AVSIM Commercial Utility Review

Flight Simulator X For Pilots:
Real World Training

Gold Star Award

Product Information
INTRODUCTION: “For Serious Pilots, It’s Not A Game”

Microsoft Flight Simulator X For Pilots: Real World Training (What I will call FSX For Pilots from here on) is a book for anyone interested in becoming a pilot, both in the real-world as well as in the virtual world of FSX. The title of the book, although long, describes very well what is contained inside: a detailed and extensive course in how to pilot an airplane, using FSX as a training tool. The book was published after FSX was released (naturally), but before the release of Service Pack 1 for FSX (SP1). Except for some very small outdated operational concerns regarding the inner workings of FSX, all of the lessons provided in the book should work with any version of FSX: Vista, Windows XP, DX9 or DX10.

The authors, Jeff van West and Kevin Lane-Cummings, are both experienced pilots and writers. In fact, both men are CFIs, Certified Flight Instructors. Not only are they experts in the field of flight training, they are also both seasoned authors. They successfully channeled their real-world experiences into the world of virtual flight, and wrote an extremely clear manual on how to fly.

The field of aviation manuals for sim pilots is a growing concern for the FSX community. The spectrum of books range from user-friendly "gaming guides" that help beginners learn to use FSX, all the way up to highly specialized texts that replicate the official manuals used by commercial airlines. FSX For Pilots sets a very high standard for anybody interested in books for FSX, and so I will award an AVSIM Gold Star for Excellence.

PRE-FLIGHT CHECKS: I’m Not Actually A Pilot, But I Play One On TV

Before I go much farther in my review, I do feel the need to make a few things clear about this article. Although I did contact the publisher, Wiley, and one of the authors, I never did get explicit permission from them to post content from the book for my review. It’s not that these people were unfriendly or unhelpful, but rather that the Wiley organization is very large, and they have a system in place for dealing with requests for book reviews. Unfortunately for me, it’s a system that requires more patience than I have in supply.

The good news is that I can discuss FSX For Pilots in detail, and I can certainly recommend it as an excellent training manual, but the bad news is that I can’t make quotes from the book, nor can I take any illustrations from it. The pictures that I have included in my review are my own FSX screenshots, and they show some of the things I’ve learned to do as a sim pilot. The majority of the pictures in FSX for Pilots are taken from FSX as well, so there may be some unintentional similarity there.
I can also direct you to the Wiley web page where you can see for yourself what the book looks like and read a sample excerpt.

**TAXI TO THE RUNWAY: Fasten Your Seatbelts**

FSX For Pilots was written by pilots for pilots. However, I would suspect that many people, myself included, enjoy FSX but do not have a pilot’s license, or even any hours behind the controls of a real aircraft. So is FSX Pilots for you? Absolutely!

The book is divided into six broad sections:

I: Pre-flight
II: Sport Pilot
III: Private Pilot
IV: Instrument Rating
V: Commercial License
VI: ATP (Air Transport Pilot) and Beyond

The more experience you have as a pilot, the fewer of these sections would have new information for you. Still, the authors are very experienced instructors, and it’s likely that they would have information that would be useful for even seasoned professional pilots. From what I can see, there are two types of pilots that FSX For Pilots is geared towards: real-world pilots and simulation pilots. Some people are both types of pilots at once. FSX for Pilots, though, has excellent instruction for anybody who is not a pilot but who is willing to learn.

In fact, FSX for Pilots can get you started right from the very beginning. The opening chapters discuss in easy-to-follow terms the basic physics that govern controlled flight. The big difference between a flight textbook and FSX For Pilots, though, is that you get interactive lessons within Flight Simulator that teach you in practical terms the things about which you’ve just finished reading! For people who like to learn as they do, this provides a powerful way to learn how to fly.

One question that comes to mind is, is it necessary to have FSX to enjoy FSX For Pilots? In a basic sense, the book could be used independently from FSX, especially the beginning parts. However, the IFR (Instrument Flight Rating) chapters use the Garmin GPS and Garmin 1000 system as it is portrayed within FSX as teaching aids. In addition, the entire book makes frequent references to custom-made flights for use with FSX. So, you could take FSX For Pilots to your vacation cabin, the one without any electricity, and learn a lot about pilot skills.

However, this book works best if you are at your FSX computer flight station, so that you can read about a lesson and then go right ahead and fly it in simulation.

**TAKING OFF: The Piper Cub Club**

Since FSX for Pilots relies on FSX, the book starts by giving some very basic (and somewhat dated) advice on how to set up FSX on your home computer. People interested in learning how to tweak FSX for the best performance and graphics won’t find any detailed information, but the authors do a decent job setting up the basics of simulated flight.

Once you have FSX set up to your satisfaction, FSX For Pilots introduces you to powered flight through one of the simpler
vehicles available in the virtual hangar: the Piper J3 Cub. The Cub has all of the basic control surfaces of an aircraft; ailerons, elevators, and rudder, and represents well the class of aircraft that would be available for a Sport Pilot, a small, lightweight aircraft to be flown in fair weather during daylight conditions.

The dashboard of the Cub is simple, which allows the pilot more freedom to concentrate on stick-and-rudder flying as well as more opportunity to look out the window and enjoy the sights that FSX has to offer. In my case, I am pleased with this, as the Piper Cub is my very favourite of all the aircraft in FSX!

Basic lessons include how to take off, climb and turn, descend and land all performed in the Piper Cub. Lessons come with custom designed flights that set up specific tasks for the student pilot to perform.

After the student has been exposed to the very beginnings of sim flight, FSX For Pilots teaches the basics of navigation the old-fashioned way, using a compass, a map, and your bird’s eye view of the land.

The lessons are clearly presented and well illustrated. The custom flights that go with the lessons are not anything different from what you would see in a Free Flight in FSX. They aren’t Missions, with friendly voices to guide you and glowing checkpoints to follow. Nevertheless, they are set up with clarity in mind, and they give the student an excellent “classroom” for learning how to fly.

**IN THE AIR: Cruise Control**

Although the lessons in the book can be taken in any order, they do logically progress from the very simplest aspects of aviation, and gradually add levels of complexity to flight operations. After the initial lessons are out of the way, the student pilot will learn how to fly in and out of controlled airport airspace, as well as how to handle rough weather, crosswind landings, night flight, instrument flight, and in-flight emergencies.

Weather and emergencies are handled in different ways in FSX versus the real world. For one thing, the weather can be controlled by the sim pilot in FSX, and although emergencies can be generated in Flight Simulator, they don’t have to be handled with the same authority as is required in real life. Simply put, if as a sim pilot you don’t like the way your flight is going, you can stop what you are doing and make any changes you like.

FSX For Pilots is most careful to explain the differences between real-world flight and sim flight in FSX. If there is a difference, the method for dealing with the issue is emphasized for FSX, but the real-world solution is often explained as well. What this means is that the student will gain a lot of knowledge on sim aviation and also will learn something about how real-world pilots work in the cockpit.

There are some large differences between the Garmin Global Positioning System (GPS) and Garmin 1000 “glass cockpit” as depicted in FSX versus their counterparts in the real world. FSX For Pilots explains in detail how to make the Garmin systems work in Flight Simulator. In fact, an entire chapter is devoted as a thorough tutorial on the features of the Garmin 1000.

This chapter acknowledges what the G1000 can do in FSX as well as its limitations. The authors prefer to operate the G1000 in the 2D cockpit, for instance, which makes sense because on their system, the glass virtual cockpit gave them horrible frame rates. There’s finer details as well. For example, the
authors demonstrate the best way to click on the Garmin control knob to get fine control, and they explain the differences between the real world G1000 and the one in FSX: the FSX G1000 has fewer display customization options and engine instruments than the real G1000. As well, in FSX the G1000 and the autopilot in the Cessna Skyhawk are linked together, so that if you move the altitude bug in the G1000, the Cessna will follow. In the real aircraft, the G1000 bug and the autopilot altimeter bug are not linked.

This is one example of many where the book teaches you how to fly in FSX, yet it is not intended for real-world flight instruction. Although the reader gains proficiency in operating the flight simulator, he or she will still need the guidance and wisdom of a CFI to learn how to fly for real.

The research that a real-world flight student needs to become a licensed pilot can be started in FSX For Pilots. For instance, where possible, the authors do make mention of how the real-world G1000 could be run where the FSX unit lacks details in its operation. That, and they recommend other books for learning how to use the G1000, and they even point out where to find a dedicated G1000 simulator as well as payware add-on aircraft for MSFS that have realistic glass cockpits not made by Garmin, namely the Avidyne Entegra and the Chelton glass cockpits.

### IFR CONDITIONS PREVAIL: Playing With Instruments

Approximately half of the FSX For Pilots book covers learning VFR (Visual Flight Rules) flying, the kind of fair-weather clear visibility in the daytime flight that certified Sport Pilots enjoy. However, once VFR is mastered, then there’s IFR: (Instrument Flight Rules). IFR flight involves traveling through low visibility conditions where the pilot cannot see much if anything out of the cockpit window. The pilot relies on cockpit instruments to maintain safe flight. FSX For Pilots devotes roughly the other half of the book to teaching solid IFR skills. If the VFR instruction was thorough, then the IFR chapters are exacting! The process of IFR flight is completely de-mystified, although again the emphasis is on sim flight in FSX rather than real-world piloting.

At first, the IFR lessons introduce you to the older, more basic instruments in the FSX Cessna Skyhawk. Then you learn on the G1000 glass cockpit system. The student graduates to the faster, sleeker Mooney Bravo, and learns how to properly generate and follow an IFR flight plan.
Although FSX simplifies the process of dealing with flight plans, there are many details involving real world IFR procedures that must be followed in order to avert disaster in the sky. The chapter on charts fully explains how to interpret airport diagrams, approach and departure plates, and sectional maps. You will need to understand how to use these in order to guide your aircraft using IFR.

Special emphasis is placed on navigating approach charts. Again, in FSX, if you follow the built-in Air Traffic Controller, you would just follow the stated vectors and perhaps your ILS (Instrument Landing System). In the real world, you would be expected to follow published approach procedures including missed approaches, and FSX is realistic enough to allow the sim pilot to do this if he or she so chooses. FSX For Pilots gives you the tools you need to learn how to fly using approach plates, even the ones that have more arrows than General Custer’s Last Stand.

Students who complete the IFR lessons can take their skills to the next level by learning how to perform GPS approaches. Although FSX does not provide approach charts in its main map, it does keep a database of approaches in the Garmin GPS. FSX For Pilots will teach you how to find and use those approaches correctly.

There is a lot of procedure that must be learned because the Garmin database in FSX is highly detailed. There are a lot of pages that go into GPS approach procedures, thankfully, they are clearly illustrated.

**FINAL APPROACH: Double The Engines, Double The Fun**

If a sim pilot followed FSX For Pilots from section to section, he or she would start with basic flight in the Piper Cub, then move on to the Cessna Skyhawk and the Mooney Bravo. Flight conditions would go from clear and sunny to dark and socked in, where navigation and landing requires following flight instruments and the GPS. If a pilot went from a Private Pilot’s license to gain their IFR rating, then a next possible step would be to learn to be a Commercial Pilot.

Many commercial aircraft have more than one engine, as a multi-engine aircraft can carry more payload than a single-engine vehicle. Since operating costs are not factored into the FSX aircraft, FSX For Pilots introduces the powerful and expensive Beechcraft Baron as a training platform.

Operationally in FSX, flying a twin-engine aircraft isn't much different from flying a single-engine plane, at least for the amateur sim-pilot. The biggest change in going from one engine to two is to know what to do with that second engine. FSX For Pilots explores in detail the capabilities of the Beechcraft Baron and will help you exploit its powers to the fullest in FSX. Then it throws the nightmarish scenario of engine failure at you. Fortunately, the book will help the sim pilot to understand what needs to be done when one engine goes out.

Perhaps the ultimate test of pilot skill comes in the chapter describing commercial flight manoeuvres. Throughout the book, the authors emphasize the
importance of flight manoeuvres of the type that would be found in a typical pilots’ flight exam.

Commercial pilots use many of the same manoeuvres but are asked to perform them with greater precision. In addition, there are new manoeuvres that are intended for commercial pilots only, including the failure of one of the twin engines. Pass this test, and you will certainly join the ranks of the steely-eyed sim pilot elite!

TOUCHDOWN: Back On The Ground

FSX does more than allow you to be a sim pilot. With a strong multiplayer connection to the Internet, you can join the on-line community of flight simmers. You can have more than one sim-pilot operate a single aircraft, and you can participate in virtual airspace shared by aircraft piloted by other sim pilots. The whole area may be controlled by virtual Air Traffic Controllers using FSX.

FSX For Pilots does a creditable job of introducing the multiplayer community to the sim pilot of any skill level who, to this point, has only flown in FSX alone. You are shown how to connect to a multiplayer scenario and what to do when you are on-line. FSX For Pilots describes what the sim pilot can expect if they are flying on his or her own or if they choose to share a cockpit with someone else. If you want to try the ATC function in multiplayer, FSX For Pilots describes how you can get into that as well.

Perhaps the best way to get into multiplayer FSX is to join a Virtual Airline (VA) or a dedicated online flight sim network like VATSIM (Virtual Air Traffic Simulation) or IVAO (International Virtual Aviation Organization).

Because one of the authors is a VATSIM member, VATSIM is used as the main example of how a flight sim network functions. It’s fascinating reading, although it may appeal more to sim pilots who are comfortable with the intensive on-line gaming experience than those who picked up FSX For Pilots for the aviation tutorials.

TAXI TO THE GATE: The Bumps Along The Way

FSX For Pilots is an exceptional book, and it deserves a place next to your flight sim computer where you can come back to refer to it repeatedly. With a book of this size, however, there are a few items that I think could be improved. For the sake of completeness, I will discuss them now, although I do not feel that they detract from the book as being one of the best available for FSX.

Already my copy of FSX For Pilots is bent, bedraggled, torn, and even slightly mutilated. I read the book through as quickly as I could, and then as I was taught in University, I am reading it again. This time taking notes and analyzing the information within. It might take me a year to finish doing that. The book is 726 pages long, and there are very few lean areas between the softbound covers. The book itself is thick and heavy, and so it doesn’t take much use and abuse until it looks like it had been dropped from the sky. A harder binding would probably help FSX For Pilots last longer, but considering the generous asking price, I don’t mind the soft cover all that much. I just have to remember to be careful with my book.
Overall, the layout of the book is clear and robust, which makes it easy to read. The typeface is large and uncluttered, so that if you are looking at your sim and then at the book, your eyes shouldn’t suffer. In my copy of the book, though, some of the pages are a little grayish, and the pictures are all in grey scale which can give the text a washed-out look. I would have liked to have seen a greater attention paid to the contrast and readability of the images, but considering that there are many, many illustrations in the book, I am satisfied that even the most complicated parts of FSX are explained in pictures. The other fault that I had with the layout of my book was that on a few pages, the gutter (the blank part around the edges of the page) was offset too low, with the result that the text went right to the bottom of the sheet of paper.

The writing style of Jeff Van West and Kevin Lane-Cummings is clear and engaging. Their experience as flight instructors and authors shines throughout the text. From time to time, they do make some mild references to pop culture or to inside humour that would appeal to pilots, but in general, their writing hits the mark. Since there is so much dense reading to go through, it’s very much appreciated that the writing style is direct and uncluttered.

That brings me to another criticism of the book, although I feel this is a positive: this book is geared towards the serious student of aviation. A beginner can progress from never having used Flight Simulator at all to mastering multi-engine aircraft using instrument approaches at the busiest airports under IFR conditions.

Certainly, one can pick up the book and find what they want to know as if they were looking up a recipe, but to get the most out of FSX For Pilots, one must be ready to do a lot of reading, and then a lot of studying and research on their own. It’s definitely a book for those who consider FSX a detailed simulation and not just a video game. However, to get the most out of FSX For Pilots, be prepared to do a lot of time-consuming, thought-provoking homework. If you don’t like a lot of reading, then FSX For Pilots will seem daunting.

Since the book is rather complex, and since it is written by pilots with pilots in mind (even sim pilots), one thing that the authors rely on is a lot of acronyms: abbreviations made out of capital letters like VFR, IFR, GPS, and so on. Talk to any pilot, and they will reply to you with acronyms sooner or later. The authors do explain what the acronyms mean, but sometimes it’s difficult to find what they are trying to say if the acronym is used again later in the book. The biggest unfulfilled wish that I had for this book was that it must have a Glossary of terms. Fortunately, as long as I can do research on the Internet, I can find out what the more obscure words are supposed to be.

As I had mentioned before, the overall style of the book is clear and easy to read. I think it’s obvious that the authors have fun flying as well as teaching and writing. On nearly every page of the book, the authors include small asides, little mini-articles in boxes that give snippets of information regarding FSX, or real world flight operations, or their own thoughts on a particular topic. Many of these are engaging and useful. The authors include a series of asides they call “Accident Chains” that I don’t feel so good about.

The idea of “Accident Chains” is to provide examples of things that pilots did wrong that resulted in a crash or some sort of mechanical fault. These are presented as examples of what not to do in an aircraft.

Younger readers, and people who are interested in improving their flight sim skills without the immediate goal of becoming a real world pilot, may be disturbed by some of the stories in the “Accident Chains” segments. Some are easily preventable, while others involve the pilot ending up in a situation that goes beyond their abilities.
The problem that I have with the “Accident Chains” is that they are real events that happened to real people, often ending in death. One thing about FSX and how it is “As Real As It Gets” is that nobody gets killed no matter what happens in the sim. In FSX For Pilots, I feel that the death toll in “Accident Chains” is too much information for those who just want to play with their simulator.

I realize that in the real world, flying an airplane presents a certain amount of mortal risk, and those grim lessons paid for by the blood of downed pilots must be passed on so that others may learn and live. For myself there were a few of these stories that really hit home, and I had to put the book down for a while and sort out my feelings.

Becoming a pilot is a very serious undertaking, and FSX For Pilots will underscore this idea many times through the length of the book.

EXTRA BAGGAGE: Bonus Sections

Early in FSX For Pilots, the authors briefly mention accessing the CD-ROM that comes with the book. There is no CD-ROM, as far as I know. What is added for the book, is an extensive library of downloadable content all on .PDF format. This includes:

- 2 bonus chapters;
- 5 appendices (no Glossary, though);
- All of the custom flights and movies referenced in the book;
- Aviation charts for the custom flights;
- Practical Test Standards for flight tests; and
- Full-colour versions of all of the illustrations in the book.

Altogether, the downloads come to 872 MB of data, which is too big for a CD-ROM. You can choose to download only what you want to see, so practically speaking, your downloads will probably be much smaller than that.

The two bonus chapters detail the operations of passenger aircraft. The first chapter is a discussion on high-altitude flight procedures involving pressurized cabins. FSX doesn’t model cabin oxygen, but there are enough similarities between the real world and the virtual one to warrant a tutorial. FSX For Pilots then introduces the student to the Beechcraft King Air, and gives him or her a thorough check ride in this high-flying aircraft.

The second bonus chapter puts the sim pilot behind the controls of the Boeing 737 in FSX. Since FSX For Pilots is intended for people who are pilots to begin with, this chapter seems more like wish fulfilment than anything else. How many people do you know of that get to fly a 737 without first becoming an airline pilot? I’m not saying it’s impossible, it’s just not likely.

The authors admit there’s a chance that you might get into a commercial flight simulator, and so this chapter can help you along your way to realizing that dream, given the limitations that FSX imposes on the 737. The bonus chapter does provide an interesting tutorial flight written to the same high standards as the aircraft types that the authors are more used to flying.
The appendices provide these details: a short list of FSX command keys, a tutorial on how to operate slew in Flight Simulator, some very basic troubleshooting tips pre-Service Pack 1, a few words regarding Windows Vista, and a good list of on-line resources for further research (including AVSIM! Hooray!).

CONCLUSION: Executive Summary

Microsoft Flight Simulator X For Pilots: Real World Training is the cumbersome title for a thick book of 726 pages that can teach you how to fly the aircraft in FSX. Written by real-world Certified Flight Instructors Jeff Van West and Kevin Lane-Cummings, this book is intended for pilots. Of course, if you are a sim pilot and not a real world pilot, you will find a tremendous amount of useful information in this book.

The text of FSX For Pilots is clearly written and easy to read. The lessons are logical and progress from the very basics of flight in a Piper Cub on a sunny and calm afternoon and go all the way up to the rigorous standards set for Air Transport Pilots in zero-visibility IFR (Instrument Flight Rules) conditions. You can read the lessons in any order, given your personal level of flying experience. As well, you can download content that supplements the book, including custom-made flights that let you immediately try out the lessons you just read about in the book.

Every aspect of real-world flight that is modeled in FSX is explained in detail and made simple through excellent tutorials. The things that FSX fails to model correctly are also covered; however, the focus is on flying with FSX rather than on real-world flight instruction. Some parts of the book do get complicated; even so, the authors do their best to shed light on even the most obscure facets of aviation.

FSX For Pilots has lessons for VFR (Visual Flight Rules) and IFR flights, including instrument and GPS approaches. After the student has mastered FSX as a solo pilot, the book also introduces the dynamics behind learning to fly (or control traffic) with the on-line multiplayer system in Flight Simulator.

FSX For Pilots has it all! There is a heavy amount of reading involved, and a few descriptions of crashes which might be disturbing to some readers, but FSX For Pilots will keep sim pilots like me soaring for years to come.

The measurements of the book are 9 ¼ inches by 7 ¾ inches by 1 ½ inches thick. I am telling you this because this is the amount of room you must make on your flight simulator desk for this book. If you have that space available, I would strongly recommend that if you are interested in a great realistic manual for FSX aircraft, you should fill that empty space with FSX For Pilots.

I am pleased to award Microsoft Flight Simulator X For Pilots: Real World Training an AVSIM Gold Star for Excellence.

Here is a link to Wiley Publishing, where you can see excerpts from Flight Simulator X For Pilots: Real World Training: