



Retaining asset values

Lessors are not only concerned with the income generated by asset leases, but also the value of those assets on return. Retained value derives from several factors, with good record keeping an essential cornerstone. **Paul E. Eden** reports

The key factors in retaining asset value distill down to condition, records and traceability
(all photos: Ian Harbison)

Both aircraft and components on lease generate revenue for their owners through regular payments. But regardless of the lease term, the lessor always looks to the future and the eventual return of the equipment. What happens next depends on the asset's retained value, which could be expressed purely in financial terms if it is to be sold, or its attractiveness if it is to be re-leased.

Either way, without a consistent, complete, high quality set of maintenance records, the asset's value is dramatically reduced. In extreme cases it could be such an unattractive purchase or leasing proposition that it becomes unviable; so how do lessors protect these asset values?

The technical team at GECAS says: "Through our online system, customers provide us with various reports over the lease term. These include, for example, utilisation reports advising the number of hours and cycles operated. We also receive invoices relating to certain heavy maintenance or overhaul work, with copies of underlying documents, to confirm the work has been performed.

"Towards the lease expiry date, to help the customer prepare for the aircraft's return and transition, we look at the technical records in more detail. We use Aerdata's Stream electronic records system to store much of this sort of information."

GECAS requires airlines to maintain aircraft and keep records of work carried out under the rules of their governing aviation authority and operating licence, including obligations in the lease terms. These terms also detail an agreed list of documents that must be redelivered with the aircraft at the end of the lease period.

These documents include records of modifications, repairs and major maintenance events, plus detailed maintenance records associated with its more recent history. The technical team notes: "The lessee needs to produce these documents to show that it has properly maintained the aircraft and that it complies with applicable airworthiness requirements. Our next lessee will be interested in that too. The review of the records is usually a significant aspect of the aircraft's redelivery. ▶



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"Normally, when an aircraft is accepted on lease the package of historical records is also accepted so that the next operator has full access to the historical data. It takes over responsibility for continued maintenance and will need to satisfy itself and the local air authority to obtain a certificate of airworthiness.

"As lessor we retain scanned copies of some of the records at delivery, storing them on Stream. The operator is obliged to maintain the records on an ongoing basis to meet its obligations to the air authority and, in due course, to meet the requirements for return of the aircraft," says the technical team.

Software solutions

Several MRO software solutions support day-to-day airline maintenance operations. Thomas Schulz, Product Manager at Swiss AviationSoftware (Swiss-AS), which publishes the AMOS system, says that although no lessor currently uses AMOS to directly control their assets or retrieve data from their lessees, operators using AMOS usually provide operational data through its standard reporting capabilities, which include some lessor-specific reports. In some cases, external document management/archiving systems are also used to provide end-of-lease information, typically including 'dirty fingerprints'.

"The end of lease/phase out process in AMOS uses primarily the same reporting options as the daily operation, such as maintenance forecast, AD/SB and equipment list.

"On request, Swiss-AS also supports its customers in extracting historical data in compatible formats, ready for import into other systems. For the phase-in of records from other systems into AMOS, the same tools are used as during the initial AMOS setup process when an operator migrates from another system."

The lack of standard record formatting and cross-system compatibility across the industry is a long-term, frustrating challenge affecting the rate at which assets can be transferred to begin generating revenue again. Schulz says: "Swiss-AS has received a strong request from the AMOS customer community to improve the exchange of records between operators. The initial focus is on the transfer of aircraft inside a single (multi-entity) AMOS installation and to allow transfer between independent AMOS instances (airline groups with individual installations for example). We aim to develop a dedicated set of functions within the next 12 months.

"For the exchange of data to and from other systems, Swiss-AS considers further standardisation in the industry to be a priority. We therefore participate in the ATA Electronic Aircraft Transfer Records working group and other activities," he adds.

Mid-life values

With offices in Dublin, Miami and Singapore, Apollo Aviation describes itself as a "multi-strategy alternative investment manager with approximately \$2.5 billion

worth of aviation assets under management as of 31 December 2015, which includes invested capital, indebtedness and available capital." The company has carved itself a very particular niche in the leasing market, finding operators for aircraft and engines in the middle stages of their operational lives. Here the collection and maintenance of accurate records and, therefore, retention of value, can be particularly challenging.

Rob Taylor, Apollo's Miami-based Senior Vice President Technical, explains: "We're uniquely positioned in the mid-life market. We purchase aircraft and redeploy them or, depending on our analysis, break them into parts and move the assets into the supply chain. We're primarily an asset manager/lessor, currently with 90 plus aircraft on lease. Of those, we own around 95% under our own fund structure and manage the remainder for other companies. Apollo is in its 15th year and in that time it has also disassembled well over 100 aircraft, of which the remaining values are included in the assets we manage."

Before it acquires a mid-life aircraft, Apollo relies on what Taylor describes as "very robust commercial and pricing teams" to perform a thorough analysis of the asset. The focus is not only on its revenue-earning potential on lease, but also its value for onward sale, re-lease or parting out after the initial lease period. Individual engines and other components, he says, are handled in exactly the same way.

"They'll examine the market and analyse the contract, focusing on whether we're buying from an operator or off the ground, as well as where it is coming from. We also try to specialise in aircraft that remain in production, so although it might be 14 or 15 years old, we look for it to be in production and tend not to go after those that are not." Apollo's clear policy on acquisition means that the early Next Generation Boeing 737, for example, is now very much a type in which it is interested.

The company considers both standalone aircraft and engines for purchase, but should it acquire an engine with useful remaining life for parting out, it will look to redeploy the engine into the market. This latter course generates around 90% of its engine assets. "We use them to support both our existing and our new lessees, or we sell them."

Taylor says that in some cases the cliché that an older machine is worth more as parts than as a complete asset holds true. "It really depends on the vintage of the aircraft, how many are still on the market and in need of support, or where it is in its maintenance cycle. It's truly a market and condition-driven exercise." In other words, the cost of scheduled deep maintenance could leave very little profit to be had when selling an older aircraft; its value as a serviceable asset is greatly reduced and parting out is the only sensible option.

When Apollo buys an aircraft or engine, Taylor says: "I want all the records! It's easier for me to do something with it if I have them all. Today more people are digitising

records, but it's still a fairly new market and a lot of records, especially for mid-life aircraft, are still on paper.

"That paper dictates what you can do with an aircraft to a certain extent, and although I want them all, there are records that you *must* have. If you're redeploying the aircraft you need all the airworthiness, trace and repair records, the ADs, service bulletins, back-to-birth trace for life-limited parts, the landing gear, APU and so on.

"We might be looking at an aircraft that's had its fifth C check and I might therefore need the records for a C check done 10 years ago. Because a lot of MROs still bury the conforming certificates – EASA Form 1s or 8130s – in the packages of C check records, to prove the aircraft's history for redeployment I have to go into the documents and find the certificates; the C check packages are vitally important."

If all an asset's records are missing, Taylor says it is effectively worthless. There are regulatory means of moving it if necessary, but as an asset "no one would touch it". If parts of the records are missing, an MRO could re-perform the work for which data is absent, or replace components for which records are lost, but the asset's value is significantly reduced: "It might not jeopardise the deal, but it does jeopardise the financial return."

When a lessee accepts an aircraft, it also accepts the records. It is then required to maintain them: "Any records created during the lease become part of the historical record for when it comes back at the end. We're beginning to see the records for mid-life aircraft becoming more defined in historical lease agreements. Older leases might simply have required 'the return of all records' and could result in protracted discussion with the prior operator as to what those records were. It's not clearly defined in EASA or FAA regulations, which state that an aircraft's status must be kept, without clearly defining what a status is."

When Apollo has an aircraft out on lease it follows a careful process to ensure that it is correctly maintained and records are being kept. "At a minimum we'll do an annual physical inspection of the aircraft and a records audit. Before we go on site we send a list of the records we want to see, either digitally – which can be sent to us before we arrive – or to be prepared ready for when we get there. We walk around the aircraft, comparing it to our last inspection report, as well as examining it digitally for records generated and major repairs done. We also look for other things – if it's been on the ground for a long period of time which wasn't for a check, for example, we'd ask why."

This careful process of audit and inspection should prevent surprises when an asset returns from lease. It ensures that its value is retained at expected levels and, perhaps more importantly, acts as a crucial safety assurance. Should records or an aircraft's condition not be in order on its return, then the lease terms are broken and the lessee will face financial penalties.

Rob Taylor reports: "There's a quiet enjoyment term in almost every lease and we adhere to that just as much as the airlines do, which is why we have to write the annual inspection requirement. But we sometimes find that after a lease has been created and the aircraft taken into a fleet, the maintenance team or operations team don't have visibility to the return conditions until the very end.

"An example of an issue that we've seen is where an aircraft has come back with an entirely different interior to the one we supplied. We were marketing it based on a configuration that it was no longer in, and although there's usually a resolution, there's also likely to be a financial impact."

The key factors in retaining asset value boil down to the aircraft's condition, records and traceability; a set of criteria very much dependent upon MROs and operators making good use of software solutions, or generating and carefully archiving physical records. While digitisation seems the obvious route, paper records remain the preferred medium in many parts of the world, especially for mid-life assets that might be going to operators under the jurisdiction of regulators who themselves are not yet equipped to accept digital material. ■

Back-to-birth trace

When Apollo decides to part an aircraft out, it extracts record packages to accompany individual components for redeployment – typically engines, landing gear or APUs – maximising their utility and value.

Rob Taylor, Senior Vice President Technical at Apollo, explains: "We separate the individual asset records to create a standalone package. For an engine it includes the current status, last shop visit, back-to-birth trace on life-limited parts and historical shop visits. We also tie in to the commercial trace because we're looking at a commercial transaction for a standalone asset. It becomes part of the trace package alongside the technical records.

"We do it because the engine may have come into a fleet from another operator and any sales transactions tie into the historical back-to-birth traceability for life-limited parts. There's no definition of back-to-birth trace in the regulations, but commercially we have to provide evidence for every step from birth to the present. I wouldn't say that an asset couldn't be sold with a more limited trace, but its market would be reduced and you wouldn't be getting the best financial return from it."

