



Carenado

Due to its exceptional short-field performance, the Do228 is extremely popular with island hoppers and other austere airport operators

DO228 100 HD SERIES

The aircraft that can go anywhere!

Anyone who knows me will attest to my fascination with utility aircraft, particularly those that operate in extreme environments such as bush and STOL (Short Take-off and Landing) capable aircraft. When news reached me that Carenado was modelling a Do228, I was enthusiastic about the prospect of wringing it out. I first learned of the capabilities of the Do228 while researching a 'Challenging Airports' article (PC Pilot no.75) that featured the gateway to Mt Everest: Lukla airport in Nepal. I was already aware that the Twin Otter was a regular visitor to the extremely challenging airport at Lukla but when I saw the other odd aircraft with the tapered wings and wide stance, I was intrigued. Indeed, the Do228 is a workhorse

at Lukla due to its exceptional low speed handling and high altitude performance. Nor does it hurt that it is an exceptionally reliable aircraft. Thankfully, Carenado developers must also be huge fans of the Do228, because they

did a fantastic job capturing the character of the aircraft with their offering for FSX and Prepar3D.

The package

The Carenado Do228 100 HD SERIES is one of the nicest

products that Carenado has developed in this reviewer's opinion. This is not just because the Do228 is a quirky and perhaps unlikely aircraft to model, but because Carenado seems to have put an exceptional amount of work into providing customers with an authentic-feeling experience. The option to allow users that own the Flight1 GTN 750 or the Reality XP GNS530 to swap out the Carenado instruments is a nice perk for those who own those add-ons. For those who don't, the Carenado Garmin GNS530 is quite capable on its own, as is the lightly modelled Carenado Universal FMS. Six HD liveries provide a good selection of possible operators but as is usually the case with Carenado aircraft, the user community



In typical high-quality Carenado fashion, the Do228 features excellent configuration menus that allow for the placement of ground service elements and door controls

The Do228 is popular with many government, military and cargo operators due to the boxy cargo compartment, excellent load-hauling ability and superb short-field performance



ABOVE: A very nice pop-up menu allows you to set a cold and dark cockpit or ready for taxi aircraft state

BELOW: The cabin is nicely modelled and pairs up nicely with the excellent preset passenger viewpoints



is rapidly churning out paint schemes. Documentation, the Achilles heel of Carenado, is of typical poor quality, with extremely brief PDF files spread over multiple files (nine PDFs and three text files). To be honest, I'd rather Carenado bundled all of the PDFs together in one file so that I could get my fill of awfulness in one fell swoop rather than having nine tabs open. While the checklists will get you through all phases of flight, there are no systems descriptions for those that are curious as to exactly how a Do228 works, so you'll have to search elsewhere to answer those burning questions. The performance tables span just six pages and for a utility aircraft that lives on the margins of take-off and landing data, the omission

of more useful information is frustrating. The continued lack of enthusiasm by Carenado for improving its documentation continues to be a sore point for their otherwise brilliant work.

Panel

The default cockpit layout is gorgeous. The artists were obviously shooting for a well used and worn looking Do228 cockpit in a nod towards its utility roots and they succeeded wildly. I love the scratches, scuffs, soiled carpet and chipped paint. Gauge and text readability is excellent throughout all zoom levels and the fine detailing is fantastic. The GNS530, Universal FMS and Universal Multi-Function Display combine to give modern capabilities to what looks to be



ABOVE: The aircraft modelled by Carenado is a war-torn workhorse with battle scars and wear in the cockpit implying many years of service

BELOW: Carenado has included many custom internal and external viewpoints that are perfectly positioned for dramatic effect



a borderline freight-dog aircraft. There is a pleasant juxtaposition to watching the autopilot fly a beautiful DME arc to an inbound approach course using the advanced avionics, while you manage the aircraft with steam gauges and instrumentation more representative of an earlier era. The fact that all three of the advanced avionics boxes (GNS/FMS/MFD), plus the autopilot and flight director panel and altitude preselector can be popped up with 2D windows, is a very nice feature that is deeply appreciated by this reviewer. Cockpit lighting is perfect with the appropriate amount of variables to set the mood in the cockpit. They honestly could not have done a better job with the cockpit or the cabin.

The TAWS (Terrain Awareness and Warning System) option on the Universal MFD is a very nice feature since most of us will be taking the Do228 into areas where we might catch a glimpse of a mountain goat standing in a cloud (tip of the hat to Gary Larson!). The Universal FMS is only lightly modelled, but considering we might expect an even more austere cockpit in a well weathered Do228, I'll take the option of some functionality over none. The fuel summary page is useful in showing remaining fuel, weights, fuel flow, range and endurance among other variables. The Flight Plan (FPL) page allows you to enter and modify flight plans, select approaches and provides a summary of the flight plan. Unfortunately, SIDS and STARS are not supported. >>>

The package includes six gorgeous HD liveries and one HD blank livery - and as usual, this Carenado aircraft is very popular with community livery creators



ABOVE: Shoehorning the Do228 into short strips is a lot of fun, made easier by the fantastic low-speed handling of the aircraft

BELOW: The cockpit is beautifully modelled with convenient pop-up 2D window capability for the Universal MFD, FMS and Garmin GNS530



ABOVE: The panel and gauges are of typical Carenado quality, sharpness and fidelity

BELOW: The Do228 features a nice, lightly modelled universal FMS that provides enough functionality to feel authentic. Coupled with the Garmin GNS530, there is little excuse for getting lost



External model

In line with the cockpit graphics, the external model continues to please the eye with such graceful lines that you'll be hard pressed to jump back in the cockpit to keep the aircraft out of the trees. In a successful ploy to show off their exceptional 3D modelling, Carenado gives us many custom viewpoints that really add drama to the whole affair. The wing views, nose on views and side views frame the aircraft perfectly against what is typically stunning scenic areas to which these type of aircraft fly. There is something visually appealing to the Do228 that is tough to put a finger on - it looks like a

hybrid between the Mitsubishi MU-2 and a Shorts 360, with a Dornier 328 belly and wing. And while a bit boxy looking, the Do228 can scoot along at around 200 knots, yet plop down at 75 knots into the tightest of tight airfields. Carenado includes its customary menu systems that allow for placing chocks, pitot covers, inlet covers and opening and closing of doors. Another nice feature is the menu that allows you to select a cold and dark state or ready for taxi on the fly.

Flight model

Bringing the Do228 to life is a straightforward process with just

a few steps to get the engines up and running. A quick note on the sound effects - they are exceptional. As both a former line service tech and a current pilot that has had to walk in the vicinity of the Garrett TPE331 turboprop, I can tell you that all of the stories of the piercing scream of those engines that threaten to rattle your dental work loose is spot on. Carenado did a good job of capturing the shrill tone of the engines but it will be up to you to provide the volume! Once the engines are up and running at their ridiculously high idle speed, you'll find the aircraft is a pleasure to

taxi. Once again, I'll use the word exceptional because so many FSX/P3D developers get the ground taxiing "feel" wrong (I know, X-Plane makes it easier!). The Do228 just feels right with regards to rolling friction, nosewheel tracking and a slight swaying of the fuselage while making turns.

Take-off distance at mid-weights (9,500lb), sea-level, are around 900ft while take-off distance at maximum gross weight (13,250lb) came in at a mere 1,200ft - a stunningly short distance that is an indicator of why this utility aircraft is so popular for STOL operations. Once airborne, the

With the throttles at idle and flaps extended, the Do228 can point its nose down without increasing airspeed - a useful characteristic when approaching over obstacles or when one wants to stay high to provide for bailout (go-around) opportunities on the approach



The cockpit lighting is nicely modelled, providing a warm and comfortable environment to ply your trade

Do228 handling is sublime. Whether hand flying or letting the quite capable autopilot and FMS/GNS manage the aircraft, the Do228 is highly responsive to all your wishes. Carenado's modelling of the single shaft Garrett engines seems to be very good, allowing for idle power descents at blue line (105 knots) with about 13° of nosedown pitch without any speed increase. This ability to point your nose down provides exceptional visibility, allows for very steep approaches over obstacles and allows operators to

maintain height above terrain for the possibility of a go-around until late in the landing phase. Landing distance at maximum landing weight (12,500lb) came in at a mere 825ft in absolute ground roll. While the performance seems to be quite a bit better than most Do228 reference material, I feel the spirit of the performance is adequate.

Conclusion

With this aircraft, virtually no airfield will be off limits. Lukla, Courchevel, Saba or even many



The autopilot functionality is very good, with nice tracking, course capturing and the convenient inclusion of 2D pop-up flight director, autopilot and altitude preselect panels

Papua New Guinea airfields all fall within the realm of possibility with the performance of the Do228. Carenado really captured the spirit of the aircraft in both looks and performance, while giving us additional capabilities with its Universal FMS, MFD and GNS530. The ability to retrofit the panel with the Flight1 GTN750 or Reality XP GNS530 could make this one of the most full-featured aircraft in your hangar. At the typical Carenado price point of \$39.95 (£32 approx), I think it is unrealistic to expect ultra deep

FMS and GNS530 modelling. Sure, a 'pro' version of any aircraft, with a premium price point to match would be nice, but the effectiveness with which Carenado has brought the Do228 flight experience to us seems like good value for the money. I'd go so far as to say this has been one of Carenado's best aircraft to date.

By Chris Frishmuth ■



The Do228 is one of the few aircraft for FSX/P3D that feature what I consider to be exceptional ground handling characteristics. The rolling friction, nosewheel tracking and the sway of the aircraft while turning are fantastic

DETAILS**90**

Publisher & Developer: Carenado
Price: \$39.95 (£32 approx)
Website: www.carenado.com

At a glance: A standout 3D model and cockpit. Well represented flight model. Lightly modelled advanced avionics that add value. Poor documentation. The Do228 STOL experience is very well translated.

System requirements: Windows XP with SP3 installed, Vista or 7 (32- or 64-bit).
Microsoft Flight Simulator FSX with SP1 and SP2 (or Acceleration Pack) installed or Lockheed Martin - Prepar3D v2.5 or v3.0 or FSX: Steam Edition.
i3 processor/3GHz or similar
Minimum 2GB RAM (Recommended 4GB RAM)
512MB graphics card.
1.2GB available hard disk space
Internet connection is required for installing this product.