AVSIM Commercial Aircraft Review

Flight1

Cessna Skyhawk 172R

Product Information		
Publisher: Flight1		
Description: Cessna Skyhawk 172R Add-on airplane		
Download Size: 58 MB (FSX)	**Format:** Download or CD ROM	**Simulation Type:** FS9 and FSX
Reviewed by: Angelique van Campen AVSIM Staff Reviewer - July 23, 2007		

Introduction

On September 7, 1927, the Cessna Aircraft Company was a fact, but Clyde Cessna had built and flew his first airplane already in 1911. Since those days, the company has become famous for the Cessna 150 Series but even more for the good old modern elegant and stable Cessna 172. Of course, these two models are just a few from the large list of single-engine

airplanes, ranging from small to medium distance, 2 to 6 seat versions, retractable gear and many more options. The Cessna 172 is available as the Skyhawk and Skyhawk SP version.

According to Flight1, we have to deal with a general aviation airplane that captures the spirit and feel of this famous and popular high wing, single engine aircraft. Features include a photo realistic 2D panel, 3D aircraft model, exceptionally clear virtual cockpit, new sounds, and flight dynamics that have been developed using the real performance tables.

Is it really such a great add-on airplane or not?

When you fly this Cessna 172 in real life, then we can say "yes, it is really a suburb add-on with many details". We know this Flight1 model already from FS9, and now it's also available for FSX.

In this world of small general aviation add-on airplanes, there's a huge competition between designers like FSD, Dreamfleet, Carenado, Flight1, etc.
There are also, of course, price differences. This makes it sometimes difficult to make the right choice. The only airplane which is a good competitor, is the Carenado 182 RG II and 182Q (Cessna Skylane models). Both are also available for FS2004/FSX.

Making 2D and VC panels, including an attractive exterior look, are unfortunately not the only things that makes a model superior. A model becomes superior over others when flight dynamics or flight characteristics, including sound, are as real as it gets. Ok, sound is not too difficult to simulate since designers are able to make live recordings from a C172. But flight dynamics .... that's not that easy since a lot of things related to the aerodynamics of the airplane must be simulated in one way or the other.

Although the default FSX C172 is dramatically improved compared to its FS2004 sister, it doesn't offer as many things as this Flight1 product. I have to be honest by saying that Microsoft has done a good job by reconstructing the default C172. The 2D panel has a real look, not speaking about the VC or 3D cockpit. The exterior of the default FSX C172 is completely different then the one from FS2004 but .. yes there is always a "but" ... Flight1 adds so many new features to it, like highly detailed panels and exterior model, which initially gives me a very good impression.

Installation

When you choose the download version, you can take either the FS9 or FSX one. When ordering the CD; it comes with both FS versions. Here there are no problems with key's or Internet connections to validate your product. It's up to you if whether you request the CD or the download, since there is no price difference except for the shipping costs.

I've installed the C172R via the CD-ROM, which makes life easier since we don't have to contend with any download problems and at the same time we get both FS versions. Since this review covers the FSX version, there is something important to know during the FSX installation. Due to the provided small booklet with the CD, you easily forget to read it while being busy with the FSX Flight1 installation.

While this was not available in the FS9 version, in FSX it is. During the installation process you are asked if you want to run this program (left picture). You need to click Run. Directly after this, a new window appears (right picture) and needs your approval to load this gauge file every time during FSX loading. Select Yes to confirm.

	Security warning that you're running this software regarding the F1_C172R.GAU files.	Conformation window where you need to confirm the automatic loading of the C172R GAU file during every FSX start.

Documentation

Regarding the documentation, I would like to combine the following items;

• Paper and digital Flight1 documentation or Flight1 POH (Pilot Operating Handbook),
• 172R Skyhawk Configuration Manager,
• Text-O-Matic

The small paper Flight1 booklet supplied with the CD contains essential items as well as the complete checklists. Except for the cover, the content is black &white but easy to read. The digital Flight1 documentation is in one word -"great" - and is called up via the Flight One menu created during the installation process and found via the Start button.

It comes as a Microsoft HTML file format (*.CHM) and it is just 1.1Mb in size. It's very detailed with all kinds of information needed to fly this C172R in a professional way. Apart from the introduction, the manual is split into seven sections containing background airplane information, panel description, lots of performance tables and all the different checklists. Pay special attention to section six. This contains an operative weight and balance (W&B) form.

What does this mean - "operative"?

Before you fly, you would like to know if you're not over weighted due to too many passengers with their luggage. This real working W&B calculator helps you to see and find out if it is safe to fly. Keep in mind that the calculator only works in pounds.

A last remark concerning the documentation is section seven, sub chapter 7-7 and 7-8. Here you find how to operate selector knobs for the avionics panel as well as how to control the autopilot. It's really important to have a look to this section, since every add-on manufacturer has its own way of doing/operating it.

The Cessna 172R Skyhawk Configuration Manager is also called up from an icon on your desktop. As you can see from the picture, it's a straight forward, uncomplicated window where you are able to select the pilot, passengers, and baggage weight in either kgs or lbs. Further, we are able to make selections of gauge resolutions, flight dynamics and the visual model related to having wheel pants installed or not. When you've made you're changes, save the configuration and exit. Detailed information can be found in the digital documentation. That's it!	
The last one is the Text-O-Matic. This tool is used to apply custom paints to the aircraft. It's a common sub program from Flight1 since many other airplanes use this tool to add paint or liveries. One thing to keep in mind is that the download version doesn't include the Text-O-Matic program. This can be downloaded via the official Text-O-Matic website. Unfortunately, the default Flight1 software comes with only 1 paint scheme.	

After contacting Flight1, I found out that liveries from FS2004 can also be used for the FSX model, which makes the list of liveries much longer. Although Flight1 doesn't offer any other livery, here at AVSIM you will find a lot of liveries. See some

examples below.

| Cessna original livery | Embry Riddle | The Spirit of Zürich |

A last word about the Text-O-Matic manual. It explains in clear steps the procedure how to add a new paint scheme to your model. Keep in mind that the FSX Text-O-Matic looks very similar to the FS2004 version, but it's specially designed for FSX.

2D Cockpit

The 2D panel looks very clear. It comes with highly detailed instruments which are very readable for every screen resolution, even with settings of 1600x1200. When looking to it, you could think "that's a simple main panel design" but remember, the old fashioned Cessna didn't have anything more than those instruments. This means that the co-pilot's or passenger side didn't have any instruments. So no horizon, no ADF instrument and so on (see Virtual Cockpit).		
	Highly accurate and very detailed instruments on the panel. Unfortunately, I prefer a more "used" panel with scratches, dents etc.	The second right hand panel screw from the top - O - gives access to the Panel Manager
Sub panels like switches, fuel selector, elevator trim, and throttle with flaps, GPS, avionics/radio and checklist are called up via the middle screw on the right hand side of the panel. A nice and clear panel with selection buttons gives us the possibility to request those panels, which makes life easier. For these and other sub-panels, details are extremely high and realistic.		
	Visible are the radio stack or radio control panel behind the throttle panel. Due to its width, the flap control is missing.	Shown is the switch panel with switches and circuit breakers, the elevator trim panel with the microphone and the fuel selector.

When you own two monitors, just undock what you need and put them on the other monitor. But keep in mind, too many of those panels could slightly reduce your FPS. Although I haven't noticed it, it also depends on your own system and graphics card. When looking close at those sub-panels, I'm amazed by the details and sharpness of the levers, and switches etc, like on the throttle panel or elevator trim panel.

Believe me; it really looks like it does in real life!

I locked the system at 25FPS and let's say, it was somewhere between 23-25FPS. Of course, it also depends on the settings and tweaks on FSX. I did no tweaks and restored every "display setting' to default. The pictures from the test flight were

made under Windows XP and not under Vista. The reason for this is that the nVidia driver is not yet optimum for my system, which also reflects bad behavior under FS2004 and FSX.

Virtual Cockpit (VC)

When changing to the VC (Virtual Cockpit) and specially looking to the PF (Pilot Flying) side, we're overwhelmed by the sharpness and details of this instrument panel and the installed instruments.		
The window side struts, and front and rear seats are not that sharp at all and not as detailed as can be expected from a payware model designer. We always try to get the best of the best, which means the most realistic interior view. Especially in FSX, since the VC is much more important than it was before. Ok, it depends on your needs and what you like.		
	Front seat view with side panel.	Rear seat with side panel and a part of the fuselage strut. Details are completely missing.

Sounds

Probably not every real C172 sounds exactly the same and over the years, engines are modified or even replaced by different models depending on their needs. But I can tell you from real experience that the Flight1 C172R sounds like real!

The only thing that is missing is the engine vibration but you never know, probably within 10 years Microsoft may be able to simulate vibration while sitting in the cockpit or flight deck. What you could do for the time being is place your subwoofer on your desktop, that will surely simulate some vibration as you are sitting and enjoying in the cockpit.

The cockpit interior sound level is, with a subwoofer available, very realistic. In real, with an average of 2200 engine RPM, you still hear the true engine sounds in your headset and that's also the case with this Flight1 model.

Flight Impressions (Aircraft Dynamics)

Before doing anything, it important to mention that we have to decide what kind of aircraft flight dynamics we want to have. Open the Configuration Manager and click either for a stable configuration or a more spinable dynamic.

OK, let's have a quick look while doing our walk-around check. It's amazing how detailed the wheels, fixed gear struts, wings, fuselage body and tail look. Text written on the aircraft, even during a close-up inspection, is very good, not to mention the

rivets all over the fuselage.

Due to the size of the airplane, we are quickly finished since we have only limited access to certain panels like the fuel cap on top of the wing or engine cowlings, except then for the doors and luggage panel. If such an option is important, that's dependant on the user himself. Some like to open all kind of panels and see what is behind them. It's nice and gives a very realistic view but it means a lot more programming to simulate how something looks behind that panel.

Once we're finished the walk around, we jump into the aircraft. Put your belts on and take out the checklist. Either you do it via a paper version or you can call it up from the Panel Manager by clicking on the checklist icon.

Our test flight starts at Kissimmee Gateway airport (KISM) in Florida and ends here as well. While in this region, we will not just fly around, no, we will see the behavior of the aircraft when we do special exercises like a slow flight with and without flaps, POWER OFF STALLs, spins, steep turns and so on. The idea of those exercises is to see if the simulated Flight1 model offers real characteristics compared to the original model, as far as possible of course.

Are you ready! Let's go. We're taxiing from our parking location spot 12 to runway 15. Although it's not too far away, we have to keep our mind on the center line, since taxiing this thing is not that easy, like in the real C172. It's because – what I wrote earlier – we don't feel any vibration from the engine or from the taxiway itself.		
Before we know it, we're hanging in the air and while climbing to 3000 feet. We make a right hand turn in the direction of Walt Disney World's Epcot Center. I didn't use any external weather programs but I did use the Microsoft weather dynamic update. Not that it's very accurate compared to, for example Active Sky, but the idea is more the feeling of its behavior while flying through clouds or even in the neighborhood of them.		

One thing in the VC configuration that really disappoints me is the lack of the green windows in general. The propeller rotation is very well simulated as well as the different power "sound" settings, but in the VC there is nothing in front of us, no green shaded color or anything in that direction. The other thing that disappoints me is the side view and aft cabin view while in the 2D configuration. After consulting Flight1, is seems that Microsoft changed their policy from photographic options to VC look panel views. Just to give you an idea, see the details in the pictures below and judge for yourself!

LH side view – aft cabin view – RH side view (FS2004)

LH side view – aft cabin view – RH side view (FSX)
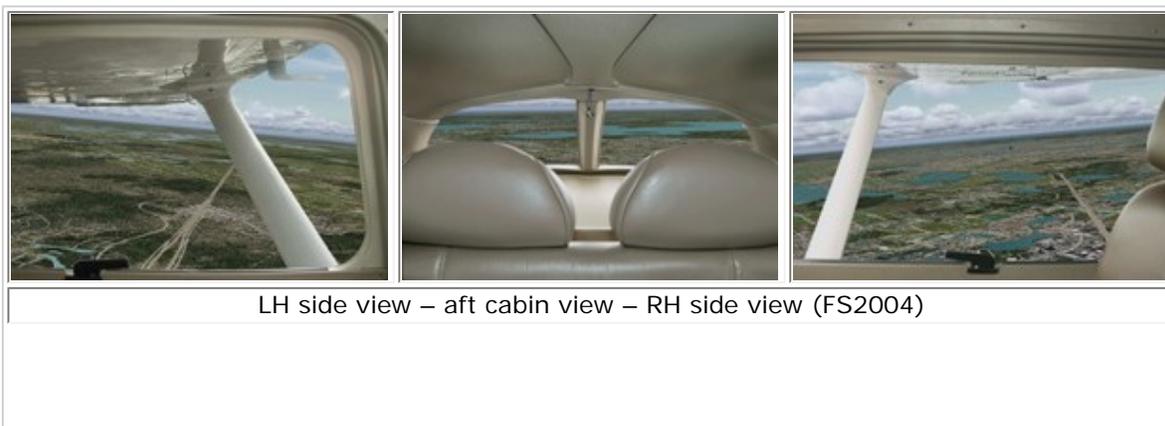
The different side and aft views in the FS2004 version are of a high photo quality, while this is completely missing in the FSX version. When you fly the FS2004 version with add-on scenery installed for this area, you really have the sensation of a supurb flight sim experience. The screenshots are self explanatory; however in the FSX version you don't have those, but what was written above is due to the Microsoft designers and we cannot blame Flight1 for that.

Ok, let's continue with our test flight in the Sunshine State of the US. In the meantime, we have reached 3000 feet and are flying on a heading of 330°. We reduce the power to 2200 RPM and keep the speed at around 100 knots. Let's first enjoy the outside view and yes, we will simulate our first practice, a slow flight without flaps.

We reduce the power to around 1600-1800 rpm, give a pitch UP command and try to maintain a speed of around 50 knots while altitude is maintained by adding power. Direction (yaw) control, so heading, during this slow flight is not done via the aileron but with the rudder. That's the theoretical story but how is the Flight1 model acting? This is a great performance, exactly according to the book. Our photographer outside managed to take some great shots for you!

Let's have a look how the Flight1 C172 performs during a slow flight with flaps. There's not much difference except that the flaps are fully extended. Thinking back to my own PPL lessons, this is really super. The only thing apart of the vibration which is missing, is the wind sound but when we forget that, the feeling is very realistic.

One other trick to do, since this is difficult to simulate; a full stall and the aircraft behavior when the airflow it no longer able to keep us in the air, so a spin (when you go too far)! Therefore, the aircraft dynamics can be adjusted to a more "unstable or real" performance during this simulation.

Ok, let's simulate a full stall without flaps.

We maintain 3000 feet and slowly reduce the throttle to idle power. We try to maintain our altitude by pulling on the elevator. Oh, there's the pre-stall sound! Without the option of more

spinable dynamics, (Configuration Manager) we cannot simulate a spin but the stall works fine.		
We will try it again with the "spinable" option activated from the Configuration Manager and yes, under the same conditions the aircraft goes perfectly into a spin.		

The only question for you, is do you want to do this? I don't know, but what I do know is that the simulation of this critical part is very well simulated.

With a lot of sweat in our hands, let's go back to our intended 3000 feet and let's enjoy the outside view of this part of Florida. In the mean time, we can think back to our practices and conclude that the aircraft aerodynamics are very well simulated. The possibility to adjust the spinable feature is really great although not everybody will use it.

While we plan to fly to the east coast of Florida, just 30 minutes from here, we make it a little easier for ourselves by connecting the Auto Pilot. We connect for an altitude of 3000 feet, so no VS entry is needed while flying a heading of 90°. Simple click the HDG knob on the AP panel of the radio stack and the current heading is locked (ROLL indication) or click a second time for HDG HOLD. In this configuration, the AP HDG follows the HDG bug on the indicator.

Keep in mind that this requires a different approach when comparing it with the default FSX C172, but you have the Flight1 manual to figure out all those differences. I should mention, forget the default C172 as this Flight1 version is like the real model and needs to be handled as the real model and not the simplified version from Microsoft itself.

In the mean time, we've reached the coastline so a double practice is left; S-turns along the coastline and then above the sea, steep turns. I doubt that this Flight1 model will not behave as we may expect, but we want to be sure how it will do and if the pilot can survive this.

We've passed the coastline heading to the open sea. Don 't worry, we'll only go 1-2 miles out!

Currently we are at around 2000 feet but that's high enough to perform a steep turn. During a steep turn - as you can see in the picture– you bring the aircraft to a 45° angle, keep your altitude of course, and finally make a full circle. When you like, you do another 360, but generally we can say that the Flight1 performs very well or if you wish "realistic", except for the missing forces, which you would normally feel during a real steep turn.		

Before returning to Kissimmee Gateway, we fly towards the coastline and the moment we pass the beach, we start with our S-turns. It's not that much different then a steep turn, except we only turn 180° in either direction and maintain a normal bank angle. I can accept it, the aircraft performs well within limits and even in VC mode it's very realistic since we need to look

outside when we turn in the other direction.

Completely exhausted from all these special performances I think we can conclude that the Flight1 C172R Skyhawk dynamics are very realistic and worth the money for this part of the mode.

Summary / Closing Remarks

Finally there's always the question, is it worth the money?

Test System
Dell Precision 650 Dual Intel Xeon 3.06Ghz 4Gb RAM DDR 533Mhz nVidia 7800GS+ 512Mb AGP RAID-0 HDD's - SCSI 340Gb Windows XP Professional SP2 FSX with SP1 CH USB Pedals CH USB Flightsim Yoke **Flying Time:** 22.5 hours

Ok, let's put a few things together. Flight1 offers you the FS2004 and FSX model for one price, which is not always true with others. Sometimes you can buy an FSX upgrade, while with other add-on designers you need to buy a complete new FSX product, for example the upcoming PMDG 737NG.

With Flight1 they even go further; when you bought the FS2004 C172R Skyhawk, you can download the FSX model via their website and use your original key which was needed for activate the FS2004 model, but now for FSX.

You get a good and very realistic model with highly detailed 2D and VC panels, including an excellent exterior model and few things like opening panels. But more important, you get sounds and flight characteristics that are very close to the real C172 Skyhawk model. Since there is no other add-on C172 to compare with, I still think this Flight1 model is worth the money.

The item that disappoints me the most is the lack of details from the VC cabin interior. Today standards and technology should make it possible to create a more realistic image of the seat's leather (if applicable), and wall and ceiling panels as well.

Despite this remark, it's still worth purchasing even though you will spend some time looking around for other paint schemes.

What I Like About The Cessna Skyhawk 172R
• Although it's a modified version of FS2004, it still has it own characteristics. • Very accurate and realistic 2D instruments/panels. This is also applicable for the VC instruments. • Highly realistic aircraft dynamics and having the option to make the aircraft more spinable • Existing FS2004 paintings can be used for the FSX Cessna 172R model.

What I Don't Like About The The Cessna Skyhawk 172R
• That the designer didn't add the modern cockpit lay-out to this instead of providing only the old fashioned instruments. • The Weight and Balance calculator in section six of the provided manual doesn't allow you to change between pounds or kilograms. • It's a shame that for example engine cowlings or separate panels are not modeled, so they can not be opened/closed by the user. • The C172R comes only with one livery, the old fashioned color scheme from FS2004. • Flight1 offers still no other liveries, so we need to look for this on AVSIM or other sites.

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TU160 "Blackjack"

(adobe acrobat required)

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