

The need for high quality asset management of aircraft on lease has grown, as has the complexity involved. Angus von Schoenberg examines some of the commercial and technical issues facing the leasing community in its quest to protect asset values.

Asset management part 1: Protecting value

Despite the best due diligence performed by lessors on new or existing customers prior to delivery of aircraft, the airline industry has many examples of lessees running into financial difficulty, which has either led to insolvency or massive restructuring.

Aircraft Commerce is launching a series of three articles, the objective of which is to gain a greater understanding of why active management of aircraft on lease means so many different things to a variety of industry participants.

This first article in the series will examine the purpose of asset management, its role in protecting the interests of aircraft owners and lessors against the risks of leasing, and in maximising their returns.

This will be followed by an examination of asset management's commercial and technical components as applicable to on-going lease management. The series will conclude with the role of actively managing aircraft when airlines experience difficulties, which can necessitate repossession either on a friendly or hostile basis. Some comments about aspects relevant to the decision to place an aircraft on lease in the first place will also be made.

Purpose

The primary objective of active aircraft management is the protection of asset value. This presupposes, however, that owners paid the right price for their aircraft originally. Dick Forsberg, Head of Risk and Strategy at Avolon, which currently has commitments on its books for 84 aircraft as a lessor, points out that no amount of active management can protect value entirely if the owner overpaid for the aircraft. He says that a part of the value protection purpose can only be achieved by thoroughly understanding aircraft values, including

modifications and buyer-furnished equipment (BFE).

With the above in mind, Gary Fitzgerald, vice president commercial at Avinco, which currently manages a fleet of A320 family aircraft and will shortly add a number of additional A320 family aircraft and A340s, describes the purpose of ongoing asset management as:

- Protecting aircraft value through the lease term.
- Maximising asset residual value upon lease return.
- Maximising aircraft remarketability.
- Ensuring that your aircraft are not discriminated against within an operator's fleet.

Given the high value of aircraft, a further important objective is to minimise any non-revenue periods between leases. In the event of a lessee default, the purpose of active management is wider, but this topic will be explored in a later article.

The past decade has seen the continued growth of separation in ownership and operation of aircraft. With many airlines, including large top-tier carriers, now leasing a larger proportion of their fleets for short periods, they have little interest in maintaining the long-term value of those aircraft. Given that such a fundamental conflict of interest exists between the lessor and lessee, the need for active asset management to protect value only increases.

Nevertheless, although the need for active management is now more widely accepted, it can still be difficult to persuade some aircraft owners of its necessity and importance. Some, in particular those financial investors that concentrate on high-quality carriers, believe that asset risk is minimal and therefore consider aircraft management to be an unnecessary cost, as well as an admission of greater risk.

Components

By dividing the components of asset management into its constituent parts (*see chart, page 7*), the implication is that aircraft owners can pick and choose the parts they want and ignore others. According to James Uniacke, director of asset management at The IBA Group, which manages some 140 aircraft on behalf of third-party owners, it can be a mistake to divorce the technical and commercial elements of asset management. For example, a consequence of choosing to contract for technical services only can be that the commercial implications of the findings of a technical inspection report are not always fully analysed against all the other risk factors involved. Therefore the requirement for corrective action is not providing best value. Instead, Uniacke recommends a holistic approach that integrates both technical and commercial elements to give the owner a complete picture of the risk factors involved, and how to best maximise value and opportunity.

Aircraft management

Pre-delivery

From a commercial perspective many, including Uniacke, say that active asset management should begin before the aircraft is delivered. This should not be a concern for those lessors that perform all commercial functions in-house. This assumes that new business teams work closely with those responsible for on-going aircraft management. Where third parties are contracted it is helpful if those managing the aircraft also understand the rationale of the original transaction through being included in structuring the lease and its associated documentation.

While extensive credit-related due

diligence is vital for all potential lessees, Steve Doughty, senior vice president sales and marketing at Falko (formerly part of BAE Systems), adds, "Our focus on older aircraft leads to a need for a different level of both pre- and post-delivery management oversight than for newer aircraft. As the motivation for wanting to lease older aircraft is often driven by an inability to acquire aircraft any other way, the credit risk of such carriers is usually greater so that there is an increased need for extensive pre-lease due diligence." He explains that this includes not only a review of financial information and business plans, but also detailed route analysis, particularly for start-up carriers.

Doughty warns that there is a greater need to analyse jurisdictional risks in emerging markets, since the ability to repossess aircraft from them may be more difficult. "There can also be a need for export licenses or issues relating to remittances of foreign currency, such as exchange controls," he continues. "However, jurisdictional risk does not remain constant so that, for example, Indonesia and Peru have become more encouraging in recent years. Such risks can be mitigated by developing a strong relationship with the airline to enable a deeper understanding of the local market, but also where possible through alternative registration such as that of the US in South America, or registering under the Cape Town Convention."

Such risk mitigants are far from bullet-proof, however. Keith Wilson, partner at Berwin Leighton and Paisner, cautions that while the Cape Town Convention establishes the ability to repossess aircraft under an Irrevocable De-registration and Export Request Authorisation (IDERA) to a secured party, signatories to the Convention have applied its articles inconsistently. More importantly, they have failed to enact domestic legislation on its implementation. For example, the enactment of the Cape Town Convention in Mexico did not provide all of the convention protections in Mexican airline bankruptcies. A recent review showed that while Dubai and Saudi Arabia have both adopted the Convention, there is confusion as to what effect, if any, this will have there, given that local law will still be used to determine disputes.

On-going management

The necessity for administration services such as rental invoicing, maintenance reserve collection and gathering monthly utilisation reports is generally not controversial. Many owners can do this in-house, particularly if they have invested in good software systems, such as those offered by specialist



providers like AerData. Many lessors and third-party managers now subscribe to this type of system, or have developed their own in-house capability. As the capabilities of such systems have become increasingly powerful in their ability to capture many elements of commercial and technical management, some owners can now integrate all aspects of managing their leases in one programme. It may no longer make sense to divide the components between external providers and maintaining even the administrative tasks in house.

There are numerous other commercial functions. Most would agree that on-going monitoring of the financial condition of lessees is vital. Fitzgerald says that the provision of regular financial statements on their own is not sufficient, since these take time to produce and can be too late if an operator encounters financial difficulty. Like Doughty, he says it is therefore vital for lessors and managers to develop a strong relationship with their airline customers in order to assess their on-going financial performance. This means holding regular commercial meetings with airline customers to evaluate not only their financial strength in isolation, but also to understand their lessees' home markets, their competitive positions and threats.

Bill Cumberlidge, executive director of KV Aviation, adds that regular statement analysis can have a value over time, since it will reveal trends in airline performance. He adds that regular utilisation reports, which may be used for technical assessments, also have a commercial value. "If utilisation of your aircraft has changed over time, or the aircraft has been parked for a period, this

is valuable in identifying potential concerns," he says. "Furthermore revenue passenger kilometre/mile (RPK/RPM) and available seat kilometre/mile (ASK/ASM) data should be regularly collected and benchmarked against both competitors in the local area and the global average for that particular aircraft type. This also holds true with the aircraft's daily utilisation. Often such data can be collected from International Air Transport Association (IATA) statistics." This also illustrates the importance of the inter-relationship between commercial and technical management.

Formerly, some aircraft owners had introduced credit-related covenants into lease agreements. These may have included liquidity ratios designed to protect or comfort financiers. While this is more common on loans or finance leases, and may include items such as loan-to-value clauses, such covenants are increasingly rare in operating leases. Wilson notes that in a recent review of a portfolio comprising 45 aircraft held with 16 lessees, there were no financial covenants. He points out that not only are lessors often reluctant to enforce such covenants when there is no other default under a lease, but they can be a distraction from the important issues when a lessee is in financial difficulty. Fitzgerald agrees, and adds that leases sometimes contain a material adverse change clause, but that he has never seen one exercised in an operating lease. He suggests that, in the event of financial difficulty, it is usually better for lessors to work constructively with an operator to protect the value of their asset rather than focusing on exercising default-related triggers.



Technical management

Almost all aircraft owners would agree that a level of technical oversight is a critical part of asset management, but not on what form this should take. Mike Skinner, chief executive of AMS Aircraft, which manages a fleet of 30 aircraft mainly for banks, says that for some, a light version of aircraft monitoring is sufficient, and simply requires a periodic inspection of aircraft and records. He also says that, increasingly, due to difficult experiences with scheduled lease re-deliveries or unplanned voluntary or hostile aircraft returns, many owners require and benefit from a higher degree of technical monitoring. The scope of increased technical management can cover monitoring aircraft utilisation, assessing maintenance worksopes, timing aircraft inspections during scheduled checks and other lessee- or borrower-specific technical work. The majority of established lessors perform their own technical management and have dedicated technical teams, but smaller lessors, banks and investors can easily outsource that work to a number of specialist companies.

Forsberg comments that the starting point should be for aircraft owners to have a strong understanding of each aircraft type within their target market. He says that Avolon has expended considerable resources on analysing each aircraft from a technical perspective, with a view to establishing its correct value. This includes a thorough appraisal of their major components, such as their associated engines, high-value rotables, modifications and BFE. The high-thrust variant of the CFM56-7B27 powering the 737-800 is rated at 27,000lbs thrust, but

the standard variant is 26,000lbs thrust. This 1,000lbs upgrade costs about \$1million, but is only useful to about 5% of -800 operators, which actually need this extra thrust in some hot-and-high conditions. From a leasing perspective, it is therefore highly unlikely that a future operator would want or need this modification. The value can therefore only be attributed to that modification during its existing lease, so that a significant discount to its cost would need to be taken into consideration. Similarly, other components such as head-up displays (HUD), which are not included as standard, would need to be discounted.

The above examples highlight the importance of aircraft modification status, because unusual changes to the standard variants can negatively impact the ability to remarket aircraft, and therefore have the effect of reducing their values, despite the high original installation costs. The same applies to unusual interior configurations, such as, for example, first-class seating in a narrowbody or regional aircraft, or an unusual galley layout.

Regular inspections

From the perspective of an on-going preservation of value, there is little disagreement that regular inspections of aircraft and their associated records are essential for aircraft owners. Most lease agreements now contain a mechanism permitting periodic inspections, provided that reasonable notice is given and there is no interference with the lessee's right of quiet enjoyment. The level and frequency of such inspections vary considerably, however. For blue-chip carriers, a sample-

Asset management actually should start prior to aircraft delivery. This is because many airlines now have little interest in maintaining the long-term value of aircraft.

based check every 18 months might be sufficient, and then possibly only on some aircraft if the owner has multiple aircraft with the same lessee. If such an inspection reveals any findings that concern the owner, there may be a need for follow-up inspections to monitor corrective action. For higher-risk lessees, owners often choose to carry out more frequent and deeper inspections at six-monthly intervals.

While the need for health monitoring of aircraft is nothing new in asset management, the nature of maintenance on current generation aircraft has added layers of complexity for the leasing community. Some of these are addressed below.

Segmented maintenance

Alan Robinson, managing director of Aircraft Leasing & Management, manages about 100 aircraft for a variety of banks, investment funds and Japanese trading houses. He questions how to define heavy maintenance on new generation aircraft that have segmented MSG3-based maintenance programmes, and therefore how maintenance should be monitored by aircraft owners. Previously, aircraft had fixed intervals between 'C' and 'D' checks, which meant that monitoring compliance or calculating maintenance reserve rates was relatively straightforward. He cites the different maintenance programmes between 737 Classics and the new generation (NG) models, where heavy maintenance is now fragmented into smaller chunks. While Robinson says that this provides greater flexibility to airlines, there is now a need to capture separately individual tasks that have a wider variation of intervals. Monitoring compliance and determining appropriate maintenance reserves become more complex as a result, as does determining what level of check is required to meet return conditions.

The leasing community has approached this in a number of different ways. Thomas Schmid, chief counsel at CIT, says it typically now does not collect reserves for the segmented equivalent of C checks, but does so for heavy checks performed at 6- and 12-year intervals on A320s; and 8-, 10- and 12-year intervals on 737s. This means that C check type



heavy maintenance now principally becomes relevant for redelivery. In this context, airframe return conditions would typically be defined as requiring a check that covers tasks falling due under the manufacturer's Maintenance Planning Document (MPD). For example, there would be a stated requirement to perform tasks that would fall due within a defined number of flight hours, cycles or calendar period following the scheduled lease termination date.

Forsberg adds that after many years the leasing community has come to terms with segmented maintenance, since most events can now be tracked and defined to a series of lessor-friendly tasks.

One of the associated issues with a greater use of segmented maintenance is that these programmes are usually designed to ensure efficient operation of the aircraft for the specific airlines concerned. This means that between operators there is now a greater disparity in the maintenance process so that, for example, component limits may vary between many maintenance programmes. This creates an issue of transferability from one operator's maintenance programme to that of another. This in turn affects aircraft remarketability and therefore value for the leasing community. There may, accordingly, be a greater need for extensive bridging maintenance between the return of an aircraft from one lessee and delivery to the next. This would typically have been captured by a requirement for the lessee to return aircraft in conformity with the

MPD. This has also contributed to the growing trend for increasingly comprehensive return conditions over the past decade.

Engine maintenance

One of the main areas of controversy for the leasing community over the past decade has been the increased adoption of power-by-the-hour (PBH) engine maintenance programmes offered by relevant manufacturers and, in some cases, third parties. For smaller operators these are usually based on a number of engines. For larger carriers this may be a fleetwide programme, where payments are not necessarily associated with particular units. Such programmes have become increasingly widespread, so that Rolls Royce, for example, now has a majority of its engines, ranging from its Trent series down to the smaller Allison powerplants on the Embraer ERJ family, enrolled in its Total Care Agreement (TCA). From the perspective of lessor security, this means that engine maintenance reserves are no longer payable, because this would otherwise force operators to reserve for engine maintenance twice.

Initially, most lessors adopted a negative attitude towards PBH programmes, which some continue to hold. Lessors and third-party asset managers took the view that these programmes did not take into consideration the financial community's interest in maintaining aircraft values.

Engine manufacturers have taken many steps to address the concerns of lessors with respect to PBH maintenance programmes. This is partially explained by the manufacturers not allowing PBH programmes to be dissolved, and there not being enough clarity regarding the cost of engine maintenance in the event of a fault termination.

For Robinson the reasons for this include:

- There appeared to be no consistent way to access payments for a particular owner's engines at lease termination for a fleetwide operation at large operators;
- Engine manufacturers would not allow PBH programmes to be dissolved, and would not refund previous monthly payments to be claimed at lease termination. If the next lessee did not want the PBH, these payments were effectively wasted while the new lessee looked for a contribution from the lessor for the hours and cycles already flown on applicable engines by the previous carrier;
- PBH providers would not automatically facilitate the transfer of their programme from one lessee to another; and
- If lease return conditions stipulated a minimum threshold for hours and cycles, and necessitated maintenance that would not at that time be performed under the PBH agreement, then the provider would often not cover this cost.

Aircraft owners and their managers therefore concluded that engine programmes were not lessor-friendly. While many remain sceptical, however, Skinner says that engine manufacturers have realised that PBH programmes focused on operators are to the detriment of lessors, and have attempted to address this imbalance.

Forsberg goes further, and says that engine manufacturers have made huge strides in addressing lessors' concerns in this area over recent years. "For example," he says, "Pratt and Whitney consulted all the major lessors when designing the PBH programme for its new geared turbofan engine, and have addressed about 80% of the concerns raised by the leasing community. There is now much greater clarity on what is covered under a PBH, and it is possible to get an increasingly lessor-friendly programme."

Maintenance records have become as important as the physical condition of the aircraft. There is a lack of standardisation of record keeping. Local regulatory standards therefore do not ensure that aircraft are marketable, despite records being kept. While it is desirable to have all records in English, it is not always possible to enforce this in countries such as China.

As an example, Schmid explains that Rolls Royce has now developed an Operating Lessor Engine Restoration Agreement (OPERA). This agreement provides the lessor with a significant degree of financial certainty regarding the cost of any engine refurbishment in the event of a default or lease termination. It also facilitates the transfer of the engine into a new engine programme involving the next lessee. This standardised document can be readily assigned if the aircraft is sold. Schmid adds that other manufacturers offer various combinations of step-in rights for lessors, pro-rata contributions to next shop visits or even reimbursements of amounts previously paid in by lessees.

This kind of agreement provides a degree of certainty that the lessee will not have underpaid for its usage and that the lessor will not end up bearing a disproportionately large part of the next shop visit.

Aircraft records

Nobody would dispute that monitoring aircraft records is an integral and important part of any aircraft management process, because incomplete or poor documentation seriously impairs value. At a minimum, an audit of records should be carried out, together with the periodic physical inspection. This is the more time-consuming aspect of that review. Given that the standard of record-keeping is now probably more important than the actual physical condition of the aircraft, this might seem obvious, but the continued proliferation of operating leasing has raised some new areas of concern. The global nature of leasing to a variety of jurisdictions with different regulatory standards has led to an increased lack of standardisation in record-keeping, despite harmonisation in certain regions, notably in those areas covered by the European Aviation Safety Agency (EASA).

Robinson confirms that local regulatory standards cannot always be depended upon to ensure that an aircraft remains remarketable. Furthermore, he adds that the explosive growth of leasing in Asia, and particularly in China, means that the language in which records are kept has become a greater issue than in



the past. Many lessors insist on English records, but this can be difficult to enforce in practice. In some cases, the fallback position is to take a snapshot of records at annual inspections and insist that translations are done at the time, but this is a far from ideal solution.

Different local regulatory standards have also created more divergence, in terms of back-to-birth traceability for components. For example, some interpret the need for traceability to mean only going as far back as the last overhaul. This can impact the ability to meet return conditions and to import aircraft back to Europe, which, in turn, affects asset value.

The greater use of electronic record-keeping creates both advantages and risks for those involved in aircraft management. As it becomes more straightforward to copy and transfer electronic data files, it can be easier for aircraft owners to keep and create copies of certain records. Doughty explains that in some cases electronic records management means that all historical records can now be kept by the lessor, while the lessee will only maintain current electronic records as required by their local regulatory authorities.

The use of electronic records, however, also brings certain risks for aircraft owners and asset managers. This is not least because electronic versions of documents do not always capture all the quality manager signatures for individual tasks and the associated responsibility trail. There are also numerous complexities in transferring electronic records from one lessee to another, due to the differences in the ways the systems are set up by different carriers.

Concluding remarks

The above issues outline some key areas of concern from both a commercial and technical perspective. If a single message were to be taken from almost all of the themes addressed, it would be that building strong and lasting relationships with airline customers is the best way to ensure that asset management is performed successfully.

Most major lessors now perform their aircraft management in-house, and have therefore developed a strong capability to identify many of these problems before they significantly impair the value of their portfolios. Other investors or smaller lessors can achieve a similar result by using capable third parties. When bankruptcies do occur, such careful lessors have proven to be much more successful at moving capacity to new operators than those financial investors that have not made the necessary investment in a strong, on-going management capability.

The next article will examine how the elements within an active asset management programme can be used to identify early warning signals that an operator may be experiencing difficulties, which could lead to a lease default. Since a default is often a costly and, therefore, undesirable outcome for aircraft owners, this will also include some of the measures that can be adopted to either reduce such a risk, or to implement a strategy of co-operative aircraft repossession. **AC**

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