

Review of
TCA Yoke Pack Boeing Edition
Manufactured by Thrustmaster

Intro

There is an everyday growing interest for flight simulation and this attracts various professional companies that are both able and capable of creating beautiful, realistic and high quality hardware for the demanding simmer or flight enthusiast.

Whether you are using flight simulation just for fun or for gaining experience before real life flights, then the market today is certainly very interesting and filled with opportunities to build your own customized home cockpit.

You can build a replica home cockpit or just a more dynamic home cockpit, the opportunities are great, and within this review I will take a closer look at a brand new piece of flight simulation hardware developed by Thrustmaster – their new TCA Yoke Pack Boeing Edition featuring a pendular yoke as well as a combined throttle quadrant and autopilot.



Packaging, Delivery & Assembly

The delivery was made using the international courier FedEx with departure France on a Thursday with scheduled delivery in Denmark already the very next day (Friday) – this however turned out to be delayed and the pack was delivered the following Monday instead; still a very quick delivery with superb track and trace and SMS information. When the packages arrived I quickly took a close look at the boxes (2 boxes) and found that there were no or just very small signs of rough handling meaning that both boxes had been handled with fair care.

The consignment consisted of two boxes; one containing the TCA Yoke system and the other containing an additional throttle quadrant for making a full setup.

I started out by opening the large box featuring the complete setup. The outer box was the transport box which was made from a hard and thick cardboard and for which was perfect for transportation. Inside the transport box was another cardboard box which fitted perfectly into the transport box with maximum cubic volume. This box was made featuring a softer cardboard quality but still fair, hard and sturdy. Opening the inner transport box I now found the display box which was a thin and soft cardboard box and which does not support the product during transport but is instead meant for displaying the product on e.g. shelves in a store etc.

Now opening the display box I got into the more interesting parts. I found two smaller cardboard boxes where one contained the throttle quadrant with accessories and the other containing tools, screws and mounting bracket for the throttle quadrant. The yoke itself was packed below these two boxes in a 2-piece formed-shaped cardboard wrapping which was perfectly aligned with the yoke and the display box for optimal support. The last layer of protection for the yoke was a thin plastic bag that was wrapped around the yoke – I assume for protecting the yoke from being scratched during unpacking or similar.

The throttle quadrant within the TCA set as well as the throttle quadrant delivered as quadrant #2 was both packed the same way, well except that the additional throttle quadrant also had an outer transport box. The throttle quadrants were packed in an inner transport box with the display box inside the inner transport box, and inside the display box was as like on the yoke, a 2-piece form-shaped cardboard wrapping and the plastic bag that supported and protected the throttle quadrant perfectly. As part of this wrapping the form-shaped cardboard also featured support for the usable levers, the tools and the connection cables.

Overall both the packaging of the complete setup as well as the single throttle quadrant was very professional, and supported and protected the yoke and throttle quadrants perfectly for an international shipment

The parts within each box are the following:

TCA Yoke Pack Boeing Edition

- Boeing 787 replica yoke
- Boeing 787 replica throttle quadrant
- 2 throttle levers both featuring reverse throttle levers and autopilot disconnect buttons
- 1 speed brake lever
- 1 flaps lever
- Desk mounting bracket for throttle quadrant
- Connection cable USB-A/C – one for the yoke and one for the throttle quadrant
- Screws and tools for mounting the bracket to the throttle quadrant
- An additional spring for the yoke
- Tools for opening the yoke to add the spring
- Metal bracket to mount on top of the yoke (for e.g. an iPad, maps or similar)

Additional Throttle Quadrant

- Boeing 787 replica throttle quadrant
- 2 throttle levers both featuring reverse throttle levers and autopilot disconnect buttons
- 1 speed brake lever
- 1 flaps lever
- Connection cable USB-A/C

No real assembly is needed since the yoke comes almost in one piece except for the metal bracket that supports the charts or tablets etc. There is included a tool for opening up the base of the yoke to add or remove tension springs, but as default I do find the tension to be a good start.

In regards to the throttle quadrant then all needed to be assembled are the various levers that you would like to include as well as the mounting bracket for the desk. On the bottom side of the quadrant is located a tool (Phillips like screwdriver) for use to mount the small connection brackets between each throttle quadrant if you have a dual setup. The brackets and screws are all fitted on the bottom side of the quadrants. The same tool is used to mount the desk bracket – this bracket is universal and fits both just one quadrant but also both connected side-by-side.





Look & Feel

Taking a first look at the yoke I was quite surprised by the huge size of the complete mechanism where as the yoke handle itself actually seems smaller than other Boeing yokes (737) that I have previously tried. According to Thrustmaster the yoke is a replica of the 787 Dreamliner yoke at the scale of 1:1 or maybe more accurately said the yoke is inspired by the 787 yoke. I haven't been able to verify the measurement since I couldn't find the actual measurements for the real 787 yoke. The replica yoke measures about 29cm in width on the widest part of the handle and about 31cm in width when measuring the outer points of each top. The height on the center part is about 18cm and the handle is about 2.50 cm higher.



The entire yoke including the desk mounting as well as the mechanism sets the yoke with a total height of about 36cm. This however does not apply when mounted since about half of it remains below the desk level. The total depth is about 40cm and when mounted to a desk the yoke fills up about 24cm – what I more discovered was that the yoke is heavy, it weighs about 3.8 kilos. The yoke features a 100% metal frame (internal structure) which provides a great weight, superb stability and a perfect base. The built-in mounting bracket supports the integration between the yoke and the desk perfectly and the yoke is easy to mount and dismount on the desk. The assembly screws are fixed onto the yoke and are of a good metal quality – the ‘pillows’ that grab on to the desk are huge and provides a good grab and stability when tightened so that the yoke sit perfectly firm and does not move when used. The yoke can be mounted on desks up to 5cm in thickness.

The yoke itself and the shell of the base are made of high quality plastics. Here I would have loved to feel the yoke being built of metal or die-casted aluminum as some of the other products are from Thrustmaster, but that said, the feel is still amazing and the visuals is pure eye candy. I could not find a clip on the yoke's center as often found on yokes to e.g. hold charts or checklists etc. but instead there is the metal bracket just behind the yoke where you can add your charts, checklists or even an iPad or other media.

All the various buttons and levers on the yoke are all made from hard and high quality plastics as well – this of course is the easy solution and also a good way of keeping the costs down, but in my opinion I would have loved to see and feel other materials for these functions.

The yoke has the following features:

- 18 action buttons, One 8-way hat switch and a mini controller with a push button
- Two built-in throttle sliders which can be mapped as you like – e.g. as fuel cut-off sliders and found on the 737 throttle quadrant
- One landing gear toggle switch on/off with gear knob
- Two axis – Ailerons and Elevator
- 1/8-inch / 3.5mm stereo microphone jack for headset
- Official Xbox, View, Menu and Share buttons
- Dual metal mounting screws
- Support for tablet or smart phone (previously described as a metal bracket)

Now moving the focus from the yoke and instead towards the throttle quadrant I found a very beautiful and versatile 3-axes throttle quadrant. Of course the throttle quadrant itself is not a complete replica due to several things like e.g. the obvious numbers of axes – the real have engine 1 and 2 together with speed brake and flaps where as the simulator quadrant only have 3 axes.

The levers being the throttle, the speed brake and the flaps levers are all very nicely and accurately created and looks superb and true to real life, however going on the backside of each throttle lever I did notice that the reverse thrusters are not that accurate and according to real life. The reverse thruster seems to be created and mapped as buttons and not axes as per real life. Also these reverse thrust levers are very loose and do not really provide me with a realistic and firm quality feeling.

The throttle quadrant is not meant as being a replica but it is certainly inspired by the real 787 throttle quadrant. I normally like to change the resistance in a lever so that I need more force to move the levers, but I could find any tightening feature as found on several other Thrustmaster products. However, the resistance replicated within this throttle quadrant is accurately created and verified by real 787 drivers.

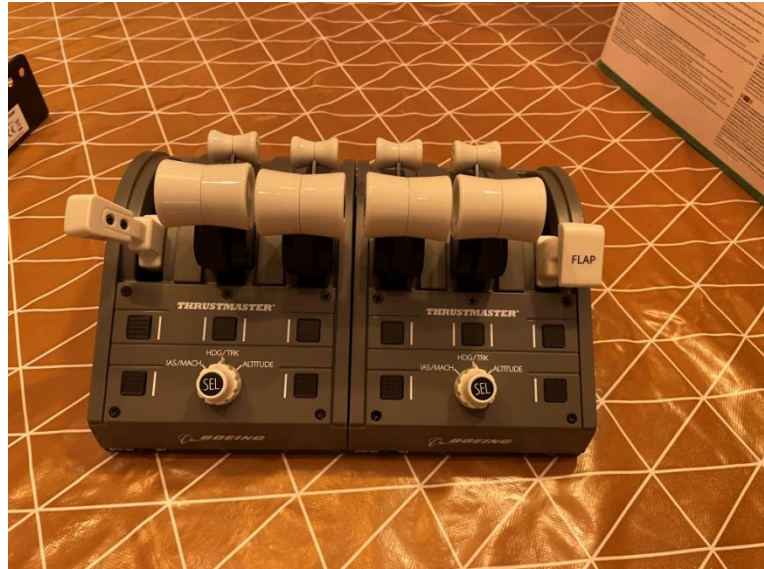
All parts – the various levers as well as the buttons and the casing are all made from high quality plastics. Again I would have loved especially the levers to be made from metal for a better feeling but still the experience I get from using this throttle quadrant is amazing and an absolute higher level than I would have assumed. The rotator switch selecting IAS/HDG/ALT I do however find to be of a lower quality – it makes a lot of noise when turning it. This is maybe due to lower quality or maybe the plastic casing I don't know, but definitely not a super smooth rotator switch feeling.

The desk mounting bracket is 100% metal and easy to connect to the throttle quadrant. The bracket supports the throttle quadrant perfectly – both when mounted on just one throttle as well as being mounted and shared by two throttle quadrants. The tightening screws are metal as on the yoke and the 'pillows' have a superb grip on the desk so neither the quadrant or the yoke moves when mounted and used. The throttle quadrant bracket also supports desks up to 5cm in thickness.

The finish on both the yoke and on the throttle quadrant is absolutely beautiful, and I can easily see that Thrustmaster has kept a superb focus on this development. Even though the outer parts are made from high quality plastics, I guess to keep the costs down, the inner parts are high quality industrial grade components that I am confident will have a very good durability. I did notice that there were no covers or rubber bands or similar around each lever on the throttle quadrant to prevent dust getting into the sliders and down to the electronics and the mechanism within – I know this is a similar setup as to the Airbus throttle quadrant and for which I have had now for quite some time. I have not experience any durability issues on the Airbus throttle quadrant in that regard and therefore I would absolutely assume the same outcome for the Boeing throttle, meaning that it will not affect the throttle quadrants performance overtime.

The throttle quadrant has the following features:

- Up to 17 action buttons (both buttons and a rotator switch)
- 3 configurable axes for use for throttle, speed brake and flaps or whatever you would like
- One customizable encoder with push button
- Switch for dual throttle versus single throttle mode



Connection & Performance

I performed the connection test on both my computer setups where the primary setup features a Win11 OS and connections through USB3.0, USB3.2 Gen2 and USB3.2 Gen1. The secondary setup features a Win10 OS and connections through USB2.0 and USB3.0 – On both systems the yoke and the throttles were perfectly recognized so no issues in regards to connections.

To power both the yoke as well as both the throttle quadrants, there is no need for an external power supply – power is supplied through the included USB-cables and the computer.

Both the yoke and the throttle quadrant was tested on the flight simulation platforms MSFS2020, P3Dv4.5, DCS World 2.5 and WoP, and was also here perfectly recognized as gaming ware and thereby able to be mapped with the various functions within each simulator platform. I assume that the same goes for the older platform FSX and also for the XPlane series, but this I haven't verified.

Various connections found on the back of the yoke base are 1x USB-A and 1x USB-C as well as a TFRP connector to connect e.g. rudder pedals like the T.Flight rudder pedals or similar. Finally there is a switch to select if the yoke is to be connected to a PC or an Xbox. The yoke features several buttons specifically used for Xbox together with the specific legends on the trim buttons also for Xbox – the legends are A, B, X and Y. I haven't tested the yoke on Xbox – only on a PC configuration but the yoke is licensed by both Boeing and Xbox and for use with Xbox One and Xbox Series XJS.

The yoke surprised me greatly when I used it for the very first time – the rotation on the ailerons axes is not limited to 90 degrees but is in fact 150 degree rotation which provides a lot more realism and also a lot more precision. The resolution of the aileron axis as well as the elevator axis is 16-bit featuring 65,536 x 65,536 values each (counts per revolution). The range of travel measured on the aileron axis are 150 degrees and on the elevator axis 8.3-inch / 21cm (pitch).

Many of you have probably heard of the H.E.A.R.T. technology used by Thrustmaster – this stands for 'HallEffect AccuRate Technology' featuring 3D magnetic sensors on each axis for improved precision and durability – This technology is used for both the yoke's aileron axis and elevator axis as well as all three axis on the throttle quadrant which also features a 16-bit resolution and 65,536 x 65,536 values on each axis.

I absolutely love the yoke especially for the pendular motion that replicates a floor mounted yoke, which is quite different from a normal GA yoke that features the push/pull motion and which you would normally find as simulator hardware. This yoke features a pendular motion and resembles in great perfection the real motion of a floor mounted yoke (I have previously tried ACE737 floor mounted yoke). Both the motion of the aileron as well as the elevator axis is super smooth and just pure joy to experience. The resistance on both axes are good and what I'd believe as very realistic – still if you would like to change the resistance, you can of course do that by adding or removing some of the springs inside the lower part of the yoke's casing - how to is shown in the included

manual. The yoke also features a back-2-center function for both axes and that also works perfectly and smoothly with a firm reaction.

There are lots of usable and programmable buttons on the yoke. Apart from the buttons for Xbox you also have the gear lever button, two sliders, together with the buttons placed on both the left and the right side of the yoke. The left side features two vertical mounted mon-off-mon switches which I use for elevator trim and flaps override, a thumb button, an index finger button and an 8-way hat switch which is pre-assigned to the view. The right side features two horizontal mounted mon-off-mon switches which I use for ailerons trim and rudder trim together with a thumb button, an index finger button and a mini joystick which can be used to view around more smoothly than the 8-way hat switch found on the left side.

Additionally there is also located one 1/8-inch/3.5mm stereo microphone jack on the base of the yoke which I find to be an excellent idea. This absolutely eases the connection of the headset so I don't have to use cable extensions. Of course you could also just have speakers or a wireless headset, but I use a wired headset when I don't use my speakers and the jack is a good solution. I did encounter an issue with the jack or maybe more precisely when not using the jack – meaning that when I use my headset with the jack connector, there is no problem, but when I remove my headset from the jack connector to use my speaker system instead, then the sound is cut off. I am not sure if that is an issue with the integration of the jack or if it is more likely a setup in my sound configuration on my computer – I do need to explore that further.

The gear knob and button found on the yoke has a fairly strong resistance to it, so that you don't accidentally push the gear in or out. The gear knob is quite small and not according to real life, but does fit nicely into the setup. On the front and lower part of the base are the two sliders located – I think these originally were intended to function as throttles if the yoke was purchased separately meaning without a throttle quadrant. The resistance here is fair and these sliders I think I'd map as being fuel cut-off for engine 1 and 2 as found similar on the B737 throttle quadrant.

Now setting the focus to the throttle quadrant, this quadrant features a 3-lever configuration where all levers can be mapped as you like. You can customize the setup any way you would like as e.g. speed brake-throttle-flaps or two throttles by removing either the speed brake or the flaps or simply just use two throttles etc. The configuration is super easy – each lever features a click-on function meaning that you simply just click on a top lever on the desired base throttle lever. There is one mini connector on each base throttle lever that now connects and adds the button functions found on the top throttle levers – this for both the reverse thrust levers as well as for the autopilot disengage buttons.

The speed brake lever has no additional functions and neither has the flaps lever, but each throttle lever both has a thumb/pinkie button together with a button that activates the reverse thrust feature by lifting up the reverse thrust levers. Other buttons found on the throttle quadrant are 5 click buttons, a rotator switch that are pre-set to autopilot functions as selection of airspeed, heading and altitude and an encoder with a click button on the top. Actually I think that the rotator switch is more or less integrated to the encoder and the pushbutton which would make good sense.

Connections on the throttle quadrant are a USB-C for connecting to the computer like on the yoke, but you also have the connector TFPR for connection of e.g. the T.Flight rudder pedals. On the front of the quadrant there is located a switch where you can select the quadrant to be either ENG1&2 or 3&4 – this is a feature that you will use if you have a multiple throttle quadrant setup so that each quadrant is recognized as a separate unit and thereby being able to be individually programmed.

The axes on the throttle quadrant has a great feel to them with a super smooth motion and fair resistance however there is unfortunately no possibility to change the resistance. The throttle quadrant is tested by real world 787 drivers which do confirm that the resistance is according to real life.

Now, how to program the throttle quadrant as well as the yoke is easy – they are both recognized by the built-in mapping tools of each simulator that I have tested them on. Additionally I am confident that you could also perform the mapping or programming of buttons and levers using external tools like Thrustmasters TARGET software or other software like FSUIPC, Linda, SIOC or similar.

Performing mapping within any of the simulators I didn't encounter any issues. There were multiple pre-mapped functions which for some is superb, but which I don't appreciate that much because I then have to clear them all before being able to map the functions to fit my desired setup. Some axes has to be assigned with the reverse function as e.g. the speed brake and the flaps axes but that is easy and absolutely no issue.

One issue on the throttle quadrant is that the reverse thrust function normally should be an axis but on the quadrant this is instead a button. This removes some functionality which I would have loved were there – when it is an axis you have the possibility to easily select various stages from 0-100% of the motion, but using a button you cannot control this to the same flexible level. When assigning the reverse thruster as a button you can activate the reverse thrust and also map (in some sims) the function to be repeated resulting in an incremental increase of reverse thrust, however this is rather difficult when decreasing because that will require another button for that function. Also some simulators does not feature the repeat function resulting in either a max reverse thrust effect right away or an incrementally increased where you have to activate the button several times after each other and that unfortunately decreases the experience for me.

I have mapped the function as 'decrease throttle quickly' in P3Dv4.5 with a repeater function which works well, but in MSFS2020 I had to go for max meaning that when I apply the reverse function in MSFS2020, it is activated 100% each time, of course this is also durable but I would have loved the reverse thrust to be an axis instead. Maybe this can be solved by using an external programming tool? A work around could of course be to map the reverse thrust to one of the axis instead – in my setup I have a dual throttle quadrant setup so I here have 6 axes to play with. Currently I use one for speed brake, two for throttles (engine one and two), one for pitch control, one for mixture control and the last one for flaps control, but that you can of course map as you prefer.





Conclusion

The TCA Yoke Pack Boeing Edition is absolutely a beautiful and high quality addition to any home cockpit setup and by adding the extra throttle quadrant it just improves everything and creates an environment that is even more flexible.

I certainly love the feel and the realism that this set creates – the experience I have when flying my favorite airliners as well as my favorite GA aircrafts has been greatly improved. The look and the finish are beautiful, the feel is really good and the quality is on a very high standard.

The pendular motion is awesome and when seeing that this solution has been integrated into a desk mounted yoke is just incredible. In my opinion Thrustmaster has succeeded in creating what I believe to be their next flagship.

Internally the yoke and throttle quadrant features the hall-effect sensors which provides great precision and better durability. The motion of the elevator, the ailerons as well as the levers on the throttle quadrants are smooth and noiseless and absolutely a very realistic experience.

The set also features a very good and firm mounting function which keeps the yoke and throttle perfectly aligned with the desk without moving even at quick and hard movements. I find the yoke to be very sturdy and a must have for flight simmers that enjoys flying using a yoke.

Of course there are always things or ideas that you wish would have been different but on this set these wishes are certainly very limited and I am very positive towards this yoke and throttle. I don't know of any other desk mounted yokes that features the pendular motion.

The yoke and throttle quadrant is great quality and has already provided me with many hours of fun and superb flight experiences. I can certainly recommend this set to my fellow simmers – great job done Thrustmaster, I can't wait to see what will come next.

Rays Aviation



Review Computer Specifications

Primary Computer

- ✓ Windows 11 (64-bit)
- ✓ Intel Core™ i7-12700Kf 5.0GHz
- ✓ Asus Z690-A Prime DDR5
- ✓ Thermalright Macho Rev.B
- ✓ Corsair 32GB DDR5-4800 Vengeance
- ✓ 2TB SSD NVMe M.2
- ✓ 4TB WD Sata 7200rpm
- ✓ Asus GeForce RTX3080Ti 12GB Tuf
- ✓ Corsair RM850x 850W 80plus gold
- ✓ 1000/1000 Mbit Fiber Internet

- ✓ MSFS2020

Secondary Computer

- ✓ Windows 10 (64-bit)
- ✓ Intel Core™ i7-4790K 4.40GHz
- ✓ Asus Maximus VII Ranger (ROG)
- ✓ Antec Kuhler H20 650 Water Cooler
- ✓ Kingston HyXB 32Gb DDR3-2133
- ✓ 500GB Samsung 850 EVO SSD
- ✓ 3TB Seagate Barracura 7200rpm
- ✓ Asus GeForce GTX 980 Strix OC 4Gb
- ✓ Seasonic 750RT 80plus gold
- ✓ 1000/1000Mbit Fiber Internet

- ✓ MSFS2020
- ✓ Prepar3Dv4+
- ✓ DCS World 2.5
- ✓ XPlane11
- ✓ Wings of Prey
- ✓ FSX w/Acceleration Pack