

Review

CH Products Throttle Quadrant USB

by **Vince "Beer Camel" Putze**

CH Products has added an interesting new unit to their list of legendary game controllers. The **CH Throttle Quadrant USB**. It's definitely a unique and interesting piece of equipment, but to be totally honest my first impression was somewhat less than enthusiastic. It appears to be typical CH Hardware... well engineered and manufactured, but my initial feeling was that it's something only useful to the 'Civilian Aviation and Virtual Airlines' gaming crowd. 'Everybody' knows the real fun is in the air combat sims! After all, I make my living flying Jumbo Jets, That's work! I only do it for the money! (Big Lie! It's the SECOND best job in the world). This new CH controller has six funny levers on it... who the heck needs more than one throttle (Well... Maybe TWO, if you are an F-4, F-14, F-15, F-18 or P-38 JOCK!). Worse yet, it's not a 'real' HOTAS! There aren't any four/eight way hats, rotaries, or buttons on ANY of throttle levers! The ONLY switches, actually buttons, are on the front of the quadrant! How could this thing possibly be of any real use to the dedicated virtual combat pilot?

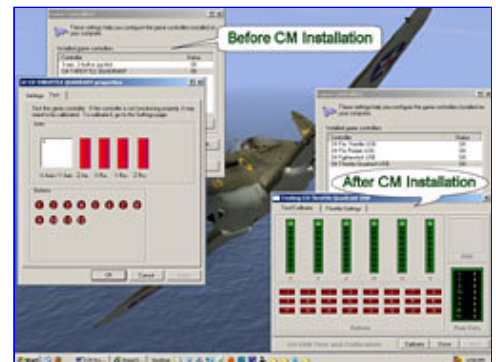


I'll bet you think I don't care for the CH TQ... Nothing could be farther from the truth. Lets see why...

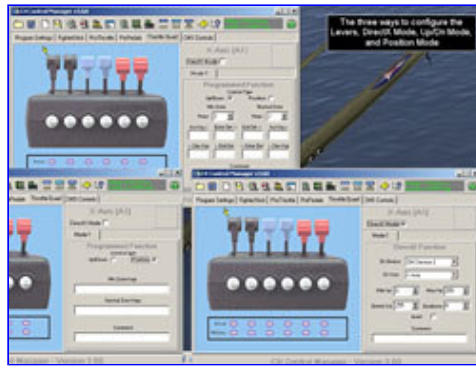
Inventory and Setup

Utilitarian is the best word to describe the contents of the box... in it I found the CH TQ unit, screw-on desk mounts, and a set of extra throttle lever knobs. There are a total of four black 'Throttle' knobs, two blue 'Prop' knobs, and two red 'Mixture' knobs. Noticeably missing are a complex printed manual and driver/installation CD. I strongly agree with the decision NOT to include these last two items. Every time I purchase just about ANY PC hardware, gaming or not, the included drivers tend to be woefully out of date and the printed manuals inadequate. I always end up on the manufactures web site downloading current ones. Why waste the time and cost to include them?

The TQ's setup in Windows XP was painless... Plug it in and XP recognizes it as a 'CH Throttle Quadrant', a six-axis, 12-button controller. Separate drivers are not really necessary to use the TQ as a basic throttle controller. Be advised that I only tested the CH TQ in Windows XP. I no longer have any of my machines running Windows 98SE, so I am not sure if the TQ would behave as well in that legacy OS. This basic six-axis controller mode is really an easy way to use the TQ if your game allows assignment of axis and buttons organically. If your favorite game cannot accommodate that, or you want to get more creative with control assignments then you have another option. That is to download and Install CH Product's Control Manger Software. It enables extended programmability and the ability to combine newer CH USB Controllers into a single 'virtual' controller. With Control Manager (CM) installed, the TQ will be recognized as a six-axis, 24 button controller. The latest version of CM is available on the CH web site.



When installing Control Manager... I HIGHLY recommend taking the time to actually READ all those little instructional pop-ups that we normally ignore during software installation. This will prevent errors in the setup of your CH USB controller and the pain of trouble-shooting driver issues later. Once CM is in and running I also recommend you do the individual controller calibration routines; I've found it can really make a difference in output accuracy and eliminates some potential problems. I experienced a big difference in the accuracy and reliability of the TQ's pseudo buttons after proper calibration.



Description and Function

The CH Throttle Quadrant is appropriately and very descriptively named; it is a rectangular six-lever throttle quadrant with six two-way spring centering switches on the facing side. It clamps to a desk or table top with what appears to be the same clamps as on CH Products 'Yoke' controllers. The throttle knobs are interchangeable allowing several combinations of colors and shapes among the throttle levers. Each Throttle has two detents in the aft, or throttle closed, position. The detents are the 'extra' 12, or pseudo buttons on the TQ. The additional 12-pseudo buttons cannot be directly activated without lever movement. As previously stated, Windows does not recognize the additional buttons in the standard game controller applet until Control Manager has been installed. Once that's accomplished then Windows displays a six-axis, 24 button unit.



Control Manager software allows you to configure the throttle levers in several ways. The default lever control assignment is as an axis (DirectX Mode). If the game function you want to use a given lever for does not allow axis assignments, then you have the choice of two different ways to assign keystrokes in Programmed Function mode, they are Up/Down or Positional.

The Up / Down function is used with 'increase' and 'decrease' keys. It has two zones, one above and one below the detent, with a minimum of two positions and a maximum of 100. There are also separate assignable detents that are specific for each direction of lever movement... i.e. increasing direction key assignments and decreasing direction key assignments. The Positional mode has two sections, the Min Zone Keys below the detent and the Normal Zone Keys above the detent. The keys assigned here will be activated in proportion to the position of the lever.

The six two-position momentary switches on the front of the TQ are programmed just like standard CH controller switches/buttons using CM software. CM is very intuitive and I am sure that it will satisfactorily fulfill the needs of most users. For the really adventurous MAP makers CH Products included a text based scripting utility called CMS (Control Manager Scripting). It can write more complex command algorithms when the CM GUI just won't do... I have used CMS with other CH units. It is a very useful programming utility, but it is definitely more complex and will take some time to learn.

The TQ in Games: FS2004, CFS 3 and Pacific Fighters

FS 2004 was initially selected due to its very realistic engine control emulation and interface. It seemed the most appropriate game to begin my evaluation. The TQ was added to my current CH HOTAS FS 2004 Control Manager Map of Fighterstick, Pro Throttle, and Pro Pedals. The process went quickly and was easily accomplished. The only real limitation I had was running out of available axes on a single controller; eight is the maximum. Control Manager software provides a solution by allowing the creation of another virtual controller (when the map is 'activated'), and therefore an additional set of axes. The only limitation is the ability of the intended game to recognize and use multiple controllers. Most recent flight sims do have this capability so it should not cause a problem in most situations. FS 2004 does indeed recognize multiple controllers; in fact it allows the assignment of three separate controls per engine for up to four engines. If you assign each engine with a throttle, prop, and mixture that's a total of 12 axes for engine control! If you had a B-17 or B-24 add-on for FS2004 you would need TWO... yes TWO CH TQ's for engine management alone! That's a whole lot o' levers! "Everybody grab a throttle! We're going around!"

Once Control Manager was configured and my FS 2004 Map downloaded I proceeded into FS 2004 to configure the in-game assignments. This was more complicated than it sounds... It had absolutely nothing to do with the TQ... It is the complexity of FS 2004's control system. To correctly configure FS 2004 you must pay close attention to control axis assignments, sensitivities settings and dead zone settings. The first few attempts to fly the DC-3 proved frustrating until I noticed that the sensitivities and dead zone settings for a few of my 'extra' axes were turned all the way down. Once they were properly adjusted everything worked flawlessly. It was really fascinating watching individual in-game throttles, prop levers and mixture levers move proportional to my inputs on the TQ... It really adds to the immersion factor and feels almost eerie! Take a closer look at the screenshot with the photo inset to get a better idea of what I mean. This made flying that old FS 2004 DC-3 much more fun... I may have to spend some more time with this 'boring' civilian flight simulation! Lets move on to an 'action' flight sim and see how the TQ handles that genre aviation gaming...



Since I already had the FS 2004 Map loaded and my installation of Microsoft's Combat Flight Simulator 3 control assignments are configured similarly, CFS 3 was the next logical challenge for the TQ. I had to spend a little time locating and assigning in-game engine controls to the correct axis settings, but once completed the TQ performed flawlessly. It added another layer of depth to this classic, sometimes under appreciated, combat simulation. The ability to easily and accurately manipulate complex engine controls in a true to life manner really does add a level of immersion not



easily duplicated! Once again, I was fascinated just watching the in-game throttle, prop, and mixture levers accurately move, directly replicating my inputs on the TQ. (Yes its true... simple minds are easily entertained!). I had a blast just flying around playing with the engine controls... I am actually now considering purchasing some of the add-on pay-ware titles for the MS flight sim series...

Oleg Maddox's Pacific Fighters is one of my favorite games; I play it almost to the exclusion of everything else. I really had high expectations for the TQ in PF's multi-engine aircraft. Unfortunately I discovered that PF has some limitations that restrict the accurate engine control the TQ was designed for. Oleg's great flight sim lacks the ability to assign different control axes to each engine in multi-engine aircraft. There is only one engine and one prop axis; additionally the mixture and supercharger can only be controlled via keyboard commands. In multi-engine aircraft you must select the engine to individually adjust, perform the control input, and then reselect 'all engines'. This is an awkward way to operate in a 'combat' situation. Even the TQ's industry leading programmability cannot fully work around this problem. The only real solution would be a PF patch to allow separate axes assignments to individual engines and their subordinate controls.

The single engine aircraft in PF were a different story, the TQ once again proved to be a very useful and realistic tool. I mounted the TQ alongside of my CH Pro Throttle in a position that would be appropriate in a real aircraft. I then configured my HOTAS in the following mode: CH Pro Throttle slider as the throttle axis, the first TQ lever as the prop axis, and the next TQ lever as the mixture control via keyboard positional commands (Be advised this was a pretty useless control assignment as the mixture control in PF is NOT very realistically modeled on aircraft with auto-mixture). This configuration allowed me to use complex engine controls in a very realistic, natural, and intuitive manner. The unused levers on the TQ were quickly assigned to other functions like landing gear, hook, supercharger control, and tail wheel lock. It just FEELS more correct to drop the hook with a throw of a lever instead of a 'peck' on a keyboard! A noticeable but minor distraction is caused by PF's heavy use of 'toggle' controls instead of single discrete key assignments, occasionally you end up 'out of sequence' with your control input. A simple solution is available; just ensure that all your controls are in the correct position prior to beginning the game.

Conclusions and Recommendations

The TQ is a very specialized game controller that is really only appropriate for gamers who take their flight simulations seriously. The casual player cannot justify the cost and does not need this level of capability in entertainment hardware. For the hard-core virtual pilot this unit can add significantly to the gaming experience. I know it did for me. The addition of the TQ to my CH HOTAS made a big difference in the feel and immersion of all my flight sims. The difference is more pronounced for civilian simulations with complex engine management options than it is in the 'standard' combat sim, but it is no less noticeable. If you're an aficionado of Microsoft Flight Simulator and similar games, then the addition of the TQ to your gaming hardware setup is blatantly obvious. You NEED it... You'll LOVE it... and you'll USE it constantly.



The real purchase dilemma emerges if you primarily enjoy 'flying' Air Combat games. The big drawback of the TQ is its lack of on-throttle HOTAS buttons; this does indeed limit its utility as a primary throttle control in complex combat sims. I'm sure the TQ was targeted for the civilian type flight simulations, but don't discount its use in the 'hostile skies' of a combat sim. I was very surprised how useful it is even in games with limited engine management capability. I used it for secondary controls like gear, tail hook, supercharger, and other things that would be controlled by some sort of lever in real life. Is this secondary use worth the significant cost of a TQ? I think so... The additional immersion factor is hard to quantify, but I like it. As games get more complex and realistic the need for more capable and complex hardware in our HOTAS configurations will emerge. The TQ fills that emerging need perfectly. After the experience of this review I now 'need' the TQ in my HOTAS setup, and I am even seriously considering purchasing a second TQ unit!

The list price for the TQ is impressive at \$200.00 US, but as I have stated before, you generally get what you pay for. This has been especially true of CH Products hardware. The quality and durability CH Products controllers demonstrate is legendary — My original CH gameport HOTAS is STILL in use after many years of problem free operation! I can't make that claim with any other joystick or HOTAS I've ever owned... and I have literally owned all the major brands! The CH Throttle Quadrant is a great addition to any serious flight sim enthusiast's hardware inventory. If you think you want

acquire one... good news! The street price should be significantly lower than suggested retail. Do a bit of looking on the Internet, it should be pretty easy to locate. I found it for \$133.00 US, not cheap but a fair price for an outstanding piece of hardware.

CH Products Throttle Quadrant Summary

Assets:

- Six Axis, 12 or 24 button USB Throttle controller
- Fully Programmable with Control Manger Software (350 total Button positions)
- Can be combined with other CH USB Controllers in a HOTAS
- Realistic appearance with changeable knobs
- Easy installation and Setup
- Compatible with Windows 98, ME, 2000, and XP
- CH Products Quality and 2 year warranty
- Outstanding Company Support

Liabilities:

- Relatively High Cost

Just a note to anticipate some of the emails I generally get concerning "Exactly where did you find it for that price?" If you are looking for somewhere to purchase CH gear for a fair price, a good place to start is Provantage computer supply in North Canton Ohio. Take a look: <http://www.provantage.com/buy-66GAMCON-game-controllers-shopping.htm>. They have pretty good prices on all controllers and CH Products in particular. This is not an official SimHQ endorsement of Provantage, but I personally had very good service from them. As always...'Caveat Emptor'

System Specs

- AMD 3200XP 400
 - MSI K7N2 Delta 2
 - ATI 9800 Pro 128MB
 - 1GB Crucial DDR 3200
 - Seagate 120GB HD
 - Creative Audigy 2
 - DirectX 9C
 - Windows XP PRO SP1
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