CREDIT, FINANCE AND LEASING Q&A

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2016: A CHALLENGING TIME TO BE AN UNDERWRITER OR INSURANCE BROKER!

Russell Group launched 2016 with an aviation thought leadership campaign that started with its ground breaking Ground Accumulation Hazards paper published on the 26th January (www.risklounge.co.uk). Since then we have turned our attention to the subject of emerging aviation risks this year with a focus on the real risks that could be caused by drones or major cyber incident.

In this new white paper Q&A we focus on the current aerospace credit, finance and leasing, and the wider geo-political environment that affects the sector. Russell Group MD Suki Basi caught up with AVOCET Insurance Consultants, which provides the Airfinance market with specialist aviation insurance consultancy and product placement services, to speak to one of the firm's consultants Barry Moss.

The following is a thoroughly enlightening questions and answer session that provides information that will be of interest to aviation industry professionals and insurance practitioners alike.

The current soft market has seen continued rate reductions however the $ impact has been offset by growth, so generally the airlines are paying the same amount of premium. If there was a wide spread adjustment of aircraft values, is it right to say that the impact on the hull premium basis could be substantial?

Not necessarily. Investors currently see aviation as an industry with good returns in the current low oil price environment. At an airline economic conference in Dublin in January 2016, aircraft lessors and financiers continued to talk up the market, however it is an industry highly susceptible to global economic impacts and the current demand for new aircraft appears to be counter-cyclical which may indicate that the demand for new aircraft is reaching its peak. In fact 2015 was the first year in many years where year on year orders for new aircraft declined.

The first A320neo was delivered to Lufthansa in January this year and Airbus are gearing up to deliver up to 60 A320 ceo/neo models per month. Boeing made their first test flight of the 737 max this month and will also ramp up production over time to around 57 aircraft a month by 2020. The neo/max models will sell at a premium compared to current generation models and are generally expected to obtain a 15% improved fuel efficiency over the aircraft they are designed to replace.

The introduction of the neo/max models will not necessarily hit residual values of current aircraft models in the short term as Airbus and Boeing have full order books for the next three to five years or more and therefore there is still a strong demand for new and used 'classic'/"next gen" narrow body aircraft because the passenger demand is there. Airline earnings per RPK have

increased considerably due to improved load factors, economics and the reduction in oil price which may stay at its current low level for the foreseeable future, with increased oil supply taking effect due to sanctions having been lifted against Iran.

How substantial would that adjustment be?

We do not envisage an imminent collapse in aircraft values for the following reasons. The value of aircraft is determined by purchase price, cost of capital over a prolonged period and airline demand for certain aircraft types. Whilst there has been some decease in lease rentals of certain types, the cost of capital is currently very low and therefore any reductions in lease rentals are somewhat factored in.

Current aircraft models generally have an economic life of around 25 years in what is pretty much a duopoly between Airbus and Boeing on mid to large aircraft types. This lack of competition is restricting technological improvements, particularly in the narrow-body sector because the A320 and B737 types are the manufacturers 'cash cows' and therefore there is little manufacturing appetite to invest large R&D cost in developing clean sheet designs. Boeing has recently said that it has no intention of producing a 'clean sheet' aircraft design until after production of the first B777-8X and B777-9X aircraft enter the market in 2022 or shortly thereafter.

With up to 80% or more commonality between the A320 neo and ceo types the A320 and a similar percentage commonality between the B737 next gen and max models, these aircraft will no doubt have an extended production run for at least another 15-25 years unless business as usual factors change considerably during that period. Therefore we can expect to see A320/B737 operating well beyond 2030 on a BAU projection.

Considering the first B737 was developed in the mid-1960s and the A320 in the early 1980s, this is a pretty impressive production run and therefore there is a strong investor appetite for these narrow-body models of later vintages (up to 10-12 years old). Some later build models are being parted out earlier where there continues to be a strong secondary market for original aircraft manufactured parts. The increased fuel and maintenance costs of operating older equipment is being more than offset by the current low oil prices which is keeping values relatively high and stable.

The wide-body sector is a different scenario. Operating cost per seat remains a determining factor and therefore the secondary market for less fuel efficient types has had an effect on airline demand and apropos lease rentals and aircraft residual values. The market for A340s had plummeted but is seeing a slight resurgence due to low oil prices. The B777 market has been affected due to a number of aircraft coming to market around the same time.

It is a buyers' market for these types with Delta just paying $7.7m for a used B777 whereas a new B777-300ER model would presently be valued at around USD200m. The difference between values of similar aircraft covers an awful lot of additional fuel and maintenance costs for older models. However, there does not appear to be a rush to used models for other reasons such as reconfiguration costs and also the B777 has 2/3 engine types which may make fleet commonality a problem.

Whilst the demand for new B777 and A330 ceo types remains pretty buoyant, these aircraft will also be replaced by the B777-X and A330 neo and A350 types and therefore residual values of present types may erode pretty quickly once the newer models take control of the market. The manufacturers are also having to play a juggling act in the winding down of production of existing types and the ramping up of manufacturing of their replacement types which is likely to restrict supply in the short term.

The large wide-body sector has become a niche market. BA continues to operate very old B747s, mainly on transatlantic routes, because they are financially unencumbered and economic to operate in a low fuel cost environment, providing they have a high load factor. The B747-8 is unlikely to continue in passenger production for long due to poor airline appetite for the type. The production line will I expect be kept open for freighter versions and will probably come to an end once the current US Presidential aircraft are replaced with two or possibly three of the latest B747 models. This will have an impact on values although the world B747 fleet is now so small that it will have little effect on insurance premium income.

Therefore in summary, we expect that unless airlines and aircraft lessors make large write-downs of aircraft asset values on their books, Agreed Values are unlikely to depreciate much in the current BAU environment. Where we do see an impact on premiums is for older types where most of the residual value will remain in the engines rather than the airframes.

In the current environment for the leasing companies, the credit risk should be a major concern. If we see a downturn as CAPA forecast, is it true to say that aircraft being returned early, particularly wide bodied aircraft would create a major issue in addition to the write downs associated with aircraft value realignment?

No lessor wants to have to repossess aircraft which can be a long and difficult process. Therefore the

credit rating and risk management of the aircraft operator has to be factored into lease rentals and performance obligations etc. The established aircraft leasing market is capable of managing this. What concerns us however is new entrant demand due to surplus capital looking for good yields.

We are concerned that there appears to be a fair amount of naïve equity investors entering the market where yields are the determining factor rather than what we consider to be the utmost priority of any aircraft owner being the safety of their airline lessee's passengers. This has the potential to go horribly wrong for many new market entrants and could put pressure on existing lessors to cut costs and take greater risk.

Banks are inclined to take a haircut on non-performing aircraft assets rather than incur the cost on continuous maintenance, storage, insurance etc. and this would therefore have an impact on distressed aircraft values, particularly in a difficult market. What the market does not need right now is the collapse of a major airline or lessor where numerous aircraft will come to market at the same time depressing lease rentals and values even further. We see further consolidation in the leasing market and increased participation from deep pocket investors, particularly from the US and China.

More generally what are the major economic and finance issues affecting credit counter-parties? Presumably the low oil price and low interest rates but what else?

Whilst the airline market is currently pretty robust, it would not take much to reverse the sector's fortunes such as if large scale terrorist attacks take place, increased risk of regional conflict and health pandemics result in a collapse in passenger demand. We are also concerned that insurers/reinsurers have increasingly concentrated risk at certain home/hub airports where fleet values can easily run into billions of dollars.

Our view is that there is, particularly in the Middle East, Europe and to some lesser degree the US, China, Russia and certain Islamic states, increased terrorist ground risk exposure. Relatively poor airport security in some territories (e.g. the recent planting of small explosive devices on aircraft with the complicity of ground staff in Egypt and Somalia) and the availability of cheap drone technologies that can deliver reasonable payloads accurately over short/medium distances cannot be dismissed as a potential threat.

Whilst many commercial drones contain software limiting their GPS capabilities around airports, this technology, so we have been informed can be easily overridden with little technical expertise. We believe the development and adaptation of low cost commercial drones as highly capable potential terrorist munition platforms poses a threat to aviation insurers/reinsurers and the Airfinance and aircraft leasing communities.

Security is an issue that will continue to face territories where fundamentalists and extremists will try to threaten moderate and liberal regimes which are counter to the ideals of those who perpetrate such crimes. Recent comments from the French Prime Minister Manuel Valls, for example, that Europe will undoubtedly suffer further 'hyper-terrorist' attack is obviously based on intelligence gathering.

The French PM told the Munich Security Conference the terrorist threat had increased because the ideology driving terrorists was "at the heart of our societies". He said: "We have entered - we all feel it - a new era characterised by the lasting presence of 'hyper-terrorism'.

"We must be fully conscious of the threat, and react with a very great force and great lucidity. There will be attacks. Large-scale attacks. It's a certainty. This hyper-terrorism is here to stay. The force of the ideological fascination is formidable, and if we have changed era it is because this hyper-terrorism is in the heart of our societies."

Most Aviation Hull War Risk and Allied Perils coverages provided by insurers/reinsurers to airlines are subject to aggregate annual limits. The combined value of any one airline's assets at risk at a single location often far exceeds the aggregate limit. The design of airports means that passenger gates are tightly compacted and if each of these gates is occupied by new (and particularly wide-bodied) or high value aircraft, then this poses a primary target for terrorist or other insurgents.

It would not be inconceivable for a value at risk to exceed $1bn – $3bn or more whereas the annual policy aggregate may be as little as $750m or less. Therefore aircraft owners and lessors are at risk as their assets may only be partially insured in the event of a large-scale war risk or terrorist attack event. Increasing aggregate limits or waiving them altogether would result in insurers/reinsurers assuming additional catastrophic risk and to price such risk may be beyond what airlines are willing to pay as an annual premium. It is therefore important that insurers and owners monitor fleet values/aircraft portfolio values when determining direct and contingent hull war and liability war risk coverages.

The loss of the Russian Metrojet A321 in October 2015 over the Northern Sinai and the substantial damage caused to the recent Daallo Airlines A321 flight from Mogadishu indicates complicity of airport/airline employees in aviation terrorist attacks. Surveillance video footage taken at

Mogadishu airport recorded two men handing what appears to be a laptop computer to a suspected suicide bomber after he passed through a security checkpoint. At least one of the men delivering the hand held device was an airport employee according to a Somali government spokesman.

Investigators also suspect the bomber was able to bypass rigorous security screening at the airport by boarding the flight in a wheelchair. The bomber fell from a hole blown in the fuselage of the aircraft. The bomber and many others aboard the Airbus had originally been checked in with Turkish Airlines, which cancelled its inbound flight due to bad weather. The plan was for these passengers to transfer at Djibouti and therefore it would appear that the THY flight was probably the intended target of the al-Shabab claimed attack.

My understanding is that values of aircraft have been driven by cheap debt, not demand and the leasing companies are about to go through a tricky period. All the aircraft types discussed are seeing reductions in value due to a variety of factors including over supply and aircraft dynamics. For example, the secondary market for the 777 is almost zero because the aircraft is a little too big and costs too much for the secondary market. How does that affect insurers and their clients?

We believe your assumption is probably correct with a few exceptions. We have yet to see the impact on values of A380s for example in the secondary market as the first of these types will start coming off lease in the next 18 months or so. Interestingly Willie Walsh said last month that BA is keen to acquire 5/6 second hand A380s as they will not be taking up the options they currently have for additional new aircraft.

Walsh says new A380s are too expensive but BA are only interested in RR powered aircraft which will restrict acquisition to Singapore and MAS aircraft. It will not include any of the Emirates aircraft which comprise 50% of the world's A380 fleet. There are currently three specialist German KG A380 investors who must be concerned about the long term prospects of those aircraft they have on lease to Emirates in particular.

Converting A380s into freighters as happened with B747s, B767s and B757s etc. (mainly for the parcel courier market) is a non-starter. The secondary B777 market is also difficult as the economic cost and returns of operating such equipment would be difficult for second and third tier airlines. The US domestic as well as other high capacity regional markets may be interested in these aircraft as may charter operators.

You mentioned that a Boeing 777 was recently sold to Delta - for $7m I think you said it was. An aviation underwriter I spoke to recently explained to me that this causes problems for underwriters because they are then forced to underwrite the total loss of a 2nd plane for this sum or whatever the agreed value is at a low rate but if the plane experiences, for example, a nasty wing tip collision or accident on the ramp it can rack up attritional losses very quickly. So loss exposures are going up while rates are falling off a cliff. Is that an accurate assessment? If so, presumably such an underwriting environment is unsustainable?

I expect aviation insurers are concerned at the repair and maintenance cost of older wide body types where asset values have depreciated considerably. It would not take much of an incident to make such repairs uneconomic and to declare a total loss. The cost of a C check and replacement of technical records could exceed the asset value of an older used wide-body and therefore the insurance market may decide to either take date of manufacture and maintenance cycles into underwriting rating consideration or increase the market deductibles for such types. As previously mentioned most of the residual value for older types will be wrapped up in the engines.

Moving onto slightly different ground I was interested to read the blog section of your company website. One article in particular stood out from last year: Saudi Arabian Airlines has paid a €1.4 million fine levied by a Belgian regional government for not complying with the EU's aviation emissions trading system (ETS)

We have real concerns that non-compliance with the European Emissions Trading Scheme (EU ETS) is a factor that is not fully understood by aircraft owners and their lawyers. I could write a book on this subject but unless international aviation (together with shipping) is included within national/international emissions reduction targets then reaching the 1.5ºC aspirational global warming limit goal set at Paris COP21 this year will be impossible to meet.

Presumably this is going to be a growing problem with major implications for the liability/casualty market, which are?

Yes. The EU has so far played softly-softly but unless ICAO comes up with a meaningful global aviation emissions reduction scheme to be introduced from 2020 then the EU may take a more stringent approach by reintroducing all international flights within EU ETS. This would result in even more airlines defaults and where some EU Member States have statutory legal powers to detain and sell aircraft. If this were to

happen then lessors would have little option but to forcibly repossess aircraft which could lead to oversupply on the market.

All eyes are on whether ICAO will agree on a scheme in October this year (which has now been under consideration for over 16 years). Our view is that the probability of reaching agreement is no more than 50/50 unless major concessions are made to developing countries and that would probably undermine the effectiveness and integrity of any such scheme.

Also, in the wake of the VW emissions scandal, it occurred me that it probably wouldn't be out of the bounds of possibility for something similar to occur in the aviation market! What are your thoughts on that?

Aircraft emissions are regularly tested and ICAO has an emissions matrix but this is now woefully out of date. ICAO are revising emissions criteria but only for new types that have not yet entered into service. Therefore most current aircraft types are not presently nor are they likely to have to comply with stricter regulations that are presently being proposed to come into effect between 2023 and 2028. There is a direct ratio between CO2 emissions and fuel burn therefore it is in airlines economic interest to operate more fuel efficient aircraft, although any such incentive is currently marginal with the oil price where it is. Fuel efficiency and environmental impact had much more CFO attention when oil prices were over $100 per barrel.

In 2014, geopolitical tensions left the aviation market in a fragile state. As lenders and financiers become increasingly wary of investing in a market where aviation insurance products are cancellable, it must be a good time to be a buyer but is there any light at the end of the tunnel for underwriters?

The aviation market has only been really profitable for short periods following major events such as 9/11. As long as airlines continue to maintain an exceptionally high safety record then the aviation insurance market will continue to attract new and additional capacity. In 2015 terrorism, war risk and unforeseen crew action (i.e. suicide) continues to have a far greater impact than airline safety and therefore is more susceptible to major catastrophic events.

Maybe some insurers/brokers will consider that aviation is not economically attractive or will look to develop new aviation risk mitigation products that have a higher rate of return within a highly regulated market. I don't think I would want to be an aviation underwriter or broker right now.

What other counter party credit issues are out there right now?

They are what they have always been, predominately default risk. The next major incident whether it be war, terrorism, pandemic or technical issues that results in a collapse in passenger demand will once again change the landscape of the airline and aviation insurance industry.

Is the cyber threat something that concerns you at all?

Yes it is. As aircraft increasingly rely on computer and information technology then systems are liable to remain vulnerable to cyber-attack. Recent claims that hackers have been able to compromise flight control activities through in-flight entertainment systems have been taken seriously by national aviation authorities, OEMs and airlines. Whilst firewalls can be strengthened around existing systems and software can be upgraded, the internet age poses a potential threat to aircraft security.

The fact that individual aircraft can be identified in real time from freely available web-based information services means that would be terrorists can now potentially identify an aircraft from its flight path long before it reaches its destination. Likewise with the introduction of Wi-Fi services on many flights, it is now potentially possible to coordinate in-flight terrorist attacks from the ground and to give orders to terrorists posing as ordinary passengers. To counter this threat it is also potentially possible for authorities to take command of aircraft and fly them away from major areas of population in the event of another co-ordinated terrorist attack.

However, such measures would not necessarily provide safety to passengers aboard commandeered flights where the control of the aircraft could potentially be maintained from the ground. Those airlines that currently offer free or paid Wi-Fi connectivity may be more vulnerable to terrorist or cyber-attack compared to those airlines that have been slow to introduce such technology.

About AVOCET

AVOCET Insurance Consultants provides the Airfinance market with specialist aviation insurance consultancy and risk management services.

Our aviation insurance opinions are continually relied on by Governments, investment banks, specialist fund managers and aircraft lessors. We provide our clients with independent assurance concerning the adequacy of the aviation insurances provided by their airline and aircraft operator clients.

AVOCET is also retained by investment banks and lessors to provide independent advice on their contingent hull and liability insurances.

AVOCET Risk Management also provides aircraft owners such as operating lessors, investment banks and fund managers with independent aviation European Emissions Trading (EU ETS) compliance reports in respect of statutory compliance obligations of airlines and other aircraft lessees.

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