

## Precision Aircraft Solutions has announced its plans to develop a passenger-to-freighter conversion for the A321-200.

# First details of new A321 P-to-F modification

In October 2017, Vallair Solutions was announced as the launch customer for Precision Conversion's A321PCF (passenger-freighter conversion) programme, offering a payload capacity of up to 27 metric tonnes for customers. According to Flight Global FleetsAnalyzer, there are almost 1,450 passenger-configured A321-200 aircraft in operation today.

### Prototype

The launch, conformant aircraft for Precision's programme is MSN891; an A321-200 aircraft configured to weight variant (WV) WV000, with CFM56-5B engines installed. There are 12 WV categories for the A321-200ceo (current engine option). Post modification to freighter the aircraft will be designated the A321-200PCF.

Weight specifications, for the incoming passenger aircraft, specific to WV000: maximum ramp weight (MRW) of 89,400kg; maximum take-off weight (MTOW) of 89,000kg; and a maximum zero fuel weight (MZFW) of 71,500kg about 157,629lbs).

Precision Aircraft Solutions estimates operating empty weight (OEW) for a WV000 A321-200s post conversion to be 44,600kg, about 98,325lbs. Use of the original equipment manufacturer's (OEM's) MZFW was standard for Precision with its 757 passenger-to-freighter modification. The 757-200PCF, the aircraft post-modification, then had an optional increase of MZFW by 12,000lbs, increasing gross structural payload by the same amount.

These initial weights for the A321-200PCF will provide a gross structural payload of 26,900kg or 59,304lbs. This may be subject to an increase with a rise in MZFW specification.

The OEM requires that the A321-200 operate with a minimum in-flight weight of 47,500kg, 2,900kg more than its OEW. This difference will easily be met by the weight of fuel and freight payload on the aircraft.

Zachary Young, sales manager at

Precision Aircraft Solutions, explains that WV000 represents a common WV for the -200 hence its suitability as a prototype. "The weight capabilities for this category are within the middle to upper range of weight variants for the A321-200," he says. "As we begin to see customers requiring higher weight capabilities we will look to incorporate higher weight variants into the programme, although WV000 is the ideal launch platform for our first conversion," adds Young. "In time, we anticipate that WVs 001, 002, 003 and 011 will also be popular categories."

### Configurations

The A321PCF offered by Precision will be certified to carry up to 14 88-inch X 125-inch positions in the main deck cargo compartment (MDCC) upon entry into service (EIS). This is the same as offered by the EFV conversion.

Conformant maindeck containers include the AAA, AAC, AAY or PAG cargo unit load devices (ULD) available. Each has a unit volume of 440 cubic feet and so therefore a total capacity of almost 6,100 cubic feet is provided on the main deck. These have

an associated total tare weight of 5,936lbs.

There are three different configurations available for the lower deck cargo compartment (LDCC) of the A321-200 PCF. Either it can be bulk loaded (non-containerised), containerised, or have a Telair sliding carpet installed.

If selected, the lower deck will be able to carry 10 LD3-45W containers, each of which has a unit volume of 127 cubic feet and therefore a total volume on the lower deck of almost 1,300 cubic feet. These have an associated tare weight of 1,810lbs.

Alternatively, if configured for bulk cargo the lower deck provides 1,620 cubic feet of volume.

In all, total available volumes range from 7,904 (bulk-loaded LDCC) to 7,584 cubic feet (containerised LDCC). Total tare weight for ULDs on both decks is 7,746lbs.

The aircraft will thus have a net structural payload of 5,1558lbs, or 23,382kg. Resulting maximum packing density will be 6.8lbs or 6.5lbs per cubic foot, depending on which loading system is used on the lower deck.

The A321-PCF will be available across both CFM56 and V2500 powered aircraft. Precision is expecting FAA supplemental type certification (STC) and approvals by close of 2019, with European Aviation Safety Agency (EASA) and Civil Aviation Administration of China (CAAC) validations to follow soon after.

Cost of conversion unclear, but the rate for A320 freighter conversion is in the region of \$5 million, and about \$6 million for A321 modification. **AC**

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### NEW WEIGHT SPECIFICATIONS FOR A321-200PCF

Aircraft Type	A321-200PCF
Airbus specification variant	WV 000
MTOW - kg/lbs	89,000/196,210
MLW - kg/lbs	75,500/166,448
MZFW - kg/lbs	71,500/157,629
Estimated OEW - kg/lbs	44,600/98,325
Gross structural payload	26,900/59,304
Main & lower deck ULD tare weight	7,746
Main & lower deck ULD volume - cu ft	7,584/7,904
Net structural payload - kg/lbs	23,382/51,558
Maximum packing density -kg/cu ft or lbs/cu ft	6.8/6.5lbs per cu ft