

A300-600 & A310 aftermarket & values

The prime market for used A300-600s and A310-300s is conversion to freighter. Total costs of aircraft acquisition, freighter conversion and maintenance have to be considered.

The A300-600 and A310 are mature aircraft in terms of maintenance costs. Now superseded by new generation aircraft, they have entered the used market. A large number of aircraft have been disposed of by primary users, and the majority converted to freighter.

Large numbers of the A310-300 and A300-600/-600R are still with their original operators. There are 131 A300-600Rs in operation, the largest fleet of 35 original aircraft being with American Airlines. Original fleets of A300-600Rs are also operated by China Eastern, Japan Airlines, Korean Air, Kuwait Airways, Lufthansa, Monarch Airlines, and Thai Airways International. Another 18 passenger-configured A300-600s are in service with their original operators.

Original fleets of A310-300s are operated by Air India, Lufthansa, CSA Czech Airlines, Kuwait Airways, Royal Jordanian, THY Turkish, and TAP Air Portugal.

The A310-300 has been popular as a medium- and long-haul workhorse with secondary users in a passenger-carrying role. Examples include Uzbekistan Airways, Air India, Aeroflot, Iran Air, Air Transat and Bangladesh Biman.

Used A300-600s and A310s have a secondary role as freighters following conversion. Five A300-600s have been modified to freighter and are in operation with FedEx, while 24 -600Rs have been converted to freighters, operated by a variety of airlines, including Galaxy, Air Atlanta Icelandic, Egyptair, Maximus Air Cargo, Qatar Airways and FedEx.

The A310-200 and -300 have proven to be more popular freighter conversion candidates. Of 85 A310-200s built, 49 are in operation as converted freighters. Two operate with Air India, but the other

47 are all with FedEx. Only seven -200s are still in operation as passenger types, and the other 29 have been retired.

Of 145 A310-300s built, 117 are in active service and 19 of these are converted freighters. A small number are in operation with Royal Jordanian, but again FedEx has the majority.

In addition to converted aircraft, FedEx also operates 39 factory-built A300-600RFs. UPS also operates 54 A300-600RFs.

A total of 29 A300-600s and 68 A310s have been converted to freighter. Most of these have been selected for use in express package operations, and a minority are used to carry general freight.

There are still 18 A300-600s, 131 A300-600Rs, seven A310-200s and 98 A300-600Rs in operation that are potential freight conversion candidates. Some airlines convert their aircraft for use in their own freight operations.

Consideration here is given to the cost of conversion, payload specifications, and payload-range and operating performance as a converted freighter. This must be considered against possible re-sale value as passenger aircraft. While

the A300-600/-600R and A310-300 have limited appeal as used passenger aircraft, there is a general shortage of widebodies in the market. This has kept their market values high. This may be alleviated over the next two to three years, however, as deliveries of outstanding orders for A330-200s continue, and after the first 787s are delivered from mid-2008.

This implies that while used market values are generally high for all widebody types, a drop can be expected once retirements of A300-600s, A310s and 767s, have been made by several airlines.

When converting used passenger-configured A300-600s and A310-300s to freighter, the overall cost of preparing an aircraft for service must be compared with the lease rate that can be expected for either type in the prevailing market. "There is actually relatively little activity in the A300-600 and A310 market, whether with regard to used aircraft trading or freighter conversion and leasing out," says Steve Fortune, senior vice president of Q Aviation. "Monthly lease rates for freighter-converted aircraft should be \$260,000-300,000 for the A300-600RF and \$210,000-225,000 for the A310-300F."

Lessors can expect lease rate factors of 1.3-1.5% per month for middle-aged aircraft, which puts a limit of \$20 million on the total cost of preparing an A300-600R for service as a freighter, and \$15 million on preparing an A310-300 for service as a freighter.

These limits include the cost of purchasing the aircraft; putting the aircraft through freighter conversion; installing a freight handling system; and performing some level of airframe, engine and component maintenance. A few avionics upgrades may also be added.



The total costs of preparing an A300-600 or A310 for operation as a freighter will include \$10.5-14.0 million for modification to freighter and accompanying maintenance.

The EADS-EFW freighter conversion has a list price of \$8.5-9.0 million, which includes the freight-handling system. The aircraft is likely to go through some level of heavy airframe maintenance during conversion. The maintenance programme for the two aircraft has a C4/IL check and C8/D check at five and 10 year intervals. Freight conversion is likely to occur close to one of these checks. Labour expenditure for one of these checks on a passenger aircraft is 25,000-30,000 man-hours and \$1.0-1.2 million in materials and consumables. These inputs, however, include an element for interior refurbishment. Checks for aircraft that have been converted so far have incurred costs of \$1.2-1.5 million.

Additional maintenance may be expected on several components. The landing gear, for example, has a typical exchange fee of \$600,000. The overhaul interval for the landing gear is eight years, however, and may not be required at the time of conversion.

Thrust reversers have average removal intervals of 6,000 flight cycles. A shop visit may be required on one unit, which will cost \$250,000-300,000, as will a shop visit for the auxiliary power unit. Expenditure on component maintenance can therefore be \$0.25-1.5 million, depending on the aircraft's condition and

maintenance status. Poorer condition and greater need for maintenance will be reflected in the aircraft's market value.

Engine maintenance is another major consideration. Full sets of life limited parts (LLPs) on the PW4000 and CF6-80C2 powering the A300-600 and A310-300 both have list prices of \$3.4 million. Most parts have lives of 20,000 engine flight cycles (EFC), and a few have lives of 15,000EFC. The remaining life of all parts will affect the aircraft's value. LLPs with lives that are close to expiry will force engine shop visits.

The cost of shop visits for the PW4000, not including LLPs, is \$2.1-3.0 million. Full shop visit costs for the CF6-80C2 will be \$2.3-2.7 million. Removal intervals vary from 5,000 engine flight hours (EFH) for engines operated at short cycle times to 12,000EFH for engines operated on EFC times of 3.0-4.-EFH.

There are no weight upgrades for the A300-600R and A310-300, as most of the aircraft have been produced at full specification weights.

The total cost of maintenance can therefore vary from \$2.0 million up to \$5.0 million for an aircraft in poor condition. Combined with the cost of conversion at list prices, \$10.5-14.0 million will be incurred after purchasing the aircraft.

This puts a cap of \$4-6 million on the purchase price of A310-300s and \$6-10 million on A300-600Rs if conversion to freighter is economically viable.

While there are few trades of either type, market values of the oldest A300-600s built in the late 1980s are thought to be \$8 million, while mid-1990s aircraft are thought to have fair market values of \$13-14 million. It may be economic to convert older aircraft, but they will be less attractive than younger examples. Potential converters are therefore likely to wait for market values of younger aircraft to decline before considering purchase for freighter conversion.

The A310 used market has been more active, but has slowed since FedEx stopped converting aircraft. Fair market values of mid-1980s-built aircraft are \$5 million, and while they are in the right range for conversion, the age of the aircraft will dissuade most people from converting. There are also few of these aircraft left. Mid-1990s-built aircraft have values of \$12 million, which need to fall before lessors will consider acquiring them for modification to freighter. **AC**

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