



USER MANUAL

GENERAL DYNAMICS F-111 AI AIRCRAFT VERSION 2 FOR FS9 and FSX (native code)



John Young, ACG Scenery Design Team
FDE and effects: Michael MacIntyre, Military AI Works

VERSION COMPATIBILITY

This AI F-111 package is available in separate zips for FS9 and FSX. The files are at flightsim.com and have the following names:

- JY_AI_F111s_FS9_2.zip
- JY_AI_F111s_FSX_2.zip

Please ensure that you use the correct download for your simulator version. This manual covers both. Screen shots are FSX.

WHAT's NEW IN THIS VERSION?

Improved FDE

Firstly, my apologies to some users of version 1 who experienced instability in the models and occasional crashes as a result, particularly in FS9. It was a really difficult problem to track down because it did not occur on my PC prior to release. After quite a lot of subsequent testing, particularly by users at MAIW, I eventually determined that it was down to frame rate performance. My PC is quite high end and I can run a few dozen of the F-111s in detailed scenery at settings well in excess of 100 fps with no problems at all. However, following the MAIW testing, as soon as I restricted the frame rate to 20 fps, I began to notice the jumping and tyre smoke. At 24 fps the aircraft were quite stable again, but at 10 fps they were bouncing all over the place.

The users who told me about the problem managed to solve it themselves by adjusting some of the parameters in the aircraft.cfg file. However, I am grateful to Michael MacIntyre at MAIW who revamped the FDE substantially and has produced, not only a stable aircraft at low frame rates, but an improved landing profile, with the nose wheel holding off for about 10 seconds before joining the main wheels on the runway. Not only that, but he has also provided better effects files, including a more realistic afterburner, touch down smoke and the addition of some jet exhaust efflux.

Additional Models

Version 1 of the packages contained F-111E and EF-111A's models to populate the Upper Heyford scenery design being undertaken by Ian McCartney at ACG. I produced the "E" models with a choice of 3 load-outs, together with a standard paint scheme and some of the more colourful variations. However, to add a little more variety, I also provided a Pave Tack/ Paveway 10 GBU load-out with a choice of Lakenheath (LN) or Cannon AFB (CC) F-111F paint schemes and a further Mountain Home (MO) scheme.

The front page shows a line-up of the 8 paint schemes applied to the 5 available "E", "F" and "Raven" models. However, having released them as version 1, and apart from the FDE problem, they proved really popular and that encouraged me to go two

steps further and produce the extended wing Strategic Air Command FB-111A and Australian "C" versions:



Users can of course change the load-outs and the paint schemes to give a much greater variety than those shown. I should also say that the mapping of the extended wing upper surfaces is not ideal. It's because I elected not to disturb the animation when stretching the wings by attaching all the parts together and mapping as a whole. That would have produced a better result but it would also create a lot of additional work re-doing the animation through most of the LODs.

I have though corrected the texture mapping in the right hand wing glove vane that was particularly noticeable in the Raven model.

These are the individual models and paint schemes in the packages:

F-111E, 77th FS, 20th FW, RAF Upper Heyford, circa 1993:



F-111E, 55th FS, 20th FW, RAF Upper Heyford, Circa 1993:



F-111E, CO's aircraft, 20th FW, RAF Upper Heyford, circa 1993:



F-111E, 79th FS, 20th FW, RAF Upper Heyford, Tiger Meet 1991:



EF-111A, 42nd ECS, RAF Upper Heyford, circa 1993:



F-111F, 494th FS, 48th FW, RAF Lakenheath, circa 1993:



F-111F- 522nd FS, 27th FW Cannon AFB, circa 1992:



F-111F, 391st FS, 347th FW, Mountain Home AFB, circa 1972:



FB-111A: early paint scheme with 2 fuel tanks:



FB-111A – later (DarkVark) paint scheme with 2 fuel tanks + 2 ASRAMs:



F-111C – 1 Sqn RAAF F-111 anniversary scheme



F-111C – 6 Sqn RAAF anniversary scheme



F-111C – 1 Sqn RAAF Pave Tack load-out:



F-111C – 1 Sqn RAAF AGM-84 Harpoon load-out:



No flight plans or AFCAD (AF2 or AFX) files are included in the package, but users who are interested in working with AI aircraft will know how to go about creating them.

ANIMATION

The animation was particularly interesting to do. The basic key framing for the swing wing\ flap\slats\gloves\horizontal stabiliser movement was not a problem. The real challenge was configuring the aircraft at various stages of ground handling and flight. From what I could determine in the real world, the configuration worked something like this:

- Parked (cold): wings swept (fully forward) to 16 degrees, or more usually, swept to 54 degrees, particularly when parked in a HAS.
- Readied for flight (hot): wings swept to 16 degrees.
- Taxi: wings swept to 54 degrees until “Last Chance” near the runway hold, when they were swept fully forward again for take-off.
- Climb out – wings swept to about 26 degrees.

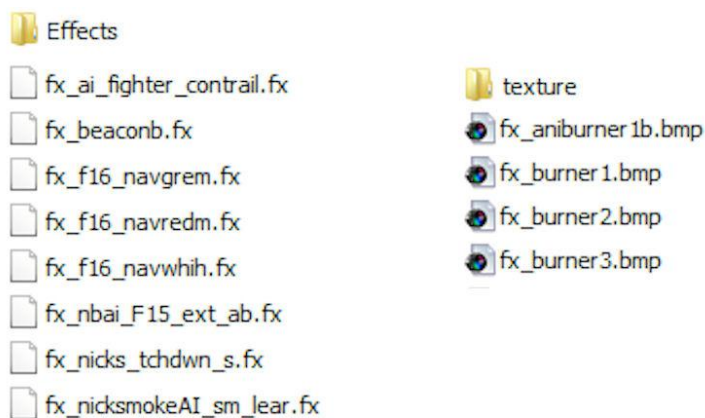
That combination was difficult to achieve and in the end I settled on two wing positions: Swept 16 degrees for parked, taxi and take-off/landing and swept 54 degrees for climb-out and operational flight. In all cases the trigger for movement is

the position of the undercarriage - down for the first set of conditions and up for the second. Here is my swept 54 degree, cleaned up, configuration:



INSTALLATION

1. Unzip the archive and move the **ACG F-111 AI folder** with all its subfolders and files to either your FS9\Aircraft folder or FSX\Simobjects\Airplanes folder depending on your FS version.
2. Move the effect files and textures to your FS9 or FSX Effects folder. These are the files:

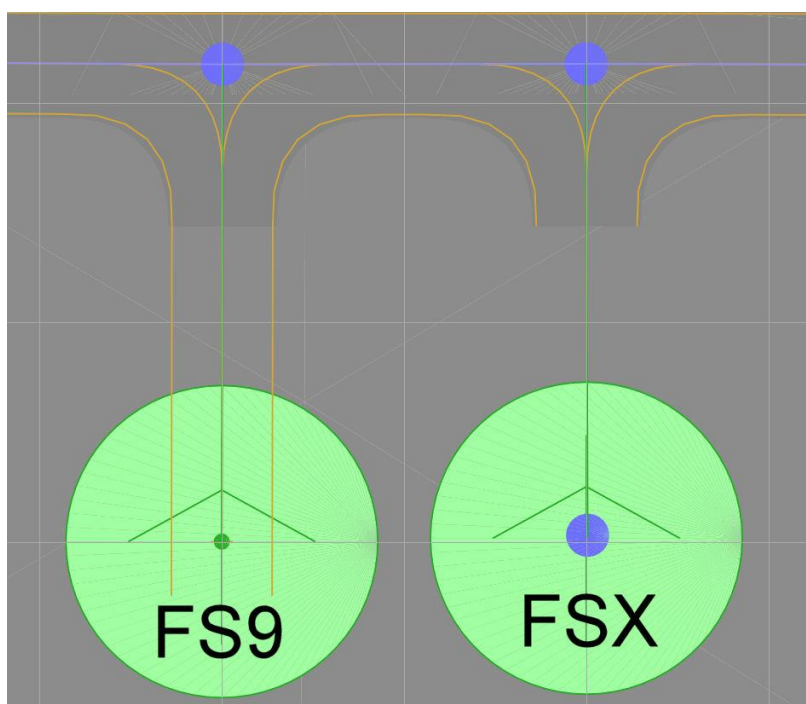


AFCAD FILES – INHIBITING PUSHBACK

ADCAD files control the layout of runways, taxiways and parking spots etc for AI aircraft. AI enthusiasts will already know how to make those and enable the aircraft with suitable flight plans. Here's a little tip however that might be useful.

The AI aircraft in this package have Ground Support Equipment (GSE) attached to the models that disappears after engine start. Since engine start occurs only after the aircraft is pushed back, the GSE will be pushed back with the aircraft. To overcome this, the pushback needs to be inhibited.

In FS9, it is generally only necessary to place the parking spot exit in the direction of travel like this:



In the case of FSX an additional blue node is needed. This should be placed on the parking link and dragged to the centre of the parking spot and aligned precisely.

PAINT KIT

I am more than happy for users to repaint these aircraft but subject to the following conditions please:

1. The “paint kit”, or rather my source files for the textures, are made available in this zip as is. I have tried to make them as user-friendly as possible but please do not ask me to re-map any surfaces, I don't have the time or interest to do that. Please bear in mind that I may have to do it twice in any case - once for FS9 and the other for FSX and then again for every LOD in the model.

2. There is no need to ask me before repainting, but I reserve the right to ask for the files to be removed if I feel that the repaint, documentation or packaging is not appropriate. If in doubt please consult me first.

3. You give me full credit for the original work.

4. You only upload the repainted textures, never the model itself. You will also need to provide a new section for users to go in the aircraft.cfg file for the new aircraft and also provide a link to this package so that users can obtain the model.

5, The AI models in this zip must not be included in another scenery or AI package.

6. The repaint must remain as freeware with no charge whatsoever.

The layered .psd files in the Paint Kit folders were produced with Paint Shop Pro X2 as .pspimage files. However files drawn with this version are not compatible with earlier PSP versions. I have therefore also saved the images as .psd (Photoshop) which is a format that PSP can open across the version history. The downside is that these converted files loose the vector data for layers like the panel lines and the serial numbers. That's not a big issue though as items like numbers can be re-typed. The .psd extension is also detected by Quicktime and if you encounter that problem either change the association in Windows or simply open the file from the PSP program and not by double clicking in Windows Explorer.

ACKNOWLEDGEMENTS

Discreet Software/Turbo Squid for Gmax, used for the aircraft 3-D design.

Members of the MAIW forum for their encouragement and help in solving the FDE problem in Version 1.

Michael MacIntyre at MAIW for the new FDE and effects files.

Brian Sturrock for help with the FB-111A plans and reference material.

LEGAL

Copyright of this package is with John Young and Michael MacIntyre, unless otherwise stated and the archive may not be altered in any way without permission. The package is freeware. It has been designed for the benefit of the flight sim community world-wide with thanks for all the great downloads that I have obtained over time.

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The archive or must not be uploaded to any web site without permission from the author.

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FEEDBACK AND SUPPORT

I would be grateful for any feedback on the package and/or if you have any Problems, please visit the ACG Forum AI section at:

<http://www.airfieldconstructiongroup.org/>

Or e-mail me at:

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