

LN FLIGHT MAGAZINE

REVIEW OF



Carenado

BEYOND SIMULATION

Hawker 850XP HD SERIES

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Intruduction:

The Hawker 850XP was mainly built By Hawker Beechcraft that bought the rights to manufacture the Hawker planes in March 2007. It was around 1 year after the Hawker 850XP was certified for operation. But sadly is no longer in production, as it was ended by 2013 as the Hawker Beechcraft closed the production after the company had tried to sell the rights but it had failed.

But then it´s good that we got a brand new aircraft by Carenado, of the Hawker 850XP then it can continue in the virtual sky as well. The 850XP model should be close to the 800 by some changes in avionic and interior but the biggest difference was that they mounted the winglets by default and that alone increased the range by 100NM for the 850XP.

GENERAL CHARACTERISTICS:

Crew:	2 pilots
Capacity:	8-13 passengers
Length:	51 ft (15.6 m)
Wingspan:	54 ft (16.55 m)*
Height:	17 ft (5.31 m)*
Empty weight:	15,670 lb (7,108 kg)
Max. weight:	28,000 lb (12,701 kg)
Powerplant:	2 × Honeywell TFE731-5BR turbofan, 4660lb each.

PERFORMANCE:

Never exceed speed:	Mach 0.80
Maximum speed:	448 kts 830 km/h
Cruise speed:	402 kts 745 km/h
Stall speed:	170 km/h ()
Range:	2,642 nm
Service ceiling(max):	41,000 ft
Rate of climb:	1948.8 ft/min

Source: http://en.wikipedia.org/wiki/Hawker_800.

* means edit from source website.

Carenado Highlights:

This is the first aircraft that rolls out of the hangar from carenado, which has fully Updatable Navigraph database, out of the box. As Carenado slowly introduced universal FMS, I mean it was by the release of the B1900D, that Carenado for the first time introduced a basic FMS that still used the flight simulator's own navigation database.

We previously saw a release of an extension pack for the S550 citation II a few months after the S550 was released. But for the first time it´s a complete implementation of the Navigraph support by the aircraft.

Over the years the demand has increased for getting the option to get updateable Navigation databases, to get some more accurate data, which many buy for some of their other aircrafts. To complete the story it seems like Carenado has moved from general aviation planes only, to more commercial/business jet´s to try to go in to another world, where the real planes have FMS to reach another range of costumers and slowly make the changes by some of the releases.

But the story does not stop there as it´s not only the Navigation database that has changed, but also the implementation of more autopilot custom made functions in order to achieve the option to go away from default flight simulator autopilot, as some would have noticed, in their previously released planes we could use Hardware Autopilots right out of the box, but since they implement more stuff like V-nav and flight level changes, and so on they move over to more complex systems out of the default world of FSX/P3D coding. When we have that in mind it would be nice to where it bring them over time, as it seems like they slowly build something solid, or maybe a test of how far it can bring them.

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DOCUMENTATION:

The Documentation is 7 PDF files that contains around 100 pages total, some are manual´s and some performance data, taken directly as scanned copy´s, and a bit extra. But the documentation in some areas is a bit limited about how things are working, and why it might not be quite straight forward if you haven´t been flying such a jet before, even for a experienced user it, could be difficult to learn it without a few test flights. However the most important document to read is the Proline 21 User Manual as it explains the basic of how the FMS and displays are work working in combination to the autopilot as well. Some of the content could be a bit better explained by limitations and how displays fully works in combination.

The Proline 21 User Manual document gives you an example of a route and how to insert it to the FMS so if you´re new to that part they show you how easy it is. I always say easier than the default GPS in use, when you learn it, as you have a key pad instead of most GPS that provide rotation buttons to navigate through the menus and letters, I know Garmin today provide touch GPS that makes that part easier. But that´s a side story.

DEFAULT FLIGHTPLAN:

If you for some reason are still thinking about, if the plane might work by using default flight plans imported to the flight simulator, I would say there is no note about it in the manual. I have tryeid it for you and the answer is both Yes and No because the plane seems to read the flight plan if there is no active flight plan entered to the FMS. There is then the limitation to it, and it´s that the displays would not show you the route! and then the interest might get low, but might indicate that it was not intended from the start to implement a FMS that is based on

Navigraph support. As you can find GPS1 as nav source of the PFD, can´t say if the real plane have that option aswell since I have never had a chance to get in to a real Hawker 850XP.

FMS / FLIGHT PLANNING:

A missing link in my personal opinion is that there is no way the end user can import company routes, whenever it´s a route that´s flown often and saved from inside the simulator or by external source. Because there is no documentation that indicate such a feature is there. But I guess some would like to use external programs to build a flight plan and import it to the FMS.

But we have to be fair and take one step at a time, remember that Rome was not built in a year. They implemented other things like Navigraph support and that alone was a good step and also was quite time demanding, but there is always place for improvement.

The picture below has highlighted buttons that is not operational at the given page shown just to illustrate some of the links in the FMS is not fully completed.



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It's important to say it's not because the pages does not exist in the FMS as they do, but you would expect by pressing those buttons beside the text at the given page shown, also would move you to that page it indicate, but does not always do.

The reason I have highlighted the EXEC button, is that we normally have to confirm when we are done and want the given input in to the active flight plan, as right now it's moved to the Legs page immediately, but is a small thing that doesn't makes a huge difference.

So far I found 2 things I would mention by the FMS, first thing is that at some airports that does not have SID, you can't select departure runway like you normally would do. The second thing is that sometimes when I load a star, I get 2 or more waypoints By the same name, so take close attention as sometimes it's the same other times it's different locations but by the same name, so don't just say remove as they might be different locations, but then we are back to Navi-graph, and not the plane.

Note if you have a short route by only 1 Waypoint and then a star you would notice that the LEGS page does not show that 1 waypoint before the star, in that case select page 2 of the FPLN page and type it as you normally would do or type it directly by the LEGS page insted. Only that way it would be loaded (a very small limitation).

FMS VNAV:

VNAV has limited functionality as its stated by the store page, it can Set different altitudes for different waypoints, and that's basically what it does. So don't expect VNAV like seen in a Boeing that has calculation of both top of Climb and

top of decent, as it does not have a so called specific VNAV page in the FMS. But how does that then work? You might ask yourself. Well after you have entered the flight plan to the FMS, it got the altitude limitations and such from sids and stars, where they are provided in the Nav data, the rest of your route is set by default to FL280 or 28000FT and have to be manually edited, there is sadly no short cuts there to set the max altitude, and let the FMS calculated the rest of the altitudes. That might make it less user friendly, as you really have to know what altitude the plane can reach before you should decent again, and by how many feet you should climb or decent for each waypoint, Because a wrong number can be too steep and the plane would either stall or over speed.

There are other problems it might cause as well, because depending on how long or short the route is and how far there are between waypoints. The plane might not get to the best altitude for that flight if the way points are too far from each other, could also be that during decent it start a 500 ft decent as the plane only knows that it passed point A at FL280 and by point B it should be at FL260 30NM away as the FMS tell it to so the plane would try catch that even you might want to keep FL280 a bit longer and make a steeper decent, that would be more realistic.

AUTOPILOT FLC AND VNAV:

The autopilot is like any other autopilot but since the aircraft has some more advanced modes that is not found in default aircrafts, I would now go thru those modes and talk a bit about some problems that I got in to, when I tested it.

To complete the VNAV we start of there as when I for the first time push the

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VNAV button the autopilot turn off. and wondered, because for an unknown reason Carenado made the VNAV button turn on the autopilot at the same time, so as I already turned on the autopilot like you normally do, it switched off the autopilot again. It was not the way I was expecting the autopilot to do.

FLC or better known as Flight Level Change, it might be handy but seems a bit weak (specialy when weather is turned on). Because I have tried to set it quite some times by now, and it had a hard time maintaining the speed you set. (very slow pitch/Vs changes) It´s not because the speed bug goes to 000 like it does when VNAV is in use.

AUTOPILOT TURN HALF BANK:

A nice touch by Carenado that many other just don´t make is the half bank option, it´s nice to see it has been implemented and is working and not only a INOP button. It actually limit the bank when turned on, guess the passengers would enjoy that when they get a meal.

INCLUDED LIVERIES:

This aircraft has 6 painted liveries and a completely white one, all in Fully HD textures like they always do by the latest planes. take a look at the nice paint job.



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Exterior High lights:



A nice detail, is the red beacons as they split the beacon and let it light up the half part of the beacon and gave it a effect like it should look like rotating I guess



Nice detail of the wings and thrust reversers in action, the lower speed brakes can't be seen for the flaps, but is on this plane, a bit special



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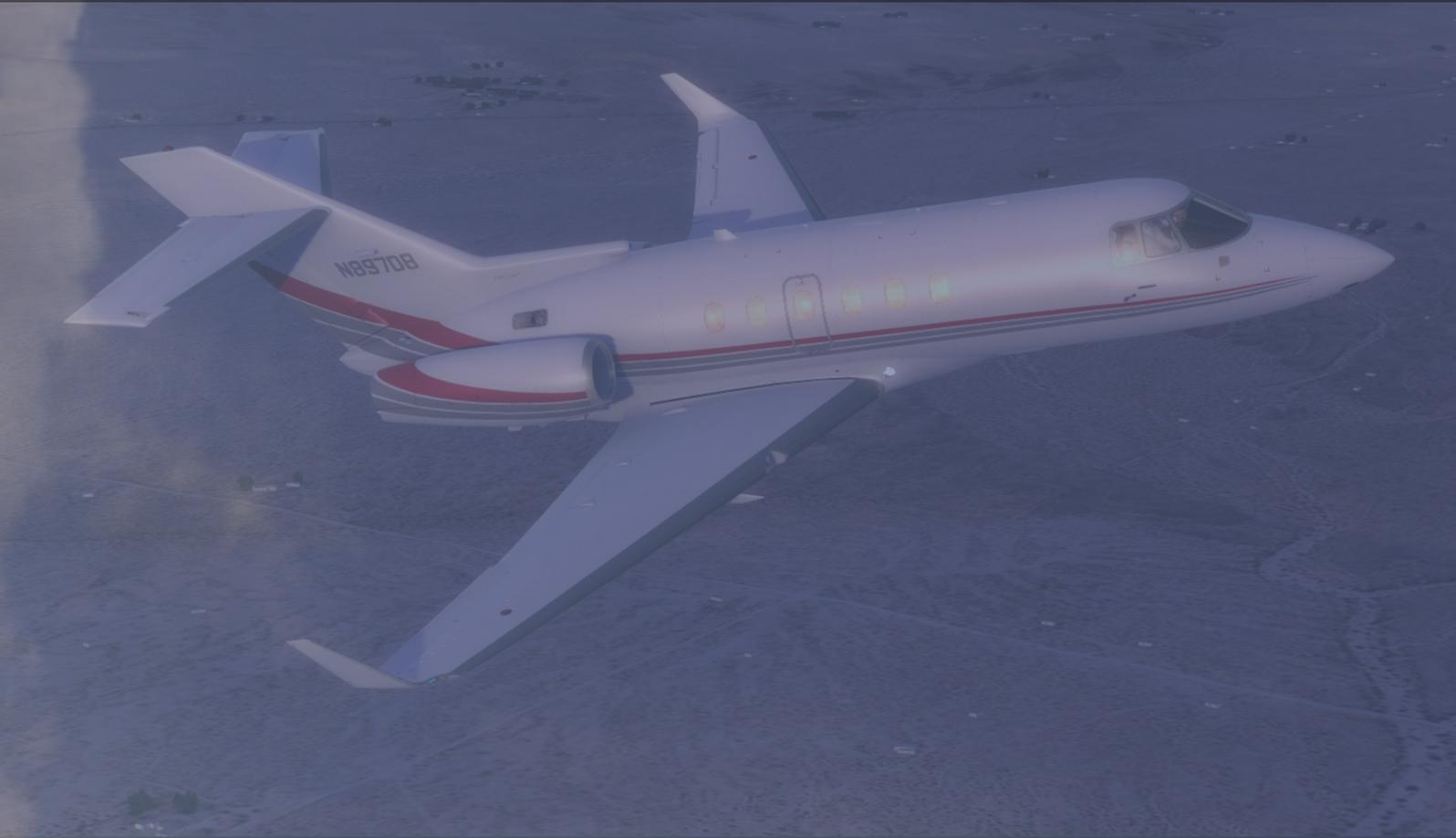
Nice Shine effect by the Airframe, plus the pulse lights. it looks so nice (blink by those lights at the wings and those in front of pilots)



Soon we only waiting for the passengers after we remove the removebefore flight Items



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Carenado really knows how to get those planes shiny, and look real like a real plane from inside out. Sadly I can't really show there latest effect by the wings of the exterior as they have implemented the Flexing wing effect you might not notice

it much, but it would be good for such small plane if the move like a heavier plane. A hint is to try adjust the camera from the captain seat and taxi then you might notice it moves a bit, that might be easier to spot than in the air.



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Interior:



Carenado implemented that some buttons has different brightness adjustments for some of the rotting buttons, so it would require a lot of pictures to show all the adjustments a really nice touch, that the user now is able to adjust some of the interior lights to what you like. But note not all the buttons have that option.

As a side note to the left in the picture above you find the APU panel, so if you wonder where it is that´s the spot.

Note the plane stil has no Autothrottle, if you did not read the first part, as it was not standard but an upgrade option, just like when you buy a new car.



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A few tip's: To use of the rotation button under the NAV/BRG is to move the mouse around that button as I see a problem by the click spots of this button and found some that claim it does not work to select all the functions of the PFD and MFD, but I can say all can be selected but I really had to move the mouse all around the button or right at the top of it to work. and as final note use the NAV/BRG button when you want to select as the option on the PFD seems to be harder to get switch, it also sometimes give you the text GPS1 if you use the PFD button. that's why I advise you to use the other way and it gives you more options as well. But dokumentation seems a bit limited in this part. so it ends in confusion as I can see it was build for the original gps only I guess and then they decided to go the other way they did. even it shows gps it follow FMS but distance and FMS text is not shown, and why it's best to select FMS.

Carenado just cover every corner, I havent found any problems/missing texture spots or any bad areas. But it's also what Carenado are best known for High Quality interior texturing.



Navigraph database:

Well I have mentioned it a bit before, but here I highlighted the issue as what should I select? can't see a difference by the name so what is the difference, compared to the airport chart. This is not the plane by Carenado it's the data the plane get's from the Navigraph database, as I have checked the case before I mention it..



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CABIN:

I have seen some that mean the cabin is not up to the normal Carenado standard, and well it could be right but I still doesn't see a problem, it still looks nice and I personally like it that way, as it's not that bad but a good compromise by performance as the aircraft has better FPS than some of these other releases. The only thing that irritates me a bit is the cabin spots are locked so you can't move around to a spot you like.



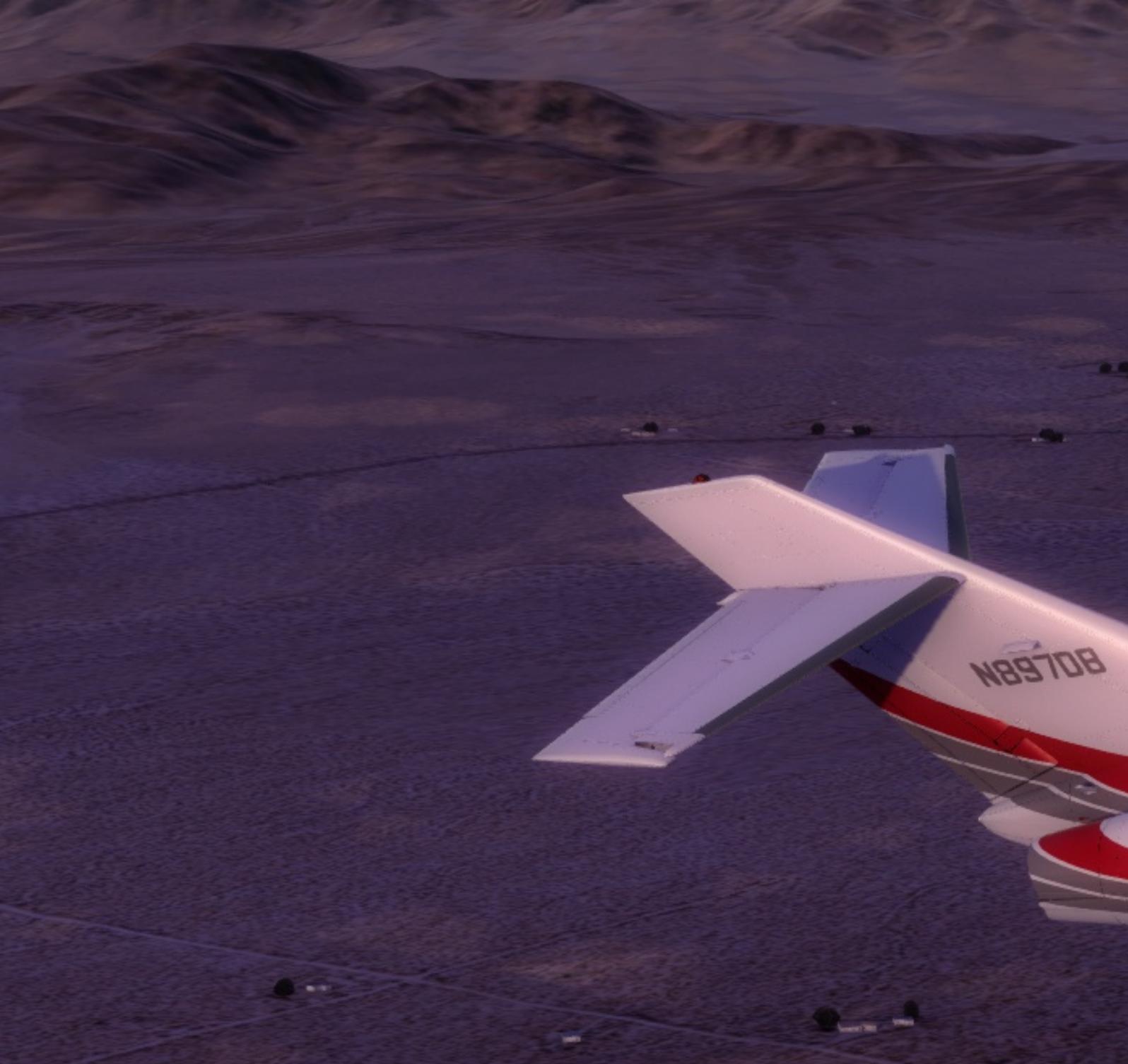
Conclusion:

Well even I had some headache trying to get everything working right out of the box, even I am a quite experienced simulator, I think they are moving slowly in the right direction, by every release and expanding the depth of the aircrafts. But the weak sides are the manual that seems a bit limited and you have to explore a bit, by yourself to get the best out of every situation. Also the Flight level Change was a problem, either it's slow in the real thing or I did something wrong but the manual does not say much about how to use it correctly, but I have used FLC in other planes by perfection. the rotation button mentioned under NAV/BRG would be nice if fixed.

It would be nice to see full VNAV in the next plane, if they select to go that way again, to get over manual calculation. But it's not all negative even it might seem so. They really have given this plane a good wind drag effect, and the engines you have to be ahead of as small adjustments can make huge speed changes if the pilot is not careful. It's a bit getting use to that response time. At the ground you find those engines need quite some thrust to move the plane.

I really like the FPS by this plane I haven't got any problems by it, so far fluid and that's really nice and what we all have been so excited about to find out. But as always the visual is stunning as always.

A big thanks to Carenado for sponsoring this review, by sending a copy. as well as to Lars, 29Palms Scenery Design, to show Twentynine Palms Airport by a copy.



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