

TrackIR2 by NaturalPoint

by **Thomas "WKLINK" Cofield**

Introduction

Well, Well, every few years another device comes along that people look at as the potential end all be all for flight simulators. Many of us have spent small fortunes on HOTAS Controls, fancy input devices, high quality mice and various other gadgets (anyone *remember* the Saitek PC Dash? *Huh?*) which supposedly improved the immersion in the game and promised to give the flier that 'edge' over the other guy.



Some of these are fairly successful, some less so, some border on ridiculous. Some voice recognition software has been found to be fairly useful. Other items, like **Roger Wilco** improve multiplayer sessions by allowing communication between participants. Others, like many of the input devices (i.e. PC Dash, MS Game Commander) really don't cross over all that well to a flight sim environment. Some of the stuff is downright amazing — look at some of the more expensive items for sale **here** at **Flight Sim Central**. But the cost is really out-of-line for what most of us can afford.

Probably the biggest bar to the feeling of immersion has to be the restrictions posed by the monitor. Not only do you have the problem of depth perception and peripheral vision, you also have to deal with the difficulties of simply looking around in the cockpit. Some relief has been accomplished with Hat switches, virtual cockpits and mouse views but overall the 'fixed forward' type view is not only unrealistic; it tends to make situational awareness difficult. Unless you are Bill Gates and have the cash to create a complete virtual cockpit around you gamers have had to deal with what has to be the biggest limitation in PC flight simulation today.

About a year and a half ago, **NaturalPoint** came out with the **TrackIR**, a gaming version of the Smart-Nav system, a device designed for the handicapped that used a sensor and reflective dots to emulate the mouse. Simple in concept, basically the Smart-Nav is a video device that uses reflective dots to control mouse movement. In other words, it is a hands free mouse. Perfect for those with disabilities like spinal cord injuries the device is a reasonably priced device that allows those with disabilities the chance to get on the computer.

The TrackIR is more of a Smart-Nav "lite". Somewhere along the line someone came up with the idea that this mouse emulation device might work well with some games currently in production. More specifically, it looked like it might work very well with some of the newer flight sims coming out. Developers like Oleg Maddox immediately recognized the potential of this device and supported the game with **IL2: Forgotten Battles** (IL2:FB). Other games like **Lock On: Modern Air Combat** (LOMAC) and **Flight Simulator 2004** (FS2004) support the use of the device. Basically, if a game supported the "mouselook" function it would work with the Track IR device.



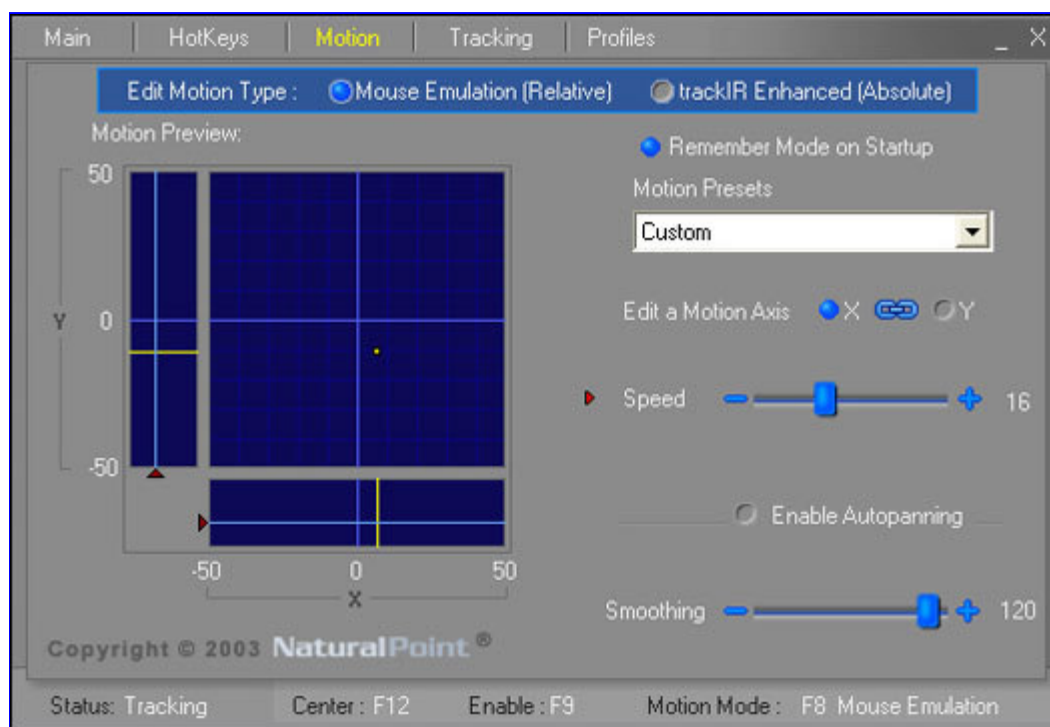
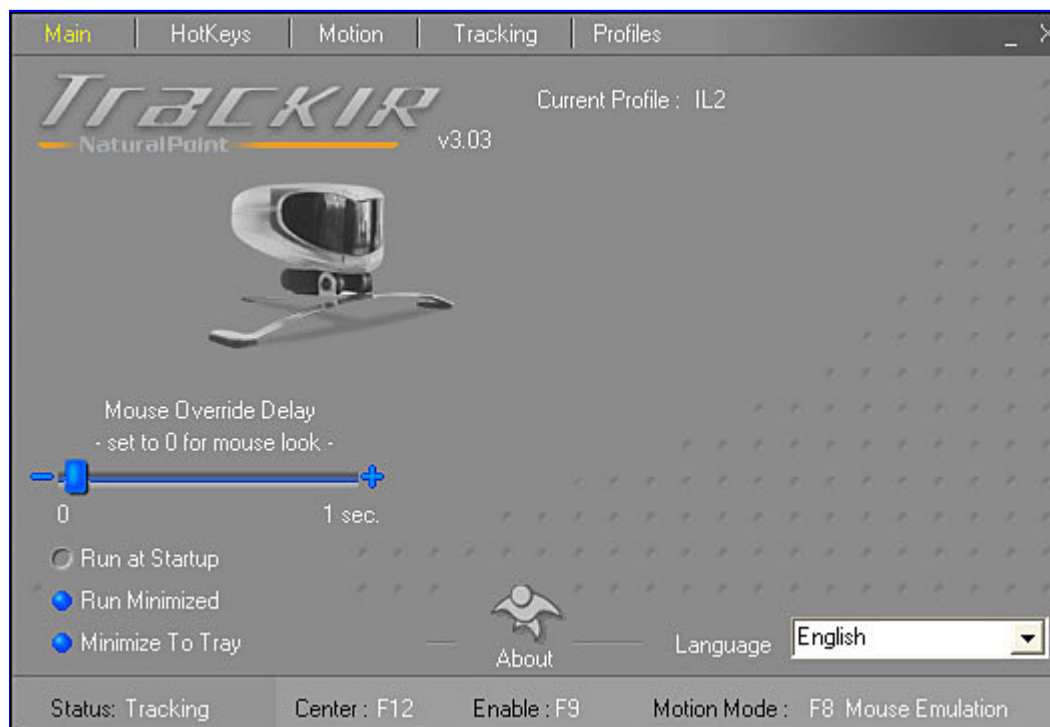
The newest device from NaturalPoint is the **Track IR2**, an updated version of the device that improves the shutter speed of the device and claims to have improved the smoothness of the panning as well as the accuracy of the device. I have an early production version of the device as well as the latest version of the TrackIR software and am running the device through its paces for the first time.

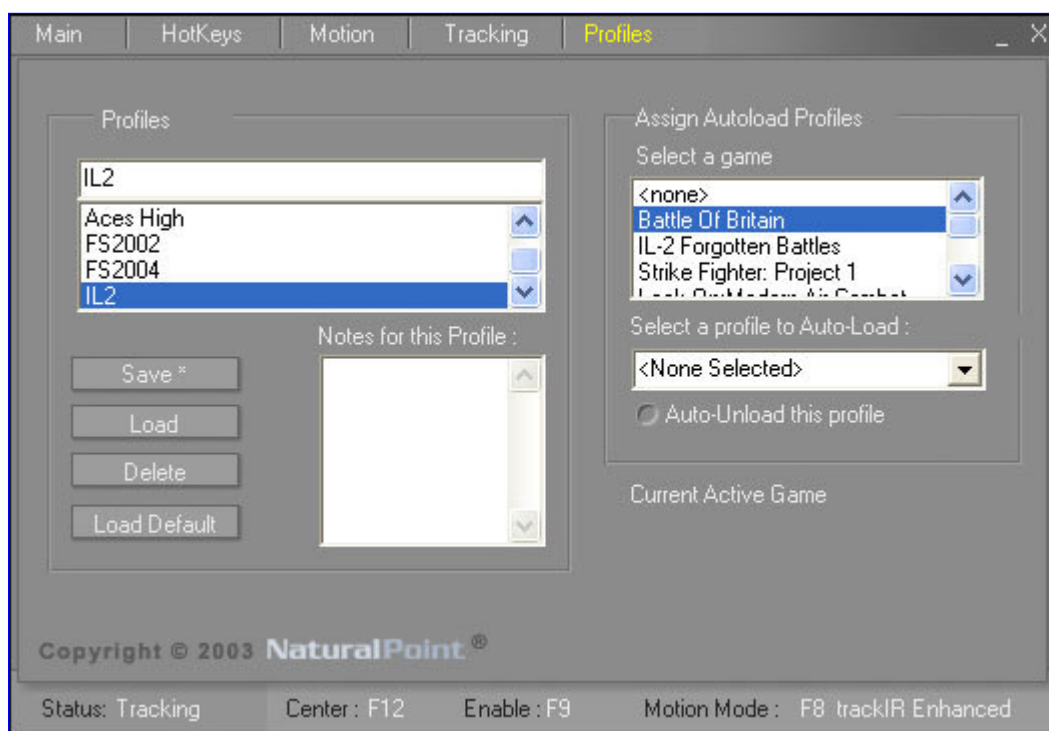
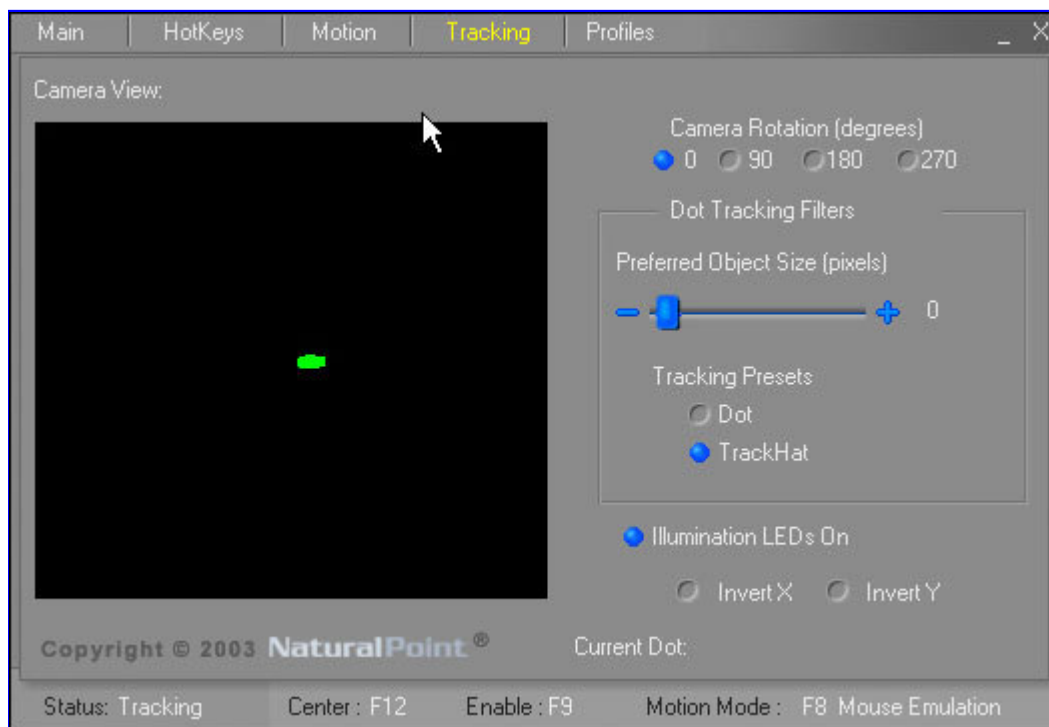
Let me say this, I have never used a TrackIR before receiving this device and wasn't sure exactly what to think of it. I have heard gamers on the IL2:FB boards simply rave about the TrackIR but until recently hadn't thought a whole lot about buying it. I decided that the device would be my little 'gift to me' after my deployment. I originally ordered a TrackIR "1", but NaturalPoint upgraded it to a TrackIR2 since the new version was so close to shipping. This was a nice bit of customer service if you ask me, most places would have shipped an older device but NaturalPoint decided to wait and let all people close to the shipping date decide if they wanted to wait.

Installation and Setup

Setup of the hardware is relatively simple. Under Windows XP you just install the software from the disk, plug in the TrackIR and you are underway. It is recommended that you not install the device to a USB Hub so those folks with limited USB space may have some trouble. Others of us with 8 USB slots already don't have that problem, but keep that in mind when you are ordering. With the way USB is now, even a hub can get filled up with USB mice, scanners, joysticks, pedals, throttles, modems, etc. etc. I haven't tried it via my hub; I figure if there *is* a problem, I don't want to contribute to it.

Once in, setting up the device is relatively simple. In the past getting the TrackIR setup correct with games sounded somewhat difficult — but the v3.01 software seems to get the device tracking fairly easily. There are some significant key points getting TrackIR to work properly.





Make sure that the device is installed at a level equal to your reflective device. TrackIR uses reflective dots to measure the 'bounce back' from the TrackIR device. These dots can be placed really anywhere, but most folks place them on a hat, glasses, or on the boom mike of their headset to keep them centered in one place. Right now, NaturalPoint is adding a free hat with reflective points sown on the brim and back. Having the device centered keeps you from drifting quite so much. Remember this is a mouse emulating device so any mouse drift from not centering the device will be transferred into a game.

Cut down on ambient light. This device picks up reflective light, both from the device and from the big picture behind you. I have a big nice glassed-in football jersey behind me which reflected on the TrackIR setup screen. It was able to filter it out, recognizing it as foreign, but smaller light returns could cause problems. Most folks with a light behind the

TrackIR don't seem to have much trouble. Since most of us fly in the relative dark anyway this shouldn't be a major hassle.

Spend time getting to know the device. As you will read about later, it is easy to set up but getting used to it may be somewhat hard for some folks. It isn't an instant plug and play joy. Like many of the HOTAS controllers we have come to love, there is a learning curve with the device and software.

One nasty bug that has shown-up causes some major problems for individuals with Hyperthreading Technology (HT) attached to the latest Pentium 4 processors. If you get a TrackIR2 and have a fast new computer, make sure you have the latest version of the software available [here](#) from NaturalPoint Support. The latest version of the software fixes the HT problem. Older versions will cause a runtime error with newer Intel boxes.

The TrackIR has two modes available.

The first, *mouse emulation mode*, is simply that; a mouse control used by the TrackIR system. Simply put, move your head around and the mouse moves with you. While simple and handy it does have its drawbacks. One drawback is, you can override the TrackIR with your mouse and vice versa. It is very hard getting the exact control you need with the mouse when using the TrackIR in mouse emulation. For example, clicking on a button in mouse emulation mode can be quite frustrating since any slight movement of your head takes the cursor out of position.

The other mode is *enhanced mode*. This is by far the better of the two since it will allow the head control function to work while in the game — at the same time allowing mouse movements independent of the head function. While useful, it requires the game developer to program compatibility for the TrackIR, and right now there are few games that natively support the TrackIR system. Notably, these games include IL2:FB and FS2004. I suspect that most new flight simulators, and probably quite a few first person shooters and some wargames will ship with TrackIR support.

Ease of Use

I will go through various simulations that either support the TrackIR2 system via enhanced mode or with mouse emulation mode. If you fly games that have mouse view emulation (like IL2: Forgotten Battles, Flight Simulator 2004, Lock On: Modern Air Combat, Aces High II Beta, or Falcon 4x, among others) then I highly recommend this device.

Simply put, this is the most significant improvement in visual control of a game since the introduction of the hat switch. Ok, maybe it is not quite *that* great yet, but this thing has the potential to be the "king daddy" of visual controllers. The learning curve is not difficult, but gaining total control of the device can be a little tricky.

I have played with the thing for about 20 hours now and I am slowly starting to get more and more comfortable with the thing. Basically, the TrackIR2 is a mouse emulation device which uses input from your head and translates it into mouse movements. While this head movement simulates the actual head movement you would find in real life, it isn't exactly the same thing.

For instance, when you are moving in space you naturally move your head in relation to the movement while keeping your eyes located on the same spot. This head movement, generally in response to the initial movement, is generally an unconscious process used to compensate for G forces placed on your body when you are moving.

This 'urge' has to be overcome with the TrackIR — and at first it is difficult. You literally have to train yourself to *not* automatically move your head when you turn the aircraft. Likewise, most folks will turn their heads to a certain point then track the target the rest of the way with their eyes. With the TrackIR you obviously cannot do this.

The ability to train yourself in general varies from person-to-person. Some folks have taken to it right away while others have more difficulty. I think in general it takes about a week or so of steady use before you really feel comfortable with the device. If you are someone that just plans on plugging the Track IR in and flying the thing, well, you probably should slow down. It takes some practice to get used to — but the rewards are well worth the effort.

Panning the cockpit for the first time, you realize the potential you have with this device. Following target aircraft no longer requires padlock keys or crude attempts with a hat key. Once you get the thing figured-out keeping an eye on the enemy is as simple as a small head movement. Getting a good firing position and laying ammo on target takes more practice, but this is easily the biggest hardware improvement I have seen for modern flight simulations.

As I said before, the TrackIR2 is a mouse emulation device which means that you can only use the functions with games that have mouse emulation. While this is good for games like IL2, LOMAC, or even EAW, it gives you problems with older games like Janes F-15 or games like WW2 Online that don't have mouselook available in a cockpit. While I think mouselook will be a standard feature in the next few years it means that the TrackIR is not compatible with a whole slew of older titles.

Likewise, if the game does not support the enhanced mode of the TrackIR2 system then you may have trouble. Later in the review, you will see my use of the system with **Aces High II** (AHII) Public Beta. I picked AHII because it was in beta. I could seriously evaluate the device without enhanced mode while at the same time not slam a game because the enhanced mode feature wasn't in place. AHII is still in the early beta stage so right now you may not have enhanced mode support, but it may be a planned feature that's supported later on. In fact, if **HiTech Creations** *doesn't* support the TrackIR, I will consider it a missed opportunity since they are the only major online flight sim that has mouselook in the cockpit.

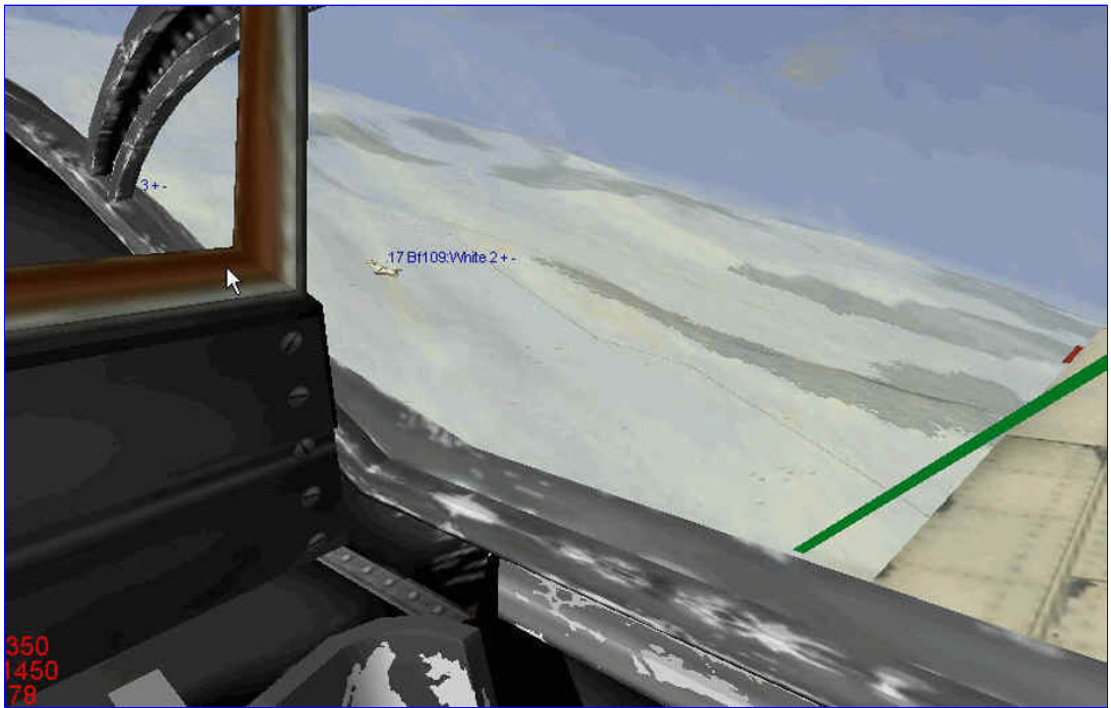
IL2: Forgotten Battles

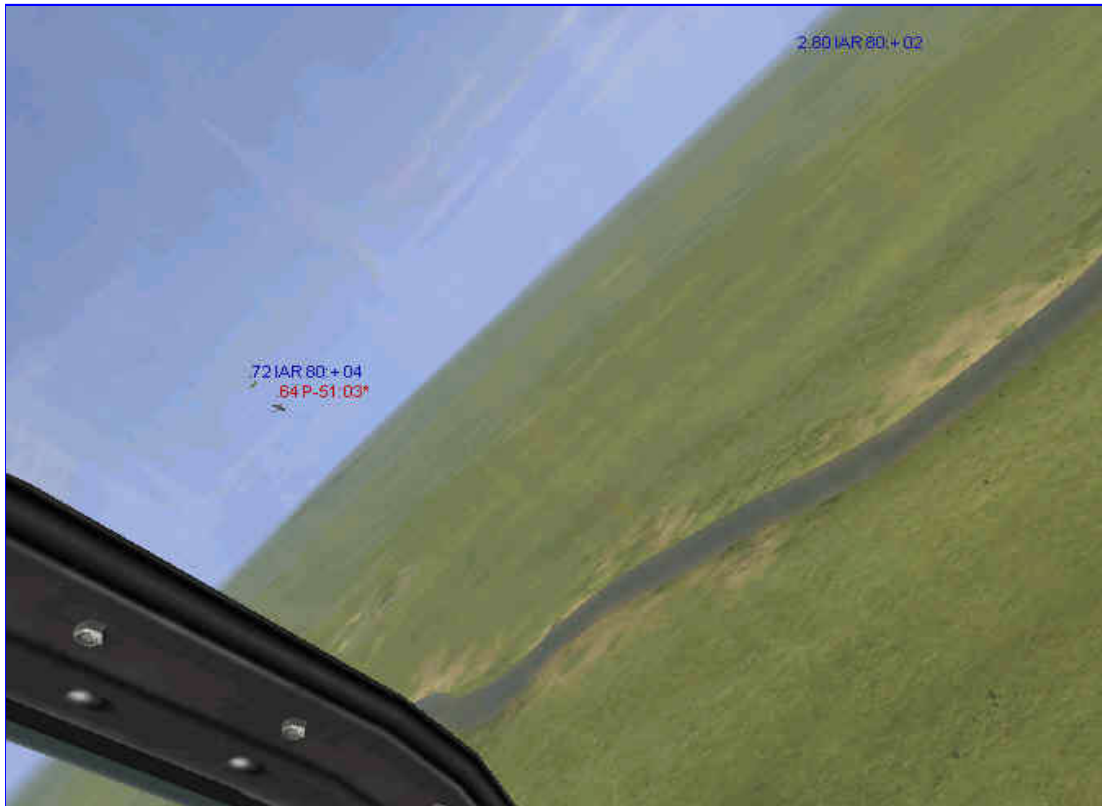


Cockpit panning is smooth and effortless in IL2:FB. Oleg Maddox was one of the first developers to recognize the potential of the device and developed IL2:FB with TrackIR support. It certainly shows in the game as it is pretty easy following enemy aircraft with the TrackIR. Earlier versions of the software allowed for a 'cheat' where people could look directly back but this seems to have been corrected in the latest software. You get enhanced and regular mouse emulation with IL2:FB when using the TrackIR2.

IL2:FB seems to be made for the device. Of all the games that I have played using the TrackIR2 IL2:FB still has the best panning and control. Head movements in enhanced mode are smooth and easy, there rarely is a problem with head control and the speed of panning means you rarely blow by your target when looking. With the regular mouselook function, the ability to pan the cockpit is stopped when the map is brought up, something you don't need to worry about in enhanced mode. The ability to pan the cockpit while still being able to click on map features will be appreciated the first time you do it.

If you are a bigtime IL2:FB flier like I am, then I highly — and I mean highly — recommend getting the TrackIR2. The advantage you have in dogfights against non-TrackIR fliers is almost unfair to be honest. Once you figure out how to fly well with the TrackIR, you will find yourself wondering how you ever got by without the thing.





Aces High II Public Beta



Right now, this looks to be the "gold standard" of future online flight simulations that will be able to use TrackIR. Some games like Warbirds III and WW2 Online have some mouselook capabilities, but AHII looks to have this capability enabled by default. Some of the features of AHII, like the ability to actually change position relative to the cockpit make looking outside of your aircraft a lot easier, and the ability to pan the cockpit via the mouse at the same time will enhance the effects of the game.

The biggest aggravation with the mouse emulation is the interference you get with the interface. Enhanced mode allows you to use the mouse in non-flight modes so you can access different menus without having to keep your head completely still. Trying to just click on the runway or selecting a loadout for your aircraft right now is difficult with the straight mouse emulation mode. Slight movements of your head cause the cursor to move just enough to keep you from staying on the correct button for selection. While not a major gripe, it is irritating, and makes you spend more time with the interface than you would ultimately want.

Within the game the device works fine. In some respects the AHII cockpit setup works in a superior manner with the TrackIR2. AHII has not only the ability to pan the cockpit but to move yourself around within the virtual cockpit to get a better position. This basically means that by using a hat switch (to map the "in-cockpit" reposition changes) you can pretty much make "seeing" in the cockpit a much more virtual experience.

The original Aces High supports mouselook via a complicated manner, but I could never get the thing to work properly, so I can't recommend it with any current online-only flight sim. I have a friend that uses his regularly online, and swears

by it for the original Aces High, but I couldn't get any view other than the seat — no matter how I tried to configure it.

As I said earlier, there are some difficulties with the interface... most notably when in the cockpit. If you are in the cockpit and try to bring up something with the mouse, you tend to pan all over the place, which is very disorienting. This is not exclusive to the TrackIR but is a mouse related problem that HTC hasn't corrected yet. I won't get too much into it since this is a game very early in beta.

Still it shows potential problems with flight sims that have the ability to use mouselook and have clickable functions in the cockpit.





Lock On: Modern Air Combat



I want to thank Matt Wagner and Clint Hayashi for getting me a Gold Copy of LOMAC for the TrackIR2 Review. I was pleasantly surprised to see a manila envelope with a copy of the game on my porch two days after asking Matt. I can't get an alternator for my car that quick, and although I had two copies on order already it was nice seeing such a quick response from a request.

I delayed on the review of the TrackIR2 simply because I needed to wait until the patch for LOMAC came out. The original release of the title suffered from a bug causing the player's view to center on his or her virtual crotch while in enhanced mode. There were tricks to get around this but they were of limited success in my observation.

The LOMAC v1.01 patch corrected this problem (among others) and I got a chance to fiddle with it. I must say that my opinion of the TrackIR2 and LOMAC is still somewhat mixed.

In mouse emulation mode I think the game is near perfect. The game allows the individual the opportunity to adjust the speed of the panning (3 different levels). So if you want a fast peek verses a slow turn you can do that. This is very nice on those approach patterns to the airbase when you are just trying to adjust your head a little to get a better view verses the combat scene where you may want quicker head movements. In all honesty, I am surprised that this feature has not been done before in simulations, it is a very creative and useful item in the game.

In enhanced mode, I wasn't quite as happy. It works fine, but unfortunately the panning is much too fast in the game for my taste. There are some profiles which help to a degree, but I still don't feel like I have the head control that I have

when in simple mouse emulation mode. Since the cockpits are non-interactive, unlike Falcon 4.0 or Jane's F/A-18, the need for a separate mouse to click on items is moot. Even in IL2:FB the enhanced mode is more important when having to interface with the map.

In other words, I don't like the enhanced mode, even after the patch but in regular mouse emulation mode the game works very well and I am quite happy with it. Like IL2:FB, it will give you an advantage over your virtual enemies and will make the game feel much more realistic.



Flight Simulator 2004



FS2004 and its earlier sibling FS2002 both support the TrackIR. I didn't test the TrackIR2 with FS2002, but it worked very well with FS2004 (although I thought head panning was slightly too fast for comfort). This is adjustable within the control panel of the TrackIR device which should be done if you want to play the game.

The TrackIR2 support includes enhanced mode. Basically the TrackIR2 pans in the virtual cockpit mode, the mode that most TrackIR users will find themselves again and again. The limitations of view that you see with the cockpits in FS2004 (the higher the resolution the better off you are) are still there. Some of the aircraft have the appearance of looking more at an instrument panel than out of the aircraft. It has been a complaint that I have had about the FS series for a long time — you feel like you are more in a panel with a virtual world behind it than actually in a virtual world. Of course the TrackIR doesn't fix this problem but very little will IMHO. The virtual cockpit is an improvement with this artificial feeling and the TrackIR takes advantage of it.

The question I guess with FS2004 is whether the TrackIR is worth it for just FS2004. It's nice, I like flying around and looking at stuff but this isn't a combat simulator so the need to pan a cockpit isn't as big for me as it would be for say IL2:FB. In fact, of all the games I played using the TrackIR2 FS2004 it was probably would be the least needed for effective gaming. This isn't a slam on the TrackIR or on FS2004... its just that civilian sims don't have the need for following some bogey like in other games.

So, if you have FS2004 and no other games that support mouselook, the TrackIR2 is a nice thing to have but not 'life critical'. I don't think that having it is a significant advantage in the game, unlike combat flight simulations. I like it, I certainly plop the old NaturalPoint hat on when I fire up FS2004, but if I had never used it with FS2004, I don't think the experience would have been significantly altered.





Overall Opinions and Conclusions

Well, to say I "really liked" the TrackIR2 would be an understatement. Some early bugs aside, the device installed without a problem, tracked well, and after learning how to use the device, proved an advantage in virtual combat. The ability to follow that bandit without stumbling through hat keys or losing orientation with a padlock key has proven to be more of an advantage than I thought it would be.

In the past there has been some debate as to whether having a TrackIR is considered a 'cheater' device in some games

— especially online. I will say this — the TrackIR improves situational awareness immensely in most combat flight simulators. It is a *significant advantage* in most games, especially if you are flying online against an enemy without a similar device. It won't overcome poor flying, bad technique or rotten gunnery, but it *will improve* your situational awareness and in most games, it makes you feel like you really are in the game.

Right now, the TrackIR2 is still in it's early stages. Yes, this is the second version of the hardware and yes, it has been around for a while... but I really do foresee a future for the device. I wonder when first person shooters will fully embrace the device (some have — Operation Flashpoint has support). I may write a supplement to this review in the future using this device with some of the more popular FPS games.

So my conclusions? If you are a rabid IL2:FB flier, then I highly recommend the TrackIR2. I sometimes wonder if the TrackIR2 wasn't designed especially for IL2:FB. I can't imagine flying IL2:Forgotten Battles without the TrackIR2 to be honest. It really makes me wish I had bought the device much earlier.

LOMAC and IL2 have my recommendation with few qualms. I don't have anything against IL2 and the TrackIR. I rarely hear anything negative about the device and the game, and I can't apply anything bad to the title either. LOMAC works well enough. Certainly worth the purchase IMHO, but at the same time I really would like to tone down the speed of panning in enhanced mode. Some folks may like it, and as I said, others have profiles which help... but it is still too fast to me. It actually runs better in mouse emulation mode, so you lose very little with this mode.

With AHII it is too early to be honest. The panning ability in the cockpit works fairly well right now, but the ability to support enhanced mode is really needed to make the game perform. If and when HiTech Creations supports enhanced mode in Aces High II you will see a rabid following created for the TrackIR2 system IMHO. Online fliers are always looking for that 'little edge' in virtual combat and the TrackIR2 will definitely give them that.

FS2004 is a good game for the TrackIR2, but it doesn't give the same advantage like you see in combat sims. If you want to improve your immersion in the game, it won't hurt though, and for those of us that play other games it certainly makes the experience more fun.

So overall I highly recommend the TrackIR2 system for those virtual fliers that desire an advantage over their enemies, both real and computerized. The price of 120 bucks may seem steep to some folks, but when you consider the money many of us spend on joysticks, pedals, throttles, video card upgrades and such, most of us will probably figure out a way to convince our wife of the need for such an important device. And if we can't, rest assured it is worth the chewing out you will receive when the VISA bill arrives.



Test System Specs

- Dell Dimension 4600
- Pentium 4, 2.8GHz (HT)
- 1GB 400MHz DDR RAM
- 80 GB Ultra ATA 100 HD
- NVIDIA GeForce Ti4600 video card
- Creative Audigy 2 sound card