



## *Packaging & Delivery*

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I received this T16000M FSC Flight Pack directly from ThrustMaster in France. The package was sent using FedEx and the delivery time was short, only 3-4 business days from departure in France and to arrival in Denmark. There were no signs on the box of hard handling and the transport was completed with success.

The T16000M FSC was carefully packed and featured first an outer box which was made of thick cardboard specifically tailored to the inner sales box. The sales box is a thin cardboard box that supports the polystyrene foam brackets used for supporting the actual flight control stick, the rudder pedals and the throttle.

The polystyrene foam brackets are specifically designed for this set and are certainly created with a focus on packing the entire set inside as small a box as possible without compromising handling and transport issues. The T16000M was nicely packed and was kept safe during transport at all times.

Additionally there were also included small tools and interchangeable parts for the flight control stick since the stick can be used as both a left and right hand stick. Standard is the right hand but if you need to use the stick with your left hand, or if that is your preferred setup, then you can alter the handle to support the ergonomic grip that you have as standard for the right hand. That is a very good idea and makes the flight control stick more versatile – to change from right to left hand or the other way around, is easily done first by removing the right side rubber part on the stick – this you can remove using your fingers. Hereafter you need a Phillips screwdriver to unscrew the Phillips screw found inside the stick that holds the left side rubber piece. When both pieces are off you first mount the right piece with the Phillips screw and thereafter the left side piece. *Vise versa* going from left to right hand.



## *Look & Feel*

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After the unpacking and no assembly of the T16000M FSC I could now have a closer look at each of the 3 items included in the set – the stick is a light-weight stick featuring an ergonomic grip and standard movement on both the X and Y axis. Additionally this stick can also be used without the rudder and throttle connected because the stick also features a twist function to support the rudder movement as well as a slider that supports the movement of the throttle.

On the top of the stick you have a trigger together with 3 action buttons and a PoV hat switch used for viewing around the cockpit. On the base you have additional action buttons with a total of 6 buttons on each side of the stick. All buttons, the trigger and the hat switch are programmable and you can customize them to your own preferred setup. There are in total 16 action buttons, 1 hat switch and 4 axes that can be programmed.

The stick and base are made from plastics with various surfaces – some parts like the base and the buttons on the base is of hard plastics with a smooth and shiny paint whereas the stick/grip feels more soft (rubber-like) providing a very good grip and a very good control of the stick. Even though the stick is made from plastic materials and the weight is minimal, you still get a great feeling and sense of control when flying your aircrafts in the sim. The materials used and the light weight build is of course perfect to keep the production costs down as well as the transport/delivery costs.

The motion of the stick on the X and Y axis is smooth and firm with a great back-to-center function. It does require some effort to move the stick since the force or spring-load on the stick is rather firm but that helps create a nice and realistic feeling. There is no tension control of the back-to-center which is perfectly ok and normal for a flight control stick – no need for it and the motion of the stick is close to noiseless which in my opinion, is a huge plus.

On the bottom side of the stick you have a switch named left/right hand – this switch is only used if you have two sticks connected at the same time, which enables you to customize both joysticks with the assigning of functions you need. I did not test this feature since I only had one stick connected, but a good idea if you use the stick for sims where you need a stick for both left and right hand.

Mounting the stick into a setup can actually also be done – on the bottom side of the base you have two small 4mm internal unions or holes with internal thread. These can be used to mount/fixate the stick properly to a surface with holes at the same places – screws are not included.

Moving on from the stick to the throttle I quickly noticed that this throttle is not just a simple ordinary throttle but actually an advanced throttle still build for a low cost setup featuring a unique sliding ‘rails’ system for movement instead of a standard curved motion as normally found on throttles using standard potentiometers. This system ThrustMaster calls for S.M.A.R.T. technology and I very much like this different movement that is actually found in several different military aircrafts, like e.g. the

new Lockheed F-35 Lightning II as well as in the Northrop/Boeing B-2 Spirit bomber. Using this straight forward/backward movement is quite different than using the ordinary throttle and absolutely something you need to get used to.

The throttle is the TWCS throttle which is a single lever throttle with a good and ergonomic grip featuring on the left side a wheel, on the front side 2x pushbuttons, 1x 2-way mon/off/mon, 1x giant lever supporting an axis that can be programmed and a mini joystick with a pushbutton. On the right side there is 1x 8-way hat switch, 2x 4-way switches and a single pushbutton.

The materials used for the throttle is also plastics which makes the throttle light-weight however, the rails are of metal for better durability and sturdiness which works nicely. The movement is smooth and easy and does not require much effort – there is no tension control on the throttle which I personally would have appreciated to add a bit more resistance to the movement. The sliding throttle system is good and almost noiseless, but I tended to have less fine-tuning control on this throttle than on other standard throttles with a curved movement – that is however not the throttle to blame for that but more likely me and what I am used to have and use.

All button-caps are of plastic which of course takes away much of the realism but the buttons are fair quality with a firm and precise activation. The throttle has a nice grip to the desktop surface but if you would like to integrate the throttle into a home cockpit environment you can also mount the throttle firmly to a surface. On the bottom of the throttle you also find two 4mm holes like on the base of the stick which enables you to fixate the throttle to a surface using two screws (not included).

The rudder pedals, the TFRP, also use the S.M.A.R.T. technology, the rails system for the forward/backward motion but has a total of 4 rails instead of two. This provides better stability and accuracy which works very nicely, and the motion of the pedals are much like on the throttle, smooth and easy and does not require much force however, unfortunately not very noiseless. The rudder pedals also does not support a tension control which I would have appreciated to add some more friction and thereby add more controllable accuracy.

The materials used for the pedals are mostly plastic except for the rails system which is metal. It makes great sense to build the rails of metal for better durability and sturdiness and the rest of plastics to keep the weight and the costs down on the set.

There is a fair traveling distance of the rudder which is super and provides the simmer with a better sense of accuracy but the return back-to-center function is unfortunately in my opinion rather weak, meaning that you yourself need to do most of the work all the time when flying. There is a back-to-center function built into the pedals consisting of a spring located at the center between both pedals – so it does have the function but I would have liked it to be more firm.



You have 3 axes on the rudder pedals. One is the rudder itself and the other two are the left and right wheel brake which is integrated into the pedals with a realistic toe-push of 15 degrees. The movement of the toe-brakes is with a fair distance and also with a fair resistance. The resistance is also created by a spring located at the center of each pedal and can be access by removing the center piece on each pedal (can be removed with you fingers and does not require any tools).

On each rudder pedal you have a nice integrated footrest which I very much appreciate so that I don't have to keep my heels on the floor. This footrest is removable so that if you prefer flying with you heels balancing on the floor, then you can do that and if you like the footrest applied, then you can quickly add it again.

The pedals are rather close to each other, more than I like, because that gives me a not so comfortable sitting position where my knees are pushed close together. This causes some tension in my legs and knees using the set for a longer period of time, but this might be different from person to person.

There are no direct mounting holes for floor mounting which could have been nice. That said, the rudder pedals feature a slight incline providing a super strong hold to the floor surface meaning that the pedals has a great grip to the floor both with the surface being a carpet but also a concrete surface. Of course it also helps that the tension is not hard because that might make the pedals slip when maxed out.











## *Connection & Performance*

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The T.16000M FSC is connected to the computer using standard USB2 male connectors – you have one connector going directly from the flight control stick to the USB port and another going from the throttle. The pedals are connected to the throttle using a RJ12 connection cable and connector and the throttle hereby functions as kind of a hub. This is on one end a very nice idea since it saves up the usage of USB ports but on the other hand, if you only would like to use the rudder pedals, you need the throttle to make the connection.

When connected to the computer, this either directly or indirectly through a USB hub, the flight control stick is recognized separately as the T.16000M and the throttle also separately as the TWCS Throttle however including the rudder pedal axis. This is of course very understandable since the rudder pedals are connected to the throttle and not directly to the computer.

Also within the various sims the hardware was recognized as two entries, one for the stick and one covering both the throttle and the rudder meaning that when you program/assign the pedals you need to select the hardware to be the throttle. In Xplane11 there is a library featuring images of several different hardware types and the stick and throttle were nicely displayed. Of course the rudder pedals was not displayed but I was able to assign, program and calibrate them using the throttle as selection – the axis was still displayed.

All axis are pre-installed / assigned as standard and you can actually go flying right away without any issue. I do however recommend before flying that you run the calibration for all axis and verify that they are assigned as you expect.

Programming each unit is simple and the units are all compatible with the various assignment tools built into each simulator. I also tested the assigning using FSUIPC and that of course also worked perfectly – you could probably use whichever programming tool you like as e.g. LINDA, SIOC, C++ or the TARGET. All my tests was with the various built-in tools and the FSUIPC developed by Pete Dowson.

The control stick features 3D magnetic sensors; the Hall Effect AccuRate Technology providing a superb quality and accuracy with a perfect respond to every movement. All axis' on the FSC stick have a 16-bit resolution and values covering 16000 x 16000.

The throttle axis (not the one on the stick) have a 16-bit resolution with 65635 values on the throttle axis and the two axis on the mini joystik and the rotary antenna features 1024 values per axis.

All cables are included, both the USB cables for connecting to the computer as well as the RJ12 cable from the pedals and to the throttle.



## *Conclusion*

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My verdict of this T.16000M FSC Flight Pack created by ThrustMaster is that when purchasing this complete control environment setup, you get an enhanced flight simulation experience using high quality ergonomic products featuring great precision, quick response, solid and sturdy controls and a good sense of realism. Easy setup (plug'n play) and a rather unique rails system for the throttle.

Each item in the pack has been created with care and thought for the experience of the flight simmer as well as for the connectivity and the versatility. Here I am referring to the fact that you only need two spare USB ports to add all three units to the computer, and also that e.g. the stick can be used in a dual-setup featuring both one right hand stick and one left hand stick. This could probably be very interesting in simulation games where you are controlling machines like an excavator or a space shuttle etc.

Even though the T.16000M is in a different category than several of the other ThrustMaster heavy weight flight simulation items, this is absolutely a set worth taking a serious look at. The price range is fair and you get a lot of value, a lot of good quality and a realistic experience for a reasonable price.

If you are new to flight simulation and would like to add realism by having both a stick, throttle and the rudder pedals without investing a fortune, then this set is most certainly recommendable as a good quality starters set.

I rate this entire set with an overall 4-stars rating – Keep up the great work ThrustMaster!

## **Rays Aviation**



## *Review Computer Specifications (primary test-bed)*

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- Windows 10 (64-bit)
- Windows 7 (32-bit) (secondary system)
- Intel Core™ i7-4790K 4x4.00GHz (Turbo 4x4.40GHz)
- Asus Maximus VII Ranger (ROG-series)
- Antec Kuhler H20 650 Water Cooler
- Kingston HyperX Beast-series 32Gb DDR3-2133 RAM
- 500Gb Samsung 850 EVO SSD
- 3Tb Seagate Barracura (7200rpm, 6Gb/s)
- Asus GeForce GTX 980 Strix OC 4Gb
- 150/150Mbit Fiber Internet Connection
- Prepar3D v4+
- REX SkyForce3D
- XPlane 11
- DCS World 2.5
- FSX + Acceleration Pack
- REX Overdrive for FSX