

AVSIM Commercial Hardware Review

CH Products

USB Flight Yoke, Rudder Pedals, and Multi-Engine Throttle Quadrant



Product Information		
Publisher: CH Products		
Description: Flight Yoke, Rudder Pedals, and Throttle Quadrant.		
Download Size: N/A	Format: Plug and Play	Simulation Type: Hardware
Reviewed by: Brian "Cap'n" Fletcher AVSIM Sr Staff Reviewer - Sept 27, 2006		

Introduction

For today's review I am inviting you to join me as I ditch my keyboard and mouse and step up to the next level of hardcore Flight Simming. To do this I will be installing a flight yoke, rudder pedals, and throttle quadrant, all of which are USB plug-n-play ready (for Windows XP and 2000), from CH Products at <http://www.chproducts.com>. To be honest I am not exactly new to using any of these controllers. Actually, they have all been a part of my home cockpit for a while now, but a recent event made me realize just how much I have taken these products for granted.

Several months ago I decided to build a home cockpit in my garage. Hundreds of hours and a lot of money later, I

realized that trying to turn FS9 into a high tech simulator is something to be left to the pros. After researching the web, I concluded that perhaps there is a way to spice up Flight Simulator without having to cough up thousands of dollars and leave my car parked on the street. I reached this decision after visiting the CH Products website where I discovered a flight yoke, rudder pedals, and a twin engine and multi engine throttle quadrant, along with a variety of HOTAS controllers.

Using the links provided on the CH Products website, I was able to find all of these products on sale at other vendors, which allowed me to save upwards of \$40.00 per product. After ordering the USB yoke, rudder pedals, and multi engine throttle quadrant I had spent a grand total of \$407.00, which included next day air shipping. So now I had the essential controls for a home cockpit, which when put together with my Saitek X52 HOTAS, meant that I had everything I needed to start putting my new home cockpit together.

Unfortunately, after using these products for a few months I had begun to become careless with them. I routinely left my yoke mounted to my desktop, and never bothered to put my rudder pedals or throttle quadrant away after use. Of course this may not seem like a problem, but when you have an 18 month old son running around the house, those yokes and rudder pedals become a target. This does not mean that these products are not constructed well, but even a B-52 can't defend itself from an aspiring 18 month old pilot.

I will spare you the details of how my new toys were rendered virtually useless until later, but let's just say that it did not have anything to do with poor quality. But regardless, I was left with nothing but my X52, and I can't even begin to describe what a massive change it was to go from having rudder pedals and a flight yoke to having to control the rudder with the twist action on my HOTAS, and how much authenticity was lost by flying a yoke equipped aircraft with a joystick.

In this review I am going to show you why I missed these products so much and why I believe that every dedicated simmer needs to consider getting these controllers for themselves. So let's get started by finding out how to get your hands on these essential tools.

Test System
Compaq Presario SR1232 AMD Athlon 2.2 GHz 2 GB Ram NVIDIA Ge Force FX5500 StarLogic 21" Flat Panel Monitor @ 1024 X 768 CH USB Flight Yoke CH USB Rudder Pedals CH USB Throttle Quadrant Saitek X52 Flight Control System Bose 5:1 Surround Sound Laptop Toshiba Satellite 1.6 GHz Intel Celeron M 512 MB DDR2 SD Ram Intel Graphics Media Accelerator 900
Testing Time: 44 hours

Locate, Purchase and Install

The easiest way to locate these products is to go directly to the CH Products website. The website has all of the information pertaining to these products and will allow you to order online or give you the option to call CH Products directly, which is especially nice for those of you who feel uncomfortable putting your credit card information online. As of the completion of this review, CH Products has placed a price of \$149.95 on the flight yoke, \$149.95 on the rudder pedals, and \$199.95 on the throttle quadrants. But don't get in a hurry to buy these products just yet. CH Products has a list of vendors in the U.S. and worldwide where you can find a better deal on all of these products.

If you were to purchase all three of these products directly from CH you would be spending \$499.85, and that does not include shipping and handling, which can really add up. However, I found deals through the associated websites and was able to get all three products for \$407.00, which included next day air shipping, which would have cost me somewhere around \$580.00 directly through CH. Many of these sites give you the option to purchase two or all three of these products bundled for savings of \$90.00 or more.

In addition to the savings I found, you might also want to consider buying these products pre-owned from sites such as e-Bay. Even though you cannot be sure of the history and care given to them, you can most likely find each of them for considerably less than the \$407.00 that I spent. In fact, after a five week research, I was able to find all of these products on auction sites that went for less than \$50.00 each. I have also found the flight yoke at a used video game store for \$55.00, and I found a set of the rudder pedals in the newspaper classifieds for \$30.00. But in all honesty, I would suggest buying them new, which will give you a 2 year warranty.

Once you have your new toys, it's time to get them installed and ready to use. For users of Windows XP and 2000, this task is as easy as plugging them into any available USB port (plug-n-play). If you are using any of the other compatible operating systems, including Windows 98 and ME, iMac, or Mac, then you will need to run the installation

disk included with the products. This is not much of a hassle at all as the auto install program will take care of everything for you.

These three products are available as USB or game port compatible, so you will need to specify which one you want when ordering. Those of you using a game port will need to use the driver on the disk to get your controllers set up. And even though you will not need the driver for USB controllers, it is recommended that you install the included driver and update it regularly. Also included on the disk is the CH Control Manger, which gives you full control over the functions of each axis, button, and switch on all of the controllers. We will discuss this program later, but let's start by getting everything set up properly.

Setting Everything Up

If you're anything like me, then you will probably want to plug in your new controllers and start flying right away. But before you get too far, you might want to take a few moments to arrange them properly, which means finding a compromise between comfort and usability. This may seem like an easy task, but with the multitude of different desks (assuming you are using a desk), it can be difficult to place everything appropriately without sacrificing comfort. Plus you need to make sure that you still have easy access to your mouse and keyboard if you still want to use them, though they will not be needed if you are using the Saitek X52 in combination with these products.

The yoke comes with two recessed screw clamps located on the bottom. If your desktop is too thin, then you will need to place a shim between the desk and the yoke to give the clamps something to tighten up against. In my case, I have eliminated the screw clamps and drilled two holes in my desk that I ran a couple of bolts through into the threads in the yoke. Regardless of how you mount the yoke, you need to make sure that it is positioned in a manner that does not block your vision of the monitor(s) while being centered with the screen if possible, and of course, you will want it to be comfortable.



Clamping the yoke to your desk

The throttle quadrant can be a little more difficult to position if you do not have an "L" shaped desk or a place to set it where you do not have to reach over the yoke, or have to stretch to get to it. It just so happens that the throttle quadrants use the same clamps as found on the yoke, so if you have space on either side of your yoke, you can mount it in the same manner and have comfortable access to it. Those of you who prefer a more permanent method of mounting the throttle quadrant, can drill a couple of holes like I did with the yoke, and the flat underside of the throttle will allow it to sit level. Most setups I have seen have the TQ placed on the right side of the flight yoke.

Positioning the rudder pedals may seem easy...just put them on the floor right? Well for some people it may not be this simple. I found that my height made it a challenge to find a good location for the rudders where I could press them in fully without banging my knees on the desk, and still being able to reach the yoke. To resolve this issue, I had to make some modifications to my desk to compensate for my height, but I would imagine that most simmers will not likely encounter any problems. The rudders come with anti-skid/slip pads on the bottom that actually does a really good job of keeping them in place on most surfaces.

But no matter how you choose to position and mount your controllers, you should make sure that they can be accessed comfortably, which will prevent fatigue on the long flights. And of course, whenever possible you should try to position them as realistically as possible, which means having the yoke and pedals aligned with the monitor and the throttle to either side as you see fit. So now that our controllers are setup properly, let's go try them out.

The Yoke

If you really want to get the feel of simming like the pros (minus the G Forces), you will need to have a good flight yoke. While researching this topic I have managed to come across a few different yokes that are compatible with most simulators, but trying to find a perfect compromise of quality, features, and affordability was not an easy task; that is until I discovered the CH USB flight yoke. The CH yoke comes with all of the features that I want, is constructed well, and will fit nicely into any simmers home cockpit for \$90.00 to \$150.00 depending on what sale you can find.

The CH yoke is moderately sized at approximately 12" wide and 13 ½" deep, but you will need a few more inches of depth clearance in order for the yoke to be pushed in/out fully. There are 5 axis of control, including pitch, roll, throttle, propeller, and mixture, the latter three of which are controlled by levers on the top of the yokes base. In addition to this there are also two 2-way rocker switches, 4 push buttons, a 2-way gear switch, a 2-way flaps switch, and an 8-way hat switch.



The complete yoke set-up



Levers on top of the yoke's body



Buttons and rocker switches on the handles

Three of the push button switches are located on the left side of the yoke along with one of the 2-way rocker switches. The buttons are programmed by default to operate the brakes and switch the views. The rocker switch is used for elevator trim, but like all of the other buttons and switches, it can be programmed to control whatever you wish. The right side of the yoke contains another push button, which is set to open the kneeboard, the hat switch, and another 2-way rocker switch, which is pre-programmed to control rudder trim.

On each of the yoke handles you will find a thumb rest facing the center of the yoke and the backside of the handles are molded to fit your fingers. I find the comfort level to be satisfactory, and all of the buttons and switches can be accessed with ease. I should note however, that I have found the three levers on top of the yoke to be inconvenient to access at times, but we will address that later by adding the throttle quadrant.

The tension / resistance of the pitch and roll is mild; not so much that you have to struggle to move the yoke, but enough to let you know you are moving it. The pitch axis has a little more resistance than the roll axis, and the further you push/pull the yoke, the more resistance you will encounter. The three axis controlled by the levers have very little resistance, basically just enough to keep them in place.

There is one more feature of the CH yoke that I should mention, which is a precision adjustment wheel located on the front of the yokes base. This wheel is used to center the pitch axis, and since the yoke does not have a center detent, you may need to do this from time to time. This wheel operates similar to a trim wheel but is much more difficult to turn. The best way I have found to center the pitch axis is to use the default windows calibration tool or CH Programming Software to find the center, and adjust the precision wheel as appropriate.

After using my CH yoke for a while now I have only found one minor problem, or let's just call it an annoyance. From time to time I hear a noise resembling a spring binding up when I push the yoke in past the half-way point or turn to the right. I have contacted CH about this issue and have been told that it is perfectly normal and does not indicate any problem with the yoke. However, if you do have a problem with your yoke, you can be comforted by the two year limited warranty which covers any manufacturing defects.

All in all I am very pleased with my CH flight yoke. With a few minor modifications, such as adding a chronometer

and configuring the mounting mechanism to my liking, I have found this product to be a necessity every time I load up any Flight Simulator. However, without my rudder pedals, this yoke does not have everything I need to sim like the pros.

The Rudder Pedals

Regardless of what type of HOTAS or yoke you use, a lack of rudder pedals separates your current setup from a major increase in realism. Adding the CH rudder pedals to your setup is an economical way to replace the twist action of your joystick (if equipped) with authentic rudder control. In addition to the rudder axis, the CH pedals are also equipped with individual toe brake axis, which can be chocked to allow the pedals to be used as racing pedals as well.

The CH pedals protrude from a weighted base approximately 13" wide and 14" deep. The pedals themselves are 9" long and 4 1/4" wide with a heel rest on the bottom. The rudder axis slides somewhere around 4" both ways, and the toe brakes axis allows for about 2 1/2" of movement. By default, the pedals are fairly sensitive, but you can use the Windows calibration tool, CH Control Manager, or integrated controller configuration utilities in the Flight Simulators to create a dead zone that will allow you a little play in the pedals.

Operation of the CH pedals is simple; push the right pedal to yaw or steer right, and push the left to yaw or steer left. When you push one pedal in, the other will pull out the same distance. If you depress the top of the pedals like you would when driving a car, the right pedal will apply the right brakes, the left pedal will apply the left brakes, or both pedals combined will apply all brakes.



The toe brake feature is especially nice when taxiing in aircraft that require the use of the brakes to steer. Instead of having to use the "F11" and F12" keys on your keyboard, you can simply depress the top of the pedals as necessary. Of course this can be a little tricky to learn if you have never used rudder pedals before, and I have heard from a few fellow simmers that they have had a hard time depressing the toe brakes without moving the rudder axis or vice versa, but I'm sure you will get the hang of it fairly quickly.

If you happen to be interested in auto simulators, you may be happy to hear that the CH rudder pedals also work quite well as a gas and brake pedal. By inserting the included plastic chocks, the yaw axis of the pedals will be prevented, allowing you to use the toe brake feature as you normally would to drive a car without the pedals moving forward. The only complaint that I have with these pedals is that I would like to have a little more tension / resistance in the rudder and toe brake axis.

Like the flight yoke, the rudder pedals come with a 7' USB cable, are fully compatible with all of the same operating systems, work with every Flight Simulator that I tested them with, and include a two year warranty. Whether you have the yoke to compliment these pedals or not, this is one controller that you really should have if you want to replicate flying a real aircraft with Flight Sim.

The Throttle Quadrant (Multi-Engine)

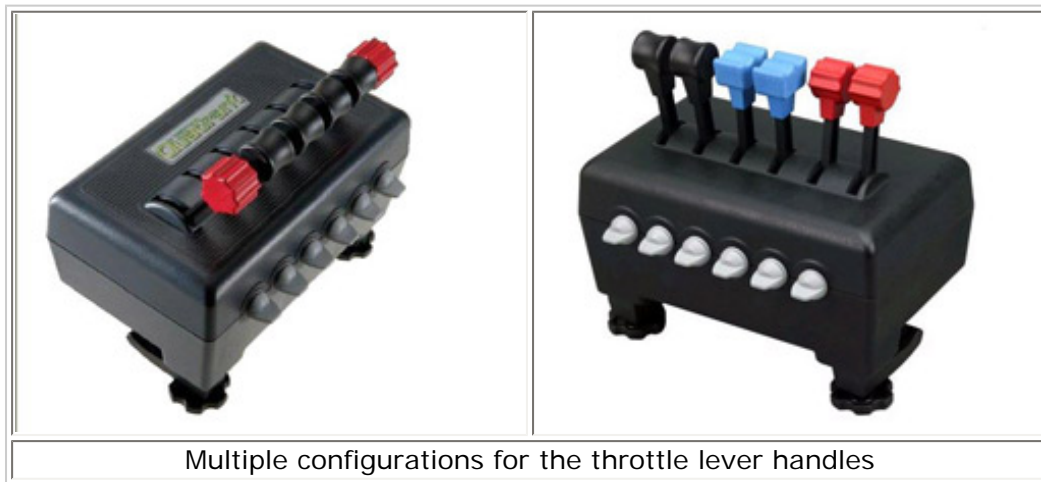
Even though the CH flight yoke has a throttle lever, it is not very authentic for multi-engine aircraft. To resolve this issue, you may want to take a look at the third and final product under review today; the CH multi-engine throttle

quadrant. By adding the multi-engine throttle to your setup, not only will you have a much more authentic feel of controlling the engines, but you will be able to control them independently if you so choose.

The throttle quadrant has 6 levers on top, four of which are set by default to operate the engines, and two additional levers that can be used for flaps, spoilers, or whatever you wish. Each of the levers has a center detent, which makes it easy to tell when the levers are centered (engines at idle), and also helps to determine the amount of forward or reverse throttle used.

The multi-engine TQ comes with 8 handles for the levers; four black, two red, and two blue, which allows you to identify each lever as you see fit for two, three, or four engine aircraft. And even though this TQ works best for aircraft of two to four engines, it can be used for any aircraft.

On the front of the throttles base are six 2-way switches that can be programmed to operate any aircraft function you wish. And if you use the CH Control Manager software, which we will discuss momentarily, this simple looking throttle can actually control up to 350 different functions.



Multiple configurations for the throttle lever handles

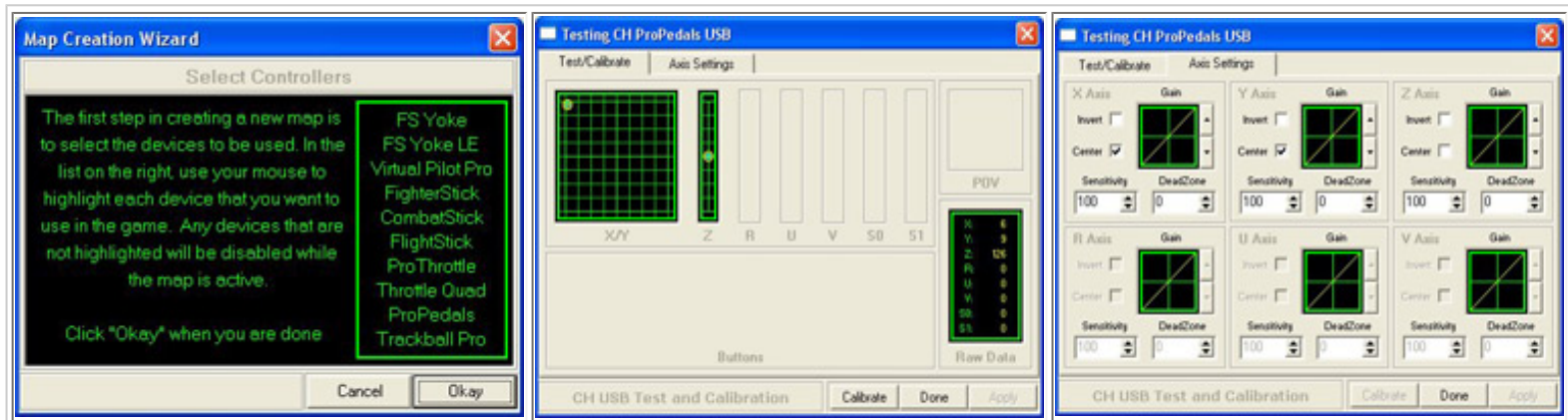
If you are more interested in the single and twin engine throttle quadrant you can consult the CH website for more information, but there is not a whole lot of difference in these other than the designation of the throttle levers. The single / twin TQ is a little more realistic for the twin engine aircraft as it is preprogrammed to control the throttle, propeller, and mixture functions.

I have yet to be able to find any problems with this throttle quadrant or anything that I don't like about it. I have used it for several months, sometimes with a little more force than necessary, but have yet to notice any problems. It is constructed as well as the yoke and rudder pedals, and just like them, comes with a 2 year warranty just in case you do run into any problems.

So, thus far we have discussed the flight yoke, rudder pedals, and throttle quadrant, but that does not conclude my evaluation of these products just yet. What about configuring these controllers? After all, I did say that the throttle quadrant can control up to 350 functions, but how do you do that?

The CH Control Manager

Each of the controllers are accompanied by a disk containing the CH Control Manager. This software is used to assign functions to your controllers, calibrate them, making dead zones, and much more. One feature of this program is that it can be used to assign a button to switch modes, which will allow you to set several functions to just one button or switch. For example, you can set the first 2-way switch on the throttle quadrant to control the mode when pressed up, and then you can set the same switch to operate many other functions by pressing down, depending on what mode you are in.



The calibration utility works very similar to the default Windows calibration tool, but you can do more with the Control Manager. One thing that you can do is to set dead zones, which allows any of the controls to be moved a certain amount without having an effect on the sim. If, for example, you want to be able to depress the rudders slightly without the aircraft yawing or steering, you can create a thin dead zone that will allow you to move the pedals as little or as much as you like before they have an effect. This also goes for any other axis on any of the controllers.

Another feature of the Control Manager is the ability to adjust the sensitivity of each axis. This will determine how much of an effect each axis has on the sim when used. If you wanted to, you could set the yokes pitch axis so that only the slightest movement would perform a steep climb or dive, or you could set it so that you have to push the yoke in / out further to have the same affect, or anywhere in between.

If you happen to use more than one Flight Simulator, the Control Manager allows you to save a profile for each sim you use. You can choose to have each button and switch perform a different function for each sim. You can also save the sensitivities, dead zones, and calibration for each sim, and simply load the proper profile before use. And perhaps the most notable function of the CH Programming Software is that it overrides any of the simulators pre-defined control settings, which can save you the hassle of having to designate the functions in the sim.



Putting It All Together

If you are using these three controllers combined with no HOTAS then you should not encounter any problems. However, when you have a fourth controller plugged in you may encounter a few adversities. I happen to use the Saitek X52 Flight Control System, which is a two piece joystick and throttle controller. Since the X52 has a rotating axis used for rudder control, the slightest movement could interfere with your rudder movement. And even though the rudder axis can be locked in place, the joystick can still rotate slightly.

To counter this effect you may want to remove the rudder axis from your HOTAS inside of the Flight Simulator's controller settings. Different simulators have different techniques for doing this, so you may need to consult the manual for further guidance. It may also be necessary to eliminate other control functions, such as the brakes and toe brakes, both of which are functional by use of the rudder pedals.

Other problems you may encounter include the throttle controls of each applicable controller interfering with each other. From time to time I have noticed that the throttle control on my X52 overrides the CH TQ or flight yoke. This

problem, and any other you come across, can usually be remedied by adjusting, changing, or removing control assignments in the Control Manger or in the sim, just like I did with the rudder control.

And one final note; DO NOT leave the cords hanging around where they can get damaged in any way. If you recall my introduction to this review, I mentioned that my son damaged yoke and rudder controllers beyond repair; well this was done by me having left the cords hanging out of the door where my computer is stored in my desk. My cords got caught up in the hinge and after having the door shut on them several times, they were severed, breaking a few of the wires inside. I cannot explain why the controllers would not function properly after repairing the wires, but just don't let that happen to you.

Summary

In this review I have discussed why I am fond of the three products evaluated, and I believe that most simmers will likely find them to be as fantastic as I did after trying them out. However, there will always be someone who disagrees with my analysis; in fact, I have found a few simmers who have not taken a liking to any of these products. The reason for disliking these products varies. One person told me that they would prefer a metal handled yoke, another said they only use hard rubber handled yokes. Since the CH yoke is plastic, they do not care for the comfort and/or realism, but I do not mind.

I have also been advised by a few individuals that they do not care for the plastic base of the rudder pedals, and have heard that they frequently need to be calibrated. I have no problems with the plastic base as I have found it to be sturdy and plenty sufficient, and as for the latter problem, I have yet to have the need to recalibrate my pedals thus far. I have not heard a whole lot of complaints about the throttle quadrant, but a fellow simmer did tell me that he would prefer if the quadrant were designed to support single, twin, and multi-engine aircraft all in one quadrant. Actually, you can use this throttle for all aircraft, but I can understand why some people would like the lever's configuration to be different.

In my opinion, however, I have found all three of these products to be a great way to step up the realism of Flight Sim affordably. Of course the affordability can be debated, but you would be hard pressed to find a yoke, rudder pedals, and throttle quadrant of similar quality any cheaper than the CH models...excluding pre-owned products that is.

Therefore, I do put my stamp of approval on all of these products. I believe that these controllers will make an enormous improvement for any simmer, especially those with real world experience, who want to replicate flight more authentically. But even those of you who have never flown a real aircraft are sure to benefit from the CH yoke, rudder pedals, and throttle quadrant as they provide the realism you need to learn to fly the right way.

REVIEWERS NOTE:

The following programs were used during the testing of the CH flight yoke, rudder pedals, and throttle quadrant.

- Microsoft Flight Simulator 2004, 2002, and 98
- Microsoft Combat Flight Simulator, CFS2, and CFS3
- Lock-On Modern Air Combat
- IL-2
- Pacific Fighters
- Xtreme Air Racing
- EA Sports NASCAR Thunder 2003, 2004, and 2005

In some simulators, the controllers may not function by default or they may function improperly. To correct this problem you will need to either adjust the control settings within the Sim, and / or create a profile with the programming software. More information can be acquired by contacting the crew at the CH Products Gaming division.

What I Like About These CH Products

- The yoke and pedals are priced right.
- The yoke, pedals, and throttle quadrant dramatically increases the reality.
- The yoke and throttle quadrant have buttons and switches to help reduce the need to use the keyboard.
- I have found the craftsmanship and quality to be more than acceptable.
- The rudder pedals have toe brakes, adding to the realism.
- All of the products are very stable when mounted properly (the pedals need no mounting).
- I have found all of these controllers to be comfortable to use.
- The lack of a center detent in the yoke allows for precision adjustment to the users liking.
- All of these products are compatible with Windows XP/2000/ME/98, and iMac or Mac.
- Each product has a two year warranty.
- The CH Control Manager gives the user full authority over assigning controller functions.

What I Don't Like About These CH Products

- I found the throttle quadrant to be priced a little steep.
- I don't care for the heel rests on the pedals.
- The occasional spring noise in the yoke can get annoying. (you may or may not experience this)

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