PILOTS MANUAL FOR FSX AND P3D

aerosoft™

F-14

TACPACK POWERED
vrsimulation.com

Aerosoft F-14A/B

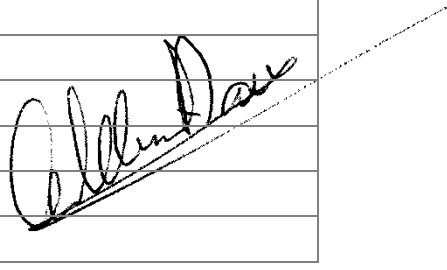
Volume **1**

The F-14 in FSX

Version 12 April 2014

RECORD OF REVISIONS

Revision	Issue date	Release	Description
0	Nov 25, 2014	1.0	Initial Release



Release in this table indicates the software version the change is applicable for

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INTRODUCTION TO THE F-14

As a young boy, I remember watching my dad putting on his uniform complete with ribbons and medals of every sort along with a pair of shiny, gold wings. I have always been very proud of my dad, and grew up knowing that I was going to follow along in his footsteps. My father flew the F9F Panther during the latter stages of Korea, then on to the F9F Cougar, F7U Cutlass, F11F Tiger, in the mid 60's he began a love affair with the F-4 Phantom. He endured two tours in Vietnam, where he flew 204 Combat missions and achieved two air to air victories.

After college and flight training, I found myself at NAS Fallon, standing face to face with my new ride: The F-14 Tomcat! I was amazed at both its size and sleekness. The Tomcat seemed to evoke emotions even while static. While learning how to fly this magnificent plane, I earned a master's in engineering from the University of Las Vegas. Strapping into the Tomcat for the first time, I was a bundle of nerves. We had been taught how to handle the beast, but reading about it and running the simulator is quite different from real life. As we departed Fallon and headed for our testing area, the instructor quizzed me on emergency procedures. We made some lazy turns, along with a few easy loops and rolls before departing the test area and heading back to Fallon. I remember feeling proud and pretty sure of myself. For, at first glance, the jet had seemed easy to handle and had shown no interest in trying to kill me; but this would change! We entered the pattern and I made a hard pitch out. The jet began to buffet as it entered a stall - the shaking could have knocked the fillings out of our teeth. I acted quickly to settle the jet down and was able to keep my nerve; there would be time to shake later! I managed to get the jet, and us, down in one piece. We taxied to the hard stand and shut down the engines. After a soft ass chewing, I managed to stay in the program and graduate.

My first assignment would be with VF-2 The Bounty Hunters, and a long career of ups and downs followed along with a love/hate relationship with the magnificent jet! By the time I retired, I ended up with nearly 4,000 hours and 900 traps across all versions of the F-14. Once the Tomcat had been mastered, it became a formidable weapon. To accomplish this you need to have patience, skill, timing, and a bit of luck. The hardest aspects of flight to handle are air combat and carrier landings. The jet will respond to a fair amount of abuse, but if you're ham-fisted or push too hard you could end up losing the fight and your life.

I had a dear friend, Yuri Kostcovinski, who flew just about every type of MiG ever made. His favorite was the MiG-21, because it was "terrifyingly beautiful to fly." The same could be said for the early Tomcat. If things were going well and your head is in the game, you were in for a treat, but if things are going pear shaped and your head is full of snot, then you better get your head back in the game quickly, or you will find out how unforgiving the jet can be.

The A-models were buggy. They had a bad habit of departing flight quickly and without warning if you did not have a strong hold of the reins. You always need to remain two steps ahead or you could be a smoking hole in the ground.

At high alpha, you always had to be mindful of throttle movement. Fast advance usually would not cause a flame out; however, there was a notable lag as the engines try to catch up. We ran into the most trouble with high alpha while quickly retarding the throttle. Anything that causes a disruption of air into the intake is asking for trouble, but the engines are particularly sensitive below 78%. If you retard the throttle too quickly then advance them again, expect a stall. Horsing the throttles around is just asking for trouble. Coming out of burner caused problems as well. If you pull back too fast out of burner you could flame out. This is not a problem just with the Tomcat, but with most military fighters. Remember that measured movement of the throttle is best, slow and steady wins the race!

In the heat of aerial dog fighting, yanking the throttles around was more dangerous than the actual combat. This is the main reason we were elated to get the engine upgrade. With the F110's we could spend more time doing our mission rather than worrying about pissing off the TF30's!

The F-14A was also underpowered to put it bluntly. The A-model needed all of its resources to get to 35,000FT, so 92%-100% RPM was the range, especially if we were carrying ordnance. We would use the burner to get us to altitude quickly, say 28,000ft, and then she would peter out. We would have to climb in steps from there, using the burner off and on, but then we could also hear the fuel being sucked out of the tanks!

Landing aboard the ship is one of the most stressful times for a Naval Aviator, even more so than combat. When the bean-counters and paper-staplers in Washington did a test of pilot stress in Naval aviation, in particular stress related to peace time versus war time, they found something quite surprising. It turns out that Naval Aviators are much more stressed out about landing on the carrier than they were about flying in combat. This stress goes up when we throw weather and night traps into the mix. Start by trying it out on dry land.

During my first trap in a Skyhawk, I had such a death grip on the stick and throttle that I thought they would break off in my hands. But the voice of God (LSO, Landing Signal Officer) got me through it! The LSO is ultimately responsible for rating the trap all the way from one mile out to wheels on deck. They have a language all their own so I'll keep it simple. Think of an invisible box floating out in space moving towards the carrier. If your jet is anywhere inside the box, you are golden. If you are outside the box, you need to correct your course accordingly. Also, your speed must be spot on. Your target is the three wire; if you hit the one or the two, you're low and slow but can still make an OK rating. If you hit the four wire you are too high, too fast, or both. The "Greenie Board" kept close track of our traps. Each trap had a peg, either green, yellow, or red. Green was an OK pass, yellow was Fair, while red was a Bolter, missed pass, or wave off.

> *Green peg*: in the groove on speed, on centerline, three wire, "OK or OK"
> *Yellow peg*: high or low in groove, left or right, off centerline, too fast or slow, "Fair"
> *Red Peg*: high or low in Groove, left or right of centerline, too fast or slow resulting in Bolter or wave off.

Barring an in-flight emergency of some sort, we were expected to get aboard. Remember that the AOA indicator is your friend. DON'T STALL ON APPROACH! If you don't have altitude, hang on because you are in for a quick ride on the ejection seat. If you lost an engine on approach and you had altitude, throttle to idle, and try a hot restart. But I have to tell you, the huge problem with a flame out was torque roll as the faulty engine unspooled. Unattended, the jet would lollygag to the port and roll over on her back.

Keep the circle lit, keep the ball centered, and you will trap. When you've got it down, try it in the dark. One of my instructors once said, "Put the couch in the middle of your living room and place a postage stamp on the other side. Turn out all the lights and jump head first over the couch. If you lick the postage stamp, then you made a good night trap!"

I feel pretty lucky to have been a part of the aviation community and especially lucky to have been a part of the Tomcat club! I feel honored that the design team has allowed me to be a part of this project. You will find that this jet will perform very much like the real Tomcat, given the limitations of the simulator. I give it two thumbs up and a salute! After shooting some approaches in all kinds of weather with a dozen or more CATS and TRAPS I actually began to sweat a little and get that 'uh oh' feeling in my gut! The developers have done their homework and put a ton of work into this project to bring you a beautifully rendered F-14. Take your time getting to know the systems and parameters of the Tomcat. Practice using controlled inputs and don't try to horse it around or you will end up being a smoking hole. Also remember that this is a simulator...HAVE FUN!!!!! If you crash, hit the reset key and try it again!

- A Proud Tomcat Driver

THE MANUALS

There are 6 separate documents that make up the manual. Do note that we speak of FSX only, but all will apply for P3D as well.

- **Vol 1 - In FSX.pdf**: You are reading it now. Contains information on using the aircraft in FSX and more general information.
- **Vol 2 - Checklists.pdf**: Full checklist for use in the cockpit.
- **Vol 3 - Cockpit & Controls.pdf**: Hardware input configuration, and cockpit layouts
- **Vol 4 - Flight Systems.pdf:** Overview of the primary aircraft systems
- **Vol 5 - Avionics.pdf:** Interactions with display based systems
- **Vol 6 - Weapons.pdf:** Payload configuration and VRS TacPack integration
- **Vol 7 - Carrier Operatons.pdf:** How to land on a ship, CV-63 routes, and AI Scenarios

Also note that the readme.txt always contains the information on the latest updates. Before contacting support do make sure you installed the latest version!

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Aerosoft GmbH
Lindberghring 12
D-33142 Büren
Germany
www.aerosoft.com

CREDITS

Modeling	
Primary/Texturing/Animation:	Mark Harper
Weapon Models/Textures:	Jon Blum (*Vertical Reality Simulations*)
F-14 Texture Baking:	Tim Taylor (*Metal2Mesh*)
F-14 HD Panels and Rivets:	Hank Essers
XML coding	
Visual Systems	Jivko Rusev
Primary Systems	Finn Jacobsen
Flight Systems	John Cagle
C++ coding:	
Fuel and Payload	Baylan Cannol, John Cagle
Axis Management	John Cagle
Flight Mechanics:	John Cagle, Jivko Rusev
Sounds:	Turbine Sound Studios, Aerosoft
Installer:	Andreas Mügge
Official Pictures & Thumbnails:	Rafal Stankiewicz (*yoyosims*)
Manual, documentation:	John Cagle, Jivko Rusev, & Mathijs Kok
Project Management:	John Cagle
Specialist Advice	
Flight Mechanics	Julian Data
Tomcat Drivers	Jeff 'Six Guns' Roets, JJ 'Micro' Guerra
Landing Signal Officers	Paul 'PJ' Jennings, Mark 'Poohbear' Withycombe

Beta Testers:
William Mackay, Kurt 'Deacon' Swanick, Greg 'Barfly' Bartos, John 'Mig' Miguez, Bill Casey, Bryant Hardee, Frank Safranek, Erik van der Kind, Diego Mendez, Nathan Kelly, Rafal Stankiewicz, Joseph Sherril, Guido Moses, David Ellis, Hubertus von Selchow, Orion Lyau

SPECIAL THANKS

One of the overarching goals of this project was to make an immersive addition to Naval Simulation as a whole and include a more interactive environment. Several freeware and payware developers graciously allowed their creations to be included in the package, and have added a terrific character to the simulation.

Ron Zambrano: ***Razbam Simulations***	AI KA-6D Tanker
Dimitri Samborski: ***Samdim Design***	AI Tu-95MS & Tu-142 Bear
Team SDB Scenery:	Carrier deck aircraft, tractors, and deck crew
Javier Fernandez:	USNS Patuxent, Kaiser class replenishment oiler
Alberto Garcia:	FFG-84, Oliver Hazard Perry class Frigate
Rafal Stankiewicz:	Liveries for AI 747, 737, and Learjet

Final word: This project benefitted immensely from the participation of retired military personnel. Their insights were frequently piercing, yet humble and supportive in delivery. Many email, Skype, and forum conversations inspired this developer to grow not just in technical capacity, but as a person. It was an honor to be surrounded by individuals of such character. Salute to the developers, the testers, and our men and women in uniform. Please enjoy!

SYSTEM REQUIREMENTS

- Intel Core 2 Duo E6850 CPU (Core 2 Quad recommended)
- 2 GB RAM (4 GB recommended)
- Direct X 9 compatible Graphics Card with minimal 512 MB (1 GB highly recommended)
- Microsoft FSX (SP2, Gold or Acceleration) or Lockheed Martin Prepar3D
- Windows XP, Windows VISTA, Windows 7, Windows 8 (fully updated), 64 bit versions recommended
- Microsoft MSVS Redist 2008 SP1 [(2)]

[(1)] Available for free, download at: http://www.microsoft.com/en-us/download/details.aspx?id=5582

CONTACT SUPPORT

Support for this product is done by Aerosoft. We prefer to do support on the support forum for one simple reason, it is fast and efficient because customers help customers when we are sleeping.

- F-14 X forums: http://forum.aerosoft.com/index.php?/forum/686-f-14-x/
- If you prefer support by email (and can afford to wait a bit longer): https://aerosoft.zendesk.com/anonymous_requests/new

We feel strongly about support. Buying one of our products gives you the right to waste our time with questions you feel might be silly. They are not.

INSTALLATION AND REMOVAL

Installation is simple-- start the .exe file you downloaded and follow the instructions on screen. Make sure FSX (P3D) is closed and we do advise you to reboot your system before installing. After installing it can help to defragment your hard disk (unless it is a SSD drive that should not be defragmented)

Removal should **never** be done manually but only using the software removal applet you will find in the Windows Control panel.

VRS TACPACK INTEGRATION

VRS TacPack enables functional weapons which are seamlessly integrated with the stock F-14's visual systems (HUD, VSD, and TDI). Activation of the Tomcat is automatic with TacPack v1.4 and up. Simply have TacPack in an active state, and the Tomcat will do the rest.

If you don't intended on flying multiplayer; the exercise of intercepting a drone performing evasive maneuvers, or dodging SAM's from aerial defenses will push your systems management, situational awareness, and maneuvering abilities to levels which are otherwise difficult to achieve in the stock FSX environment. Moreover, the AIM-54 was almost never fired in confrontational aggression, and carefully generated drones within TacPack can authentically replicate many of the most spectacular real world feats achieved by the AWG-9/Phoenix combination.

Both Drone's and SAM's can be called on demand from inside FSX with user defined position, state, and behavior. Aside from function weapons, TacPack also provides a splendid carrier placement tool which is compatible with the USS Kitty Hawk.

CHECKLIST

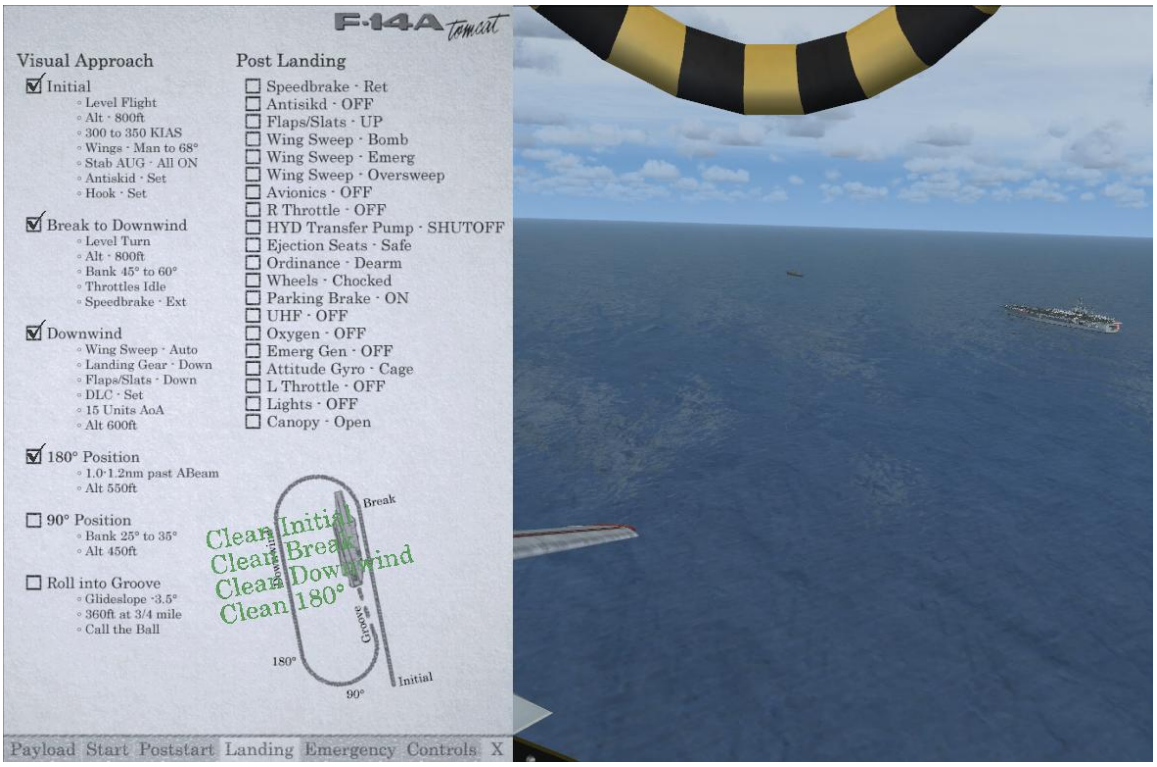
The Aerosoft Tomcat X comes with an interactive checklist system. Not only does it show you all the steps you need to perform, it will even do it for you when asked.

USING THE CHECKLIST

Checklists will start unfilled and most items will progress automatically as steps are completed; some items, such as fuel check need to be checked manually. If you are lost or don't know where to find a particular switch, clicking on the check-box will complete the action automatically.

The most complex form of the checklist is the visual approach checklist. Many steps in approach require not only configuration changes, but specific altitude, orientation of the aircraft, and relative carrier position. If a visual approach is attempted on either a land base, or on a carrier which is not tuned to TACAN, the ratings will be based on the altitude and orientation of the aircraft only. i.e. A successful 180° position will only need to have a properly configured aircraft at 550ft ±80ft.

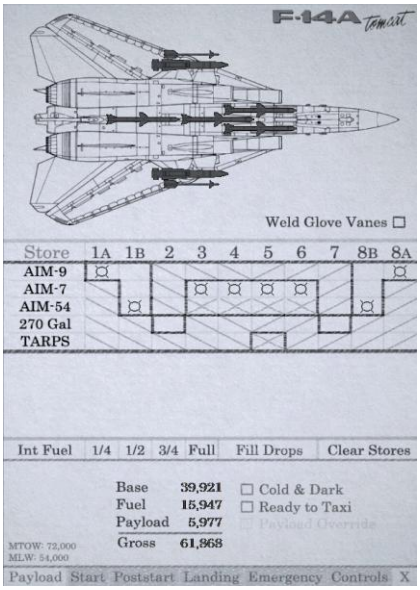
However, if you are actively tuned to a carrier's TACAN channel (Kitty Hawk or other), ratings will be based on both position and orientation, i.e. A successful 180° position will require all of the above, plus require that you be 1.0-1.5nm past ABEAM, ship at the 7-8 O'clock position, and flight path parallel to the ship's (within reason). A perfect visual approach setup is one which requires no 'click' assistance through all consecutive steps. It should be a substantial challenge for any virtual aviator, and considered a significant accomplishment. Then all that remains is to call the ball and catch the wire.



In spite of this picture, it is strongly recommend that you track the approach progress with the MiniHUD at 'Shift+1' for successful completion of each step; only use the checklist when a reference is needed.

AIRCRAFT MANAGER

There are two types of settings in the Tomcat; session and permanent. Session setting are found on the *Payload* tab and are reset with every flight. Permanent settings are found on in the *Controls* tab, and changes made here are permanently saved anytime a change is made.



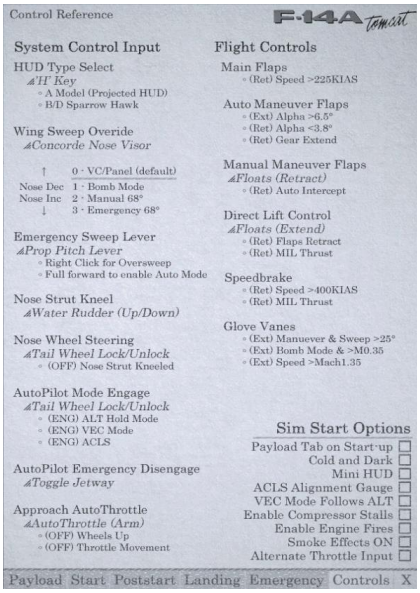
◦ Weld Glove Vanes: Glove Vanes (small wings that help stabilize at high Mach) will not extend

◦ Payload: Users choice, must be on the ground with parking brakes set to ON.

◦ **Cold & Dark** - Shuts everything down and prepares for a cold start.

◦ **Ready to Taxi** - Also can be called the "don't bite me in the ass" button. If flight starts in air, this script is automatically run. If you load the sim on the ground with engine running (and don't want to run through post-start), it's a good idea to press this button. Do note that "Ready for Taxi" does not include dropping the flaps.

◦ **Payload Override** - Intended for training purposes only



◦ **Payload on Start** - By default the PM loads to the *Controls* page. By clicking Payload on start you have demonstrated through either intuition or reading, that you understand the proper function of the Aircraft Manager

◦ **Cold & Dark** - When on the ground; sim automatically runs through the Cold & Dark script on initial load.

◦ **MiniHUD** - Sets the MiniHUD to reappear when view changes would otherwise close the 2D panel.

◦ **ACLS** - A 2D representation of the aircraft's position relative to the carrier when the ACLS/VEC switch is set to ACLS.

◦ **VEC** - By default VEC mode will only follow a horizontal path. With this active VEC mode will follow the altitude profile generated by an advanced flight planner.

◦ **Compressor Stalls** - Engines will cough, sputter, and flame-out when abused but can always be restarted with the proper procedure and a little luck.

◦ **Engine Fires** - Poorly managed stalls and hot starts can destroy engines for the remainder of the session.

◦ **Alternate Throttle** - If you have followed the axis setup in Vol. 3 and your throttles are still not working, then activate this option.

USING THE SWITCHES AND KNOBS

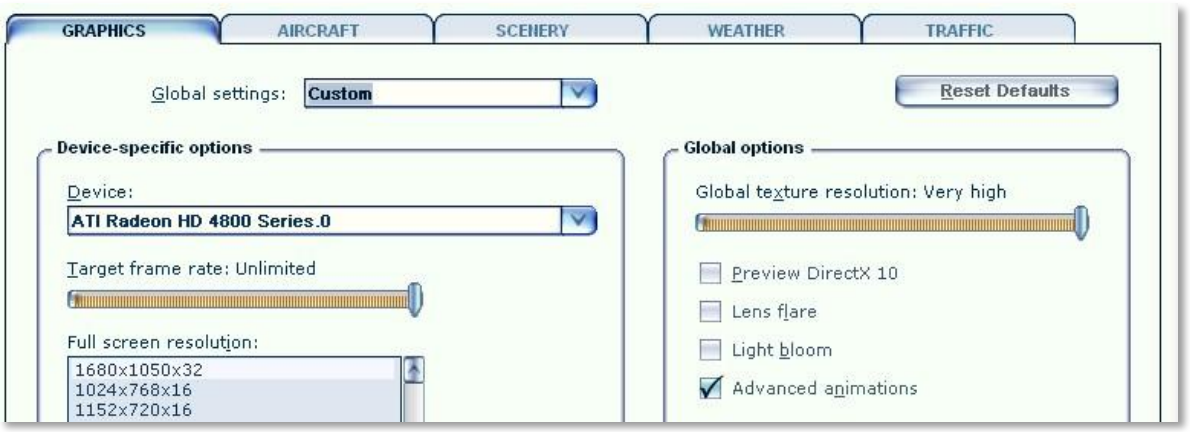
As there are many switches that have more than one setting (something that is not common in modern aircraft) we decided to use the same method for all controls. You can either left click for one direction or right click for the other direction or use the mouse wheel. Using the mouse wheel for all controls is far more natural, just put the cursor on the control and wheel up or down. Imagine the mouse wheel to be the switch and it all will seem very natural. This will work for rotary controls and switches. A tool tip will almost always give you the detailed setting.

In F-14, there are several controls, including the Emergency Sweep Lever, Master Test Switch, and Decision Height knob that have multiple functions in a single item. For these controls, mouse-click will control the first function while the mouse wheel controls the second.

FSX SETTINGS

There are a few settings that influence this aircraft.

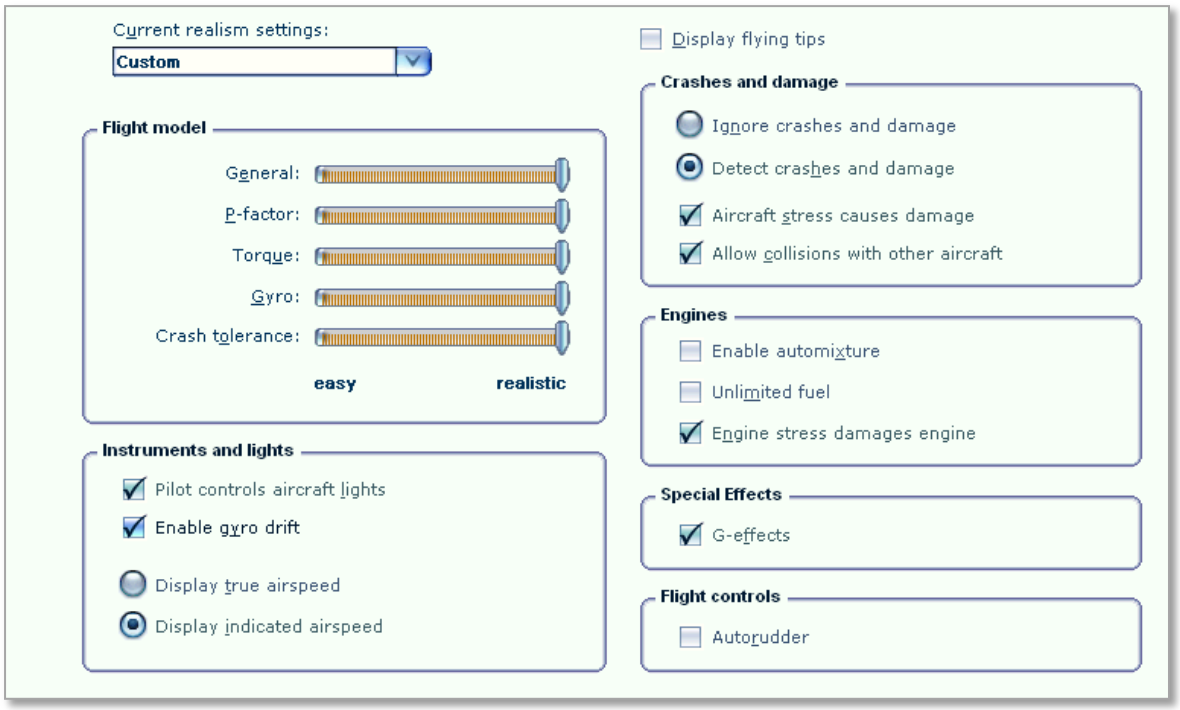
OPTIONS | SETTINGS | DISPLAY



- **Advanced animations** needs to be ON
- **Preview DirectX 10** tis best set to OFF to avoid problems

- **Aircraft cast shadows on the ground** can be left ON as it will hardly affect frame rate.
- **Aircraft cast shadows on itself** can be ON when you got a fast machine, but it will hurt frame rate in external views.

AIRCRAFT | REALISM SETTING



The most important settings are in the Aircraft | Realism dialog.

- **Flight model:** Set it to full realistic. Believe us; it will fly easier that way.
- **Instrument and lights**: You do want to control the lights and the gyro drift is not hard to handle (in fact you can ignore it). Of course we want indicated airspeed, true airspeed is totally useless.
- **Crashes and damage**: Not too important. You might gain a bit of FPS setting this all **OFF**.
- **Engines**: Set as shown, but it does not really matter.
- **Special effects**: These can be set to **ON** initially, but you might find the black-out limit is a little low for a season fighter pilot. Recommended **ON** if TacPack is installed (fixes the low Black-out limit).
- **Flight Controls**: To prevent FSX from messing things up best keep this **OFF**.

FSX TWEAKS

We are not big fans of any modification to FSX, a good deal of our support is caused by these changes. There is one tweak however that is almost obligatory these days and that is the HighMemFix trick. This change to the fsx.cfg file allows FSX to better handle texture addressing modes when using high levels of video memory. It also helps a lot when memory is scarce and for products like the Airbus X A320/A321 (formally known as the Airbus X Extended) it is almost obligatory. There are no negative effects reported. In our opinion, the HighMemFix line should be added to everyone's fsx.cfg file.

HighMemFix must be added manually to the fsx.cfg file as shown below:
[GRAPHICS]
HIGHMEMFIX=1

Note this tweak is not needed for P3D.