Maintenance records are often neglected and dismissed as a technical issue by aircraft financiers, but how many have considered what their aircraft is worth without them. Alexandra Cain reports.

SETTING THE RECORD STRAIGHT

A gang of robbers hijack an armoured van that they think is carrying cash. Instead, they find boxes of papers, which are the only copy of an aircraft's maintenance records. They dump the records in a canal.

After spending several weeks and $10.4 million restoring the records, the lessor has learnt its lesson the hard way. Documentation is something it can no longer afford to think of as a side issue.

While a few lessors and financiers have realized they need to ensure their aircraft records are safe, there are plenty who have not. "Most lessors have learnt their lesson, but financiers like banks should pay more attention with respect to record keeping," says Michael Radunz, managing director of German Operating Aircraft Leasing (Goal). With many bankers taking more asset risk than in the past, protecting that asset has become more important than ever.

"They don't do it deliberately," says Colin Short, technical manager at Airclaims. "It is just ignorance. They are just not aware of records."

Without records

Not many cases are as extreme, but sometimes records are stored recklessly in cupboards and sheds exposed to the elements. Often no copies are made. Many aircraft owners are not interested in making sure the records are kept properly, dismissing them as a technical issue. But since the costs of rebuilding them can be as much as $1.5 million for a new aircraft – and significantly more for older aircraft – bankers should be more concerned.

If the papers for an aircraft part cannot be found, the part often has to be replaced. Airclaims recently worked for a client who took an aircraft back from an airline, where one set of Form 1 tags (for parts) was missing. The only solution was to change the components, at a cost of $1 million. "We were only missing 100 sheets of paper, yet those 100 sheets of paper cost $1 million," says Short.

If an aircraft's records are missing, the aircraft is completely worthless. A buyer was recently looking at some desert-parked 747s that were in good condition, unfortunately the records were not. The sale fell through because the cost of sorting out the records would have outweighed the financial advantages of buying the used aircraft.

Records can also delay remarketing and releasing. In Goal's experience an aircraft spends an average of 15 to 20 days on the ground at the end of a lease while its records are being sorted out. This costs between $75,000 and $200,000 in lost lease rentals. "We have delivered seven A310s in the past two years, and the aircraft was always ready to go. But the value is not there without the documentation," says Radunz. For the one aircraft that had scanned documents, there was only two days' delay.

Steve Aliment, vice president, sales at Boeing Commercial Aviation Services remembers one case he was involved in where an aircraft could not be pulled out at the end of the lease because of problems with the records, which took a couple of months and millions of dollars to rectify. "It also caused a lot of acrimony between parties who were on good terms beforehand. Which was unfortunate, because it could have been avoided," he says.

Records are often held to ransom for distressed aircraft that have to be repossessed, delaying the owner's ability to get the aircraft back on lease. One owner recently had to repossess a one-year-old Embraer 145 and, although it reclaimed the aircraft, the records were never recovered, which cost the owner $1 million to restore.

Paper alternatives

Aviation is the second-most documented industry in the world, behind nuclear power, so naturally the paper mounts up. A 25-year-old 747, for example, would have accumulated about 40 boxes of paper.

In the US, records are often kept on microfilm, which requires a reader. It is unlikely that paper will be removed entirely in the near future, especially as all documents need to be signed by the mechanic or engineer. But electronic systems provide a backup, and also allow a potential lessee to examine an aircraft's records while the aircraft is on lease without having physically to go and look at them.

A few companies have already been set up to recover records, and have developed systems to scan them and then categorize them electronically. Regulatory bodies such the International Air Transport Association (Iata) and the Federal Aviation Authority (FAA) have certified scanned electronic records. Manufacturers are also planning systems that are built into new aircraft from the beginning.

Karl Scanlon and a colleague Rhett Williams,

developed an electronic system after their experience of working for a lessor and founded Waviatech. "There was no accurate way of keeping records. The only way we could do it was to develop a system ourselves," says Scanlon.

Waviatech will partner with consultancies and companies that already manage aircraft, rather than targeting financiers directly. The company is also offering the product to lessors, consultancies, airlines and MROs. It is particularly appealing to smaller and start-up lessors, which do not have systems in place, such as Fortress, Orix, Finova and Sale.

The system, called Stream, scans to pictures rather than PDFs and forms a database that is searchable by record type or keyword.

"When you re-lease an aircraft, there are 1,500 things you can be asked for. Even if the airline is good, you can spend days looking for the particular bit of information that you want. With this you can search through 48 boxes-worth of records. You can already scan to PDF but it doesn't allow you to manage your records like this," says Scanlon.

The system can be loaded on to disk and also on to the internet. It allows for smoother lease transitions because the next lessor can look at the records electronically. "What we are doing is saving the end of the lease," says Scanlon.

Goal has also developed a system to keep track of maintenance records, in particular airworthiness directive (AD) notes and defect reports. Paper records are scanned to PDF, and then put into a database. This is then loaded on to the web, so anyone with a password – which is usually the operator or owner – can log in.

"It provides much more transparency," says Radunz. "It is also an advantage for the airline itself because it gives them a package of technical information."

Airclaims runs a similar service to recover records. The consultancy visits airlines about three months before the end of lease to prepare the documentation. It scans all of the records to PDF to make sure they are in order, which also provides a back up.

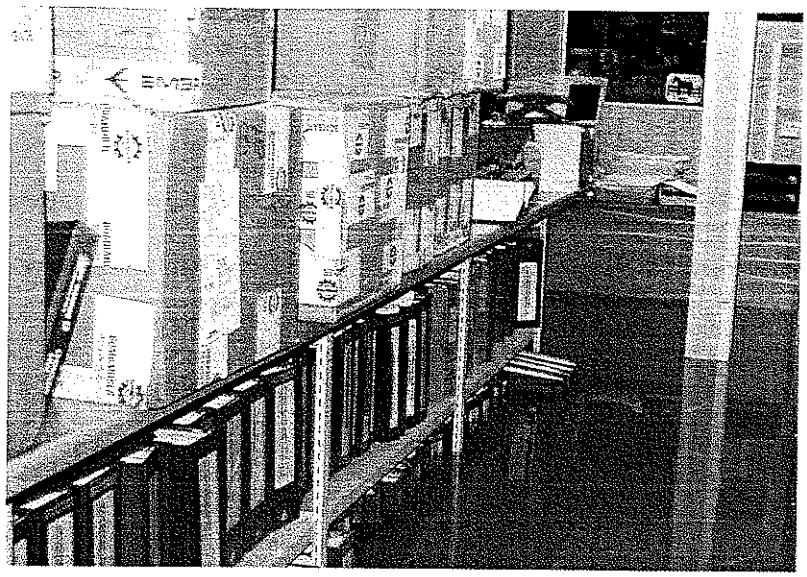
The process of scanning is labour intensive, but it is worth the investment.

Goal estimates that it takes 200 hours a year per aircraft to maintain a proper records system, which equates to $50,000 for the life of a five-year lease. "If you do the math, even one lost lease rate will cost more than that," says Radunz. He points out that if an airline has the same types of aircraft in its fleet, it will be less labour intensive once a system is in place.

When to start

The next question is, when to start implementing these systems. "We do it with all the new aircraft from the beginning. The best way is to start from scratch," says Radunz. He advises that a record system should be kept simple and everything should not be implemented at once.

However, as Short at Airclaims points out, most aircraft owners are still "playing catch up". They tend to realize near the end of the lease that they should sort out the records rather than take care of them throughout.



Drowning in paperwork

Waviatech agrees that most lessors are still using systems to deal with the problem, rather than at the beginning. "The technical guy on the ground knows it will make his job so much easier. It is a matter of convincing the management," says Scanlon.

If lessors and financiers recognize the benefits to these systems, it is possible they will be built into lease contracts.

Soon there may be technologies to keep all records electronically. "In 10 years' time there could only be PCs or laptops in the hangar, provided the authorities grant approval for those systems," says Radunz.

The next step is for all maintenance to be built into the aircraft from the beginning.

Boeing has already developed a number of systems that can be built into all of their aircraft. "There is an awareness of how important records are, but not of how important it is to do something about it before it reaches crisis point," says Aliment. "You can't predict the end of the lease, so we are trying to take the risk out of that part."

These systems include Toolbox, a prognostic system for managing maintenance and Aircraft Health Management, where the aircraft is programmed to look after its own health using self-diagnostic systems.

There is also Boeing Maintenance and Engineering Management, which is a real-time, web-based solution, which can be used to forecast maintenance demand. Operators such as Japan Airlines and Singapore Airlines are already using some of these systems.

Boeing is not providing the maintenance, but is developing inventory management systems.

Using its experience of building aircraft, Boeing has developed computer systems, which record and categorize the searchable data. It then coordinates all the maintenance records from a central system and shares them with the operators. The records and maintenance systems are therefore all kept at Boeing's headquarters. The operators do not need to have computers on site, worry about storage of servers and protecting equipment. The records can also be stored on CD-ROM and viewed.

"We're moving away from the old philosophy of 'hey the aircraft is broken', to 'predict and prevent'," says Aliment.

The new systems also reduce the risk of an airline losing records, and eliminate problems during repossession.

Aliment believes that once a few airlines begin to adopt electronic systems, more will follow. "These systems are about awareness," he says. "It is a conservative industry, but people are smart followers. We are moving in the direction of all-electronic records, but the first thing that causes change is recognition of need."

Boeing is also planning a Goldcare programme for the 787. Start-up lessor LCAL, which ordered six 787s at the Dubai Airshow in November, plans to take a different attitude to leasing through the use of Goldcare and similar maintenance systems from Rolls-Royce. The need to maintain the aircraft is therefore entirely removed from the operator.

This is similar to what is already happening with engines, with the growth of power-by-the-hour packages.

It will take a while for operators to start seeing real value in systems like this, and Aliment believes the problem will more likely be dealt with a little at a time, instead of an operator taking a large risky investment all at once.

"It's not as easy as just snapping it on to the airplane," says Aliment. "You have to change the way you think."

Ultimately, if systems like this are implemented from the beginning, the risk of lending is reduced so financing should become easier to obtain. "It is extending the life of an airplane, and its residual value. This is what a financier looks at," says Aliment.

Who pays?

It is not only the financier or lessor that should take responsibility. Operators also need to ensure their records are in order, because having a smooth lease return also benefits them. Maintenance, repair and overhaul providers (MROs) should consider a partnership with record-keeping services, although some believe their job is to maintain the aircraft and then hand the documentation over. "With MROs the benefit is customer satisfaction," says Scanlon. "We can train an MRO to use our system in a day."

There are also other benefits to having good records. Electronic systems can incorporate translations, for example. Waviatech has already translated records kept in French and Portuguese into English, by scanning the original and laying the translation electronically over the top.

"Many lessors are worried about leasing in China, for example, because the records come back in Chinese and they then have trouble re-leasing them," says Scanlon.

Record keeping is getting better, but not nearly enough people are paying attention to it.

"What we say is do it from the beginning, do it regularly and check the maintenance papers immediately on receipt from your maintenance provider," says Radunz.

And if they make copies, at least they will not have to go swimming in canals. ■