

If aircraft are returned late or in an unacceptable condition at the end of a lease, the operator can face significant compensation costs. Recommended best practices for the lease transition process are highlighted here, including the need for detailed, advanced planning.

Best industry practice for aircraft lease transitions

The International Air Transport Association (IATA) says that about 40% of the global commercial aircraft fleet is under operating lease, and that trends indicate this percentage will increase. It emphasises the challenges that can arise when the lessee and lessor look at a lease from different perspectives.

One such challenge is how to optimise a lease transition. This is the process under which an aircraft is removed from service with one lessee, and returned to the lessor in a previously agreed condition, before being prepared for operation with the next lessee. If a lessee fails to meet the lessor's required return conditions and/or deadline it may face significant compensation costs.

The International Bureau of Aviation (IBA) estimates that in a 12-month period from 2014 to 2015, there were 895 aircraft lease returns. With this number of annual transitions taking place, lessors and lessees would benefit from optimising the transition process.

Some of the usual requirements associated with the lease transition process are identified here. The analysis includes a summary of the potential pitfalls and recommended practices that operators should consider.

Operating lease

An aircraft on an operating lease is owned by the lessor and operated by the lessee. The lessor grants the lessee exclusive use of its aircraft for an agreed period of time, known as the lease term. For new aircraft this term is often eight to 12 years for a narrowbody, and up to 12 years for a widebody. Subsequent lease terms often decrease in length as the aircraft ages.

The operator is charged a monthly lease rental fee for the duration of the

lease term. It may also be required to pay supplemental rent, known as maintenance reserves.

"Maintenance reserves, by definition, are simply for risk mitigation," explains Bruce Burnett, senior vice president of technical services at Avitas. "The lessor collects maintenance reserves to protect themselves from the risk associated with the lessee being unable to pay for any major maintenance items on the aircraft when they come due in the lease term. These are most often related to heavy airframe maintenance, engine performance restorations or overhauls, replacement of engine life-limited parts (LLPs), and landing gear and APU maintenance. Since these are significant cost items the lessee pays into a reserve account, based on the aircraft or engine utilisation, thereby creating a fund to cover the cost of such maintenance events.

"Maintenance reserves for engines are adjusted periodically based on the lessee's operation, since the duration between shop visits will be influenced by the flight hour (FH) to flight cycle (FC) ratio, and the average amount of engine take-off de-rate used," continues Burnett.

Phil Seymour, chief executive officer at IBA, suggests that many large, top-credit airlines will not be required to pay maintenance reserves, since lessors do not see them as a credit risk. Instead, they will typically pay any relevant maintenance fees or compensation at the end of the lease. Generally all but the top credit operators will pay the lessor maintenance reserves towards future high cost events.

"Reserves or supplementary rent are probably paid in about half of all operating leases," claims Gary Fitzgerald, managing director at Stratos, an independent advisory firm specialising in aircraft leasing and financing. "In the

other cases, the lease typically involves some form of lease-end compensation. This compensation is either relative to delivery condition, which is often referred to as an 'upsy-downsy' arrangement, or based on the aircraft being returned in full or half-life maintenance condition. The compensation is calculated after taking into account the aircraft's physical return condition. The combination of cash compensation, or retained reserves and physical potential, is referred to as a synthetic return condition."

From an operator's perspective there are several advantages to an operating lease. The most obvious one is that it avoids any large, upfront capital expenditure and the residual value risk lies with the lessor. An operating lease can provide flexibility when optimising seasonal capacity, including adjusting seasonal demand. It is also often easier to acquire an aircraft on short notice via an operating lease.

The following analysis of the lease transition process is split into two main areas of consideration: lease return conditions and the required redelivery actions.

Redelivery conditions

All operating lease agreements specify the maintenance and general condition in which the aircraft is required to be returned to the lessor, by a given date, at the end of the lease term. These are the return or re-delivery conditions. "Usually the return conditions, such as the ability to substitute a 'replacement' engine, are outlined in a separate set of clauses in the lease or in an annex to the lease," says Burnett. "Occasionally, they are embedded in clauses throughout the lease."

"The redelivery conditions should be negotiated before the lease commences,



usually as early as the letter of intent (LOI),” explains Chris Markou, head of operational cost management, safety and flight operations at IATA.

The level of detail included in lease return conditions has increased as operating leasing has become a more common method of aircraft acquisition. “Over time, lessors and those who draft the return conditions have become more savvy with the specific language used,” says Burnett. “Each time a lessor faces a challenge during the return process, the next lease they negotiate will include language to address that particular issue. Over the past 20 years lease return conditions have grown from a simple paragraph to 20-30 pages of very specific requirements.”

Lease return conditions are negotiable between the lessor and lessee, but the operator’s leverage is likely to vary. “The biggest influence on lease return conditions is where the aircraft goes after redelivery,” says Fitzgerald. “If it is being dismantled, most lessors are keen to receive cash compensation in lieu of a better return condition. Also the largest carriers are often in a position to influence the return conditions when the lease is signed, whereas smaller airlines generally have to agree to what the lessor dictates,” claims Fitzgerald.

“The return conditions section of a lease is often heavily negotiated, although the leverage in any deal may depend on market conditions, lease rates and terms of lease,” says Burnett. “The lessor’s goal is to be able to immediately re-market an aircraft with one or two years clear of any significant maintenance requirements, while the lessee wants to minimise its expenses at the end of the lease.”

Aircraft redeliveries are timed around a scheduled heavy airframe check whenever possible. “At the end of the lease, the lessor would like the aircraft returned with the airframe, engines, landing gear and auxiliary power unit (APU) in a condition which would allow operation for a year or two without any major maintenance coming due,” says Burnett. “The lessor and lessee will often agree to a ‘mirror in/mirror out’ arrangement, whereby the return condition should, at a minimum, reflect the condition in which the aircraft was initially delivered at the start of the lease.” The variables and associated requirements can vary by lease.

“There is an industry standard set of return conditions, which account for 70-80% of the return content within most operating leases, such as the requirement for an aircraft to have 18-24 months clear of any major maintenance events,” says Fitzgerald. “The remaining 20-30% of conditions can vary greatly between leases, from an agreement for an aircraft to be returned in ‘totally run-out’ condition, which is popular for mid-to-old vintage aircraft with many US major carriers, to a requirement for the aircraft to be returned in ‘full-life physical condition’, which is common with Japanese operating lease (JOL) deals.”

In 2015 IBA produced a white paper titled ‘Redelivery expenditure: minimising surprises and maximising cash flow’. The white paper includes examples of typical redelivery conditions based on a six-year lease for an A320 or 737.

The return condition examples are summarised here. While these are intended to provide typical examples, there is likely to be some variation

There are a standard set of redelivery conditions that account for the majority of return clauses in most leases. There are, however, certain variables or precise requirements that can vary by lease. Minimum engine FH and FC requirements could differ between narrowbody and widebody aircraft due to different levels of utilisation.

between leases.

The return conditions in IBA’s example can be broadly split into nine categories, covering the general condition of the aircraft, components, engines, fuselage, windows and doors, wings and empennage, interior and flightdeck, landing gear and wheels and brakes, APU and corrosion. Many of these categories include multiple sub-sections with specific return conditions. There are 10 sub-sections listed under general condition alone.

General condition

General conditions include requirements that the aircraft will ‘be in good operating condition and be clean by scheduled passenger airline standards, and all structural damage shall have been repaired to a permanent standard.’ The ‘full complement of equipment, components, accessories, furnishings and loose equipment’ should match the aircraft’s delivery configuration at the beginning of the lease and the aircraft should ‘be in a condition suitable for immediate operations under European Aviation Safety Agency (EASA) EU-Ops 1 or FAR Part 121’. The general conditions ask that the aircraft ‘comply with the original equipment manufacturer’s (OEM) original specifications as at the delivery date’ and have a valid certificate of airworthiness (C of A), or if necessary a valid export C of A issued by the lessee’s national aviation authority (NAA). The general condition at delivery includes details of the aircraft’s basic specifications including weights and engine thrust ratings.

Other typical general conditions require the aircraft to: be free of any open or deferred defects; undergo the next relevant C check in block format immediately prior to redelivery; and have all outstanding airworthiness directives (ADs) and service bulletins (SBs) performed. Specific requirements ask that the C or base check be performed in accordance with the OEM’s maintenance planning document (MPD), and that ADs issued by the Federal Aviation Administration (FAA) or EASA should be complied with during the lease term if the aircraft is registered under either agency, or, if applicable, for a period of up to 180 days after redelivery. There are general condition demands that relate to the

aircraft's livery, signs and decals. These include a requirement for signs and decals to be clean, secure and legible.

Components

The IBA white paper lists four typical return conditions for components. The first relates to FH- and FC-controlled hard time components (HTCs), and specifies minimum levels of remaining utilisation. In this case the example stipulates that these components should have 3,000FH and/or FC remaining to the next scheduled removal. There is also a condition related to calendar-limited components. It asks that, 'each calendar-limited component, including safety equipment, will have not less than 12 months remaining to the next scheduled removal'. There is also a request that each on-condition and condition-monitored component should be serviceable and that the average accumulated flight time since new of the installed components should not exceed 110% of the flight time accumulated by the airframe.

Engines

IBA identifies three typical redelivery clauses for engines. The first calls for minimum levels of remaining utilisation. The example given requires that each

engine 'will have not less than 6,000 engine flight hours (EFH) expected life remaining to the next scheduled removal, and the LLPs shall have not less than 6,000 engine flight cycles (EFC) life remaining.'

The second clause requires that 'each engine shall have just completed a hot and cold section video borescope inspection, and a power assurance run performed in accordance with the OEM's maintenance manual.' It adds that the lessee will be liable to cover the cost of any defects uncovered by these inspections, which exceed OEM in-service limits. The final clause requires that 'each engine will be devoid of any defect which places less remaining life on its constituent parts,' in accordance with OEM or regulatory airworthiness requirements until removal.

"Lease return conditions not only include the engine type and thrust variant, but also the engine serial number and documentation requirements," says Les Cronin, head of global leasing at MTU Maintenance Lease Services B.V. "Furthermore agreements will include a maintenance timeline that predefines EFC since the last engine performance shop visit. Engines must also meet minimum serviceability requirements on return, including any applicable SB and AD embodiment standards."

Interior and flightdeck

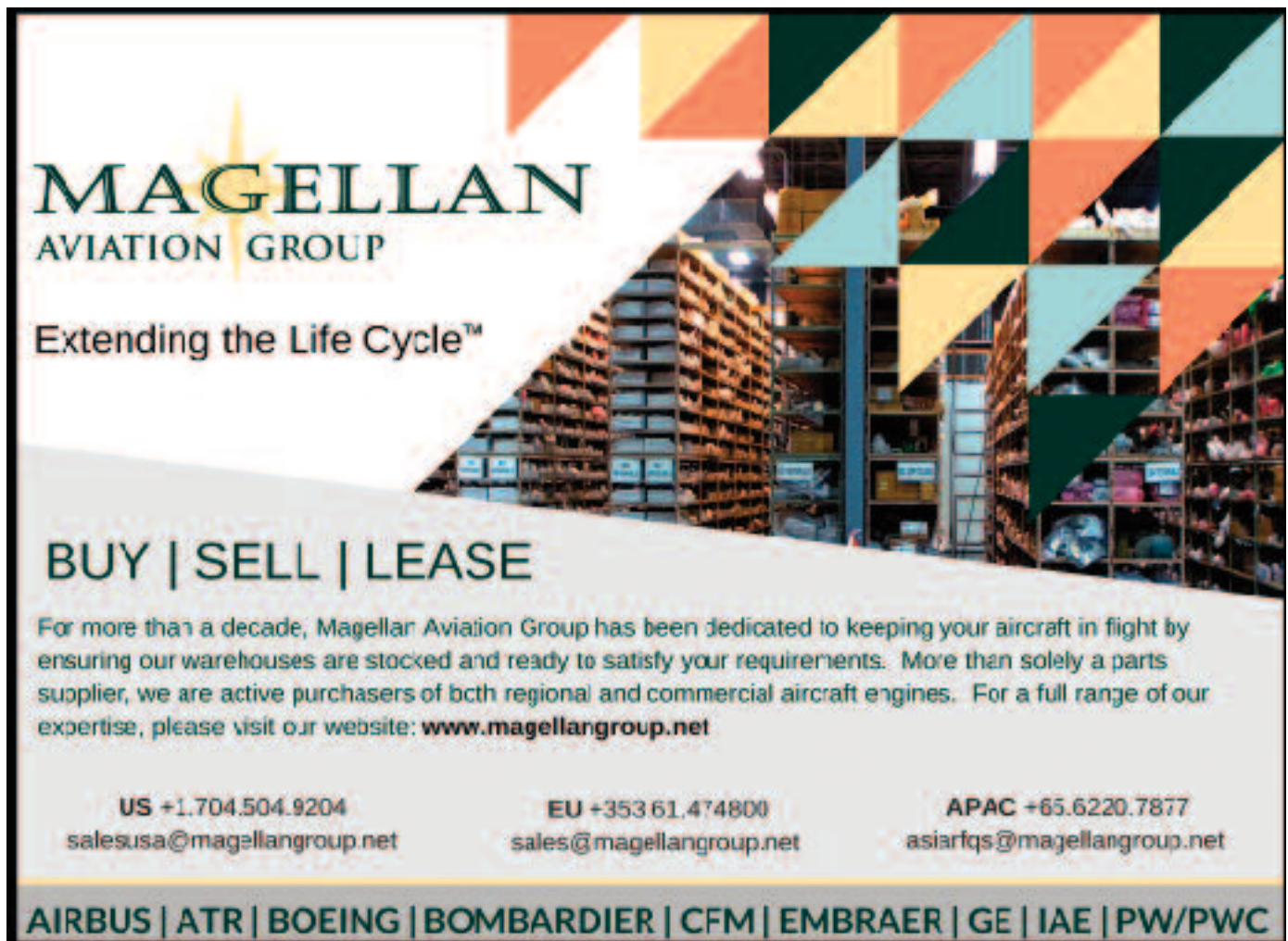
In recent years, aircraft interiors have become more advanced with the introduction of new space-saving and connectivity technologies. Airlines are also placing a greater emphasis on interior standards as a service differentiator.

During the redelivery process the lessee may remove any proprietary elements of its cabin design, including in-flight entertainment (IFE) technology. Lessors generally require an aircraft to be returned with a functioning IFE system if it was delivered with one. Alternatively if an aircraft was not supplied with IFE, and the operator removes a proprietary seat-back system, the lessor may require it to install suitable plugs or covers in its place.

IBA's white paper highlights typical interior redelivery requirements, such as a need for carpets and seat covers to be returned in 'good condition' and be clean and free of stains. The cabin ceiling, sidewalls and overhead bins will need to be clean and serviceable and there may be requirements related to meeting fire resistance regulations.

Other

Lease return conditions for landing



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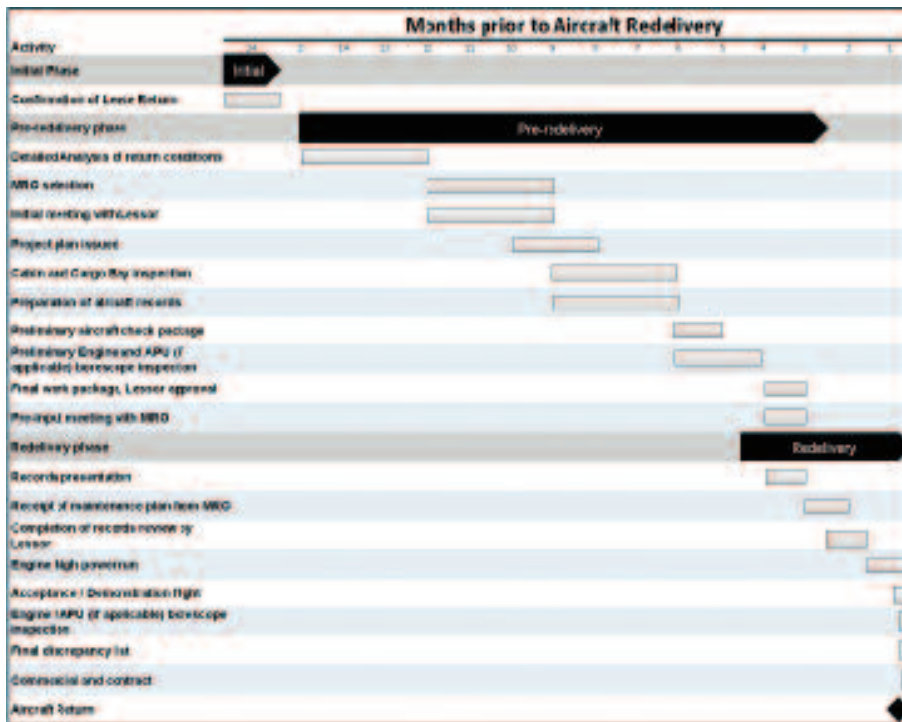
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gear, wheels and brakes and APUs generally include minimum utilisation requirements. IBA's example stipulates that each landing gear should have a minimum of 10,000FH, and/or 10,000 gear cycles and/or 36 months calendar time available before the next scheduled removal is due, and that wheels and brakes should have at least half of their useful life remaining. It further states that the landing gear and wheel wells should be clean, free of leaks and repaired where necessary. The white paper says that typical conditions include returning the APU in a serviceable condition, with no more than 1,000 APU hours consumed since the last hot-section inspection.

Other redelivery conditions will relate to the fuselage, wings and empennage and corrosion issues. The example given by IBA requires that the fuselage should 'be free of major dents and abrasions, loose or pulled or missing rivets,' with the further requirement that all structural repairs should be permanent and completed in accordance with the structural repair manual (SRM) or OEM-approved data.

IBA's example adds that windows should be free of crazing, and that any delamination should be within acceptable limits, while doors need to be free-moving and fitted with serviceable seals. Where the wings and empennage are concerned, typical return clauses stipulate that leading edges should be 'substantially free' from damage, and any repairs are performed to a permanent standard. With respect to corrosion, the redelivery conditions are likely to stipulate that the aircraft should be inspected and treated in accordance with approved corrosion prevention and control procedures (CPCP).

Variation

The minimum requirements specified in the return conditions could vary according to the length of lease and the age and type of aircraft.

"The term of the lease often changes expectations of return conditions, both during the lease and upon the aircraft's return," says Burnett. "All things being equal, a longer lease term typically means a lower lease rate and a softening of return conditions. A long lease may see an aircraft make the transition from a marketable commodity to one destined for teardown. There is little sense in drafting onerous return conditions for an aircraft that may not fly again at the end of the lease.

"Even for short-term leases, if an aircraft is approaching the end of its lifecycle, the return condition requirements lessen at each subsequent lease transition," continues Burnett. "When an aircraft is new, its initial lease will have stringent return requirements. As the aircraft ages and changes lessees, the redelivery requirements lessen, until the aircraft reaches its end of life.

"The return conditions related to airframe maintenance are similar for both widebody and narrowbody aircraft," says Burnett. "There may, however, be different FH and FC minimums for the engines, since these are adjusted for the utilisation of each aircraft type.

"All return conditions are negotiable, regardless of the age or type of aircraft or the length of the lease," adds Burnett. "Even when the lease states the airframe or engines must be fresh from heavy maintenance, some lessors may prefer to receive a cash settlement in lieu for an asset that may not be marketable."

IATA has produced a chart for a proposed redelivery plan it says airlines should follow to achieve a successful lease return. IATA splits the redelivery process into three stages: the initial phase, pre-redelivery phase and redelivery phase. It recommends that airlines should begin analysing the return conditions 12-15 months before lease end.

Complications

The structure and wording of redelivery conditions can lead to complications for lessees.

One issue facing operators has been that some redelivery conditions are not particularly clear and precise, which can leave things open to interpretation.

IBA identifies the poor contract drafting of redelivery conditions as one of the main challenges in the lease transition process, since it can lead to disputes between lessors and lessees.

In the third edition of its 'Guidance material and best practices for aircraft leases', IATA acknowledges that some elements of the re-delivery conditions are 'almost always left vague'. It highlights wording such as 'fair wear and tear' as one term that can lead to disputes during lease returns.

Some of the vaguest return conditions can relate to interior items, since these are often evaluated in cosmetic terms which can be open to interpretation.

David Louzado, principal consultant in the aircraft advisory and management practice at ICF, provided the following definition of fair wear and tear from a typical lease:

Fair Wear and Tear means normal wear, deterioration or dirt ingress which causes an item of interior furnishing, fittings, trim, panels, bulkheads, doors, floor panels, ceilings or other interior equipment to be worn or to have such level of deterioration which is consistent with normal operational use and which does not materially affect the appearance standard (compared to other passenger aircraft coming out of a heavy check and re-entering service in lessee's fleet), serviceability, operation and normal use of such item.

"The idea of fair wear and tear is to allow some level of deterioration to be acceptable at redelivery, but the use of the words 'normal' and 'compared to other passenger aircraft' makes this highly subjective," argues Louzado. "This can lead to expensive delays and disputes. ICF recommends clearer wording such as 'the cabin shall be free from scratches, tears, nicks, and stains.'"

Louzado says that definitions regarding the replacement of parts can also be open to interpretation and gives



an example from a lease agreement:

A 'Replacement Part' means a part, component, furnishing, appliance, module, accessory, instrument or other item of equipment and shall include the APU:

(i) That is in the same operating condition as, and has a utility at least as equal to the part replaced (assuming that the replaced part was in the condition and repair in which it is required to be maintained under this agreement).

“The intent of this clause is to ensure parts are replaced correctly when required, and the term ‘at least equal to the part replaced’ is supposed to protect the aircraft against a devaluation from having much older parts fitted,” says Louzado. “However, the words ‘at least equal’ could be interpreted to mean that it is acceptable to fit a replacement part with the same or much higher accumulated utilisation than the one that was removed. This is a typical case of the words not carrying the intent. A more effective way of expressing this clause is to say the part shall have accumulated no more FH, FC or calendar time than that of the removed part.

“There is no industry obligation or requirement to track the utilisation of ‘on-condition’ parts,” adds Louzado. “All of these clauses that seek to protect the overall value of the aircraft are therefore difficult to comply with in the real world, and may lead to disputes if taken out of context.”

“The originating authors of a lease are seldom around when the lease term expires,” claims Burnett. “It is therefore the exact language in the agreement that needs to be addressed or potentially reinterpreted. At this point, the lessee and lessor may read the same clause in the

lease, but their interpretations of the language may be significantly different.

“Having reviewed hundreds of leases and negotiated returns, I see a few clauses that reoccur and are known challenges,” continues Burnett. “The engine substitution clause, for example, comes up with surprising regularity. Under this clause an engine can be substituted at lease return provided it is by an engine of equal value and utility. The clause attempts to clarify this requirement with the words, ‘without regard to hours and cycles’. The challenge at redelivery is to determine the value of the substitute engine, without taking account of FH and FC.

“The use of outdated terms can also leave things open to interpretation,” says Burnett. Reference to traditional letter checks, such as a C or D checks when establishing minimum clearance thresholds for remaining life at redelivery is one such example. MPDs produced under contemporary maintenance steering group three (MSG3) principles assign each independent task its own inspection interval rather than grouping them into letter checks, to allow operators to group checks more efficiently, based on their levels of utilisation.

“A return clause may specify the aircraft shall be returned with ‘a fresh D check’,” says Burnett. “Unfortunately the term D check is no longer clearly defined, and although the authors meant well when they drafted the clause, this can result in a lengthy discussion at lease end over the amount of maintenance required.”

“When it comes to the return maintenance check, most return conditions will feature specific FH, FC or

Lack of planning has been highlighted as a primary cause of late redeliveries. Areas where airlines can struggle include the timely ordering of MRO slots for the end-of-lease check. IATA recommends that MRO slots should be booked nine-to-12 months before the lease end date, but in reality it is not uncommon for airlines to leave it until three-to-six months out.

calendar clearance periods in addition to letter check references to cover all variations and avoid confusion,” adds Louzado.

“Some return conditions can be ambiguous, such as those that require part of the aircraft to be returned in ‘good condition’ or to ‘airline industry standards’,” says Guljar Lehri, aircraft lease team general manager at Monarch Aircraft Engineering (MAEL). “Nine times out of 10, the interpretation of this language will depend on the relationship between lessee and lessor. If they have a positive working relationship, the lessor and lessee will easily agree and compromise on what actually represents ‘good condition’ or airline industry standards.”

Lehri cautions that some operators can end up in default of redelivery conditions, because they have not properly read the lease and taken into account its implications. “The lessee needs to familiarise itself with the main body of the lease and the return conditions.”

Best practice

To avoid misinterpretations of return conditions, IATA recommends that potentially vague terms are formally defined to ensure that both parties clearly understand their meaning. It also proposes that objective standards such as the MPD should be used where possible.

“The lease contract must clearly define the return conditions,” says Markou.

“Optional SBs, equipment upgrades and other non-mandatory modifications that usually add value to the asset should be openly discussed when negotiating the return conditions,” says Elentinus Margeirsson, manager of operational cost management, safety and flight operations at IATA. “In addition, the timing of the application of mandatory requirements with dates beyond the lease expiry should be addressed.

“Ideally all issues that can possibly arise in the redelivery process should be discussed and clearly identified in the negotiation stages,” adds Margeirsson. “The people that draw up the contracts are often no longer there seven to 10 years later when redelivery takes place, so it is important to avoid ambiguity in the contract. Technical experts who will be

involved operationally should also be involved in all discussions between the operator and lessor.”

“A lessee must involve its technical team in reviewing the return conditions before signing the lease,” agrees Burnett. “Failure to do so may lead to significant compliance expenses at lease end.”

“Lessees should allow enough time during the initial lease negotiation to establish a set of practical return conditions, while avoiding any perceived pressure to ignore these considerations in the rush to get the deal signed,” says Louzado. “Technical staff from both sides should have an opportunity to negotiate and refine the return conditions together, rather than leaving it to the commercial, legal or sales staff, or accepting them as a given.”

Those lessees that pay maintenance reserves may wish to establish how far these will go in terms of financing the required end-of-lease maintenance obligations.

Redelivery actions

A number of redelivery actions must be performed as an aircraft approaches the end of its lease term, including a combination of planning, administrative and physical touch labour tasks, designed to ensure the aircraft complies with the

agreed redelivery conditions.

IATA has published recommended guidelines for the redelivery process.

Redelivery guidelines

“A detailed timeline listing how the entire redelivery process can be handled, and who is responsible for certain tasks, can be found in chapter 5.2 of IATA’s ‘Guidance material and best practices for aircraft leases’,” says Markou. “It is recommended that airlines follow these guidelines when preparing and executing a redelivery. A number of airlines that participated and collaborated in the creation of the best practices has been able to return aircraft on time based on the recommendations.”

IATA categorises the redelivery process into three separate phases: the initial, pre-delivery (operating), and redelivery phases. The recommended guidelines for each phase have been summarised.

Initial phase

According to IATA the initial phase should start with an airline confirming that the lease will end on the agreed date rather than being continued. At this point IATA recommends that airlines review the return conditions and any upcoming

maintenance events for major components such as engines, APUs, and landing gear.

IATA suggests that lessees should begin the initial redelivery phase up to 24 months before the end of the lease term, although it acknowledges that timing will vary by airline, and that it is not uncommon for the process to start only from six to 15 months out. IATA also cautions that the starting point and duration of the initial planning phase will vary depending on the length and complexity of the lease.

Pre-redelivery phase

IATA suggests that the pre-redelivery phase should commence 12-15 months before the end of the lease, with the operator performing a detailed analysis of the return conditions. It recommends that the lessee identify any possible compliance issues at this stage before evaluating potential solutions.

The next steps are to select an MRO to perform the required redelivery touch labour, and arrange an initial face-to-face meeting with the lessor to discuss the return process and requirements. IATA proposes a number of objectives for this first redelivery meeting between lessor and lessee, including: appointing project managers from each party; defining a

The advertisement features a scenic view of the Great Wall of China winding across a mountainous landscape. A white parachute is suspended in the air, with its ropes extending down to a white box on the wall. The box and a sign in the upper right corner both display the AVTRADE logo, which consists of a blue globe with white lines. The text on the sign reads "AVTRADE THE GLOBAL COMPONENT SERVICE PROVIDER". At the bottom of the image, the text "PUSHING THE BOUNDARIES OF COMPONENT SUPPLY." is written in large, bold, white letters. Below this, a smaller box contains the text "NEW CHINA OFFICE NOW OPEN." and the website "WWW.AVTRADE.COM" is displayed at the very bottom.



schedule for follow-up meetings; and clarifying each element of the return conditions to ensure a common understanding between parties. The initial meeting may also formally document any agreed amendments to the return conditions or agreements related to buy-outs, whereby the lessee agrees to pay the lessor in lieu of meeting a certain redelivery requirement. Other potential objectives from the initial lessee/lessor meeting might include a discussion of general issues related to the return process, and reaching agreement on potential compensation costs, if applicable.

IATA recommends that lessees book their MRO slots and begin meetings with the lessor nine to 12 months before redelivery. The lessee should generate a project plan for redelivery eight to 10 months out. This would include details of the main redelivery tasks and timelines and should be agreed with the lessor.

The IATA guidelines propose that the next redelivery actions should be the preparation of aircraft records and cabin and cargo bay inspections, six to nine months before returning the aircraft.

It is recommended that lessees begin to prepare aircraft records, either in hard copy folders or digital format, depending on their internal processes. A list of typical redelivery records is included in Annex II of the IATA guidelines. They include aircraft manuals and records documenting the condition and status of the aircraft, and its key components. Examples include AD and SB status, the certified LLP status for the engines, landing gear and airframe, the certified aircraft repair status and repair records. Other typical documents include those related to shop visit and traceability

records. IATA suggests prioritising records on critical issues such as AD or repair status, so that potential solutions can be considered. It also recommends that lessees review the aircraft's repair and modification status at this stage, and consider giving the lessor remote access to electronic records where available.

IATA proposes that in the same timeframe cabin and cargo bay walk-through inspections should be arranged and attended by the lessee's and lessor's representatives. These inspections provide an opportunity for the two parties to clarify what constitutes an acceptable return condition, and give the lessee sufficient time to place early orders for any cabin interior items, as these have notoriously long lead times. IATA therefore recommends placing orders for any parts deemed to be 'at risk' even if their condition is still being discussed with the lessor.

At five to six months out it is recommended that lessees establish a preliminary check package for the aircraft's redelivery maintenance input. IATA emphasises that this should take account of applicable return conditions that might require the aircraft to be bridged from an operator's bespoke approved maintenance programme (AMP) to the latest revision of the OEM's MPD.

IATA guidelines suggest that preliminary engine and APU borescope inspections should be performed four to six months before redelivery so that the lessee has time to respond to any issues. It also recommends that the findings are shared with the lessor so that the two parties have a common understanding of engine and APU condition.

The final pre-redelivery phase tasks

Missing or incomplete documentation can cause problems during the redelivery process. Missing records can sometimes require a repair to be removed and performed again. IATA recommends that airlines begin to prepare the aircraft records six to nine months before redelivery.

should be completed three to four months before the end of the lease. These tasks include defining the final check package and arranging a pre-input meeting with the MRO. IATA says the final check package should confirm the components that must be replaced to satisfy the redelivery conditions and any actions needed to resolve missing or invalid historical records. The final workpack should be approved by the lessor before the lessee discusses the details and schedule with the MRO. IATA recommends that the lessee directs the MRO to only take instruction from the operator rather than the lessor or next lessee.

If the lessor already has the next lessee lined up, and they are based in a different country with a different NAA to the current lessee, the aircraft may require an export C of A when it is returned. IATA recommends that the lessee's regulator be contacted three to four months before redelivery to begin making arrangements for this document.

Redelivery phase

The lessee's first task in the redelivery phase is to present the organised aircraft records to the lessor for review, before the end-of-lease maintenance inputs. The records are often presented in a 'redelivery book', which contains various summary sheets. IATA says that collating the redelivery book and associated compliance files can be one of the most labour-intensive stages of the redelivery process.

IATA guidelines say the records should be made available three or four months before redelivery, and recommend that the two parties should agree on a set time period in which the lessor will complete its records review and make the lessee aware of any discrepancies. IATA proposes that the lessor and lessee should agree on a cut-off date, after which the lessor is not permitted to raise further issues with the records.

At two to three months out, the lessee should receive the detailed check plan from the MRO, the schedule for which should be shared with the lessor. With two months to go the lessor should have completed its review of the aircraft records. IATA contends that any further discrepancies raised by the lessor should be restricted to the return maintenance



check and associated documents.

High power engine runs, acceptance or demonstration flights and engine and APU borescope inspections should be performed once the return check workscope is completed, typically within a month of the redelivery date. These inspections could be witnessed by representatives of the lessee and lessor, to permit the two parties to agree on a final discrepancy list and any required solutions.

Return acceptance & deregistration

“Once the lessor and lessee agree that all of the redelivery conditions have been met or remedied, the aircraft is nearly ready for return,” says Burnett. “The lease often includes a clause where the lessee will be required to provide an export C of A. This will allow for the deregistration of the aircraft by the outgoing lessee and subsequent registration by the next lessee if the aircraft is moving to a different region with a different NAA.

“The challenge associated with this requirement is that the new NAA may require specific modifications before the aircraft is granted a C of A,” continues Burnett. “There could be significant costs associated with this compliance, and the lease needs to clearly define which party is obligated to cover them. If the aircraft stays within the same region, the deregistration/re-registration process will be much simpler.”

The final step in the redelivery process is for the lessee and lessor to sign the technical acceptance certificate included in the lease, once it has been established that the aircraft has successfully met the return conditions.

Potential pitfalls

There are a number of potential redelivery pitfalls for operators. These can lead to lease transition complications and cause late returns, resulting in additional costs or financial penalties. “It is quite common for an operator to hand back an aircraft after the agreed redelivery date,” says Lehri.

IBA identifies a number of factors that can lead to challenging lease transitions and potential redelivery delays. These include: lack of lessee planning and early engagement with the lessor; inadequate focus on assets during operation; lessee operational demands consuming redelivery resource; decentralised, missing or incorrectly completed records; underestimation of the total workload, lead times and lessor expectations; discovery of additional work required during the redelivery maintenance input; lack of lessor appetite for the returned aircraft; and engines failing final borescopes.

Lack of planning

“Poor lessee planning is almost always the cause of most issues during the redelivery process,” says Fitzgerald.

“Beginning the redelivery process too late will result in a high probability that the aircraft will not be returned by the required end of lease date,” says Lehri.

In a study carried out by IBA in 2016, over 80% of responding lessors thought that lessees engage too late on at least 50% of lease returns. Lessee respondents suggested that such incidents were more infrequent. This prompted IBA to conclude that lessees are in denial over the engagement process with lessors. It identified engines as incurring the most

It is almost certain that lease return conditions will require each of the aircraft's engines to undergo a borescope inspection. IATA suggests airlines should perform preliminary engine and APU borescope inspections four to six months before redelivery so that they have enough time to respond to any issues.

cost in the redelivery process and puts this down to late decisions and poor planning by airlines, leading to them having to take quick and expensive decisions to ensure return condition compliance.

“A well-respected airline client had a fleet of aircraft to return,” explains Louzado at ICF. “The airline did not prepare, and took the view that it was compliant with the regulations, so the return would be straightforward. It did not distribute details of its redelivery obligations among its engineering team, did not plan additional downtime for the end-of-lease checks beyond that of a normal C check, and did not assign a project manager from the beginning. The result was months of delays that turned the redelivery programme into an expensive and complicated situation for all sides. The maintenance checks were not suitably cleared to cope with delays caused by a lack of repair substantiation data, which demanded the re-work of certain structural repairs. The additional downtime knocked the checks that had already been performed out of compliance and a lack of cabin spares caused further delays.”

“An example of poor planning is an engine that fails to meet the return conditions,” says Burnett at Avitas. “By not monitoring its utilisation well before the lease end date, the operator may allow the engine to exceed the minimum return requirements established in the lease. Failure to plan ahead may cost the lessee a several million dollar shop visit.”

Inadequate and late planning can affect the rest of the redelivery process. “If aircraft surveys are not carried out in a timely fashion, the airline may be unable to procure the required spares in time for the end of lease check,” says Lehri. “This is particularly true of cabin items which have long lead times. If insurance borescopes are not carried out on the engines and APU, and damage is found during the end-of-lease check, it will result in late delivery, since shop visit rectifications will be required and could have lead times of up to 90 days. Bad planning could also result in a lack of MRO and paint slot availability,” continues Lehri. “If there are any missing records for repairs or components, repairs may need to be redone or re-assessed and components replaced. This

leads to increased maintenance downtime and costs that have not been budgeted for.”

“Documentation irregularities cause the most nuisance to a smooth return,” explains Fitzgerald.

“The most common issues involve records of repairs, how the repair was performed, traceability of work and providing back-to-birth information for components,” claims Margeirsson. “Parts Manufacturer Approved (PMA) parts and Designated Engineering Representative (DER) repairs can be an issue, although most lessors now accept them as they are recognised by the relevant airworthiness authorities. The PMA/DER issue should be negotiated up front to avoid redelivery delays and misunderstandings.”

Burnett highlights missing paperwork for repairs or modifications as a common problem and adds that there can be issues related to AD compliance documentation. “The collection and acceptance of aircraft records and redelivery compliance discussions have the largest influence on the length of the return process,” says Burnett. “These may take anywhere from three to four weeks for a well-organised lessee, but there are many cases where this process can take months or even years if the records are not in compliance, or the aircraft needs substantial work.

“Missing repair substantiation is quite

often a significant issue,” adds Burnett. “Without the approved paperwork to authorise the repair, the lessee may have to remove the repair, inspect the area, and install a new repair to ensure compliance. With the advent of digital record-keeping the number of documentation and records issues has dropped significantly.”

IBA suggests that lessees are often aware of issues with records, but ignore them until it is too late. It highlights how collating records can be complicated by different document formats, including a combination of hard copy and digital records. IBA claims that another major issue related to records is that the redelivery conditions might require more detailed information than the airline would normally process. LLP traceability and back-to-birth records, for example, can differ in format and detail.

“The belief that a regulatory compliant aircraft is compliant for return is a common mistake,” says Louzado at ICF. “The lease agreement is invariably stricter than the requirements of the regulator, because the lessor wants to preserve the value of the asset and enhance its liquidity with minimum investment. This means records retention policies and the depth of detail required for the redelivery need to be understood from the outset.”

IBA provides an example of an

operator that maintained its leased aircraft meticulously in accordance with the MPD. “When the operator began planning the redelivery six months out, it was apparent that the redelivery conditions featured certain work to be performed in excess of the MPD requirements,” explains Paul Lyons, strategy director at IBA. “The resulting unscheduled maintenance on the engines and landing gear cost over \$2.00 million and the operator was left in a weak negotiating position.”

Defects discovered during the return check and final borescope inspections can lead to delayed aircraft returns. IBA estimates that unscheduled repairs account for about one-quarter of delays.

“Underestimating the amount of work and time required to comply with the lease end conditions is all too common and results in significant added expenses for the lessee,” says Burnett at Avitas.

Areas where airlines struggle include the timely ordering of MRO slots and spare parts, particularly for cabin items. It is not uncommon for some operators to book MRO slots up to six months out, but others leave it as late as three months before the redelivery deadline.

IBA says that disagreements regarding the condition of interior items can lead to costly delays due to long lead times. It

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offers an example where replacement of seat foams resulted in a 10-week delay while they were sourced and delivered.

Another reason for delay identified by IBA is that the lessee's technical team can end up focusing on its day job - keeping the aircraft flying - at the expense of forward planning for the lease return.

"A lessee without a team focused on the planning requirements of a lease return will inevitably have significant expenses associated with failing to meet return conditions, penalty rent, or negotiated settlement costs," says Burnett.

Recommendations

IATA's redelivery guidelines offer a useful template for operators looking to avoid common lease return complications. Most recommendations focus on the importance of planning.

"The main recommendations are, do not leave redelivery planning to the last minute, do not give the lessor an excuse to challenge or reject the return condition, and do try to get on top of any contract ambiguity," says Lyons.

"Preparation and planning are key," says Louzado. "The return should be planned and prepared from the day the lease is negotiated, not just at the end."

"The major element of a successful lease return is planning," says Lehri. "If you do not plan adequately you will fail to meet your objectives."

In addition to its main timetabled guidelines, IATA offers general redelivery advice for lessees. This includes the need to understand that the larger the aircraft, the more complicated the redelivery process will be. IATA estimates that the

normal redelivery period for a medium widebody such as a 767 or A330 would be two months from the start of the return check. It also recommends evaluating the risk of delay in the redelivery process. IATA proposes that airlines faced with tight return check slots should consider flying their aircraft to a different location where there may be more hangar space and manpower available, once the routine tasks have been completed. It advises that any such movements should be agreed with the lessor before the redelivery process begins. IATA also recommends that operators should place emphasis on evaluating the condition of the interior, since lead times for spares can stretch into several months, and that lessees should regularly review aircraft records.

"IATA encourages operators to review records for leased aircraft annually," says Markou. "Best practice is to supply the records at year's end for each aircraft they are leasing to the lessor for review, so that at the time of redelivery the only records outstanding would be for the preceding year."

Changing behaviours

There are signs that airlines are becoming more proactive in the redelivery process either through employing third-party expertise from the likes of Avitas, IBA, ICF and Stratos, or via establishing their own in-house teams.

"Most lessees are getting better at preparing for and meeting their return condition obligations," says Burnett. "Many of the costs associated with non-compliance or late returns can be averted by having a dedicated staff overseeing

Disagreements over the condition of interior items or the late ordering of these parts can lead to costly delays due to the long lead times for cabin spares. IATA recommends arranging cabin walk-through inspections six to nine months before redelivery so that any 'at risk' cabin items can be ordered well in advance.

planning of lease redeliveries."

"A number of airlines regularly return aircraft on time and achieve this through learning the hard way initially, before improving their processes, bringing in external help, or both," says Louzado.

"In my previous experience, return conditions never used to be distributed within airline maintenance organisations, and there were no procedures in place to align with the aircraft exit programme," explains Lehri. "Operators have learned painful lessons through poor redeliveries in the early years and they now start planning for lease returns 18-24 months out."

"Monarch Airlines has 32 aircraft to redeliver over a six-year period," continues Lehri. "At MAEL we have already begun the planning phase for the first redelivery, which is due to occur at the end of March 2018. Redelivery conditions are distributed within the business to ensure all requirements are met. A robust redelivery timeline is established for an on-time lease return."

"We believe that we are in a phase of change regarding lease transitions," explains Cronin at MTU Maintenance Lease Services. "They have a reputation for being long, fraught with misunderstanding and costly, though in our opinion this is not necessary. MTU Maintenance offers a portable maintenance solution for lessors and lessees that accompanies the engine across all phases of its service life, and focuses on mitigating risk for all parties when it comes to engine maintenance and ensuring maximum asset value is maintained at each phase of life.

"Through our programme we provide the lessee with predictable, direct engine operating costs," continues Cronin. "MTU maintenance can carry forward maintenance reserves for pre-consumed life and determine the actual condition of the engine and take on the associated risk in the lease transition phase. Additionally, the MTU programme coverage includes dealing with corrective action required by findings during an end-of-lease check."

In addition to a more proactive approach from lessees, IATA has been developing ways to smooth the lease transition process. It has been trying to simplify documentation requirements related to aircraft leasing and the whole aircraft transfer process. Working with the lessor community and their

representatives through the Aviation Working Group (AWG), IATA has introduced the Incident Clearance Statement (ICS) that replaces the Non Incident Statement (NIS). “Both of these are commercial documents that are not required by regulatory authorities,” explains Markou. “The NIS states that there has been no incident or accident involving the aircraft or its engines, but this can be open to interpretation due to broad definitions of accidents or incidents. It also does not say much about the current condition of the aircraft. In contrast, the ICS states that even if an incident or accident has taken place, the aircraft or engine is clear of any defects according to the maintenance manual. The ICS is becoming standard, especially among airlines and lessors that work closely with IATA.”

Potential compensation

If a lessee fails to redeliver an aircraft on time or in the agreed condition it will be liable to pay compensation costs to the lessor.

“The largest and easiest penalty to impose is late rental payments,” explains Burnett. “A clause in the lease may stipulate that rental payments continue with a payment factor of 150%, or even twice the initial rate. This is intended to

be a motivator for the lessee to redeliver the aircraft on time and compliant with the return conditions.

“All the other clauses that require specific return conditions or documentation may be the subject of financial settlements,” adds Burnett.

“Each lease contract will be different and penalties may apply for various non-compliance issues,” says Markou.

“Usually penalties are explicitly addressed in the contract and airlines should be aware of them when negotiating and signing the lease agreement.”

Misinterpreted return conditions could lead to misunderstandings between lessor and lessee regarding the validity of certain compensation demands.

“Most misunderstandings are solved well before any legal action is initiated,” says Burnett. “There is a great deal of negotiation and trading at the end of a lease because everyone is motivated to transition the aircraft from one lessee to the next.”

IBA has calculated that, in addition to late rental payments, poor redelivery planning can lead to maintenance overspend at the end of the lease as lessees attempt to bring the aircraft up to required compliance standards. In 2015 IATA estimated that the average end-of-lease maintenance overspend was

\$500,000 for a regional aircraft, \$1.65 million for a narrowbody and \$3.90 million for a widebody. In 2017 dollars the figures for narrowbodies and widebodies are now closer to \$1.90 million and \$4.10 million. IBA says that the largest proportion of this overspend is accrued by engines.

It is possible that lessees will redeliver aircraft with higher specifications or maintenance standards than the return conditions require, but a lessor will seldom compensate them for this.

“Unless the lease has specific language addressing the cost-sharing of upgrades, modifications, AD compliance, or other changes to the configuration of the aircraft, the lessor is under no obligation to contribute to funding these changes,” says Burnett. “In addition, the lease often stipulates that the lessor needs to be notified of, and consent to, any substantial changes to the aircraft’s configuration. At redelivery the lessee may be required to undo any changes embodied during the lease. In some circumstances, upgrades in the certified weights or other performance enhancements may remain embodied as a windfall enhancement for the lessor.” -

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