

Freight developments

While the 707 and DC-8 could soon experience a renaissance and the A300 has had a successful entry to the freight market, it appears a tough time could be looming for the 727.

727 cargo door AD to spring a nasty surprise

Warnings are coming from the industry that freight operators should not be complacent about the airworthiness directive (AD) concerning the 727's freight door. The Federal Aviation Administration (FAA) has said it will publish the AD this September, which is substantially as it was earlier presented in the NPRM.

The freight conversions are basically split between those airlines which used the FedEx supplemental type certificate and those which used the AEI conversion.

The AD will mean the weight limit of each pallet position is restricted. Some in the industry have speculated that the AD will not materialise since it would cause too many problems for the freight operators. Other have warned that the AD will be issued and its impact will be serious.



The full implications of the AD are that each pallet position will be limited to a weight of 4,000lb, the aircraft will have an altitude ceiling and cruise speed limit imposed and all containers are likely to have to be loaded so that their access doors face aft. The limitation on pallet weight may impose further payload losses because of weight and balance considerations. Pallet weight could then quite easily be less than 4,000lb.

The FAA is also unlikely to be sympathetic to airline's concerns about economic viability and the AD will

probably be mandated immediately. Even though the implications of the AD will make the 727 uneconomical, the large percentage of the US freight fleet accounted for by 727s means operators will not be in a position to ground them.

The initial payload restriction per pallet may be 4,000lb but this could be reduced further to 3,000lb. This will surely trigger demand for other freighter types and give substantial lift to lease rates for whatever is available.

The cost of compliance per aircraft will be substantial and is expected to be at least \$0.5 million. The warning of the AD is quite stark since it has been claimed that the freight industry cannot believe the magnitude and implications of the issue. The impact on the 727 fleet and cargo sector will be massive.

TNT considers A300

UK freight carrier TNT is in the process of acquiring 14 A300B4-200s. The carrier is known to want to buy its own aircraft but will lease some from either Pinnacle Aircraft Cargo Enterprises (PACE) or C-S Aviation. British Aerospace Aviation Services and Daimler Benz Aerospace Airbus (DASA) are competing for the conversion contract. It appears C-S Aviation is working for a combination transaction.

TNT has been offered three ex-Pan Am aircraft by Airbus. Airbus is the lessee of 12 A300B4s which it has taken from several banks. Airbus has sub-leased these aircraft to Continental Airlines and MGM Grand Air. In part of its pre-privatisation process Airbus is attempting to unwind these leases and is trying to sell the aircraft.

Airbus has been offering four of these -B4s and TNT has reportedly been the winning bidder and taken three of the aircraft. Airbus has had the right to buy the aircraft from the lessors in order to sell them.

TNT will convert the aircraft it has bought and definitely lease another five from C-S Aviation or PACE. The airline therefore requires another six aircraft to meet its requirement for 14.

In the meantime, PACE has bought four -B4s, spare engines and spare parts

from Qantas for \$40 million. This puts the value of each aircraft at about \$7.5 million. They are A300 fleet leaders and have exceeded the Airbus design goal, which Airbus is trying to extend.

PACE has ordered 21 conversion slots at DASA but has not acquired all the aircraft it needs. It was beaten by C-S Aviation in getting the ING aircraft. The Thai aircraft are not available and have been earmarked for DHL for several months. Several parts suppliers in the US have bought about 20 aircraft between them, some -B4s. C-S Aviation also still needs to acquire three aircraft to fulfil its order for 31 conversion slots at British Aerospace.

Stage 3 hushkit for 707 by Farnborough

As Aircraft Commerce was going to press, Burbank Aeronautical of California said it was expecting to receive the supplemental type certificate (STC) for its Stage 3 hushkit for the 707-300 by the end of August. The company will be exhibiting a 707-300 freighter with the hushkit installed at the 1998 Farnborough Airshow.

After an extensive flight test programme, the hushkit has been found to meet the standards of all Federal Aviation Administration and International Civil Aviation Organisation noise categories. The 707 also has no gross take-off or landing weight restrictions and no altitude ceiling limits. The fuel burn of the aircraft is the same as the Stage 1, un-hushkitted aircraft. This compares to an approximate 10% fuel burn penalty, caused by increased drag, that the Comtran Stage 2 hushkit imposes. That is, 707s retrofitted with the new Burbank hushkit will have this penalty removed, with subsequent improvements in range performance.

The kit imposes a penalty on the aircraft's operating empty weight. The kit weighs about 725lb per engine, increasing hull weight and reducing gross and net structural payload by a corresponding 2,900lb. Ken McGuire, president of Burbank Aeronautical explains it is the aerodynamics of the hushkit which

allowed the aircraft to achieve its original fuel burn performance. "The kit has an internal 16 lobe mixer which mixes the jet flows from the fan and core engine. The kit also provides a long jet duct for the engine, allowing the two jet flows to completely mix," explains McGuire. "This mixing reduces the temperature of the jet exhaust which reduces the noise emission. We have also eliminated the cascade thrust reversers and replaced them with a hydraulic target type thrust reverser."

Burbank has purchased a DC-8-54 and plans to have the 707 hushkit configured for the DC-8-50 and -61 series aircraft. "We will have a test and flight test programme for the DC-8 hushkit immediately after we have secured the STC for the 707," says McGuire. "The kit will have about 80% common parts between the 707 and DC-8. We are, in fact, one year late with getting the 707 hushkit's STC, but at least the intensive work we put into the 707 kit will mean getting the STC for the DC-8 will be a much quicker process. We expect to have the STC for the DC-8 by the second quarter of 1999."

The 1999 list price for the 707 kit is \$3 million per aircraft shipset, which is retrofittable to JT3D-3B and -7 engines. Burbank is also developing winglets for the 707 in a separate programme and expects to have the STC for these approved by mid or late September 1998, just a few weeks after the hushkit STC has been awarded. The winglets give the aircraft faster climb performance and overall reduce fuel burn by the order of 7%. A Stage 2 707 modified with Burbank's hushkit and winglets will therefore have a 17% fuel burn improvement and a corresponding increase in range of about 500nm. With payload of about 78,000lb, at about 80%



of full structural payload, the Stage 2 aircraft has a range of about 3,000nm. With both modifications the aircraft's range should be increased to about 3,500nm. This compares to the A300B4-200 freighter's range of about 2,500nm with an 85,000lb payload. The 707-300 can fly about 3,800 nm with 60,000lb payload. The list price for Burbank's winglet system is \$400,000.

There are about 110 707s and 90 DC-8-50/-61s still flying. Burbank has sold only four shipsets for 707 hushkits but McGuire expects to sell out his 1999 production capacity in the few weeks following the issue of the 707 STC. "Our production rate will be about three a month, but this could rise to four a month," says McGuire.

"US operators of course only have 1999 left in which to do something about hushkitting their aircraft. Although most 707s are flying with African and South American operators, there is one US operator which is bringing 16 aircraft back into the US to operate on a wet

lease basis. There is another which plans to fly east-coast to west-coast with the aircraft."

The economics of modifying the aircraft are clear. Most aircraft will have been fully depreciated and will also have many service bulletins (SBs) and flightdeck airworthiness directives, such as TCAS, complied with. The cost of the hushkit is about \$3 million per aircraft. Winglets will cost a further \$0.4 million, installation of all required flightdeck instruments another \$0.5 million and the completion of various SBs and possible supplemental structural inspections might add another \$1.0 million. This would take total investment in the aircraft to about \$6.4 million if all the items were required. This would have to be amortised for the remaining life of the aircraft. The 707 and DC-8-50/-61 are, however, in a class of their own, since they are optimised for long-thin markets, rather than the A300B4 which is suited to medium-haul markets carrying the same payload.

