REVIEWS

FS2000 PRO

By FlightSim.Com Staff (UPDATED November 1, 1999)

INTRODUCTION

IMPORTANT Update, November 1, 1999. We have received help from some great flightsimmers out there and has this information on a very common illegal operation you will get in FS2000, if you frequently save situations. FS2000 has a flaw that will cause illegal operations everytime you save a situation with an airplane that is not from the default FS2000 list. That means, any experienced flightsimmers that have added **any** FS98 airplanes, or have tinkered with the FS2000 airplanes' panels in **any** way - will get an illegal operation when they try to access that situation made with a non-default aircraft! Even if you use the panel designer included with FS2000 and save a situation with any airplane that you edited the panel on, you will crash FS when trying to load that situation containing your "new" airplane. Simply, **do not** save a situation with anything but a default plane. To fly your new airplane, just save a situation wherever you want, as you normally would do, but switch off to a default airplane first, save, then exit. Now, when you go back into that situation, just re-select your favorite "new" plane, fly and have fun. You should not have problems with illegal operations as long as you don't save a situation with a non-default, non-edited aircraft! Good Luck.

FS2000 is out! Microsoft has released the latest version of the granddaddy flightsim of all time. If you don't have it, you'll want to know how it is! If you do have it, you're either frustrated or delighted and may not even want to read this. This review is partially here for those few simmers who don't have it already and those who want to see what we think of FS2000. We'll give some hints along the way too. All testing was flown on an Intel PIII 500 with 128 megs of ram and a new Creative Labs 3D Blaster TNT2 video card.

So how is it? That's what everyone wants to know. **EXCELLENT** with a few **BIG ISSUES** but nothing terribly affecting flight. Let's start off by saying you'll need a **powerful computer** - something like a PII400 + or you should not even open the box. The minimum requirements are a P166. Unless you enjoy frame rates of 1, I would never attempt to run this on anything less than a PII400. That is disapointing. Even more disapointing is that if you do have a faster computer than that, you're only going to be getting flyable framerates and NOT fluid ones of 30+. In most cases, users of FS2000 are getting out-the-cockpit view framerates of 10 to 20 on average. This goes to about 50 to 60 at high altitudes or over sparse areas. This can crawl to around 5 in bad weather or bad weather near a city. And yes, this is on a PIII500 with a TNT2 graphics card (our test machine). Depressed? Don't be. I was when I first tried it. I even swore. I felt gypped. As the past designer of **Flight Unlimited III** I felt the "frame rate heat" from many users when PII300s were slightly sluggish on that **awesome** sim too! It's a sign of the times. Flight simulation makers could make Flightsims with 60+ framerates, but won't. They want to push graphics to the limit and eye candy is the name of the game. I don't always agree with that. The time I have spent in $15 million dollar full motion airliner simulations told me simple can be great! I'll plug **FLY!** and **X-Plane** then. Smoothness is great and the helper of great flight modeling. So how can I love FS2000 with such horrendous framerates?

FRAMERATES, FRAMERATES

It's not that the frame rates can't be tweaked. They can be. And the big secret I have found as well as all the other simmers in the world is that FS2000 suffers from a bug with the artificial horizon indicators and the directional gyro displays. These gauges operate very smoothly but cost the system performance when turning your aircraft. What we have found is you can turn off these instruments in the instrument reliability menus or fly in full screen mode (W). Now, you can fly FS2000 with straight ahead full cockpit framerates on a PIII500 of around 10 to 30, and full screen, maintain 15 to 30 in turns. If I told you this can be achieved with rain pounding the windows and clouds skimming the aircraft wouldn't you be more excited? YES! That's what makes framerates not too hard to take. See, FS2000's weather does not really degrade framerate at all! This goes for one or two solid overcast cloud layers and precipitation falling. And, all framerates are not much affected by changing the display properties either. The only ones that have an effect are the mesh scenery levels and the texture distance levels. Keeping them all around 50% (40 miles or so) results in a good overall tradeoff between sharp details and good, solid flyable framerates. On my PIII500 I keep a setting of default "#5". This gives you high levels of most all details, and about 50% on scenery texturing. Building density is on dense. AI traffic is sparse. The biggest hits to framerates are the broken or partly cloudy skies, high visibilities (now up to 120 miles) and dynamic scenery. The very best framerates generally result in flying with real weather because true surface observations are limited in visibility by terrain, buildings etc. and so when flying FS2000, you'll often get visibilities of only 10 miles - resulting in frame rates rising to near 30 with a full screen, and 20 or so with a cockpit view. To me, this is fine, considering what you are seeing outside the window! And you're seeing a very high res image of the real world wherever you are. I run in 1280x1024x16 and the clarity of the farm fields, hills, buildings and aircraft

exteriors are a sight to behold. No blurriness like in FS98. None. The overall change in framerates from 800x600 to 1280x1024 is a whopping 2. Hmm. Why bother run in anything less? And, whether or not this is a bug, I don't know but most detail sliders do absolutely nothing to the frame rates. Better off keeping most on the high side with the exception to the other two I mentioned earlier. As I write this review, flying at FL330 over Ohio somewhere in the 777-300, I am getting 58.8 fps on average, with a full cockpit view. If I should try a turn, it will drop to 10. But that is the fault of the two gauges; I understand a fix is going to be done by MS. Nighttime framerates drop only slightly.

The framerate issue is the biggest one. It has resulted in many users returning their copies. MS has left out anyone with a normal speed machine or one that may have run FS98 like a champ. If there is a patch that boosts framerates then everyone else will benefit to enjoy what has been created here. If not, well, you know what that means. Time to spend money again. I think once the gauges are patched, most PII350+ owners could really enjoy this now. Personally, at first I thought it was bad coding that made the poor framerates. But now, I believe it is flight modeling, panels, external terrain and weather graphics that are the cause. Spend two days with FS2000 on a powerful machine, and you're not likely to be bothered by them anymore. You'll be captivated by the **PAUSE FREE** flying and slightly smoother framerate on landings (because you're not turning or looking at much then). A major problem to FS98 was the constant stuttering and pausing while in flight. I can tell you folks, that a smooth, predictable framerate of 12 is better than a jittery one at 24. Landings in FS2000 work! Enough on the framerate issue. At the time of this writing, in the worst case scenario, I find it fine now. A patch to come out will really help out - and bring FS2000's silkiness much more to that of FS98.

GRAPHICS

We now have another complete globe to fly around. With the new mesh style scenery we have real elevation points that make the surrounding terrain rise and fall like the real earth. We have no more flat areas that just pop up into place at the last minute during a landing approach! We have many more ground textures to look at. A cross country trip in the jet will make you believe you're getting a geography lesson more than ever. So far I have seen in real time New Eng the Mid

Rockies
and Florida and they all look realistic with great details. All the major roads, lakes, rivers etc. are all there. You can for the first time, really use a VFR sectional while you fly your C182. At 1280x1024 it is photographic. At nighttime you'll see cars on the streets and many more ground lights than ever. Flying into Denver, coming in over the Rockies at pre-dawn, I saw small towns with many ground lights, nestled in mountain valleys. They were surrounded by snow dusted foothills and pure white alpine peaks. Making my way down into Denver, the snowline slowly ended giving way to the dull browns of winter and less foliage around the airport plateau. In New England and many northern states you'll see the accurate dulls of reds, yellows, and oranges dotting the countryside in fall. Colors are not exaggerated now. They are accurate and change over time and location. Florida had many bushy greens and grasslands. My screenshots posted on this page are from the Juneau Alaska area on a cloudy, blustery day. Click here if you want to read a young bush pilot's real-life comparison between the real Alaska, and the FS2000 Alaska.

AIRPORTS

All the airports, even the small ones, now have taxiways, parking areas, buildings, tie down spots, T-hangars, fueling areas, accurate lighting and much more. The big airports are particularly detailed, with incredible night lighting, terminal buildings, hangars and some animated rotating radar dishes and other little things. This makes an amazing difference over previous FS versions. At Salt Lake City, while arriving at night, I not only found lighted terminals, but big jet hangars with their doors illuminated in big spot lights. I really felt I was there, and that the world was alive. These airports look so good, it's going to be a long time before freeware airports can compete. I only say that because, for many, the details at the default airports are more than plentiful, professional looking and don't harm frame rates much. 3rd party developers will have to go easy at first, again, due to the framerate issue. Many of the textures are photographic looking. I was taxiing out from San Jose just an hour ago, and noticed by runway 30L, there were a set of detailed looking T-hangars in their right place, according to a nearby airport diagram I had handy. So far, the airports that I have shot instrument approaches into, have been accurate and conform to real life chart data.

AIRCRAFT

Visuals

This might be my favorite part of the new sim. As the designer of Flight Unlimited III, I took painstaking amounts of time to build the best looking aircraft available in a flightsim. All the airplanes in FU3 are technically accurate, meaning no out of size tires, windows or other parts. All parts are located correctly as well. This has been one of my big complaints is that flightsim companies don't spend much design time on the default aircrafts. However, FS2000 now comes with some real beauties, especially in 1280x1024! If I can say it, it's got to be true! The **737-400** is excellent. Small details are abundant. There are pilots in the now transparent cockpit windows. Everything about the airplane seems just about right. They even got the wheels and hubs the right

size
Detailed landing gear, gear doors, internal tubing, and animation are all there in the landing gear. Speaking of animation, the nosewheel pivots exactly as it should. Using maximum control deflection will "tiller" the nosewheel 90 degrees to either side, making locked wheel turns a reality. Finally, you can pivot your airliner around like it should be done. Viewing taxiing from the outside, looks almost lifelike. The only complaint visually I have about the 737 is the engine nacelles are "mashed" a bit more than the real ones. Other than that, the scale of the model is really well done. The external lighting is not perfect however. The strobes flash far too slowly and there are no red strobes on the top and bottom of the fuselage. Landing light beams are very pretty, but don't illuminate the ground from the cockpit view. This is a bug that is already known. I sure'd like to know how that one slipped thru the beta department. I guess they were all flying during the day! My favorite part about the 737 is the animated fanblades in each engine. When starting or stopping an engine you'll see the rotation slowly begin and spool up to a whirling blur. The swirl on the spinner is there as well, blurring out as the real one does. Simply amazing effects that add so much to the whole effect.

737 Sound

Top the visuals off with all true sound effects! MS went to the trouble of recording real engines and boy did they do a great job. The sound file alone for each airplane has about 10 different stages of engine compression sounds, startup and shutdown sounds. This makes engine startups outrageously fun to listen too. As you engage the starter, you'll hear the starter motor start to "grind" away, then the "clikety, clickety, clickety" of the blades starting to turn (if you're watching from the outside) and then the lightoff stage and rapid "hummmm" of rpm spoolup. The sounds seem to include the whine of avionics, cooling fans and airflow all at once. Whatever they've done, it's awesome and sounds just like the real thing! Just like in FS98, wind noise is deactivated in the config. file. You'll have to edit that and give the wind a speed to start and reach maximum volume. By default they have it at 0/0 which means you'll hear nothing. Also, you may want to add louder maximum volumes to the maximum speed number, I like arou 50,0 so that I can hear the roar of the wind as you

would
in a real jet cockpit at high speed. There are now rumbling sounds on the runway and
for owners of a vibrating chair or pad like I have - watch out! Touchdown sounds are
not bad, dull and a little quiet. The reverser sounds are very good now, you'll hear the
change in airflow pitch as the reversers are opened, and then the "dull roar" of the
actual power applied in reverse mode. The sounds for the 737 are outstanding, I just
wish it came with a built-in GPWS system, but as of now, I have added my own
anyway using a GPWS FS98 gauge found on FlightSim.Com. I am actually surprised
MS took the time to really do sounds well, as previous versions had only one wav file
for engines at all stages. Blah.

737 Flight Model

Flight modeling was top notch from what I can tell. The big differences in FS2000's
models are the new ground handling, better thrust to weight ratio, new momentum feel,
engine rpm changes, realistic flap retract and deploy times and accurate fuel flow and
burn rates! Cruising at flight level 390, at a fuel flow of 3.1 thousand pounds per hour
in each engine will give you exactly M.74 or about 430 kts true. The autopilot works
well, but heading changes are still far too violent. This is an old FS98 carryover flaw.
Shame on them there. Autolandings are supported with the capture of the localizer
with the autopilot's approach mode armed. I have done quite a few now and they work
great. At the right flare attitude the power levers will retard, the nose will remain up
and upon touchdown, the spoilers, reversers and brakes will be activated. With three
hours under my belt at the controls of a real 737-400 Level D simulator, I felt right at
home. When in the 737, you are in a 737 simulator, minus the systems that a sim like
FLY! offers.

737 Panel

The 737-400 panel is very nicely done. Simple, yet effective. This is where FS2000 is
not much different than FS98. However, the overall clarity, coloring, detailing and
some new systems make it much better. We now have nice popups for the throttle
quadrant, radio stack, compass and best of all the new GPS. These popups are via
toggles already on the panel. I sure am glad we finally have that! While missing all the
niceities of FLY!'s panels, the base panel here is one that works and represents the real
thing quite well. MS went for "big and legible" this time and it works to some extent.
Two bad things about the new panels are that 1) they limit more of the outside world
(especially in the Cessna) and 2) they are the cause of the poor framerates and
stuttering while in turns. Rumor has it that a patch will fix the Artificial Horizon and
Compass displays that are causing this performance hit. Personally, I think MS is
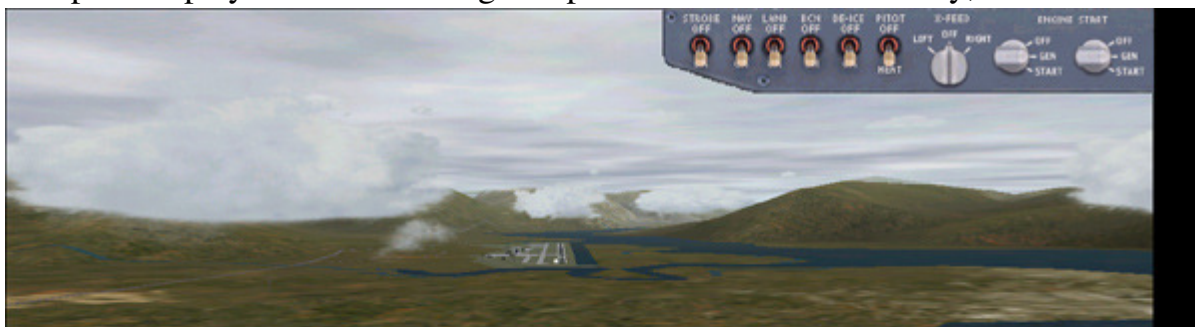
goin
for
IFR
cert
so
wan
tota
smo

instr

updates at the cost of outside visuals. The FAA was never big on visuals anyway. That's MY opinion only. I have been able to fly nice takeoffs and landings and turns while in Full Screen (W) mode to combat this stuttering problem for now. The GPS is simple, easy to use, very effective and a perfect default addon. No more loading, configuring etc. the GPS to the other airplanes...they all have it! Yea! No need to go into detail here on it, it's so easy and self-explainatory. Night lighting on the panel is so so...not really representative of what the real 737 has but a BIG improvement over the silly red glow on all the FS98 panels! It won't be long before 3rd party panels come out with all the switches, systems and sound effects missing from the default one. I really wish seatbelt signs and air conditioning switches were included by default, but that's not a big deal is adding them is simple as in FS98.

All the other airplanes

It doesn't do justice to lump all the other planes together, but in the interest of not tuning this into a book I will hit on the plusses and minuses of the planes I have flown. For the most part, the other aircraft are equally well built with flight models that range from great to perfect. Visually, each one is accurate and pretty to look at. Moving parts are abundant and the same cool engine animations are found on **ALL** the FS2000 aircraft. Next to the 737, my favorites are the Lear 45 and Cessna 182S. They are stunning! All accurate and ready to use. The Learjet's engine sounds are to die for! The prop animation on the Cessna is great as well as the flight modeling on both. The Learjet has really been improved for more stability and realistic hand flying and the Cessna seems pretty close to the real thing as well. I get to fly a brand new 182S at a local airport ($130 per hour cough cough) and the real one will climb at 2,000 feet per minute initially up to around 1500 feet or so! The default C182S is much more strong on climb performance now. Each FS2000 airplane has its own sounds, panel and cabin interior modeling. Virtual cockpits don't exist on default FS2000 airplnes. Unless you have tons of ram, the inside views are hindered by slow-to-load artwork. I don't know why they are such hogs, as the cockpits in FLY! and FU3 load much faster and are much more detailed. Overall they look good, but not great. I was disapointed in the 777-300. It looks awkward, gangly and goofy. It doesn't conform to exact dimensions

or
part
plac
like
the
othe
I
am
upse
that
mor
time
was
not
sper

on
such a gorgeous airliner. However, the animations are still excellent. The 777 cockpit is as equally good as the 737's and actually offers stutter free flying because you can switch to a different EFIS display that does not show compass. I hope to soon fly the Concorde, KingAir, Extra, Mooney, 182RG, Glider, and the Sopwith.

WEATHER

The weather system is much improved. Multiple cloud layers, wind layers, gusting winds, windshears, variabilities and randomness are all built in. The visual modeling on all the clouds is so much better and now you will see detailed forms of cumulous cloud in varying heights. The effects combined with lighting, sun angle and precipitation falling are truly a sight to be seen. Overall, I like the weather visuals almost as much as the ones in Flight Unlimited III! (that's no surprise) However, unless you choose to use real weather (which works very well) you will not get an automatic generation of random or changing weather. You can still program in areas, but you'll never be able to know that a lurking warm front could spawn some imbedded storms etc. as FU3 offers. The framerates are not much affected by solid overcast or undercast layers, nor precipitation. That's very good news. They are however, hindered by partly cloudy puffy cumulous variety, or multiple layers of differing cloud models. Then you may find your PIII500 dropping to a 5 fps count! Eeek. No pauses though (grin). The weather offers so much to see, I have yet to discover the thunderstorms, snow, icing or other surprises that my addition to real weather has supplied me with. I am flying to Alaska while writing this, hoping to find real snow there! Overall, the sky effects are great, almost as awesome as FU3's but not nearly as fluid as FLY!'s pretty clouds.

MAP

Wow! I just discovered the map! Totally new map for the 21st Century. Just grab and plop your airplane anywhere on it, and place in speeds and altitudes to start flying! And, yes, the airplane will not start off falling or stalling, it will be stable at the speed you place it at! Amazing!

PACKAGING

A big colorful box and a thick, hearty manual that's good for beginners. Good "light weight" content. Experienced simmers will not use it. Boo hoo, no approach plates nor fold out maps included.

MY BUGS UNCOVERED

So far I have found the following bugs:

1) Can't bootup to a startup mode that saved the outside spot camera as the first window you'll come to. You'll get illegal operations.
2) Messing with any cache sizes will make FS2000 unusable and result in re-installations!
3) So far I have been unable to insert my own ground touchdown sounds and hear

them.
4) Most frame rate option sliders do nothing to help
5) Some lockups for no reason I can think of. However, after re-installing and not touching my cache settings or fiddling with config. files that involve cache or memory, I have not had a lock in 3 days.

CONCLUSION

It's hard to review a product as massive as this one. There is not enough time in the world to plow thru FS2000, become an expert on it and learn it all in a few days. There is still so much I am discovering, but based on what I have seen in a week of solid flying, I am very impressed and happy about it. The frame rate issue is really the only big problem and it needs to be fixed. However, it is not as painful on a fast machine as the FS98 framerates used to be with that nagging pausing every few seconds. Try not to watch the framerate counter and you'll notice that this sim runs solid. There are no pauses. A patch hopefully will fix turning stuttering with the panel on. An overall boost perhaps from video card drivers taking in Direct-X 7.0 will help us out too.

The new panels, sounds, aircraft visuals, flight models, weather system, terrain rendering, airport accuracies and continued open-ended format have insured us flightsimmers worldwide that the FS2000 version is the future again. Slightly ahead of our current computer systems, but solid and feature packed enough so that in two years will still be flying this thing like crazy and at framerates of 100 again. Just in time for FS2002.

It's the biggest version yet and astoundingly ahead of what past versions were like. We now have scenery that's worldwide and accurate enough for each airport to educate real student pilots as to where the FBO will be. You'll learn geography from the 777 as you fly to far reaches of the globe, looking down from 41,000 feet with an atlas in hand. You can go visit Mount Everest, take a helicopter tour through the glaciers of Alaska, fly your new C182S along the rugged coast of Maine all the way to the Bahamas, pilot the King Air 350 through a heavy nighttime snowfall into the deep mountains of Colorado and view the sunrise over the coral waters of the Caribbean. You have the entire world on your hand, in practically photorealistic detail. **It's absolutely fantastically amazing!**.

In conclusion, I have just finished my approach into Juneau Alaska. Where there was never any scenery to speak of, my eyes popped out of my head as I broke through the low clouds into the valley filled with scattered low scud, gusty winds and shears and changing visibilities. There were glaciers and snow fields running up into the clouds. My landing was rough, but the virtual passengers were too busy with their eyes stuck to the windows to care. Mine too. It was a one of those "flightsim moments".

Flight Simulator 2000 gets a hearty **89**. It would easily score a 94 or more if framerates were better for more modest computers and there was no stuttering from the gauges. For a default Microsoft Flight Simulator version, it is shockingly complete and solid. I still operate in fear of lockups, but for now, have not had any in days. Once you

dive into this, you're not going to be getting any sleep for days either - so enjoy those sunrises! And don't forget the earplugs for anyone else that lives in your house. Put those sound sliders to full!

[Back | Main Menu | Logout | Help]