

# FSPilot

Flight Simulation eMagazine : Review



**Carenado™ Hawker 850XP**



## General Description

In April 1981, the British Aerospace Board sanctioned the programme to improve the BAe 125-700 series. By May 1983 the new aircraft was ready for its first test flight.

The 800 series has a number of modifications and changes over the 700, the most noticeable being the redesigned cockpit windscreen. Accompanying this are a modified rear fuselage fairing, as well as a glass cockpit and uprated (from 3,700 to 4,300 lb thrust) Garrett TFE731-5R-1H engines. British Aerospace also improved the wing by incorporating new outer wing sections. This helped to reduce drag and improve aerodynamic efficiency.

The 800 series would become a sales success. From the first BAe 125 flight in August 1961 it took nineteen years until the 500th airframe was sold. In a little over five years British Aerospace were registering the 200th sale of the 800 series.

In 1994 Beech Aircraft (which was also controlled by Raytheon) merged with Raytheon Corporate Jets to form Raytheon Aircraft. In March 2007, Raytheon Aircraft Company was sold to Hawker Beechcraft Corp, a company formed and controlled by GS Capital Partners and Onex Partners of Canada.

The current version is identified as the Hawker 850XP and was certified for operation in March 2006. The 850XP is identical to the 800XP except that it includes winglets, which have extended its operating range by 100 nautical miles (190 km). This version also incorporates upgraded avionics and a redesigned interior. The Hawker 850XP essentially fills the gap left behind by the Hawker 1000 when production of that aircraft ceased.

Two new variants were announced in October 2006 for future deliveries: The Hawker 750, in which the ventral fuel tank is replaced by an externally accessed baggage pannier, and the Hawker 900XP, using new Honeywell TFE731-50BR engines for increased range. After the bankruptcy of Hawker Beechcraft the production of Business Jets ceased.

## Specifications:

### General characteristics:

**Crew:** 2 pilots

**Capacity:** 8 passengers typical, 13 maximum

**Length:** 51 ft 2 in (15.6 m)

**Wingspan:** 54 ft 4 in (16.5 m)

**Height:** 18 ft 1 in (5.5 m)

**Empty weight:** 15,670 lb (7,108 kg)

**Max. takeoff weight:** 28,000 lb (12,701 kg)

**Powerplant:** 2 × Honeywell TFE731-5BR turbofan, 4660 lbf (20,700 N) each

### Performance:

**Never exceed speed:** Mach 0.80

**Maximum speed:** 448 kts (514 mph) 830 km/h

**Cruise speed:** 402 kts (463 mph) 745 km/h

**Stall speed:** 170 km/h ()

**Range:** 2,642 nm (4,893 km) 3,040 mi

**Service ceiling:** 41,000 ft (12,497 m)

**Rate of climb:** 9.9 m/s (1948.8 ft/min)

### Developers Description:

#### Special Features:

Original ProLine21 systems:

Primary & Multi Function Flight Displays (PFD/MFD)

Flight Guidance Panel (FGP)

Display Control Panel (DCP)

Control Display Unit (CDU)

Flight Management System (FMS)

## Appraisal - Introduction:

Updatable Navigraph database

Wing special effect s: Flexing wing effect (wingflex) and vibration wing effects on taxi

Special wind drag effect

Improved lighting systems (interior and exterior)

Multiple real aural warning sounds

Full FSX and P3D v2.0 compatible.

### Features:

ProLine21 system featuring:

Two navigation modes: VNAV and NAV

Flight plan creation based on real procedures

Weather radar screen

Situation awareness

Traffic

Set different altitudes for different waypoints (VNAV)

Navigraph database (AIRAC cycle 1310 (October 2013) included)

Load a departure procedure (SID)

Load an arrival (STAR)

Load an approach (RNAV, ILS, VOR, etc.)

HD quality textures (4096 x 4096)

3D knobs technology for better manipulation of elements in VC.

Real Auxiliary power unit (APU) simulation feature.

Original HQ digital 3D stereo sounds.

Independent lighting systems for internal lights.

Complete back cabin

Customizable panel for controlling windows transparency, instrument reflections and static elements such as wheel chocks and sights props.

Real behavior compared to the real airplane.

Real weight and balance.

Tested by real pilots.

### Included in the package:

7 HD liveries.

1 HD Blank livery.

1 complete model (including back cabin with HD textures)

1 LITE model without the back cabin for better FPS

H850XP Emergency Procedures PDF.

H850XP Normal Procedures PDF.

H850XP Performance Tables PDF.

H850XP Reference PDF.

Carenado ProLine21 User Manual PDF

Recommended Settings PDF

### Technical Requirements:

Windows XP with SP3 installed, Vista or 7 (32 or 64 bits).

Microsoft Flight Simulator FSX with SP1 and SP2 (or Acceleration Pack) installed or Lockheed Martin - Prepar3D Flight Simulator v1.4 or v2.0.

Pentium V/3GHz or similar

Minimum 2GB RAM (Recommended 4GB RAM)

512MB graphics card.

980MB available hard disk space.



Source : [http://en.wikipedia.org/wiki/Hawker\\_800\\_under\\_the\\_Wikipedia](http://en.wikipedia.org/wiki/Hawker_800_under_the_Wikipedia) :

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**Appraisal - Exterior Model :**

The modelling of the exterior of the aircraft is to Carenado's usual very high standard with excellent detailing and shaping. There are no visible mesh errors to be seen and almost no bleed.

The form of the fuselage especially the nose and cockpit areas are very nicely implemented. The window cut-outs etc. have smooth edges with great screw head detailing around the cockpit windshield's stainless steel framing. All of the cockpit / cabin windows exhibit a very nice color tint with good reflective properties. The main cabin door also has a smooth cut-out. The main cabin door has detailed structural edges. It exhibits slight bleed when closed and viewed at night. The main cabin door hinges downward with its latch handle / hand rails being animated. The main cabin door has detailed footsteps and hand rails.

Other modelled details on the fuselage are antennas, pitot tubes and a tail position light. Various other ports, access panels, and the main cabin emergency exit door / window are detailed in the very highly detailed texture sets.

Wings, horizontal stabs, winglets, vertical fin and the associated flying controls are well modelled with good shaping / detailing where necessary, which includes static wicks which balance when the engines are running. The wing flex also gives a subtle balance when the engines are running and flex during take-off and landing. Animation of all flying controls is smooth and linear.

The wing tip strobes / navigation / recognition lights are very nicely modelled, having very good light sources which have a great bloom effect. The aircraft also sports the more dated style rotating beacon red light on top of the fin which is nicely animated with a very good light effect.

The Engine cowlings / intakes etc. are as equally well modelled as the rest of the exterior with excellent detailed thrust reversers. The first stage compressors of the engines are animated and can be seen through the main intake.

The main landing gear units are nicely modelled / detailed. Animation of the gear is sequential and smooth with no apparent interference with local structures. When closed the main gear doors show no signs of bleed. Gear bay detail is simple but has great textures and a little structural detailing. Main landing lights are mounted on the wing leading edges and like the wingtip lights have good light source / bloom.

Exterior texture sets are very well defined HD textures with very nice detailing and alignment. They are both bump and specular mapped giving good effects to panels, rivet lines, fixings etc. The package (V1.1) comes with 7 color schemes plus an all white example.

**Appraisal - Interior Model:**

The Virtual Cockpit of the model is very nicely modelled / textured with very good detailing on the instrument panel, overhead panel, console, CB's / switch panels, and the throttle / flap selector control quadrant.

The displays on the panel are very easy to read with clear fonts on the PFD / MFD's and crisp dials on the AOA indicators / brake pressure gauge which have good depth between the bezel glass and dial plates.



*The nose section, cockpit windshield area, radome and lights, main cabin door, pitot blanks, chocks etc. are all very well defined in this package.*



*The main flaps are very nicely detailed with great modelling especially the curved section near the wing root. Animation is smooth with no issues.*



*The thrust reversers are very well detailed and modelled, with a smooth animation and very good co-ordinated linking of the moving parts.*







*This front view shows off the great smooth curvatures that Carenado always seems to achieve in their modelling. The bump mapping of the panel lines, fixings etc. also adds to the great realism of the modelling.*



*Showing the bottom of the wings, main landing gear and flap area was a must do as the level of detailing through structures as well as the very impressive HD texture sets shows the lengths that this developer goes to in order to achieve the final product. The subtle weathering is also typical of these very well kept / maintained business jets.*



*If I didn't know better I would think this was a real photo. The model is very authentic in its appearance in every detail.*



*The detailing of the vertical fin / strake / horizontal stabilizers is very well implemented both in their modelling / and detailing through the texture sets. Very nice work indeed.*



*This view shows off the equally good detailing of the lower section of the rear of the aircraft, engine pylons / lower engine cowlings. Another great piece of detailing are the flap motor shrouds.*



*This view shows off the great detailing of the rear section of the engine and reverser segments.*







The Proline 21 displays are two separate units on each side of the panel and consist of an PFD & MFD both also having very crisp / clear character sets and smooth graphical movement. Engine instrumentation is displayed on the MFD.

The Comm / NAV / ADF / XPDR's are controlled via the two very well defined centrally located FMS display heads which are fully functional and includes an October 2013 Navigraph database which has all the information you need to perform a flight. If desired this can be updated by subscribing to the Navigraph update service.

Other Annunciator Panels, auxiliary switch panels etc. located in and around the main panel are equally as well modelled. The PFD / MFD transfer switches located below the PFD/MFD's have no functionality in the package.

The center console rudder pedals, control quadrants, trim wheels etc. are again very well modelled and textured.

The glareshield / eyebrow panels are very well detailed and include instrument light dimmers, Master warn lts, PFD control panels and central Autopilot control panel. All switches are very well defined with their legends being easily readable.

The virtual cockpit interior trim, crew seats, side panelling etc. is again nicely modelled / textured with the crew seats having sheep skin cushions and the full four point safety harnesses. None of the cockpit quarter windows open, but there are hingeable (*hot spot*) anti-glare panels on the rear side cockpit windows.

Also through the drop down 'Shift '6' you can select cockpit windshield tint and instrument reflections, nice feature. Cockpit door opens / closes via a hotspot.

The passenger cabin is decked out in full leather / high class veneer and modelled / textured to Carenado's very high standards. There are two fold out tables via hot spots and the window blinds are also animated by hot spots. Night lighting in both the cockpit and cabin gives a very realistic night environment, great work.

#### Appraisal - Flying the Hawker 850XP:

The aircraft is relatively simple to operate in its basic functions with simple procedures for engine start etc. Procedures are detailed in various pdf files supplied along with a guide to the PFD / MFD & FMS units.

Engine spin-up time is quite realistic, though a little faster than the real aircraft with good spool up engine sounds in the exterior environment though in the cockpit the sound set for the engine is rather weak. Taxying the aircraft is simple at slow speeds with turns easily maintained. During take-off acceleration is quite retarded on the application of full power with engine sounds being realistic during take-off. The aircraft climbs very well and is easily trimmed. Handling of the aircraft is again smooth with good reaction rates to control column inputs. The aircraft handles well in all flight regimes, being a real pleasure to fly. The aircraft's stall is nicely reproduced with a good stalling effect though if you continue to hold the stick back it tends to porpoise during the stall warning.

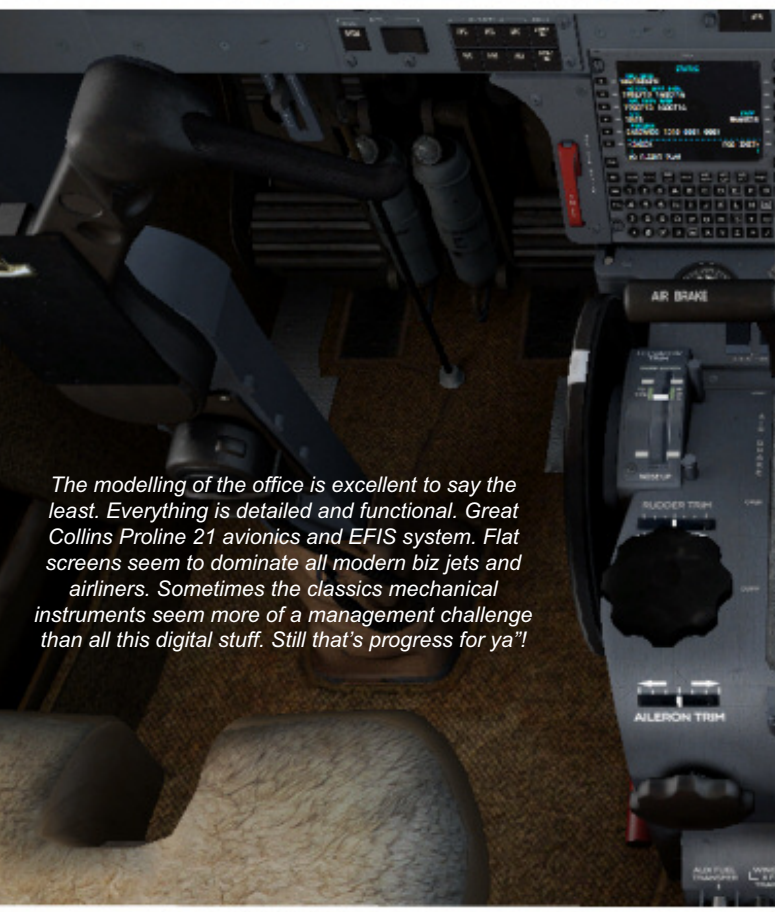
Handling on approach was good and even at slow approach speeds the aircraft is stable and doesn't over react to control inputs. Braking action was very positive on landing assisted by the thrust reversers.

The aircraft systems all appear to operate as intended including the Autopilot and FMS which were checked on various Nav tracks and using the APR function. The aircraft flew the ball as you would expect down to decision height as long as the approach was captured at recommended distances. We did not check short or steep angle captures. Overall the aircraft flies very nicely indeed and performs well. Though the sound set is a little weak in the cockpit.

#### Appraisal - Our Findings:

Overall Carenado's rendition of the Hawker 850XP is to a very high standard of quality, both inside and outside as we have come to expect from this developer. If there is any gripe regarding this product then its probably the sound set which needs to be a little louder in the cockpit as mentioned, though its not that big an issue unless of course you are a perfectionist at all levels. The lack of acceleration initially on application of full throttle during take-off is perhaps another small issue. Overall we give this product our gold seal for quality and value for money. Visit the Carenado site for product purchase. [www.carenado.com](http://www.carenado.com)





*The modelling of the office is excellent to say the least. Everything is detailed and functional. Great Collins Proline 21 avionics and EFIS system. Flat screens seem to dominate all modern biz jets and airliners. Sometimes the classics mechanical instruments seem more of a management challenge than all this digital stuff. Still that's progress for ya!"*











*The main cabin is also very chic, with high end leather seating and very expensive veneer furnishing. Just like a Bentley!*

