APU generator** switch to **PWR**
3.4. Land as soon as practical

GUN UNSAFE. A live round remains in the barrel after the gun has been fired. **DO NOT ATTEMPT TO FIRE GUN**
Set the **GUN/PAC** and **Master Arm** switches on the AHCP to **SAFE**.

HARS. HARS is offline and not providing usable data.
If HARS fails and is the active attitude reference source, you can restore yaw dampening and trim by:
1. Select **EGI** on the **Navigation Mode Select Panel**
2. **Reengage** the **YAW SAS** channels

EGI is not operating:

1. Set the **CDU** switch on the Auxiliary Avionics Panel to **OFF**
2. Set the **EGI** switch on the Auxiliary Avionics Panel to **OFF**
3. Set the **HARS/SAS** switch to the **OVERRIDE** position

HYD PRESS, L/R. This light will illuminate if either hydraulic system falls below 900 psi or manual reversion mode is enabled.
See Page 9 and 10

HYD RES, L/R. Volume of hydraulic fluid in the reservoir is low.
See Page 9 and 10

IFF MODE-4. Mode-4 is inoperative due to IFF panel being zeroized or system failure.
Set correct mode or exit interrogation environment.

INST INV. Instrument inverter switch is inoperative and indicates no power is being provided to the AC essential busses. This is indicative of the loss of both AC generators. Such a condition will also lead to the L and R ENG HOT caution lights illuminating.
1. **Engine core** speeds should be **below 90%** when **below 25,000** MSL and **85%** when **above 25,000** MSL
2. Cycle **Inverter** switch between **TEST** and **STBY** and then **leave** in **STBY**
3. **Start APU** when **below 15,000** MSL
4. Set the **APU generator** switch to **PWR**
5. Land as soon as practical

L-R TKS UNEQUAL. An imbalance of greater than 750 lbs of fuel between the two main fuselage tanks has been detected.
1. Set the **Crossfeed** switch to **CROSSFEED** on the Fuel Control panel
2. Set **wing boost pumps** to **OFF**
3. If **right system** has **less fuel**: set **right main boost pump** switch to **OFF**
4. If **left system** has **less fuel**: set **left main boost pump** switch to **OFF**

LASTE. The Low Altitude Safety and Targeting Enhancement (LASTE) system in inoperative.
Cycle the IFFCC switch on the AHCP.

MAIN FLOW LOW, L/R. Fuel quantity is below 500 lbs.
Land as soon as possible.

MAIN PUMP, L/R. Indication of possible fuel boost pump failure due to fuel pressure differential at outlet of indicated main fuel boost pump is low.
See Page 5

NAV. There are multiple reasons this light may illuminate and most of them involve EGI state. Possible reasons for this caution and corrective actions include:

EGI flight instrument failure
1. Set the **Navigation Mode Select Panel** to **HARS** from EGI
2. **Verify** an **EGI FLY INST FAIL** message on the **CDU**
3. From the **RESET** page of the **CDU**, select the **EGI line select key**

EGI is not ready failure
1. **Verify EGI** switch is set to **ON** on the AAP
2. **Set** the **EGI** switch to **OFF** for at least **10 seconds**
3. **Reset** the **EGI** switch back to **ON**

EGI GPS failure
1. On the **CDU**, verify a **GPS FAIL message**
2. On the **Navigation Mode Select Panel**, ensure **EGI** is **selected**
3. From the **CDU RESET page**, press the **REINT INS** line select key, if failure persists…
4. On the **Navigation Mode Select Panel**, select **HARS**
5. On the **CDU REINT** page, **press** the **REINT GPS** line select key

EGI INS failure
1. On the **CDU**, **verify** an **INS FAIL** message
2. On the **Navigation Mode Select Panel**, ensure **EGI** is **selected**
3. From the **CDU RESET page**, **press** the **EGI line select key**, if failure persists…
4. On the **Navigation Mode Select Panel**, select **HARS**
5. On the **CDU REINT page**, **press** the **REINT GPS** line select key

CDU failure
1. On the **AAP**, set the **CDU switch** to **OFF** for at least **4 seconds**
2. Set the **CDU** switch back to the **ON** position. If the problem persists…
3. **Reload DTS data**
4. **Select** desired **Navigation Mode Select Panel settings**

OXY LOW. 0.5 liter or less of liquid oxygen remains in oxygen converters.
Descend below 10,000 ft AGL and land as soon as practical

PITCH SAS. One or both SAS channels have been disengaged. Reengage one channel at a time and if both cannot be reengaged, leave both off. Avoid single-channel operation as it can result in undesired loading on the interconnector shear bolts.

SEAT NOT ARMED. Seat ground safety lever in SAFE position

SERVICE AIR HOT. Indication of excessive pre-cooler output air temperature.
1. Turn the **bleed air** switch to **OFF**
2. Set **APU** switch to **OFF**
3. Land as soon as practical

STALL SYS. There has been a failure in the alpha/Mach computer and the stall warning will be inoperative. In such a situation, the slats extend automatically.
Do not exceed 20 units of AoA.

WINDSHIELD HOT. Windshield anti-icing temperature is in excess of 150-F or aircraft is on battery electrical power only.

WING PUMP, L/R. Indication of possible fuel boost pump failure due to fuel pressure differential at outlet of indicated wing fuel boost pump is low.
See Page 5

YAW SAS. One of both YAW SAS channels have been disengaged.
1. **Reengage one channel at a time** and **if both cannot be reengaged**, leave **both off**.
2. Avoid single-channel operation as it can result in undesired loading on the interconnector shear bolts.
3. On the **Navigation Mode Select Panel**, **cycle** between **HARS** and **EGI** to **reset** the **attitude reference system** and then **attempt** to **reengage** the **channels**.