Review of

Socata TBM850 HD Series

Created by Carenado

The TBM850 is a single engine, low wing, turboprop, light business and utility aircraft manufactured by Socata since 2006. The TMB850 version is the successor of the previous TMB700 that was offered until 2006 and is equipped with the very powerful Pratt & Whitney Canada PT6A-66D turboprop engine that was originally installed in the TBM700N.

The Socata TBM850 is a real formula one of the skies. The engine provides 850Hp which enables the aircraft to gain a maximum IAS higher than no other single engine turboprop aircraft. When cruising with 252 knots fully loaded with fuel, luggage, crew and passengers, the total range is a whopping 1,519 nm which can be flown in altitudes up to 31,000’. The climb rate is 2,380 ft/min in lower altitudes, but a climb to 26,000 ft will not take more than 15 min. which equals an average climb rate from low-medium-high altitudes of 1,733 ft/min.

Specs:

- **Produced by** Socata
- **First flight** 1988 TBM700 & 2005 TBM850
- **Introduction** 1990 TBM700 & 2006 TBM850
- **Role** Executive Transport & Utility Aircraft
- **Status** In production & service
- **Primary users:**
  - French Army
  - French Air Force
  - Corporate & Private

Basics:

I received this add-on directly from Carenado and the download went as usual quickly and without any problems. The connection to carenado’s download server is good so downloading the complete file of about 135Mb did not take much more that about a minute or so.
The installation was also as I had previously experienced with Carenado aircrafts, very easy—I just activated the included installation wizard, that by the way is very user friendly and simple to use, which then took care of the entire installation. To do the installation did not take much more than also about a minute.

After the installation had completed I of course checked the FSX Airplane folder within my FSX directory, just to verify that the installation had proceeded perfectly. The aircraft was of course installed perfectly, so I continued and opened up my FSX to check my virtual hangar—this just to be sure that everything was working and that the aircraft would be placed correctly here also.

I found the TBM850 perfectly placed in the section of Carenado aircrafts in my virtual hangar. Here I also discovered that included is one model with two pilots and in total 5 liveries together with one white livery which can be used as base for additional liveries if I wanted to. The liveries are all of a very high quality and I like the fact that the used images within the virtual hangar is actually representing the specific aircrafts instead of just a standard image covering all liveries.

Now I turned my focus towards additional information for the TBM850 like a manual, guide or similar. Included is a short and simple Word.doc to be used as an installation guide, but again this you don't really need since it is just to activate the installation wizard, but Carenado has still included it. There is also a short Notepad file providing a few information in regards to the installation for P3D. This add-on is created to be used for both FSX and P3D, so you actually get two versions for the price of just one—Super!

Included is also a manual—well actually several manuals covering various specifics in regards to the TBM850. They are located within the FSX main directory under the file Carenado / TBM850. Here you have specific manuals for e.g. the Garmin G1000, Emergency procedures, Standard procedures, Performance charts, Recommended FSX/P3D settings for optimal use and Quick references.

These manuals are all very detailed but still written in easy English, meaning that it should not be a problem reading the manuals even though English might not be your primary language. There are a lot of useful information in terms of both basics and advanced information. Both need to know facts and nice to know planning more advanced flights. I would recommend reading both the G1000 and the Normal Procedures and Performance Charts before setting up a flight and then skim the Recommended Settings, Emergency Procedures and the Quick Reference. This since the TBM850 does not require additional computer power, meaning that your current FSX / P3D setting should be okay and that if you fly a standard flight in FSX or P3D you probably don't start out by testing engine failures or similar.
External:

I started my test with an external walk around the aircraft and what an interesting walk I had. This aircraft add-on is really beautiful and created with an extreme high level of quality. I had already expected a superb aircraft since this is an add-on from Carenado, but this really still amazed me. The model is simple put awesome – the detailing is superb down to even the small rivets on the wings and fuselage. The textures used are high quality and the aircraft becomes almost alive and very realistic especially when viewing it with REX Overdrive and a high quality scenery.

The reflections on the aircraft are superb and the appearance of the TBM850 is indeed very realistic. The model furthermore also features various animations such as rotating wheels, turning nose wheel, gear up/down, gear suspension, door open/close, flaps up/down, moving control surfaces, propeller etc. The animations are all perfectly made with smooth and realistic movements and I also discovered that the pilots head was animated which again adds to a better realism. I noticed that when opening the door a ladder would fold out so that the pilot could access the cockpit easier – a small but very cool and superb detail which again adds to an increased level of realism.

Carenado has also included some effects for this model as the dynamic propeller shines effect together with volumetric side view prop effect which contributes to a stunning and very realistic experience of viewing the propeller. Another effect that is included is a windows
lighting scratches effect as written in the TBM overview. This effect is also very nicely created and spices up the overall experience of the TBM850 to be very realistic. I have flown several aircrafts in real life and all had these very tiny scratches in the windows – of course the scratches are tiny and mostly seen if you fly directly towards the sun etc.

The lighting effect included is very well made with asymmetric light circles for strobe, beacon and wingtip and together with this the model also features the taxi and landing lights which illuminates the ground perfectly. The strobe, beacon and wingtip lights are crystal clear and have a very bright shine and the taxi and landing light are more of a soft light but still provides a perfect light that can be used when taking-off and landing during the night, dusk or early morning.
Internal:

After my tour around the external part of the model I went inside and now found myself located in a luxurious leather cabin. This virtual cabin and virtual cockpit is really well made and is 100% the high quality that Carenado is known for. When looking around the virtual cabin my first impression was Wow – everything looked to be hand crafted down to even very tiny details as stitches on the leather etc. The cabin features an enormous number of details as signs, markings, handles, animated table, air nozzles, H-seat belts, blinds and many more, all created to a very high level of perfection. Just take a look at the leather itself – you can see the textures in the leather as in real life. Very well made!

The virtual cockpit is also the same standard as previously seen in other Carenado aircrafts. Perfect and realistic instrumentation according to real life images that I could find. The TBM850 is equipped with a glass cockpit consisting of the Garmin GI000 which is the PFD and MFD with an included GCU 475 control unit. Together with this you have the AFCS GMC 710 autopilot which also is compatible with the GoFlight MCP-PROs basic functions. The Flight
plan can be created directly from the MFD and the map can show both traffic, topographic and terrain awareness.

There are also a few old analogue instruments that are used as backup instruments - these are smooth 3D gauges which are also very nicely created. The buttons and knobs in the virtual cockpit are also in 3D and look really good. The depth performance is very realistic, the textures used are of high quality, superb reflection effect in the windows and the finish is clean, sharp and very realistic.

There are several animations created in the virtual cockpit such as movable controls, levers, clickable switches and buttons, the door and several others. The animations are good and seem very realistic. The atmosphere created in the virtual cockpit is really good and I certainly got a very realistic experience flying this modern age turboprop. Included in the virtual cockpit are also an on screen normal and emergency checklist and TWAS and TCAS visual and audible alerts.

There is no 2D cockpit but instead the 2D cockpit function contains a start-up menu where the simmers have the possibility to select a cold and dark setup, ready for taxi or ready for take-off option. This is really nice since many simmers actually like doing the complete start-up procedure, but the aircraft applies for all simmers since you also have the possibility to start with engines running and ready for take-off.

Another feature is a customizable panel that can control wheel chocks, sight props, reflections from the instrumentation and the transparency of the windows etc. This is a cool extra feature which adds even more to the overall experience of the aircraft.
Sound:
The sound set included is also a high quality sound set. The sound is clean and clear and resembles the sound of the real TBM850 very well. I found a few sound files on YouTube of the TBM850 which I compared it to, and the included sound sets resemblance was really good. Carenado has also confirmed that the sound set included is actually recorded directly from the real aircraft – now this cannot be any better! The quality is HQ digital stereo but I also tested it using 2.1 stereo with a subwoofer and also with a complete 7.1 surround sound setup and it worked beautifully. I tested the sound both internally and externally and both were a true pleasure. Furthermore Carenado has also included various sound files for the switches and buttons in the virtual cockpit providing a 100% real cockpit environment.

Flight Dynamics:
The flight dynamics are what could be expected meaning that I have never flown this aircraft in real life, so my comments here are based on the model specs versus real life specs, my real life experience of other aircrafts behavior and the information provided by Carenado.
Taxiing the aircraft is simple and the turn of the nose wheel provides a quick response during taxiing. The engine is a turboprop engine which means that there is a small delay when spooling up/down the rpms – this effect is also included in the model and it is created very realistically.

Blasting down the runway during the take-off roll I found the TBM850 to be very steady and very easy to control, I only had to use very small rudder corrections to keep the aircraft on the centerline.

The general realism of the controls is really good. The aircraft moves smoothly and is actually quite quick on the ailerons. I tested the stall speed with two different configurations – One was with gear up and no flaps = config 1 and the other was gear down and full flaps = config 2. Setting up the config one resulted in a stall at 77 KIAS – this I also tried during a bank of 45 degrees with 15 degrees nose up. The stall still occurred at 77 KIAS which it should, but the reason for this test was also to see the spin characteristics of the TBM. When the aircraft stalled during the turn, the nose just went down, no shake and no spins. I would have assumed that the aircraft would start shaking just a bit when entering a stall, but this it did not. The TBM is built as a very stable aircraft meaning that it should not go into a spin which it also did not do, so this was perfect.

I now tested the config two with gear down and full flaps. According to Socata the TBM series was modified back in 2002 to be able to have a stall speed with this configuration to be below 61 KIAS. When I tested this I found the KIAS to be exactly 61 knots, so this is within the real life aircraft specs – Perfect.

According to the real aircraft specs the TBM should have a maximum service ceiling of 31,000’ – this I of course also tested. I flew the TBM to an altitude of 36,400’ but the last 5,000’ was very difficult and did take a lot of time. Still this is a little off the real life specs, but to be fair the real life specs are not the exact maximum altitude, but the maximum allow altitude for safe flight, so this might as well be very realistic that the TBM can reach the altitude of 36,400’.

As input Carenado has confirmed that this model has been tested by real world TBM850 pilots that approved the flight dynamics and the weight and balance of the aircraft, so all in all I find the flight dynamics to be very realistic.
Conclusion:

My overall experience of this add-on by Carenado is high. I am very impressed with the level of quality that Carenado puts into their add-ons. The model is superb with a lot of details, animations and effects. Together with this the model is also covered with high quality textures that really are very impressive and adds to a high level of realism.

The virtual cabin and virtual cockpit are of the same high quality and completely filled with specific and many details. The textures used here are also of a very high quality, the panel layout is realistic and true to the real panel. The depth is superb 3D, the finish is clean and sharp and the atmosphere created is awesome and very realistic. The cockpit features various animations and it is easy to see that Carenado takes care and has an interest in all details. There is indeed put a lot of time and effort into this add-on and the outcome is stunning.

The sound is a real TBM850 recording and therefore true to real life. It works both as standard stereo, 2.1 with sub and 7.1 surround sounds. There are furthermore added very specific sound files that covers the sounds created when using the buttons, switches, gear, flaps etc.

I had no issues in regards to frames and I really like the fact that Carenado always include a huge number of selectable views, so that the simmer can really enjoy the complete aircraft to the fullest.

I rate this TBM850 created by Carenado with 5/5-stars together with a Rays Aviation Gold Award. This is simply a stunning aircraft that I certainly will recommend fellow simmers to get. This is one of the best, single engine, small turboprop aircrafts that I have tried for FSX and I thank Carenado for contributing to the flightsim community with yet another excellent and very beautiful aircraft add-on.

Rays Aviation

⭐⭐⭐⭐⭐

Rays Aviation
Flight Simulator Review


Rays Aviation
Gold Award

Variants

TBM 700N
Last version of the TBM700 series with increased maximum cruise/climb power and one Pratt & Whitney Canada PT6A-66D turboprop engine - produced as the TBM850

TBM 850
Production name for the TBM 700N

TBM 850 Elite
An updated version of the TBM 850, priced at $3.2 million

General characteristics

- Crew: 1 or 2 pilots
- Capacity: 4 to 6 (including one passenger in the cockpit if there is no co-pilot)
- Length: 10.65m (34 ft 11 in)
- Wingspan: 12.68m (41 ft 7 in)
- Height: 4.36m (14 ft 3 in)
- Wing area: 18m² (193.7ft²)
- Empty weight: 2,132 kg (4,699 lb)
- Max. takeoff weight: 3,354 kg (7,394 lb)
- Power plant: 1 × Pratt & Whitney Canada PT6A-66D turboprop, 634 kW (850 hp)
- Max payload full fuel: 385 kg (849 lb)

Performance

- Maximum speed: 593 km/h (320 knots, 368 mph)
- Cruise speed: 467 km/h (252 kts, 290 mph)
- Range: 2,813 km (1,519 nm, 1,784 mi)
- Service ceiling: 9,450 m (31,000 ft)
- Rate of climb: 12.09 m/s (2,380 ft/min)
- Time to climb to 26,000 ft: 15 min