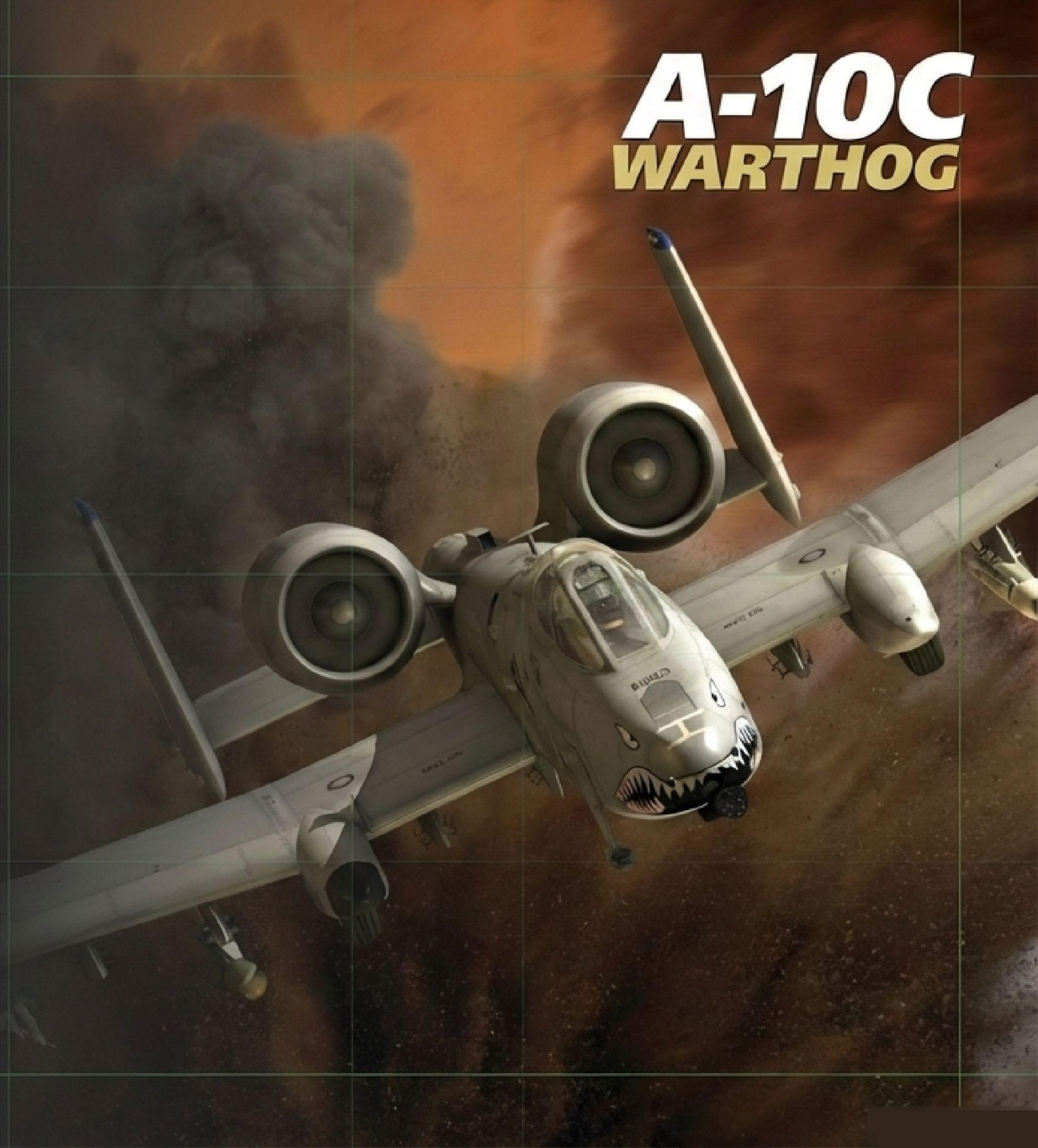
Simstruct

DCS: A-10C WARTHOG

The Tactical Kneeboard: Zero to Hero Flight Manual



A beginner's chronological sequence for combat sorties: Startup, Takeoff, Weapons, and Recovery.

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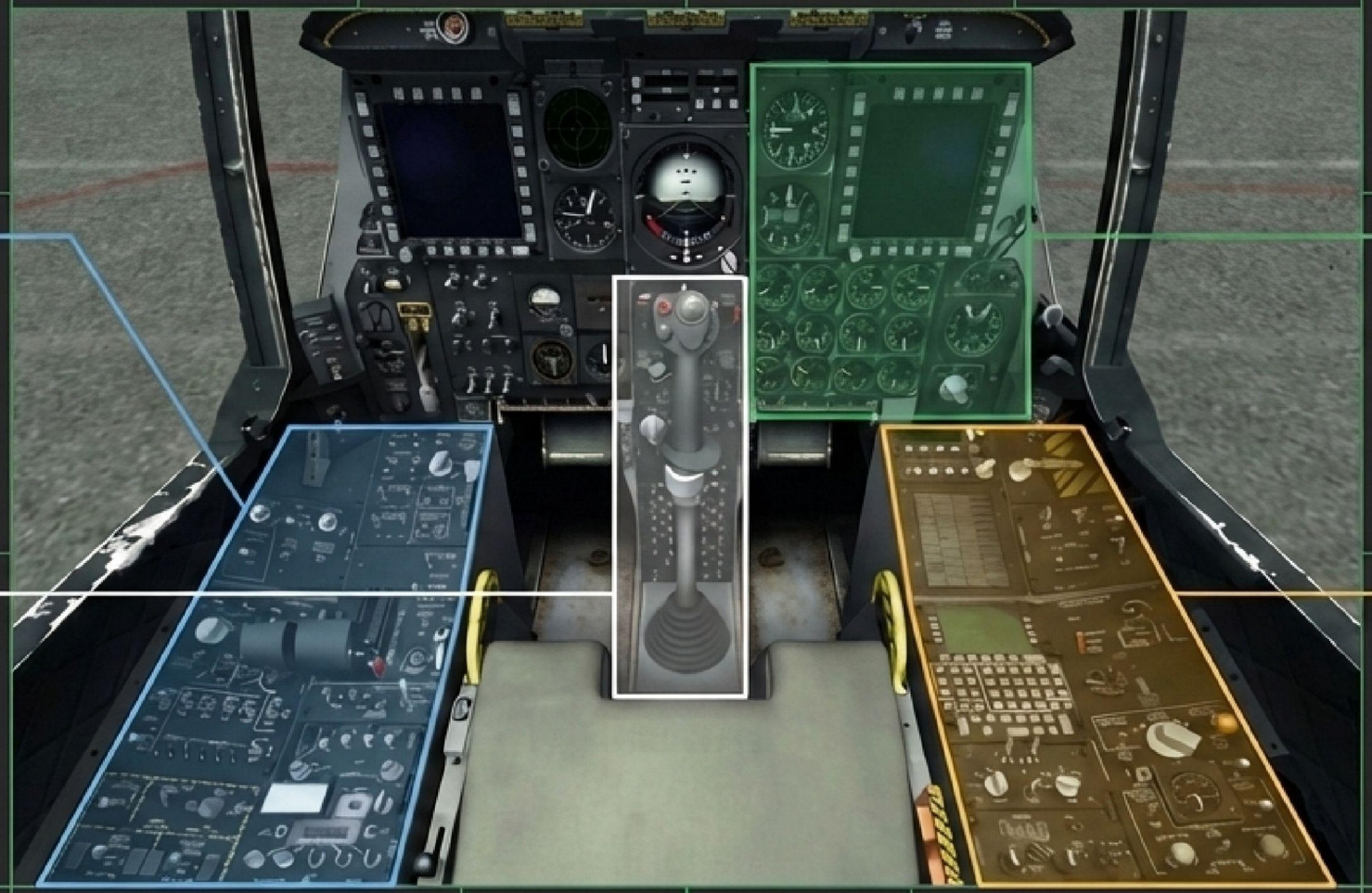

Zone 1 (Blue):
Left Console (Fuel, Radios, Flight Controls, Throttles)

Zone 4 (White):
HOTAS (Hands On Throttle And Stick)

Zone 3 (Green):
Front Dash (Flight Instruments, MFCDs, AHCP, Warning Lights)

Zone 2 (Amber):
Right Console (Electrical, Avionics, Lighting, Countermeasures)

COCKPIT OVERWHELM MITIGATION:
Do not search the whole cockpit. Follow the zone indicators on each checklist step.
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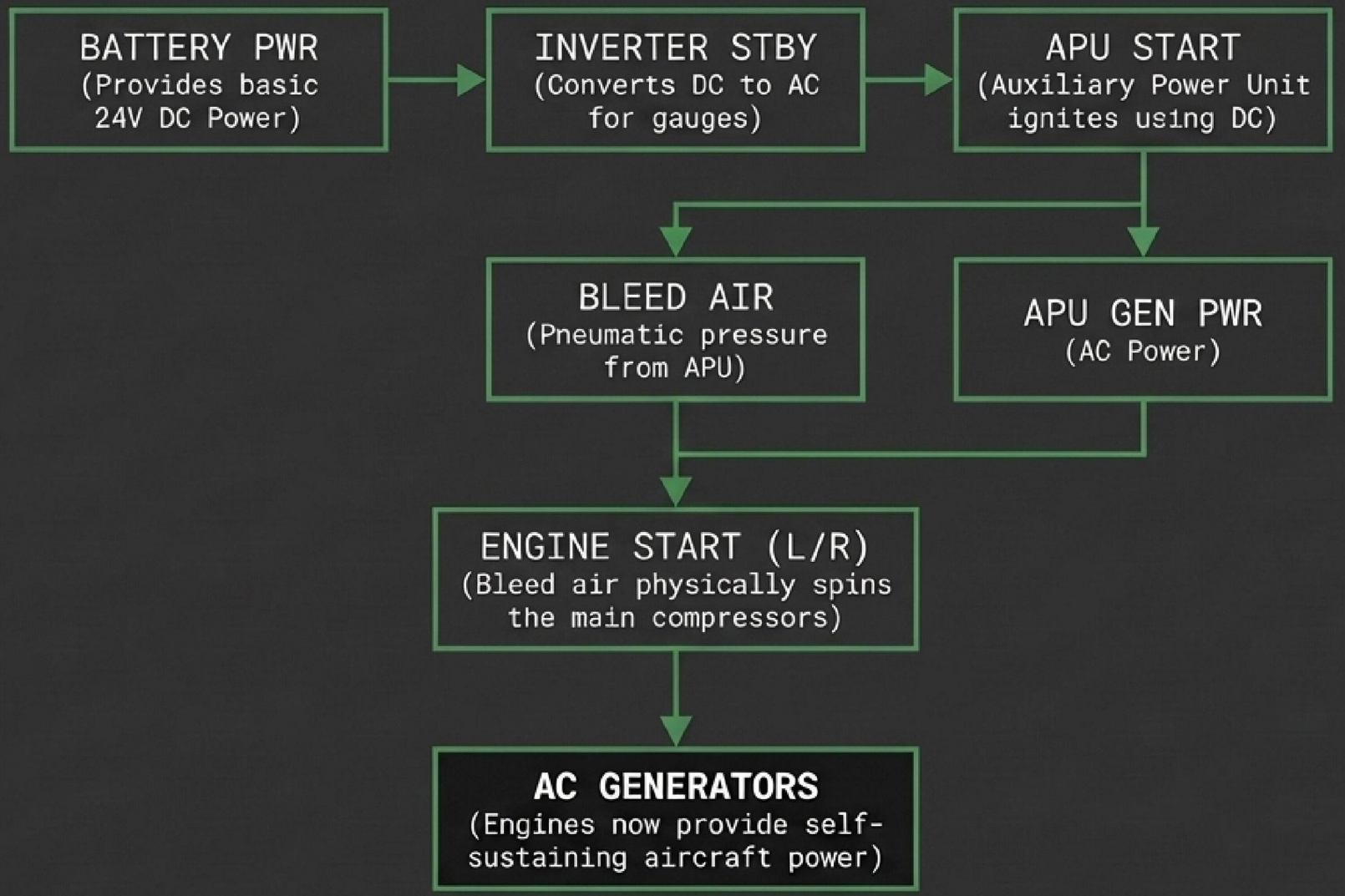
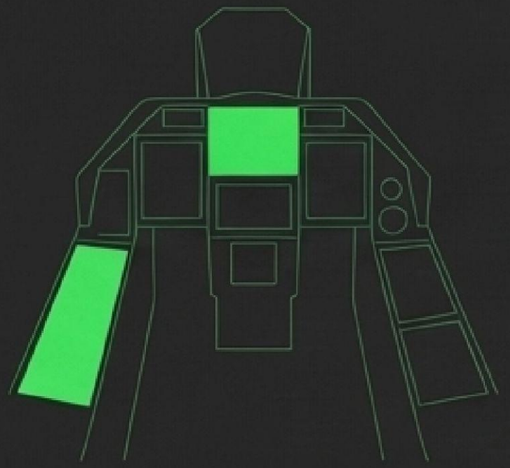
THE START-UP LOGIC



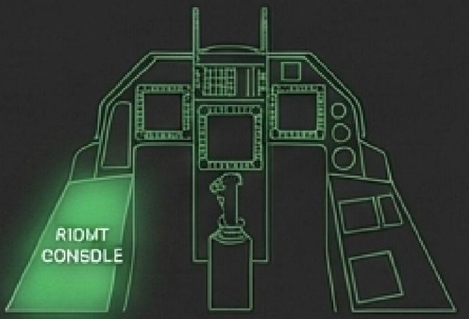
The aircraft breathes before it flies. APU provides the pneumatic breath (bleed air) to spin the massive GE TF34 engines before fuel ignition.

PHASE 1: STARTUP PREPARATION

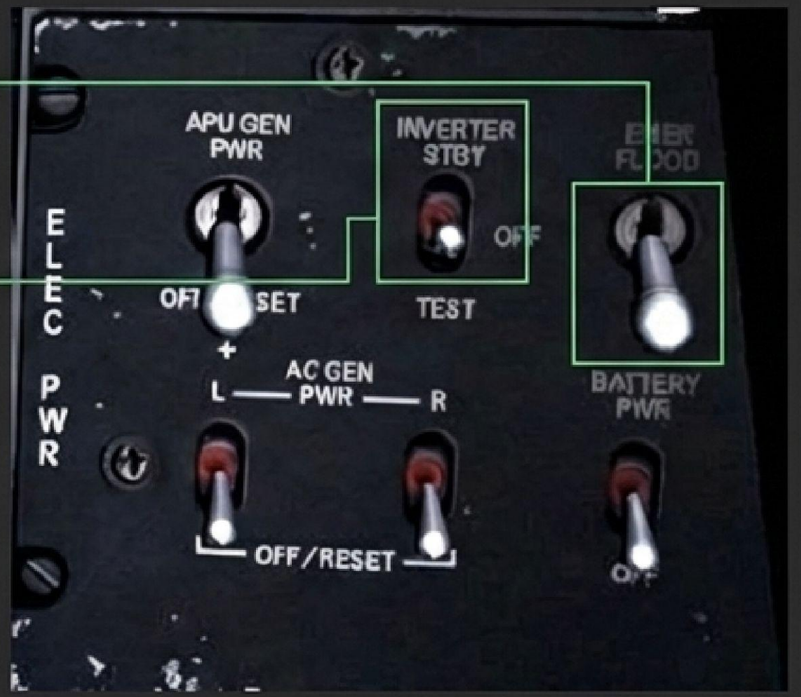


LOCATION	ACTION	RESULT/INDICATION
Left Console	Intercom & Radio Volumes	Rotate knobs as needed for comms.
Right Console	Oxygen Supply Lever -> ON	Breathing systems active.
Front Dash (Fuel Panel)	Press Fuel Quantity TEST	Pointers indicate 3,000 (L/R); Totalizer reads 6,000.
Front Dash (Gear)	Check Landing Gear Lights	Three GREEN lights illuminated.

PHASE 2: ELECTRICAL STARTUP



LOCATION	ACTION	RESULT/INDICATION
Right Console (Elec Panel)	BATTERY Switch -> PWR	DC essential buses powered.
Right Console (Elec Panel)	INVERTER Switch -> STBY	INST INV caution light extinguishes. AC gauges powered.
Right Console (Elec Panel)	AC GEN (L/R) Switches -> PWR	Pre-set for engine start.
Left Console (Aux Panel)	Press SIGNAL LIGHTS LAMP TEST	Cockpit indicators flash to verify bulb integrity.



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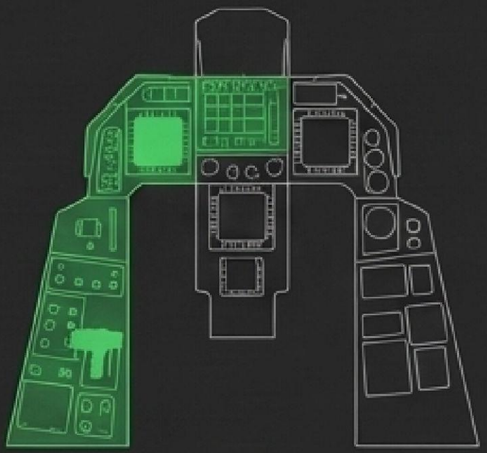
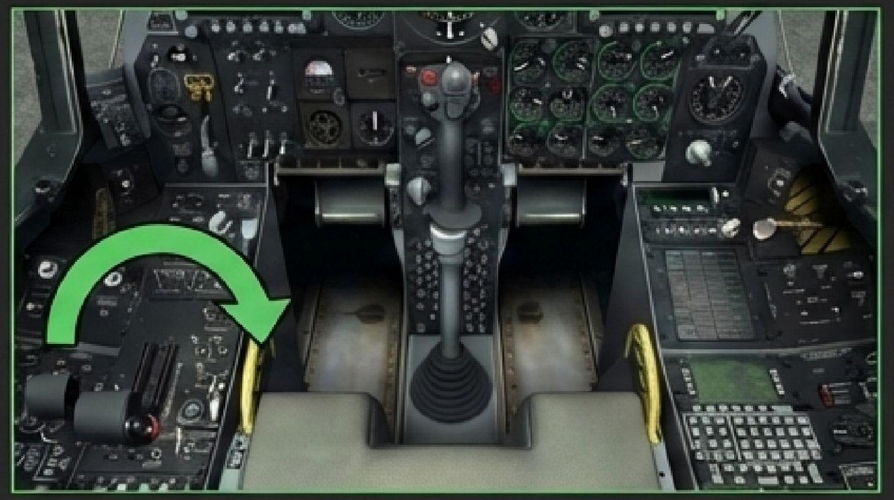
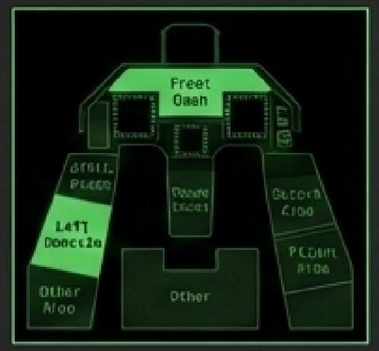
PHASE 3: APU STARTUP



LOCATION	ACTION	RESULT/INDICATION
Left Console (Throttles)	APU Switch –> START	APU spools up using DC battery power.
Front Dash (Gauges)	Monitor APU EGT & RPM	**CRITICAL LIMITS:** Spikes briefly to 760°C. Must normalize at 400-450°C. RPM stabilizes exactly at 100%.
Right Console (Elec Panel)	APU GEN Switch –> PWR	APU now powers the aircraft electrical grid.

PHASE 4: MAIN ENGINE STARTUP

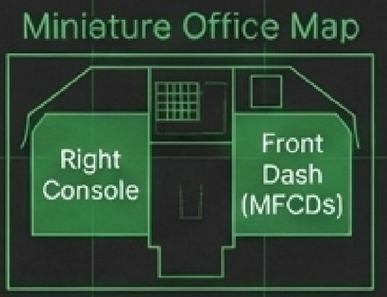




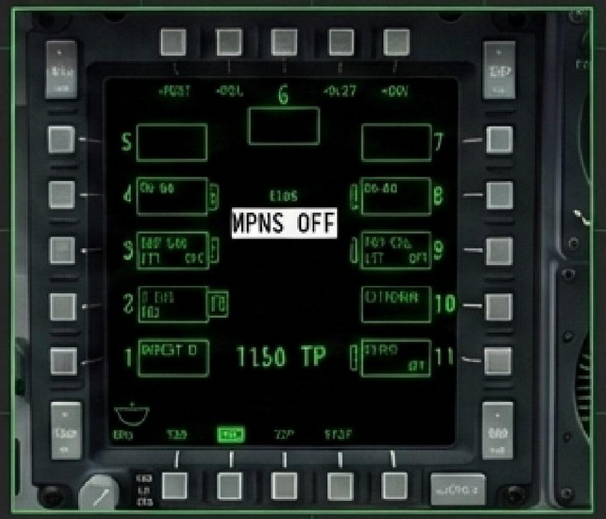
(Note: Both engines use APU bleed air. Do not use one engine to start the other on the ground).

LOCATION	ACTION	RESULT/INDICATION
Left Console (Fuel)	L/R Main & Wing Boost Pumps -> ON	DC fuel pumps feed engines.
Left Console (Throttles)	Left Throttle -> IDLE	Automatic start sequence initiates.
Front Dash	Monitor ITT & Core RPM	ITT spikes to 900°C, stabilizes 275-865°C. Core RPM idles at 56%.
Front Dash (Fuel/Hyd)	Monitor L/R Hydraulic Systems	Normal pressure establishes at 2,800 to 3,350 psi.
Left Console	Repeat sequence for Right Throttle.	

PHASE 5: AVIONICS & SYSTEMS ALIGNMENT



LOCATION	ACTION	RESULT/INDICATION
Right Console (AAP)	CDU Switch -> ON	Control Display Unit boots and begins Built-In Test (BIT).
Right Console (AAP)	EGI Switch -> ON	Embedded GPS/INS begins alignment (takes several minutes).
Front Dash (MFCD)	Press DTS Page -> LOAD ALL	Transfers mission data cartridge (weapons profiles, waypoints) into the jet's computer.
Right Console (CDU)	When EGI alignment finishes -> select NAV	Navigation system ready for flight.



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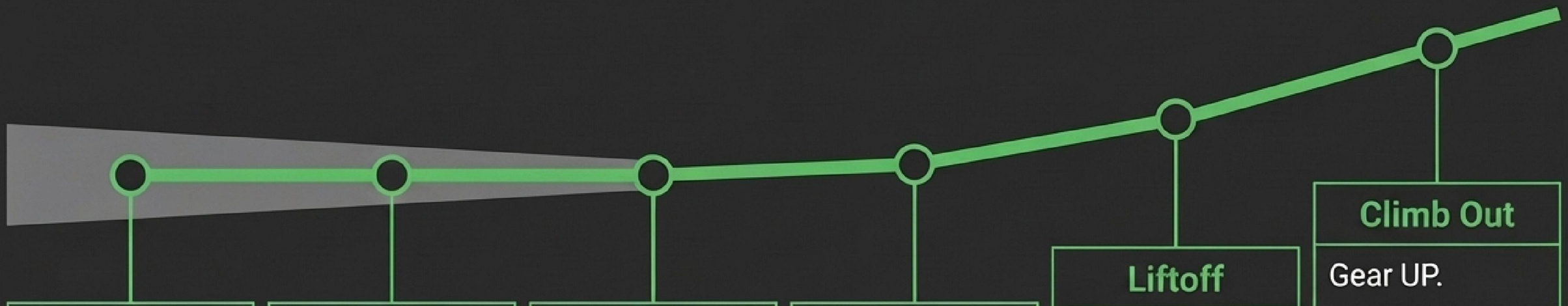
PHASE 6: TAXI AND TAKEOFF



Taxi

Engage Nosewheel Steering (NWS).

Keep speed 15-25 knots.

Set Flaps to MVR (7 degrees).

Run-Up

Hold brakes.

Advance throttles to 90% core RPM.

Check instruments.

Takeoff Roll

Release brakes. Throttles to MAX.

Disengage NWS at 70 KIAS (Knots Indicated Airspeed) to use aerodynamic rudder.

Rotation

At ~125 KIAS (10 knots prior to takeoff speed), pull stick back smoothly. Establish 10-degree pitch angle.

Liftoff

At ~135 KIAS, the aircraft flies itself off the runway.

Do not yank the stick.

Climb Out

Gear UP.

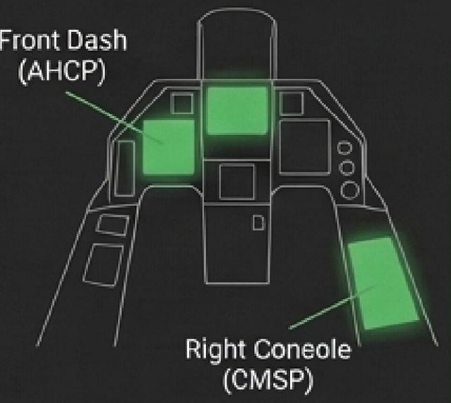
Flaps UP.

Maintain 10-degree pitch.

PHASE 7: COMBAT PREPARATION (FENCE IN)

LOCATION	ACTION	RESULT/INDICATION
Front Dash (AHCP)	MASTER ARM -> ARM	Weapons are live. (Use TRAIN for simulated drops).
Front Dash (AHCP)	GUN/PAC -> ARM	Activates GAU-8 Cannon and Precision Attitude Correction (stabilizes plane when firing).
Front Dash (MFCD)	Check DSMS Page	Digital Stores Management System confirms weapon inventory (green status).
Right Console (CMSP)	Set Mode Dial -> AUTO or SEMI	Countermeasure Signal Processor ready to dispense flares/chaff against threats.

Miniature Office Map



CMSP Panel

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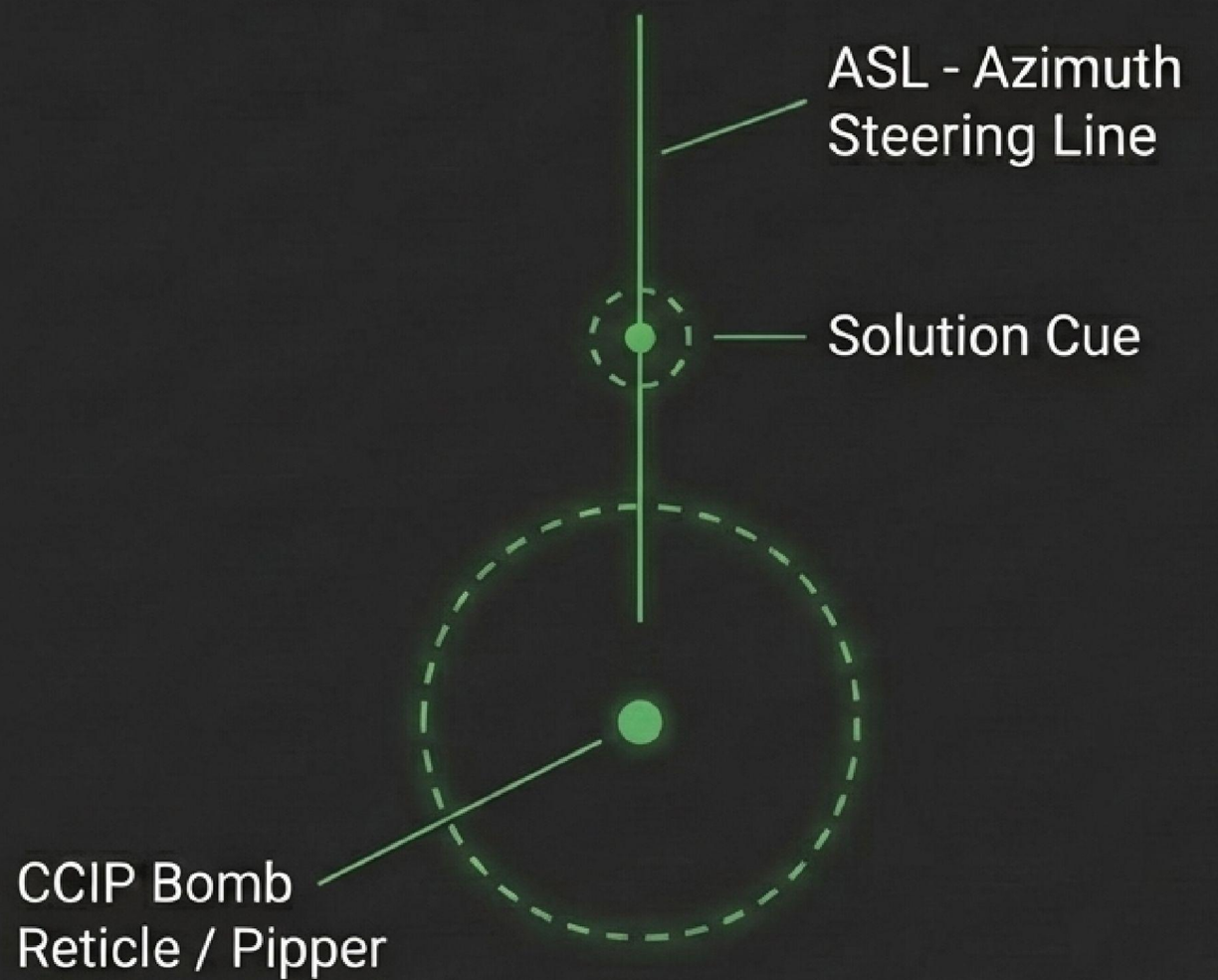
WEAPON DELIVERY METHODS MATRIX

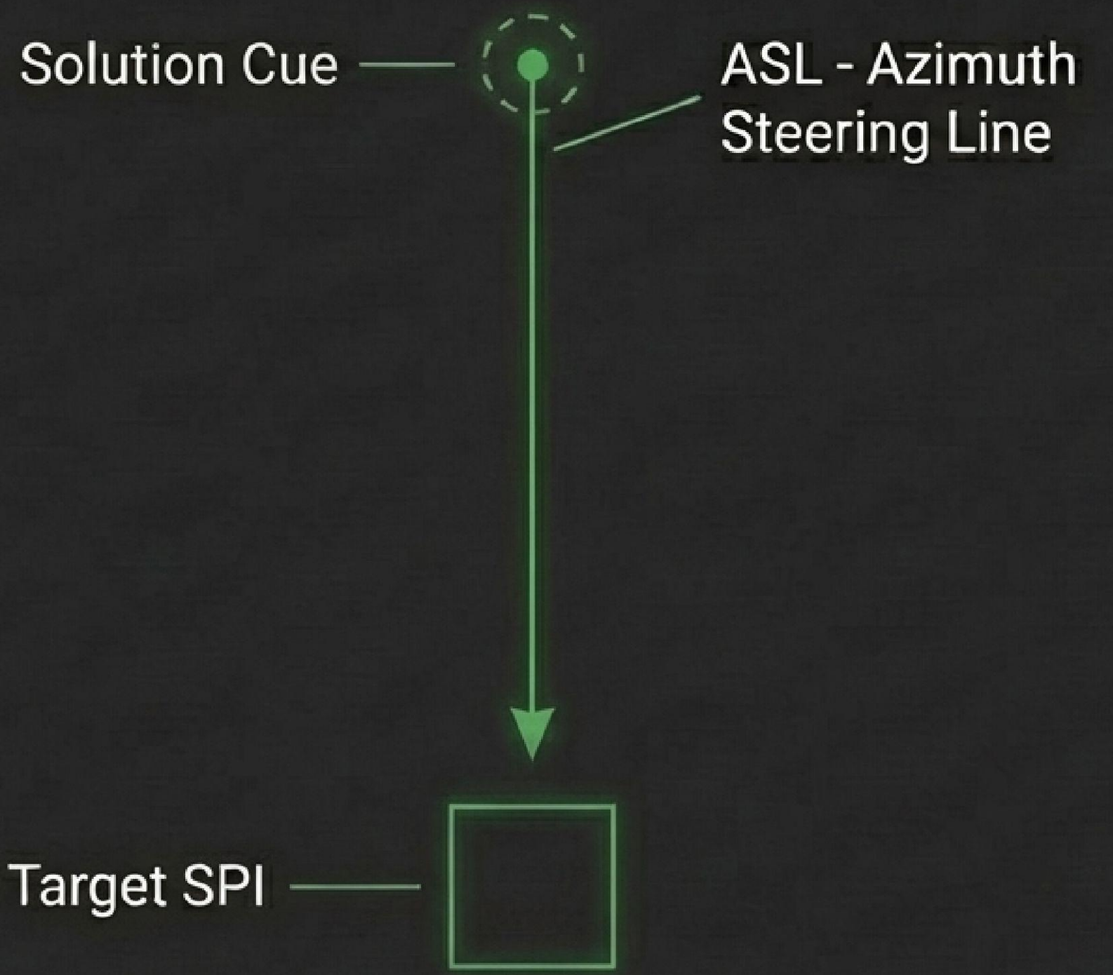
	CCIP	CCRP	IAM
Acronym Meaning	Continuously Computed Impact Point	Continuously Computed Release Point	Inertially Aided Munition
Best For (Target Type)	Visual, immediate targets of opportunity	Known coordinates, visually obscured targets	Pre-planned GPS coordinates (e.g., JDAMs)
Pilot Workload	Low (Look and shoot)	Medium (Line up and hold)	High (Data entry heavy)
Release Method	Manual (Tap button)	Automatic (Hold button while flying through point)	Automatic (Hold button in zone)

WEAPON DELIVERY: CCIP (LOOK & SHOOT)



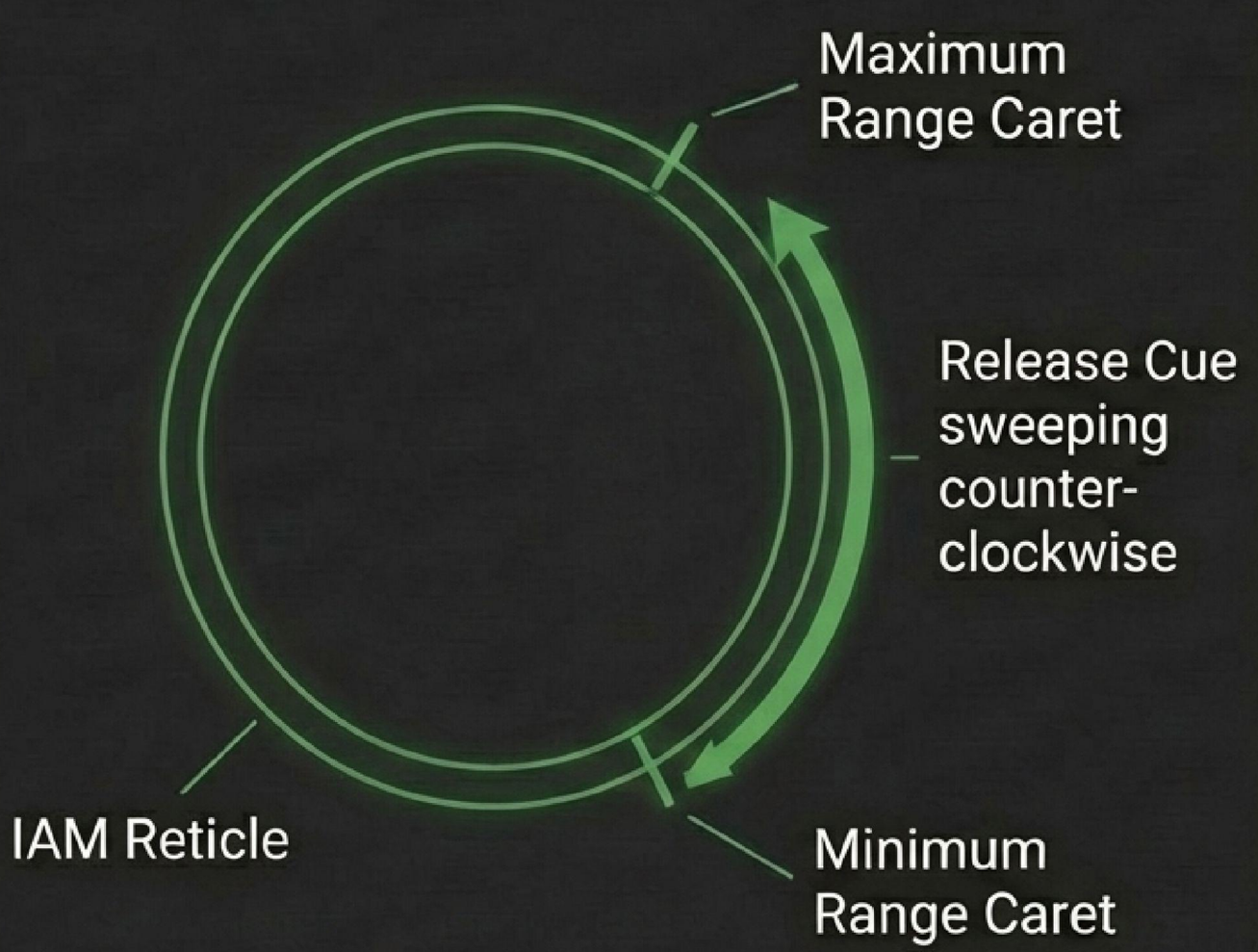
1. Select CCIP mode. The HUD projects the exact point the weapon will hit.
2. Maneuver to place the Pipper (center crosshair) directly over the visual target.
3. As you dive, the Solution Cue drops down the ASL.
4. Press and hold the Weapon Release button when the target is in the reticle.

WEAPON DELIVERY: CCRP (CALCULATE & DROP)



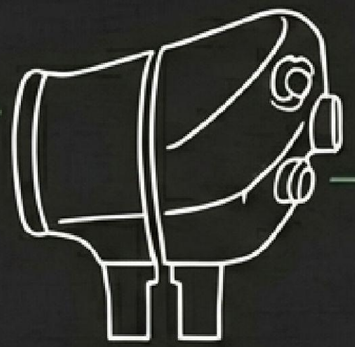
1. Designate a target (SPI) using sensors or waypoints.
2. Fly the aircraft to align the ASL perfectly vertically in the HUD center.
3. Press and ***hold*** the Weapon Release button early.
4. Maintain level flight. The Solution Cue will fall down the ASL.
5. When the Solution Cue passes through the reticle, the computer automatically releases the bomb.

WEAPON DELIVERY: IAM (SMART MUNITIONS)



1. Designate a target (SPI) via Targeting Pod or GPS waypoint.
2. Align the aircraft with the ASL heading toward the target.
3. Monitor the Release Cue moving around the IAM Reticle.
4. When the Release Cue falls between the Max and Min range carets, MAN REL (Manual Release) appears.
5. **HOLD** the Weapon Release button. (Tapping may result in a hung, jammed store).

THE HOTAS TRANSLATION MATRIX



Left Hand

Slew Control: Mini-joystick. Moves targeting pod/sensors.

Mic Switch: Communications.

Right Hand

Weapon Release Button: Used to actually drop bombs (Hold for CCRP/IAM, press for CCIP).

Trigger: Fires the 30mm GAU-8/A cannon.

Nosewheel Steering (NWS): Engages ground steering / Laser designation in air.

HOTAS (Hands On Throttle And Stick) ensures you can designate, track, and destroy targets without ever looking down at a keyboard or console.
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EMERGENCY PROCEDURE: ENGINE FIRE & RESTART

CHECKLIST: ENGINE FIRE

1. Throttle (Affected Engine) -> OFF.
2. Pull Fire T-Handle.
3. Press Fire Discharge Agent Switch (Left/Right).
4. ***If fire persists... eject or land immediately.***

CHECKLIST: SINGLE ENGINE APU RESTART

1. Descend below 20,000 ft MSL. Airspeed ~140 KIAS.
2. Inoperative Throttle -> OFF.
3. Below 15,000 ft MSL: APU Switch -> START.
4. Engine Operate Switch -> MOTOR (to blow out unburned fuel/cool down).
5. When ITT < 100°C: Throttle -> IDLE to restart.

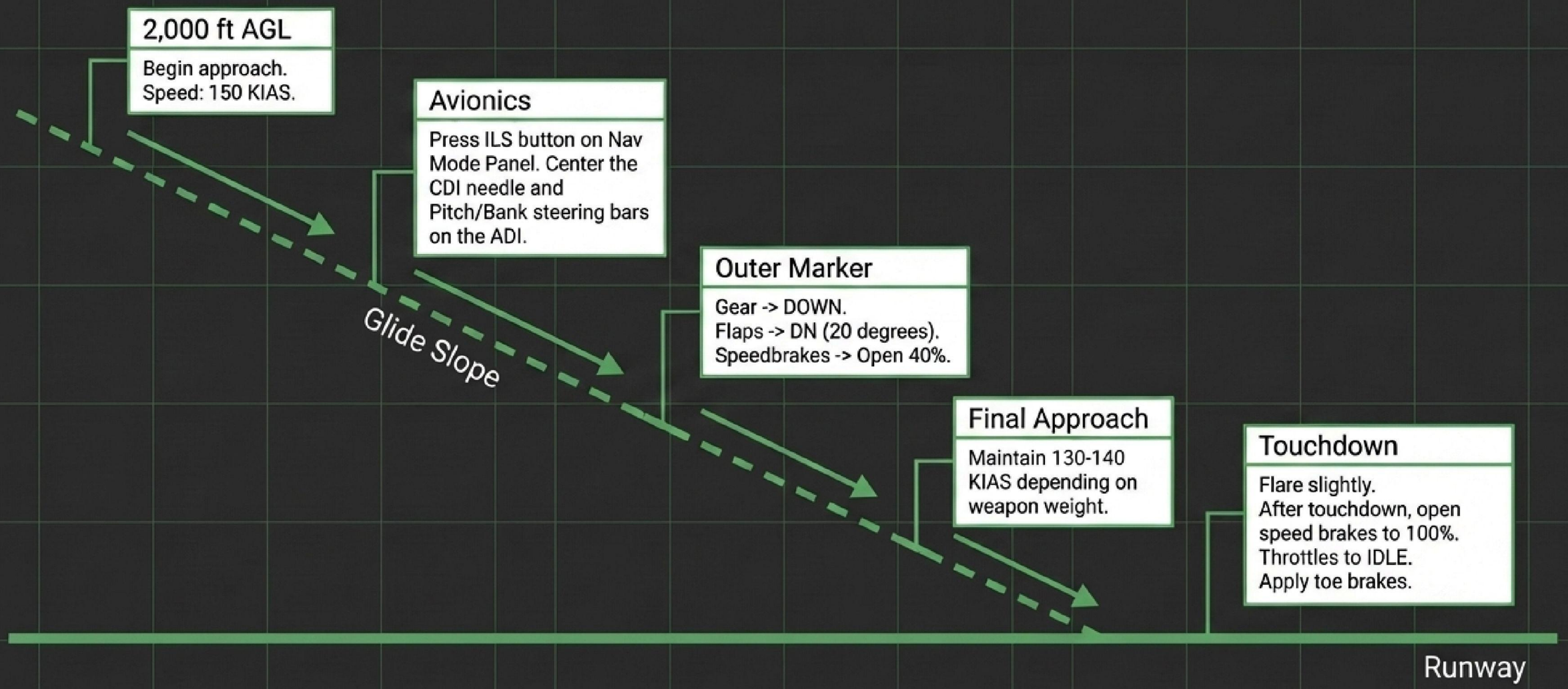
EMERGENCY PROCEDURE: EGRESS & EJECTION

Ejection above 2,000 ft AGL wings level is preferred. In uncontrolled flight, eject above 4,000 ft AGL. Do not delay the decision.

CHECKLIST (If time permits):

1. IFF Panel -> EMER (Squawk emergency code).
2. Transmit ‘May Day’ on UHF guard channel.
3. Turn aircraft toward an uninhabited area.
4. Trim aircraft for lowest practical speed, wings level.
5. PULL EJECTION HANDLE. The process is fully automated thereafter.

PHASE 8: LANDING APPROACH



PHASE 9: AIRCRAFT SHUTDOWN

THE REVERSE FLOW	
1.	**Avionics:** `CDU & EGI Switches` → **OFF**.
2.	**Engines:** `Throttles` → **OFF**. Allow ITT to cool rapidly.
3.	**Fuel:** `Boost Pumps (Main & Wing)` → **OFF**.
4.	**Power:** `AC Generators` → **OFF/RESET**.
5.	**Inverter:** `Inverter Switch` → **OFF**.
6.	**Battery:** `Battery Switch` → **OFF**.

The machine returns to silence. A successful sortie ends exactly as it began: Cold and Dark.

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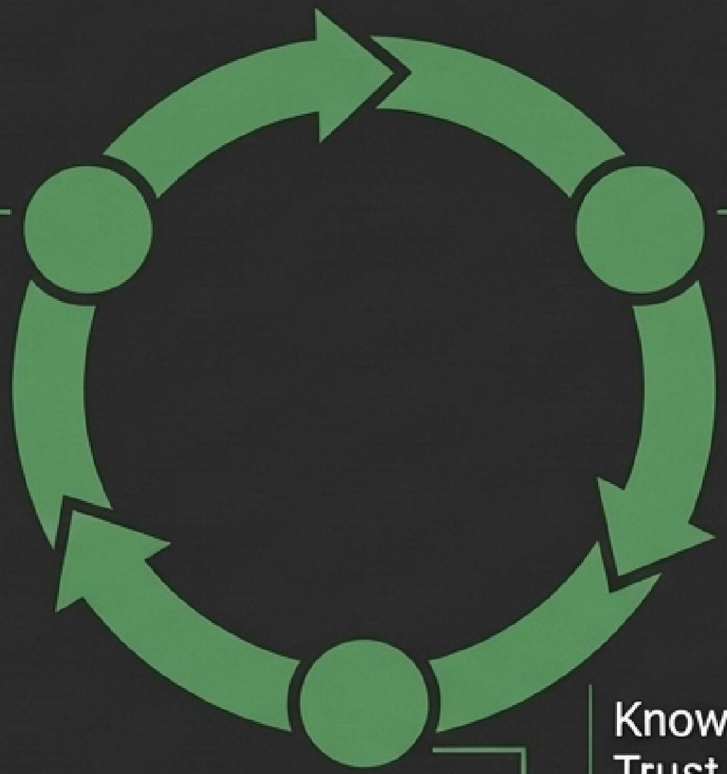
THE TACTICAL LOOP: AVIATE, NAVIGATE, COMMUNICATE



AVIATE

Fly the jet first. Monitor ITT, RPM, and Hydraulic pressures. An un-flown jet is a crashed jet. *(Left Console & Stick)*

COMMUNICATE / EMPLOY

Engage the battlespace. Talk to JTAC, load the DTS, select your weapon profile (CCIP/CCRP/IAM), and neutralize the target. *(Right Console & HOTAS)*

NAVIGATE

Know where you are. Trust your EGI alignment, follow the ADI steering bars, and monitor the HUD. *(Front Dash)*

The A-10C cockpit is complex, but the mission is simple:
Support the troops on the ground and bring the Warthog home safely.
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