



International Bureau of Aviation

Minimising Risk - Maximising Opportunity

# Redeliveries Revisited

Closing the perception gap between lessors and lessees



## Redeliveries Revisited

Last year IBA analysed the key areas of overspend in relation to redeliveries. If you have not seen the original report, it can be accessed [here](#): Its key findings included:

- **Narrowbody redeliveries cost, on average, \$1.65m more than they need to**
- **Widebody costs can be easily double that of narrowbodies**
- **Engines account for 36% of the overspend**



In the research conducted last year, we looked at the areas of overspend but we did not look at the reasons behind them. In this update we address that through a combination of pulse research with our contact base and anonymised conversations with key individuals, building a picture of the key reasons behind redelivery challenges.

We asked our database of lessors and operators five questions:

1. **What is the primary reason for a late redelivery?**
2. **Which area of the aircraft is most challenging to redeliver on time and on budget?**
3. **Lessors, how often does the lessee engage too late in the process?**
4. **Lessees, how often do you find your internal teams have engaged too late in the process?**
5. **What are the key issues that lessors face in 2017?**

We received 72 responses and discuss the findings over the next few pages.

Key conclusions from the research include:

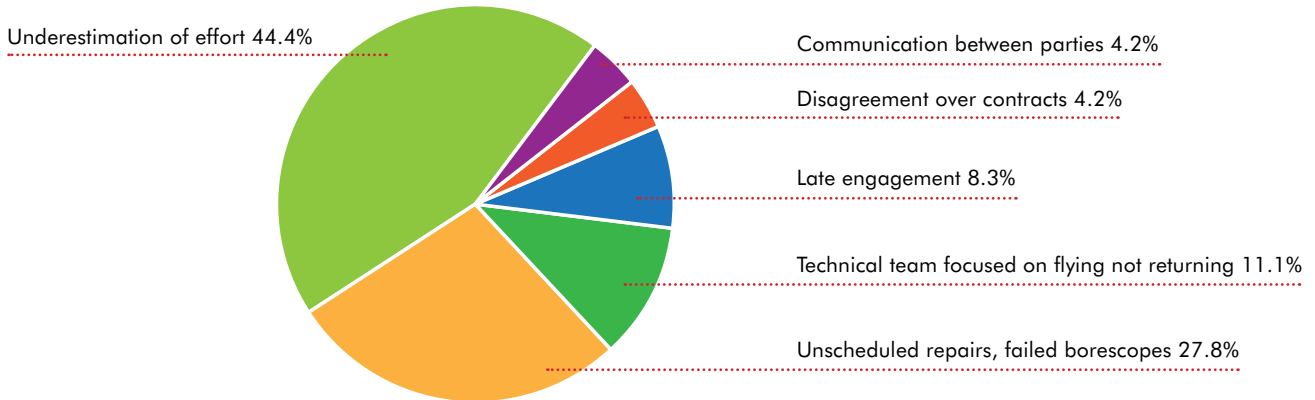
- **There is a large gap in the perception of lessees and lessors in respect to whether lessees engage sufficiently early enough in the redelivery process**
- **Over 80% of responding lessors thought that lessees engage too late on at least 50% of returns**
- **Records and engines top the list of most challenging elements of a redelivery**
- **Returns, expertise risk and widebody aircraft are lessors' key concerns for 2017**

*Note: all currency mentioned in this document relates to US dollars*

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## Part 1: Multiple Choice

### Question 1: What is the primary reason for a late redelivery?



Approaching 50% of respondents felt the general underestimation of effort was the primary reason for late redeliveries. The answers were anonymous, so we can only speculate as to the split of new vs mature players, but that is a surprisingly high figure which does suggest redeliveries are still proving challenging. At IBA we plan from two years out, with specific actions from 15 months (see infographic on page 9) and if milestones are missed in that 15 months, you are likely to hit challenges.

Many lessees appear to be under the misapprehension that so long as their records' systems meet the requirements of their regulatory authority that they have "done enough". However it is the lease agreement that usually lays out requirements that are above and beyond the day to day operational functions of the airline. For example, the lessor may require far more detailed histories of engine LLPs than are generally required. Many airlines will provide engine shop visit reports and details of engine installation and removal. Some lessors will insist on more detailed audits of the various dates and engine hours and cycles, which can become more complex if module swapping takes place and use of used LLPs, since each one will need the detailed audit trail.

Unscheduled repairs accounted for over a quarter of delays. Connected to the point above, an unpleasant surprise, such as a failed borescope inspection which is inevitably performed as one of the very last tasks in the redelivery process, will always cause delays. Organising a shop visit on an ad-hoc emergency basis creates significant turmoil for the airline, and a great opportunity for the engine MRO to invoke its "emergency" labour rates!

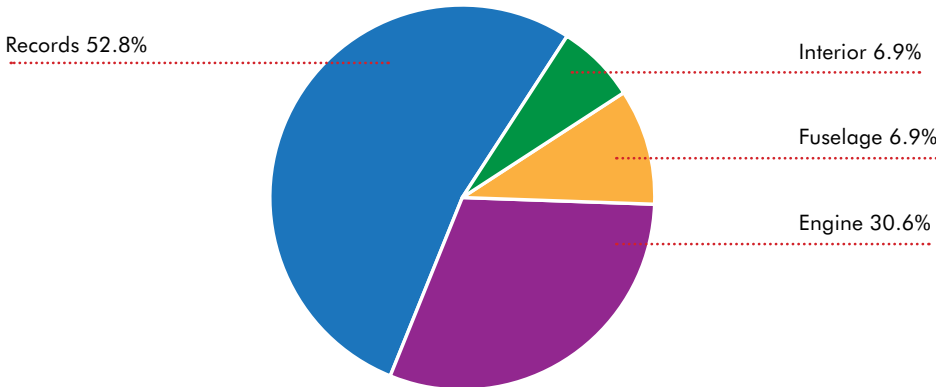
This subject is further complicated with the increasing engine OEM care programs which do not always take into account a borescope inspection requirement, other than that required as part of the ongoing program. For an airline to request (or perform without request) a borescope inspection to satisfy a lessor's commercial requirement is not welcomed by the OEM, unless it was all pre-agreed at the outset. It will often be in the small print of the OEM care program that a lease expiry inspection and findings from it are outside of the OEM agreement.

The third most-chosen reason was that the technical team focused on flying, not returning. It was refreshing to see that this number was not higher as we frequently address issues between airline departments resulting from returns not receiving sufficient focus, being identified too late, or taking too long to implement.

In a recent training program we were pleased to see a broad spread of senior executives from finance, technical and fleet planning departments, and they were all keen to prevent a repeat of previous redelivery challenges that had resulted in an \$8m overspend across five aircraft. In that instance, the end of lease check was being conducted overseas, not from HQ. The significant time difference caused a combination of delays and miscommunication. Creating simple, centralised, procedures from 15 months back to redelivery date will prevent a repeat of such delays.

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**Question 2: Which area of the aircraft is most challenging to redeliver on time and on budget?**



**Records**

Records dominated the votes which, again, was interesting to IBA as we see as many engine-related issues as we do records.

We did seek clarification on this point and there is a great deal of overlap with the combination of engine and records being a key issue.

Also as mentioned above the collation of the records remains a challenge, further details as follows:

1. Formatting and collation can vary from a few excel spreadsheets along with dozens of boxes of hard copy records to a fully updated online system. Even the online systems create issues, especially when the lessor has either a new lessee not enrolled, or a period of downtime as the lessor has not found a new lessee and prefers to have at hand "hard copies", which would be acceptable to any lessee.
2. Provision of detailed information beyond what the airline normally has and is required to have under its operating systems. As mentioned above LLP traceability and so called "back to birth" records differ on format and detail. Also the detailed approvals for modifications that a lessor requires, may go beyond what a lessee has to hand. This can also apply to repairs. That is, which data was used to perform the repair? An SRM reference may appear on the tech log but the exact work details may be buried in amongst other work packs for scheduled checks and not in "repair files" that the lease may have required.

Again, it appears that these issues are often known about by the lessee but ignored until too late – so time and money is simply wasted. Therefore the combination of the above matters combine to fall across several airline departments and unless there is a "handback/redelivery project management" focus, these matters will not receive sufficient and timely attention.

A straightforward means of avoiding a records-related delay is to conduct an audit to analyse the gap between the lease requirements, and the current state of the records.

**Engines**

Engines were highlighted last year as the major cost component of the redelivery process. Last year’s study showed that close to \$600k of additional spend was attributed to engines due to the difference between commercially imposed/agreed redelivery conditions versus the real state of the operating engine. Engines tend to be the victim of being "driven off" the aircraft to meet the redelivery condition so that the aircraft is returned in a condition that allows the next operator to have a clear run of at least two years prior to an engine removal. This is part of the price an airline pays for the flexibility that leasing provides, but it is a

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## Redeliveries Revisited

considerable cost to pay for the flexibility. The reasons why engines are the major cost element within the redelivery process are predominantly because of late decisions and poor planning by the airlines.

When a decision to place the engine into the shop is late, the priority then becomes one of expediting the shop visit to prevent continued delays, and continuing to make payments for the lease rental for a grounded aircraft that awaits its titled engine from the MRO shop. This has the knock-on effect of poor decision making with regards the material and build standard of the engine.

The fundamentals of good engine shop visit management should be to place the engine plan into the hands of experts. Some airlines may have in-house experts but overall we see this as best outsourced to engine specialists who are handling the balance between technical and commercial matters on a daily basis. These key tasks include:

1. **Assess condition of each module**
2. **Create a workscope for each module that is:**
  - a. **Planning guide compliant**
  - b. **Lease redelivery condition compliant**
3. **Assess the scrap material and use a combination of:**
  - a. **New material**
  - b. **Used material**
  - c. **PMA/DER parts where allowed**
4. **Take into account:**
  - a. **Repair lead time – often parts have to be sent to specialists, often overseas**
  - b. **Availability of used/new material**
5. **Subject to a full cost benefit analysis of all of the above options**

Unfortunately, late decision making on the part of the redelivering airline means most of these key tasks are glossed over or forgotten. This often results in quick expensive options being chosen rather than considered, economically prudent alternatives.

## Fuselage and Interiors:

Again we have seen airlines hoping for the best rather than carefully planning for the issues related to the aircraft interiors. Certification of reconfigurations during the lease term is often found to be only locally approved rather than having full OEM approval.

The fuselage problems are usually “repair and modification” issues. Most leases require “dent and buckle” charts and or “repair mapping”. Not having a detailed history of each and every repair is often the downfall of the airline and results in needing to have to re-perform the repair often resulting in delayed redelivery especially if key parts such as skins and frames have to be sourced from the OEM, who may not have specialist parts immediately available. This matter also crosses the boundary of Fuselage and Records.

The condition of the aircraft remains an issue that can often be “qualitative/subjective” rather than “objective/quantitative” and when there are disagreements of the state of seat covers, seat pan condition, or IFE operations, the issue becomes one of lead time to source new replacements. IBA saw one situation requiring replacement seat foams that resulted in a 10 week delay for those to be found and delivered. 10 weeks’ downtime of an aircraft that was costing \$325k per month.

In reality the issues above should not have to wait until the final redelivery stages - they should be manageable without incurring delays if approached in good time.

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## Questions 3 & 4

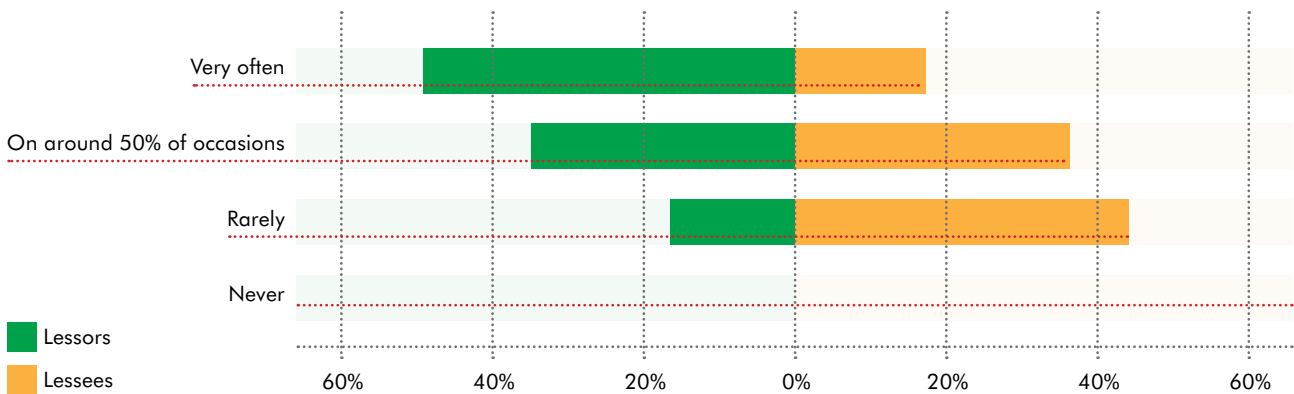
Working for both lessors and operators, we see and hear both sides of the relationship with respect to returns.

We asked two slightly different questions:

- **Lessors, how often does the lessee engage too late in the process?**
- **Lessees, how often do you find your internal teams engaged too late in the process?**

But because the answers we received were a near mirror of each other, (albeit with fewer lessees responding than lessors) we thought it useful to combine on one chart.

### How often do you feel lessees/lessors engage too late?



Overall the picture, especially from the lessors' perspective, is worrying. Over 80% of responding lessors thought that lessees engage too late on at least 50% of returns. We didn't receive a vote for "never" from either party. As the graph shows, while one third of both groups felt engagement was too late on 50% of occasions, there are large differences of opinion on other areas.

We therefore draw the conclusion that lessees remain in denial over the engagement process. The evidence is hard to challenge and the details provided above against each key area clearly provide feedback and, in our experience, there is a significant gap between expectation, desire and reality of the whole redelivery process when it comes to the lessor and lessee positions.

This is not a surprise – after all this is part of the lessor's day job but it is not part of the daily routine for an airline.

## Part 2. Looking Forward

Question 5 on our survey asked:

### What are the key issues that lessors face in 2017?

We received a wide range of replies, which we have grouped into four areas to summarise:

#### Increased competition and declining returns

- Increased competition
- Cheap funds and new lessors keeping acquisition prices high and lease rates low
- Pressure on business models due to low return new entrants into lessor market
- Oversupply
- Release at pricing anticipated at time of initial investment
- Deteriorating lease returns
- Economic life
- Age restrictions.

#### Expertise

- Skill sets of the airlines
- Underestimation of budgeting
- Lack of lessee engagement and accommodation of requests.

#### Risk and volatility

- Regional instability
- Airline consolidations
- Increase of sublease and wetlease
- Early lease terminations
- Airline financial performance decrease.

#### Widebodies

- Widebody redeliveries and remarketing
- Placement of widebody aircraft
- Re-configuration with widebodies.

#### Increased competition and declining returns

The most frequent response we received was around a more challenging market.

Lease rates for new aircraft continue to be under pressure from new entrants and a low interest rate environment. Lease rates for used aircraft are under even more pressure due to the relative attractiveness of new aircraft lease rates and this situation is unlikely to change in the first half of 2017.

Any RFP issued by an airline looking to perform a sale and leaseback or operating lease structure, has almost record numbers of responses which is pushing rates down and keeping pricing up for the time being, but for older types, we do expect that both will be leaner. At these levels, many of the larger lessors have no intention to get too involved, focusing on exclusive deals, or simply more focused on selling off what they have before pricing starts to fall.

In 2016 we have seen lease rate factors of 0.6 and 0.7 for new aircraft. Savvy investors are now looking at less popular types, for example A319 and also the regional market for double digit returns. Interest has also turned towards the freighter market where in the prevailing low fuel cost environment and falling four engine aircraft values, 747 freighters are proving attractive. We continue to see interest in the end of life and tear down sector and in alternative or intangible assets such as airport slots.

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## Redeliveries Revisited

Overall, we have seen an increase in lease extensions in the last year. This is generally good news for both lessors and lessees - it is usually a win/win situation with the lessor not having to be concerned over a gap (and therefore costs) between the redelivery condition from one airline to the next, and the lessee will usually see a reduction in the lease rate that it was previously paying.

As a result and according to IBA research there was a reduction in redeliveries of around 20% in the last year but that still equates to circa 650 redeliveries split into 150 twin aisles and 500 single aisle aircraft.

While much of the feedback under the heading of competition and returns is negative for lessors, it is important to highlight that, for airlines, there has probably been no better time to consider leasing aircraft.

### Expertise

Whether in-house or outsourced, airlines are ramping up efforts to better manage redeliveries.

However, in the non-distressed world of a normal redelivery process we continued to see poor management and increased costs of the redelivery of aircraft on the part of the airlines.

It seems that whilst some airlines have created in-house teams or used contracted-in specialists to manage the process, key decisions were often made too late and the combination of short term additional costs of lease extensions to cover the delayed process, and increased costs of ad-hoc versus planned maintenance created additional costs of close to \$2m per single aisle redelivery.

### Risk and volatility

There is a mixed picture relating to geopolitical risk. China is still a hot, albeit slowing and challenging market, and India is bouncing back. On the flip side, an increasing number of our clients are now monitoring operator activities across Latin America, Eastern Europe and West Africa.

There have been several unscheduled redeliveries in the last year as some airlines suffered from issues related to regional economic problems, cash flow reductions and exchange rate pressure. Whilst oil has remained at a relatively low level in the past year, the US dollar has strengthened against many currencies so for those airlines who earn mostly local currencies but bear costs in USD, the benefit of lower USD oil price has been cancelled out and in some cases worsened as their conversion rates work against them.

Almost all aircraft operating leases are USD costs and along with fuel and maintenance reserves (also USD denominated) the cashflow pressures have resulted in some early redeliveries and renegotiations, Brazil's GOL is the most publicised victim of the downturn in the region. We have been heartened by the airline's approach to the leasing and finance community in dealing with its drop in demand and increase in costs. We have also seen pressure in the US – Republic entered bankruptcy protection and grounded many aircraft – mostly regional jets.

### Widebodies

It has been approaching a year since the very public questioning of 777 and A330 residuals surfaced. In our survey, four interlinked concerns emerged: redeliveries, remarketing, placement and reconfiguration. The first three allude to the softening of used widebody values as a result of aircraft being returned off lease as early as 10-12 years old, with few options for a new home.

Large backlogs, cheaper fuel and weakened long-haul markets such as Russia and Brazil have also conspired to knock demand for larger aircraft.

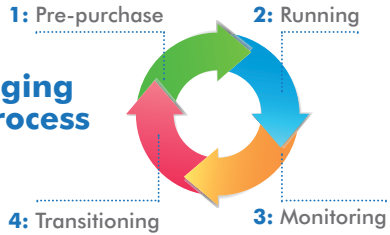
Privately, some airlines have admitted that they have ordered sufficient large jets for the foreseeable future. Add in the improved range of the latest single aisles, which can cover 7,000km+, and the widebodies are further squeezed.

These issues are only likely to intensify, given the numbers of widebodies redelivering over the next five years.



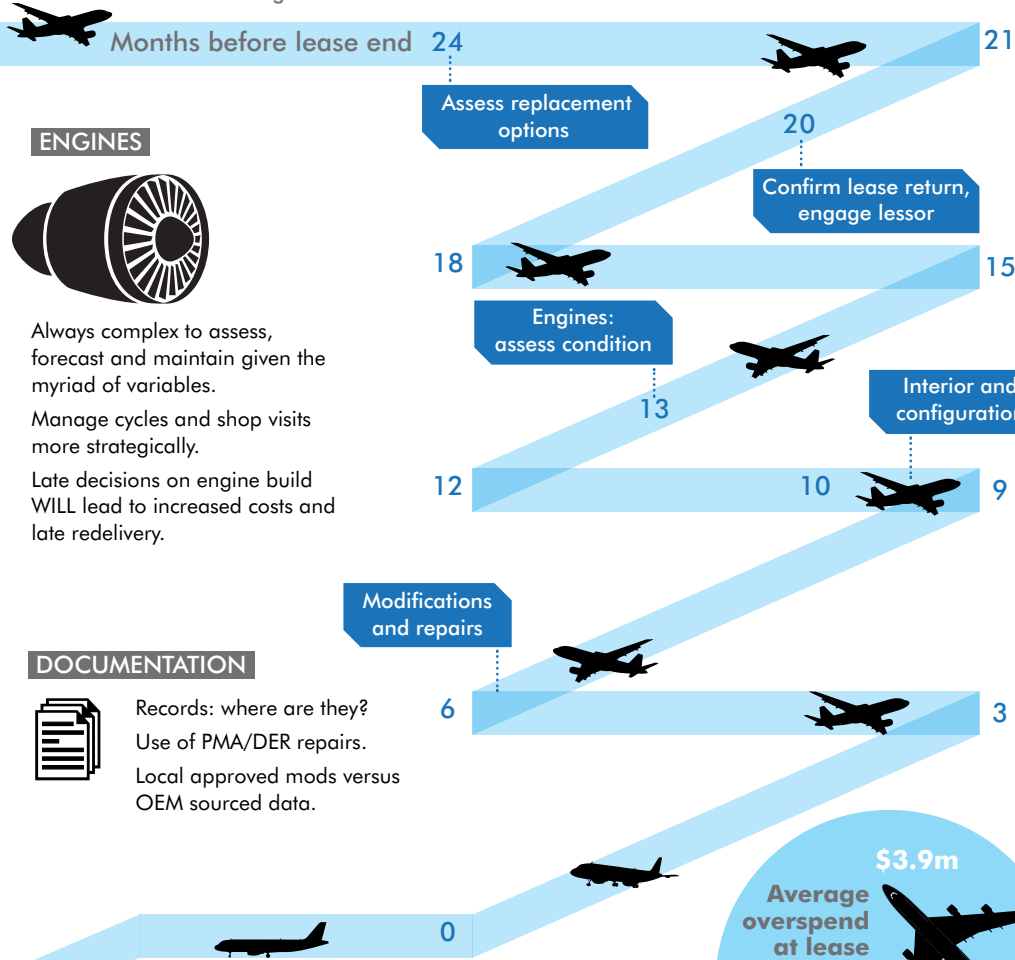
# Aircraft Operating Leasing. The Transition Management Minefield

## Managing the process

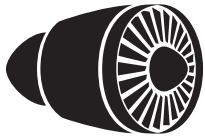


## Do you RETURN or EXTEND?

Analyse: Market lease rates  
Fuel price outlook  
Cost of meeting redelivery conditions  
Deal economics



### ENGINES



Always complex to assess, forecast and maintain given the myriad of variables.  
Manage cycles and shop visits more strategically.  
Late decisions on engine build WILL lead to increased costs and late redelivery.

### DOCUMENTATION



Records: where are they?  
Use of PMA/DER repairs.  
Local approved mods versus OEM sourced data.



## Late delivery lease premium

Dependent on contract



## Top 10 contributors to transition challenges

- Poor contract drafting around redelivery conditions, lessor inspection rights and disputes processes.
- Lack of lessee planning and early engagement with lessor.
- Inadequate focus on assets during operations.
- Lessee operational demands consuming redelivery resource.
- Decentralised, missing or incorrectly completed records.
- Underestimation of the total workload.
- Discovery of additional work required during maintenance input.
- Lack of lessor appetite for returned aircraft.
- Engines failing final borescopes – carry out precautionary borescope much earlier.
- Underestimating lead times and lessor expectations.

## The last 15 months prior to redelivery

ACTIVITY	15	14	13	12	11	10	09	08	07	06	05	04	03	02	01
<b>INITIAL PHASE</b>															
Confirmation of Lease Return															
<b>PRE-REDELIVERY PHASE</b>															
Analysis of Redelivery Conditions															
MRO Selection (Lessee)															
Initial Meeting with Lessor															
Project Plan															
Cabin & Cargo Bays - Inspection															
Preparation of Aircraft Records															
Preliminary Workpack															
Preliminary Engine & APU Borescope Inspections															
Final Workpack (Lessor approval)															
Pre-Input Meeting with MRO															
<b>REDELIVERY PHASE</b>															
Maintenance Plan from MRO															
Perform Workscope (MRO)															
Aircraft Records Review															
Engines - High Power Run															
Demonstration Flight															
Engine & APU Borescope Inspections															
Final Discrepancy List															
Commercial Resolution															
<b>AIRCRAFT RETURN</b>															

## Typical overspend, it soon adds up

Engines	600,000
General	475,000
Components	262,000
Fuselage, windows and doors	150,000
Landing gear	50,000
Corrosion	45,000
Interior and carpet	30,000
APU	30,000
Wings and empennage	10,000

**\$1,650,000**



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**As ever, please get in touch with if you would like to discuss any of the points raised, or better understand how IBA can improve your redelivery processes.**

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