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MILITARY VISUALIZATIONS



F-4E

TacPack Guide



F-4E TacPack Guide

by Jonathan Bleeker



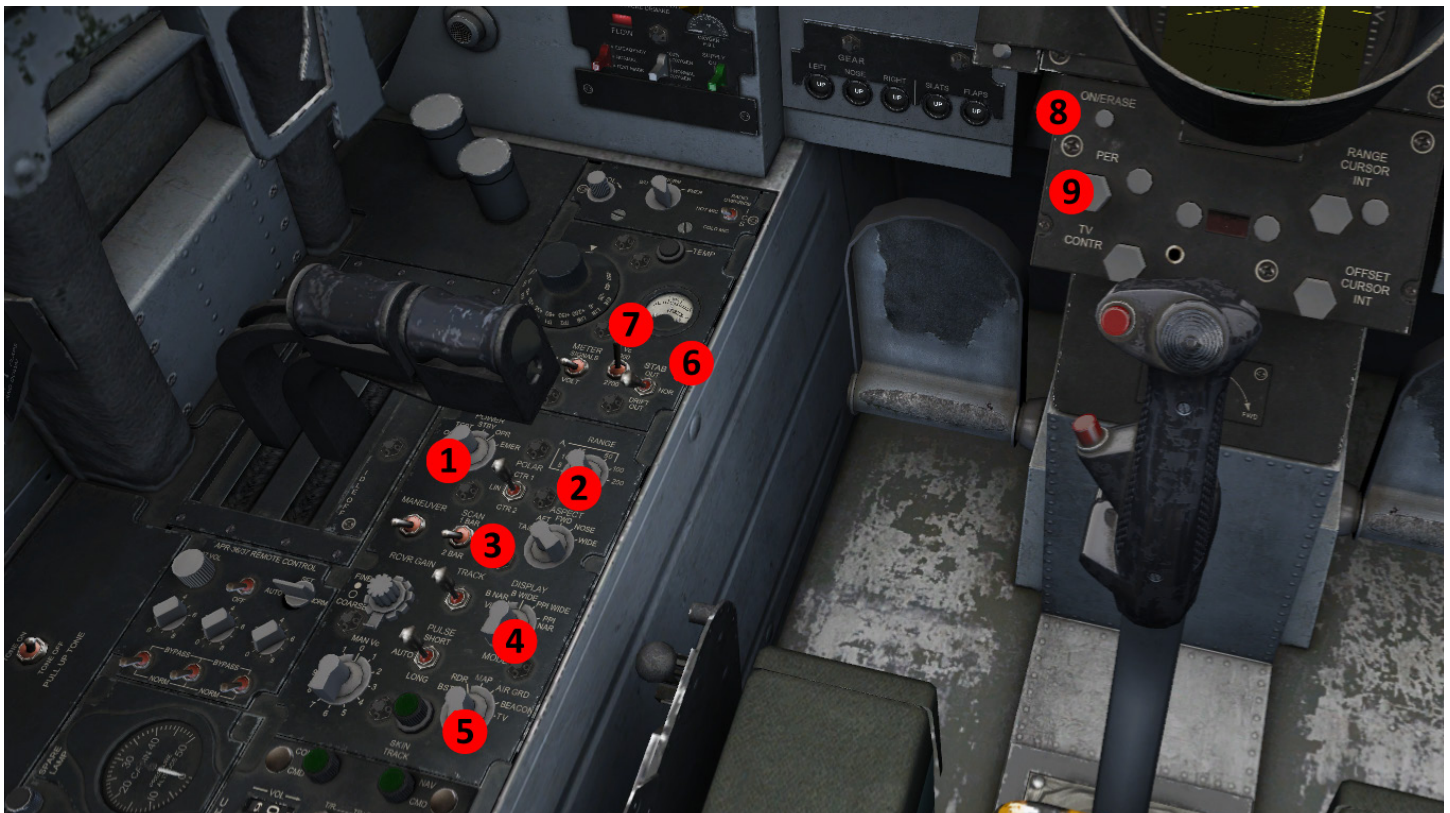
Installing this product will make a reversion to the original (non TP) product impossible. When uninstalling this product, it will, by default, and with no other option, uninstall both the TP and the original product.

Please note that all technical support is conducted via the product support forums.

For forum access please contact kat@milviz.com with your proof of purchase and preferred username.

Here is a quick rundown of the active controls in this bird.

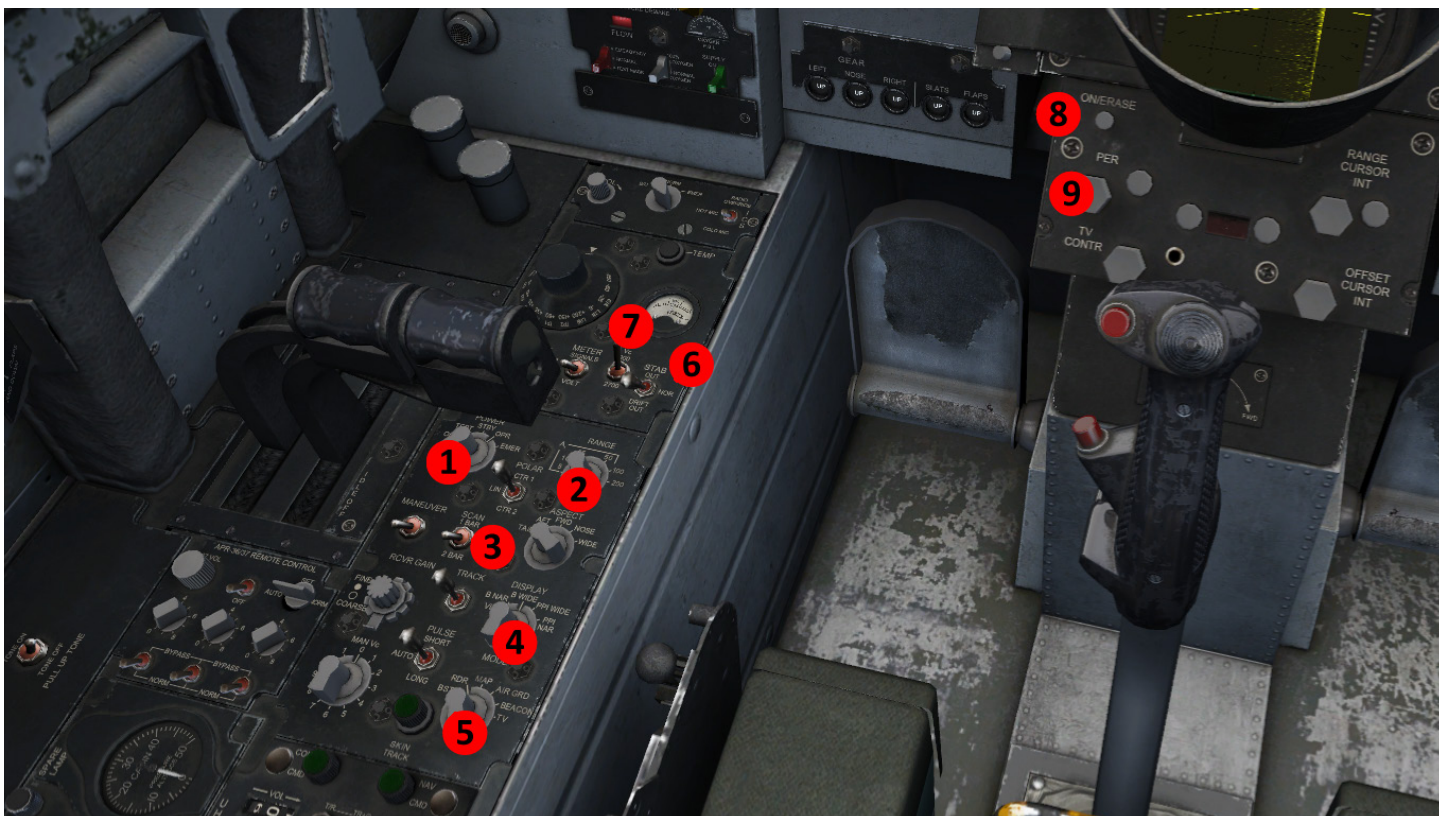
Some details on the AMS Commands: Radar Half action and Full action should only be used with a 2 stage trigger device. There are none available yet (unless you use 2 warthog sticks) but there will be sometime soon (I have contact with a new upcoming hardware dev). Use the Radar lock button instead. First press will engage half action, and if half action is successful, second press will engage full action. Third press will break lock.



1)

On the radar control panel:

1. Radar power knob (Self explanatory)
2. Range knob (Self explanatory)
3. Scan switch (1 or 2 bar elevation area scan)
4. Display knob (VI is unused. It also prevents movement of the acquisition cursor. PPI modes are unused also at this time until the Map mode is available)
5. Mode knob (BST is boresight mode, caged to 35 miles below fuselage reference line. Same position of the gunsight if caged in A-A mode. MAP and BEACON and TV modes are inop at this time)



Just above radar control panel:

6. Stab switch (STAB OUT will disable pitch stabilization so best leave in NORM)
7. Vc switch (adjusts the scale of the Vc (closing velocity) circle on the radar scope. If in the 900 position, 11:00 o'clock is a closing rate of -100 kts (ie target distance is increasing). 12:00 is 0 kts, and every hour after multiplied by 100 will give closing rate in kts. If in the 2700 position, same principles as the 900 position, only multiply by 300 not 100)

On radar scope panel:

8. ON/ERASE button controls power to the rear scope display
9. PER knob determines persistence of radar targets

Below Caution label:

10. This Air-to-Air button will illuminate if the cage button (see AMS controls) is pressed. If the cage button is pressed, the radar will go into boresight mode with range at 5nm. Pressing this button will bring it out of this mode, as will moving the WPN SEL knob in the front pit to the B position)



2)

Lights to the left of radarscope/gunsight controls panel:

1. Indicates A-A weapon selected as well as master arm status. See Radar/Heat/Gun selection controls in AMS.

Radarscope/gunsight controls panel:

2. CL/OPEN lever (Gunsight shutter, move to open to show gunsight if gunsight mode is not OFF)
3. Gunsight Mode (Self explanatory)
4. Reticule Depr (Self explanatory. Only functional if LABS/WPN REL mode set to DIRECT or L)
5. Target returns on the radar in RDR Search mode

Mode 4 IFF. On the right console where the IFF/Transponder equipment is located, is a switch for MODE 4 IFF power. It must be turned on. And the first digit of the Mode 3/A transponder code will correlate to the TACPACK team ID when Mode 4 IFF is active. (See p12 image 14).



Weapons Control Panel:

6. Arm Nose/Tail fuse switch (Nose/Tail or Tail must be selected for High Drag when using Snakeyes. Nose Only will drop Snakeyes in low drag.)
7. Gun Select button (In order to fire nose gun (ie get the ARMED half lit), Master Arm on, Gun selected with
8. Gun Missile Selection (see lights to the left of radarscope/gunsight controls panel), and upper half of gun select button lit by clicking on it) LO/LI/CTR/RI/RO Station selection buttons (in order to arm them, Arm Nose Tail must be anywhere but safe, Master Arm on, WPN SEL on BOMBS, LABS/WPN REL any position other OFF or TGT FIND.)
9. Master Arm (Self explanatory)
10. LABS/WPN REL knob (All modes to the left of OFF inop at this time. DIRECT allows for immediate release with manual pip setting. TGT FIND inop at this time till A-G Map enabled. DT is Dive Toss/Glide/Level Auto Release, DL is Dive Laydown, L is Laydown, OFFSET is inop till A-G Map enabled, AGM-45 inop. More info further down.)
11. WPN SEL knob (Only BOMBS is in use at this time as well as RKT&DISP (used for gunpods). Moving to B position will break radar Cage).
12. RDR MSL switch (Must be on CW/ON to fire AIM-7. RDR missile station lights will light up if on. The HEAT lights indicate which AIM-9 station is selected. HEAT REJ will cycle through them.)
13. INTLK switch (If IN, AIM-7 will only fire if Aim dot is within ASE circle on radar and target within Rmax mark)
14. AWRU interval knob (For Ripple bomb release interval in seconds. Max is 1 second, min is 0.05 seconds)
15. INTRVL switch (multiplies ripple interval by 10 if on X10)
16. QTY knob (P releases a once off pair of bombs from selected stations. If only 1 station is selected, only 1 bomb released. 1 is a single weapon release, will cycle between selected stations. 2 to 18 will ripple the selected amount of bombs in the interval selected from the selected stations. C will continuously ripple from the selected stations in the selected interval. Salvo will simultaneously release 1 bomb from each selected station at the selected ripple interval)



- 3)
Just showing a radar target in BST mode on the radar. To lock, move cursor onto target and initiate half action.



- 4)
Half action lock on a target. The large blip (range strobe) must be placed on the target strobe before going to full action to complete lock.



5)

Fully locked target. Outer circle is Vc (Closing rate), inner circle is ASE circle and Aim dot, the 2 marks to the left of the target are the Rmax and Rmin (Rmax2 ie no escape zone for the AIM-7 in some conditions if target is far away enough)



6)

A-G ranging mode. Note that you don't actually lock a specific point on the ground in this mode. The radar beam is caged to the gunsight position which is 35 mils below fuselage reference line. The large blip is the radar return you will lock on. To initiate lock, move cursor onto blip and initiate half action.



7)

Half action lock on A-G ranging mode. The thin line on the return is the range strobe which must be positioned in the center of the return for accurate lock.



8)

Fully locked on A-G ranging mode. Since the radar is caged to the RBL (35 mils down), if the target moves beyond 65536 feet the radar will lose lock.



9)

Weapon Release computer control panel on left of rear pit:

1. ADVANCE knob (upper right. Will advance the release point of the bombs when performing a DT or DL or L auto release run. Useful to determine where the middle bomb will land when rippling weapons. For an ODD number of bombs, to place middle bomb on target, Advance setting = release interval * ((number of bombs - 1)/2). For an Even number of bombs, to place the first middle bomb on target, Advance setting = interval * ((no. of bombs - 2)/2). To place second middle bomb on target, Advance setting = interval * (no. of bombs/2))
2. RANGE knob (Below ADVANCE knob. Used in DL (dive laydown) and L (Laydown) WPN REL modes. Determines the ground distance from designation point that the weapon will be released. Use the green popup bombing calculator to get the value to use (Distance).)
3. ALT/RANGE knob (lower left. If using OFFSET or TGT FIND bombing mode (inop at this time), target altitude in feet will be entered (max value allowed is 100x100). If using other modes, 249x100 is max allowed value. Only used in the L Laydown mode which doesn't require A-G Radar lock. Enter Initial Target Distance into ALT RANGE and green bombing computer and target altitude/release altitude into green bombing computer, and enter the MILS output into Reticule Depression in front pit. The reticule is pitch stabilised in L mode, and when placed on target while flying at release altitude will indicate distance to target. Press and hold pickle button at this moment to start release distance countdown, which when it reaches release RANGE it will automatically release).



10)

1. AS light: It will light up if a SAM site is targeting you. If there are multiple SAM sites in the area, pressing this button will blank out all SAM sites not in launch mode, or not targeting you
2. RWR screen: Short strobes extending out from the center indicate the azimuth and threat level of the return. The longer the strobe, the greater the threat.



11)

1. Power light: Press this button to toggle power to the unit.
2. DIM knob: Controls the brightness of the warning panel lights.
3. Audio knob: Controls the volume of the audio alerts



12)

1. SA-3 light: This will light up when tracked by newer radar systems like that of the aircraft carrier RIM-7 defense system. A dashed strobe will appear on the RWR scope. Pressing this button will start the self test. During the test, 4 dashed strobes of medium length will appear on the scope. The low PRF warning tone will sound first, and then the High PRF tone (ie actively tracking you) will sound. When the test is over, the light will go out and the tones will stop. Currently, only the RIM-7 system on carriers will trigger this warning
2. 1st SA-2 light: This one is inop. Pressing it will display the test pattern (4 dotted strobes), but no tones played. Currently, TACPACK only supports one version of the SA-2 system.
3. Second SA-2 light: Illuminates when detected by an SA-2 system. A solid strobe will be displayed on the scope. Test behaviour is same as the SA-3 light, except the AAA light below it will also light up
4. Red LAUNCH light: Self explanatory. Lights up when a SA-2 or RIM-7 (SA-3), or radar guided A-A missile is launched.
5. AAA DEF: AAA strobes, and SA-2 strobes are identical. Pressing this button blanks out all AAA strobes allowing you to concentrate on SA-2 threats in the area.
6. AAA/AI: Illuminates only when tracked by an AI (Airborne interceptor). Currently, only 1 type of AI threat is simulated, which will appear on the scope as a dashed strobe (same as SA-3).
7. SA2/4: Inop
8. AAA: Lights up if tracked by a AAA. AAA also has 2 distinct warning tones. No self test though.
9. ACT/PWR light: Lights up if a SA-3 or SA-2 is actively tracking you (you have been singled out. strobe length will be longer, high PRF warning tone will be given). A launch may be imminent.



13) Front display.

Operation is identical to rear, except AS light is not available (Audio knob is hidden behind a part)



14) Front pit, right console.

For IFF (identification friend or foe) purposes,

1. the MODE 3/A code must be set, and
2. the MODE 4 switch set to ON

Now for some basic ops....

To fire AIM-9s, simply select HEAT missiles via the command in the AMS (Use HEAT Reject AMS command to cycle through stations), Master arm on, get a good tone (use Air Refueling Release AMS command to uncage the seeker to track freely instead of being caged 35 mils down to RBL), and use TACPACK Trigger to fire.

To fire AIM-7s, RDR MSL switch must be on CW/ON, (CI tank light off in order to fire from forward missile bays), Master arm on, RADAR selected via command in AMS, and, if INTLK switch IN, a target must be locked and within launch params. Then use TACPACK Trigger to fire.

To fire nose gun, Gun station must be selected, Master arm on, Gun selected via AMS command. Use TACPACK trigger to fire. To fire gun pods, station must be selected, WPN REL knob on DIRECT, WPN SEL knob on RKTS&DISP, master arm on, Gun selected via AMS command. Use TACPACK trigger to fire.

To auto acquire a target on the radar, Radar must either be caged (AMS gunsight Cage command), or in BST mode with range at 5nm. Engage nose wheel steering using AMS command to start auto acquire mode. The range strobe will appear (cursor will disappear) and be constantly moving up the B-sweep. When it reaches the top it will start at the bottom again. If a target appears in the B-Sweep, the radar will lock it when the range strobe reaches it.

To release bombs, set desired release interval and quantity on AWRU. WPN SEL knob on BOMBS, stations selected, Master arm on, Arm Nose/Tail on Nose, Tail, or Nose/Tail. WPN REL knob must be on DIRECT, DT, DL, or L modes.

In DIRECT mode, use manual release methods like in the F-100 with manual reticule depression.

For all Auto release modes, a good INS alignment is required in order for good groundspeed data to be passed to the weapon release computer.

In DT mode, lock the radar blip on any point on the ground in A-G Ranging mode. Gunsight reticule will be caged at 35 mils along the radar beam, and drift stabilised. Carefully move it onto target, and press and hold pickle button. You can then reduce the dive angle (Dive glide), go to level flight (Dive level), or pull up to less than 10 deg pitch (doesn't matter if you lose radar lock once you have pressed pickle button as the weapon release computer is counting down from the A-G radar range at time of pickle button press). Bomb will automatically release at correct point. I should note that I have simplified the procedure here, as in the real aircraft a drag coefficient value must be entered into the weapon release computer in the rear pit. TACPACK doesn't support that at this time however.

In DL mode (Dive Laydown), manual release range must be entered on Weapon release computer in rear cockpit. Procedure is the same as DT mode for acquiring target. However, you must fly at a predetermined speed and altitude once target pickle button is pressed in order for bomb release distance to be accurate.

In L mode (Laydown), Initial target distance must be entered into weapon release computer in the ALT/RANGE section. Gunsight reticule is pitch and drift stabilised, and manual depression must be entered as calculated from green bombing computer. A-G radar lock is not needed, as the distance to target is established by flying at release altitude, and pressing and holding pickle button as soon as reticule is on the target. Maintain release altitude and speed until release.

F-4E TacPack Credits

Jonathan Bleeker - Radar, RWR, and weapons computer, TacPack guide

Alex Vletsas - Radar

Jamal Ingram - Fire control systems

Chuck Jodry - Effects

Mike Maarse - Sound

Bernt Stolle - Flight dynamics

Frederico Sucari - Special code

Dmitry Usat'y - Paint

Pilots / project consultants

Torsten

Toby

Beta testers

Brian Alexson

Ryan Butterworth

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Project manager - Kat Namsavanh

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