Aon Risk Solutions
Global Broking Centre | Aviation

Airline Insurance Market Outlook 2016

Uncharted skies

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Foreword

The airline industry delivered another impressive year from a safety perspective, although the positive numbers were punctuated by five major losses that have each been valued at more than USD 50 million. These serve as a stark reminder that despite the massive improvements that have been made in training, equipment and working practices over the last decade, the airline industry carries a high level of risk.

After the string of catastrophic losses in 2014, there was a concerted push to raise the price of airline hull and liability insurance. With global premium level falling from a little over USD 2 billion in 2005 to under USD 1.3 in 2015, there were those who suggested that prices had fallen too low to be sustainable.

There is certainly logic in this suggestion. Total claims for the airline industry in 2015 were in the region of USD1.5 billion with a reasonable estimate for minor losses. With premium of USD 1.3 billion, this means that once again claims outweighed premium into 2015, the third consecutive year where claims have been higher than premium.

The problem for those advocating price increases is that capacity continues to flow into the insurance markets and aviation continues to be profitable for underwriters that avoid involvement in one of the major claims. Capacity leads to competition, and concurrently competition supresses prices.

As a result, after hardening at the end of 2014, the airline insurance market returned to the soft market conditions that have been a feature of the last decade.

Despite airline insurance prices continuing to fall, Aon has remained committed to innovation for our clients' benefit. Our new Aon Client Treaty (ACT) facility gives our clients access to 20% of A+[1] rated pre-secured Lloyd's co-insurance capacity, which from an airline point of view can potentially bring some stability to the fluctuating hull and premium market conditions that have occurred as a result of major claims.

I know from talking to airlines around the world that uncertainty around the price of insurance is not helpful to the budgeting process. Our role as a broker is to make sure that the market functions efficiently, keeps evolving and supports our clients as they carry out their business. ACT can help champion this ambition.

If there are any elements of this report that you would like to discuss in more detail, please do not hesitate to contact our team.

Mike Smith
Aviation & Space Business Leader
Aon Risk Solutions

[1] Standard & Poor's rating of Lloyd's

Loss causation

While advancements in aircraft engineering and technology have led to a sizeable drop in total losses resulting from mechanical failure over the last 15 years, terrorism has recently emerged as a significant cause of total loss.

Between 2002 and 2006 there were no reported losses of western built aircraft with an incurred amount over USD 10 million due to terrorism but in the last five years there have been five.

Another notable change is that losses from mechanical failure have fallen from 16 between 2002 and 2006 to just one in the last five years. This drop can be attributed to aircraft design and manufacture evolving over the last 15 years. Indeed, from a mechanical perspective, aviation, and its insurance, has become a far less risky business with human error being the primary cause of total loss. This factor hasn't actually changed in the last 15 years but when comparing the two periods of five years again, losses due to human error have nearly halved. It is likely that this is due to improvements in training and assessment procedures.

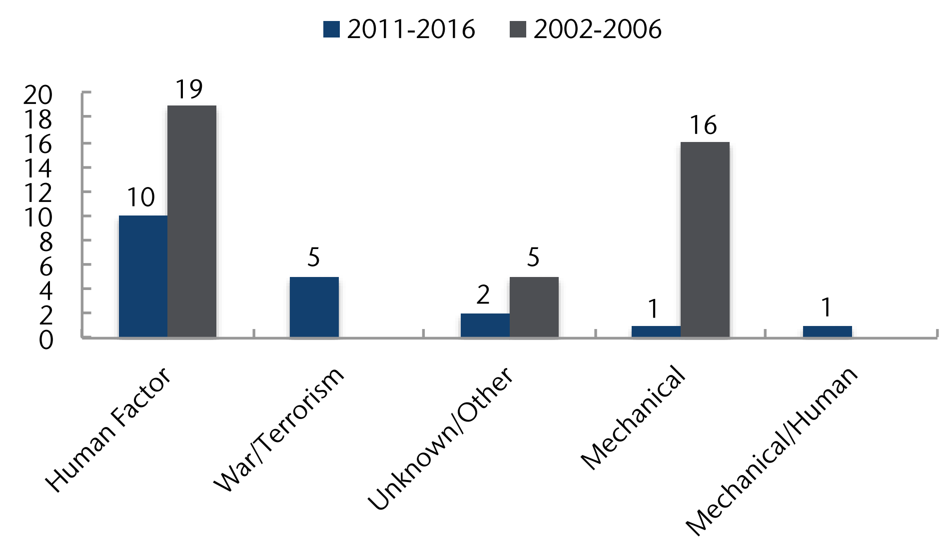
It is the human factor, however, that remains the predominant cause of losses in the industry. While frequency has reduced, perhaps in part due to the increased automation of aircraft, this aspect remains the biggest challenge for airline operators and insurers, accounting for around fifty percent of the losses over both periods analysed.

The reason why we have named this category 'the human factor' as opposed to 'pilot error' is due to one notable difference over the two periods. All losses occurring in the 2002-06 period are due to poor decision making on the behalf of the crew, whereas and perhaps of more concern, is that two of the losses in the more recent period have been attributed as a direct result of a deliberate act by a member of the crew to crash the aircraft, both of which were carrying passengers. This has prompted much debate in the industry on how to monitor the mental health of the pilots, as well as the procedures for maintaining a secure cockpit while minimising the threat of unwelcome parties entering this area.

Unfortunately it is probable that terrorism will continue to be of concern to the aviation industry in the coming years. Aon's Terrorism & Political Violence Map shows that transport was the sector most targeted by terrorists in 2015, being hit by 131 attacks in all. On top of this, tourism as an economic rather than business sector (measured primarily by attacks specifically targeting tourists) was subject to several high profile and lethal attacks last year resulting in at least 471 casualties, more than double the preceding year.

The recent nail bombings at Zaventem airport in Brussels illustrate that it is not only the hijacking of aircraft that is a concern to carriers but airports themselves are also under threat as terrorist organisations continue to favour mass-casualty attacks.

Loss causation comparison



Can the aviation industry ever be safe from cyber risks?

The threat of a cyber-attack is fast emerging as the greatest risk management challenge for the aviation industry.

As previously mentioned, progress in aircraft design in recent years has dramatically reduced the risk of mechanical failure. Now carriers have shifted their attention to cyber, with the International Air Transport Association, the International Civil Aviation Organization, Airports Council International, the Civil Air Navigation Services Organisation, and the International Coordinating Council of Aerospace Industry Associations publicly aligning their efforts on cyber threat.

Indeed the industry is extremely reliant on computer systems and, with paperless tickets and online booking, the number of entry points is set to grow even further in the future. Therefore it is important that industry bodies do join forces as otherwise they are even more vulnerable to attack.

As of yet, there haven't been a wealth of cyber-attacks against airlines but the one against Polish national airline LOT last year lasted five hours, delaying 12 flights and cancelling 10. The attack disabled the system LOT uses for issuing flight plans and afterwards the chief executive warned that no airline was safe from this type of attack.

The reliance on convertible tickets between alliance members means that a cyber-attack on one company could indeed have a knock-on effect on other members. The theft of customer data during a cyber-attack is also a factor that carries a significant reputational risk as well as the potential for hefty fines from regulators.

Along with other key risks such as the loss of business critical data and the impact an attack could have on the supply chain, it is becoming increasingly clear that standard insurance policies are not comprehensive enough to cover against these evolving risks. For instance, under a standard policy, general liability only covers bodily injury and property damage, not economic loss. Data is also not covered under property as the loss must be caused by a physical peril while perils to data are more likely to be viruses or hackers.

How worried should the airline industry be about drone use?

The airline industry is becoming increasingly concerned about the risks that drones may pose. But is this worry wholly justified? Even a recent incident - where a British Airways Airbus A320 reported a possible collision with a drone near London Heathrow – was shrouded in uncertainty. Minister of state for transport Robert Goodwill told a sub-committee in the House of Lords that it was possible that the incident was caused by a plastic bag on the runway but the Metropolitan Police have maintained that it was a drone that struck the airbus.

There seems to be opposing schools of thought on the threat of drones present, with certain bodies such as the International Air Transport Association labelling drone collision a "top priority". Casting any counter arguments aside for one moment, there is one indisputable fact: the unmanned aerial vehicle (UAV) market is going to continue to grow and gradually become more accessible to the public.

This truth in itself means that calls for tighter regulation and education to ensure that drone users are operating safely are hardly scaremongering, particularly in the vicinity of airports. The US made it obligatory for drone users to register their UAVs from December last year and it is likely that other countries will follow its lead.

What is certain, and rightfully an issue for underwriters, is that the worst case scenario is that a UAV colliding with an airplane at speed or, more importantly, sucked into the engine, could result in a catastrophic loss of an aircraft and potentially lives.

Comparisons have been made between the risks of birds and drones on the runway for various reasons. For those who feel the threat of drones is being overplayed, the link to birds is made as this is an established risk that the airline industry copes very well with, shown by the fact that there have only been 12 bird-related fatalities in the last 25 years. However others argue that this similarity means that there should be an obligation for future engines to be certified for small drone strikes, like they have to be for birds. If this does become a requirement, it could potentially be very expensive for airlines.

While the true extent of the UAV threat is not entirely clear, it can't be denied that there are currently very few controls that in place to prevent UAVs flying in close proximity to airports and any attempts to regulate are not keeping pace with technological innovation. It is an industry that will continue to grow and the aviation insurance market needs to assist airlines in their risk mitigation efforts.

Executive summary

2015 against 2014:

- Average lead hull and liability premium fell 10%
- Average fleet values grew by 5%
- Forecast passenger numbers grew by 7%
- Total lead hull and liability premium was USD 1.25 billion
- Total incurred claims were USD 1 billion
- Total incurred claims including an estimate for minor losses were USD 1.6 billion

Premium

After a brief hardening at the end of 2014, the highly competitive conditions in the airline insurance market reasserted themselves. Total lead hull and liability premium declined from USD1.4 billion in 2014 to USD1.25 billion. In 2005, total lead hull and liability premium was slightly over USD2 billion.

Claims

There were only 43 major incidents that led to claims in the airline insurance market during 2015, the sixth year in a row that the number of claims has been below the long term average of 69. There were 469 fatalities compared to 574 on average. The challenge is that the cost of minor claims is rising as the new generation of aircraft join the global fleet. As a result, the total value of claims is once again above total lead hull and liability premium (see opposite page).

Risk exposures by region

Fleet values are forecast to rise in every region except Africa where levels are expected to be flat. Similarly, passenger numbers are expected to rise in all regions except Africa. The Middle East's growth continues unabated, with airlines in the region forecasting a 24% increase in average fleet values (see page 17).

Business sectors

After a challenging year in 2014, flag carriers enjoyed better treatment from the airline insurance markets in 2015. The best treatment is still reserved for international airlines, which enjoyed healthy premium reductions at the same time as notable exposure growth (see page 31).

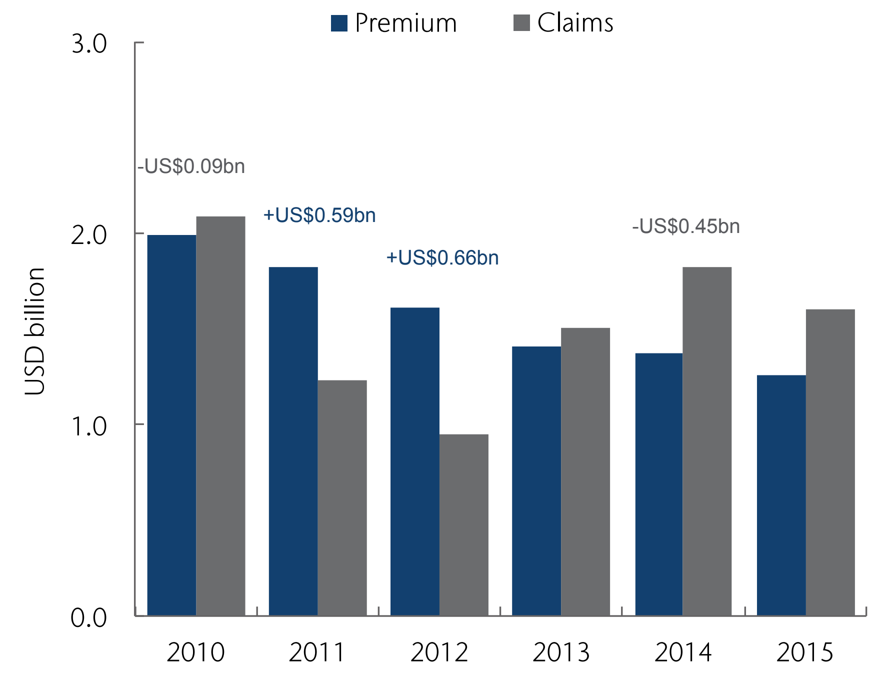
Fleet

For the third year in a row, mid-range fleets enjoyed the best reception from the insurance markets, with strong reductions in lead hull and liability premium coupled with healthy exposure increases. That said, the largest carriers remain the most profitable from an insurance market perspective(see page 33).

Capacity

The challenging global economic conditions make the insurance markets an attractive place to manage capital and as a result capacity continues to be abundant. We estimate that an airline with a USD 1.5 billion liability limit can attract around 230% capacity. With fewer major claims than 2014, the miss-factor is a less prevalent but no less relevant factor in 2015.

Total premium and claims (including minor claims estimate 2010-2015)



Source: Aon data

Overview

From some perspectives the airline insurance market is in fine fettle. Major claims in 2015 were relatively limited and as a result, while exposure grew, lead hull and liability premium continued to fall.

From other perspectives, things are more concerning. Claims have outweighed lead hull and liability premium in seven of the last 10 years, but the level of capacity continues to be significant.

Ultimately, the direction of travel for hull and liability premium has been fairly consistent for over a decade now. Despite some blips, such as a headline 6% increase for 2014/15 renewals as a result of an unusual confluence of major incidents, the sector has performed exceptionally well from a safety perspective and the average price of lead hull and liability insurance has declined as a result.

The challenge now is to reconcile the two perspectives and make sure that the airline insurance market is performing its function: supporting the airline industry in the event of a claim.

The great mystery

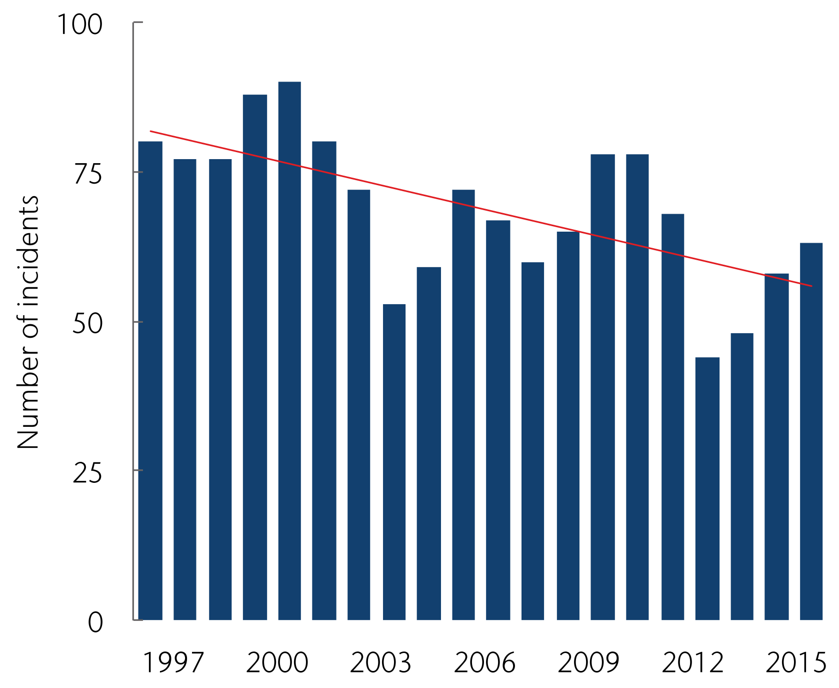
Hull and liability premium is at its lowest level since the turn of the millennium. The total global lead hull and liability premium for the airline insurance market is now 65% lower than it was in 2001, while exposure has risen dramatically. There are more planes of higher value flying more people to more places than ever before, and yet the price of insurance continues to fall.

While this may seem like a paradox at first glance, in reality the explanation is quite simple: the aviation industry has focused on improving safety and the price of insurance has dropped as a result. Aviation can never be risk-free, but safety is vastly improved compared to 20 years ago, and improved data and data analysis means that the industry is now able to learn from the majority of incidents.

There are also secondary reasons why the price of insurance continues to fall. The global economy's performance over the last five years has meant that governments and financial institutions around the world have dropped interest rates to virtually zero, in some cases lower. This means that the returns that the insurance market can offer are relatively attractive.

As a result, capital has flooded into the insurance market and been translated into an exceptionally high level of capacity. Even where underwriters try and make a stand and harden their stance towards certain risks, the chances are that they can be easily replaced.

Number of incidents, global 1996-2015



Recent history and the immediate future

2014 offers a prime example of this. Following four major incidents in rapid succession during July 2014, the airline insurance market was expected to harden significantly. Initially this was indeed what happened, with prices climbing from August.

The majority of activity for the third quarter takes place in July and as a result, the harder conditions did not become apparent until the final quarter of 2014, when the price of lead hull and liability premium rose on average by 6%.

The first quarter of 2015 continued this trend with a further 6% average increase, but as 2015 got underway in earnest in the second quarter (only 5% of total annual lead hull and liability premium is placed in the first quarter), market forces came back into play. Underwriters were still attracted to the airline sector and competition supressed prices. After a flat second quarter as the market turned, the third and fourth quarter of 2015 saw prices fall on average by 12% and 13% respectively, effortlessly surpassing the increases of the previous year.

The miss-factor, also known as luck. Or risk

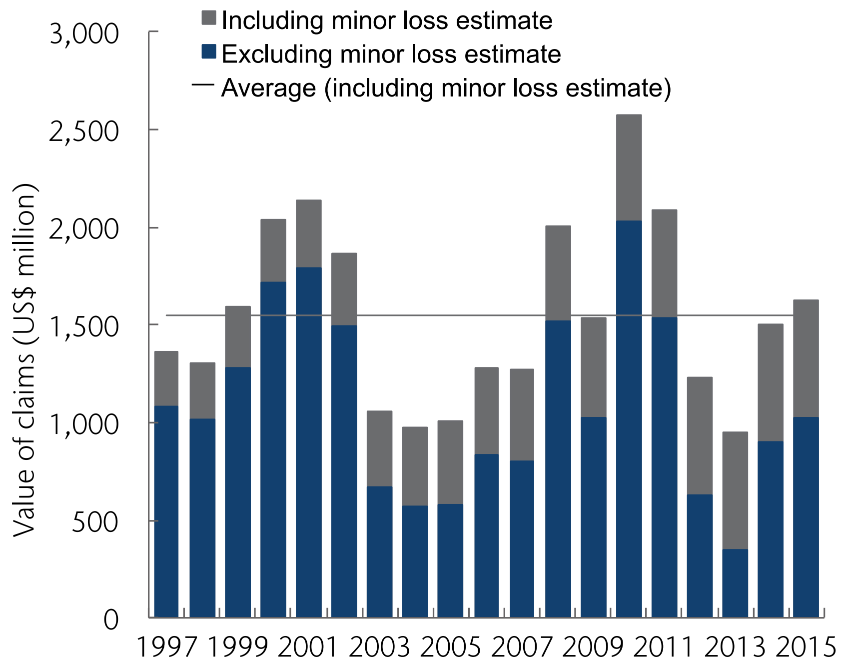
2015 was the third consecutive year where the value of claims has surpassed the total lead hull and liability premium, the fifth time in the last seven years where claims have outstripped premium.

While logic might suggest under these circumstances the time is ripe for the sector to harden, the reality is that, as we discussed last year, the miss-factor has a major influence on the airline insurance markets. Capacity is very high and all but the largest risks can be placed more than twice over. As a result, there are a number of markets that will not have been involved in many of the major losses that have occurred in the last few years.

For these underwriters, airline insurance has been a profitable book of business and one that they are happy to continue to be involved in even with falling prices.

Couple this with the level of capital flooding into the insurance markets at the moment as a result of wider global financial conditions and it is unsurprising that the soft market has reasserted itself.

Value of claims, global 1996-2015



Source: Aon loss data

A decade gone

Looking back at the airline insurance market a decade go shows some stark changes that have taken place.

In 2007, the Aon Airline Insurance Market Review reported total premium for 2006 as slightly over USD 1.72 billion, with fleet value forecasts of USD600 billion and passenger numbers forecasts of 2.3 billion.

In 2015, total lead hull and liability premium was USD1.25 billion with fleet values of USD968 billion and passenger forecasts of 3.6 billion.

While direct comparisons are inherently little more than an indicator, if 2015 airline exposures where applied to 2006 rates, the premium generated would equate to USD 2.7 billion, as opposed to the current USD 1.25 billion. This USD 1.5 billion ‘loss’ of premium has happened while the industry now carries an additional 370 million passengers, a 60% percent increase over the same period.

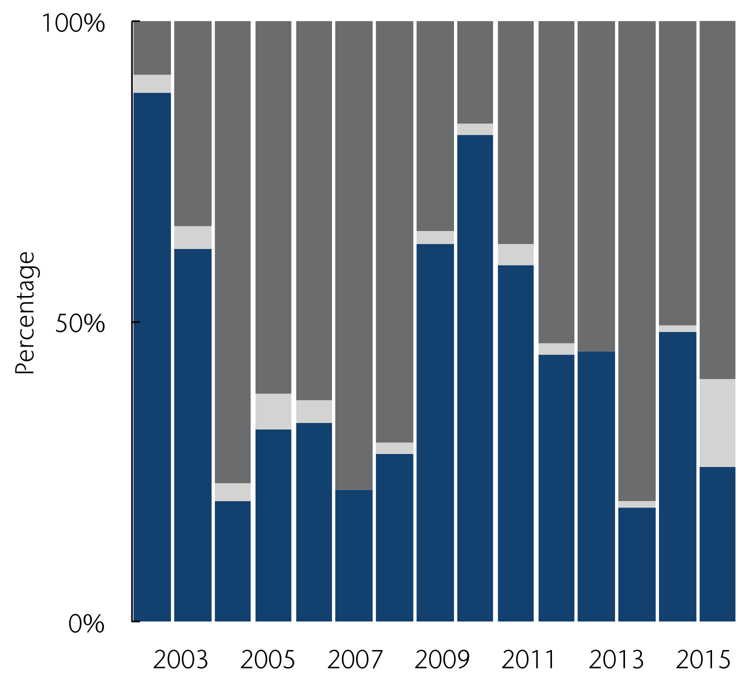
The changes are particularly interesting in two regions: the Middle East and North America.

In 2015, airlines in the Middle East paid 2% more lead hull and liability premium than they paid in 2006, but forecast that they would carry more than twice as many passengers. Average fleet value has nearly tripled in the same period.

Over the same period in North America lead hull and liability premium has more than halved while passenger numbers have risen by only 9% and average fleet value by only 1%.

Dry those these statistics are, they do sum up the unusual place that the airline insurance market finds itself in. In the last ten years, exposure in the Middle East has at least doubled while premium has stayed virtually static, while airlines in North America have halved the premium they pay despite exposure remaining relatively constant.

Proportion of airline programme premium movement



Source: Aon market data

The outlook in 2016

The airline insurance market is complex and although the market at first glance seems in a prime position to harden, this is unlikely to happen.

With the global economic prognosis currently somewhat less than positive and interest rates continuing to be abnormally low, the insurance sector is likely to continue to attract capital.

At the same time, the miss factor is still going to exude a significant influence even in a sector that was founded on the principle that the losses of the few are paid for by the premium of the many.

Uncharted skies

There are two factors that could lead to a hardening of the market.

If a string of catastrophic losses pull a number of underwriters into claims, the influence of the miss-factor will be reduced and there could be a more concerted and effective effort to raise prices.

Equally, if global economic conditions change and the swathe of capacity providers currently active in the airline insurance market sense positive returns elsewhere, the level of competition could fall.

As we pointed out last year, premiums have reached a point where if either of these factors come into play, prices could rise quickly. If the level of available capacity has fallen, the harder market conditions could be prolonged.

At this stage there seems to be little appetite to raise interest rates however and as a result, if there is a string of catastrophic losses, the healthy level of capacity will mean that any subsequent hardening is likely to be short lived.

Given the experience of 2014 with its four major claims in rapid succession, we would estimate harder market conditions lasting around three to six months. In these circumstances, as we commented in last year's report, the timing of a renewal relative to when the incidents take place is likely to be a major factor in how a renewal will be placed.

In the event of the market hardening following a catastrophic loss or string of major events, there are some airlines that have a provision to extend their insurance programmes at their current levels for a specific length of time. These provisions could well be implemented if the circumstances require it.

A two tier market?

As we have reported on many occasions in this and other publications, the massive choice of capacity available for brokers and buyers of insurance over recent years has meant that there is constant pressure on underwriters to reduce rates and premiums to ensure their participation on an airline insurance programme.

As income from the airline book of business continues its steady decline however, there will inevitably come a point where reductions on certain risks are no longer considered viable. Anticipating how and when this will occur, and for which risks, is the challenge for the next couple of years.

Some larger airline placements are exceptionally attractive for insurers because participation means that a large portion of an underwriter's annual premium income can be achieved at a stroke. Within this group of airlines however, there are some that are reaching the point where the average annual loss total is greater than the renewal premium.

For airlines that find themselves in this category, underwriters would need a strong reason to justify the double digit premium reductions that we saw in the second half of 2015. Given that overall market income has been lower than the loss levels for three years in a row, this could be the case for more and more airlines.

Capacity for larger airlines with liability limits of USD 2 billion and above currently stands at just below 170%. If one or more large insurers take the stance that they won't offer reductions for airlines that don't meet their specific criteria, future renewal costs may be impacted.

At the same time however, there is more than 330% capacity for airlines that need USD 500-750 million of liability cover. If a particular insurer decides that they cannot entertain a reduction, there is unlikely to be a shortage of alternatives willing to add a new airline to their portfolio.

This scenario has the potential to create a two tiered treatment for airlines that purchase higher and lower liability limits, potentially leading to an interesting dynamic going forward.

This market dynamic also creates the opportunity for brokers to provide innovative solutions for airlines such as the Aon Client Treaty where 20% additional competitive capacity has been created to leverage costs further (please contact an Aon representative for further details). But whatever the outcome, there is a great deal that an airline can do to ensure that it is attractive to an underwriter, such as having a pro-active stance towards loss prevention and working closely with a broker with strong relationships across the insurance markets.

As stated at the start of this section, we appear to be very much in uncharted skies and when and how the market dynamic may change remains to be seen.

Aviation reinsurance market

With the cost of reinsurance now having an even greater bearing on the profitability of aviation underwriters we take our annual look to see how the market is performing. Like the direct market, pricing is being driven by capacity, which remains plentiful for all aviation reinsurance as underwriters strive to maintain market share in the face of income reductions.

Aviation Hull & Liability

Retentions, vertical limits and coverage have remained largely unchanged. With budgets fixed on bringing inwards income down, few had the freedom to spend more to reduce volatility or retain more to match the apparent randomness of loss causation. Buyers continued to achieve significant reductions in spend, but relative to their original income, the percentage of income remained relatively unchanged.

Reinsurers are continually pushed to include more Excess War Liability AVN52 cover, but to-date the market has remained firm.

Overall capacity remains plentiful for all types of proportional and non-proportional reinsurance.

During 2016 we expect prices to fall unless there is a run of losses that affect the whole market and force direct and facultative underwriters to increase original premiums.

Aviation Hull War

Reinsurers have continued to offer support, either standalone or via whole account, while percentage of income spend can be penal in view of losses buyers are able to secure reinsurance.

Analysis

Quarterly analysis

2015 was a year of two halves. Significant claims at the end of 2014 led to a continued move away from soft market conditions in the first few months. During the second half, there was a feeding frenzy among many insurers as they fought for premium income. This pushed prices down.

	Total Renewals			Fleet Value	Passenger Movement	Premium Hull / Liability		
	2014	2015	% Change	% Change	% Change	2014 (US$m)	2015(US$m)	% Change
Quarter One	14	18	29%	16%	17%	62.72	66.55	6%
Quarter Two	36	48	33%	3%	4%	198.50	198.75	0%
Quarter Three	43	35	-19%	9%	10%	129.21	113.56	-12%
October	8	11	38%	6%	6%	69.90	62.66	-10%
November	32	33	3%	10%	6%	290.77	289.33	0%
December	57	57	0%	5%	7%	646.79	528.15	-18%
Quarter Four	97	101	4%	7%	7%	1,007.46	880.14	-13%
Total / Average	190	202	6%	5%	7%	1,397.89	1,258.99	-10%

Quarter one

Activity in the airline insurance market during the first quarter of the year tends to be negligible, with only 9% of renewals, representing around 5% of the total lead hull and liability premium, being placed. The 6% average premium increase during the quarter reflected the fact that the majority of negotiations were carried out during the final quarter of 2014 when lead hull and liability premium also rose on average by 6%. This increase was mainly a response to the four major losses that occurred mid-way through 2014.

The level of activity in the first quarter continued to drift upwards in 2015. The number of renewals in Q1 has doubled since 2013, with the amount of lead hull and liability premium rising from USD 46 million to USD 67 million. This means that the first quarter is now more active than it has been since before the year 2000. That said, in the charts shown at the end of this section , there is still some way to go before the airline insurance market could be said to have an even renewal profile.

Quarter two

Average lead hull and liability premium was flat in the second quarter, despite lower than average exposure growth of 3% for average fleet value and 4% for passenger movement. Around 20% of the airlines renewing expected the value of their fleets to contract during the course of their 2015/16 airline insurance policy, while around a quarter expected their passenger numbers to fall.

Looking beneath the headline figures, the second quarter saw the high level of capacity in the airline insurance market reassert the long term market trend for reductions. Despite the exposure increases, nearly 40% of airlines renewing during the second quarter saw their lead hull and liability premium fall by more than 10% reflecting strong competition for clean insurance programmes.

The second quarter's gradual growth in prominence continued. It represented 24% of the renewals and 16% of the lead hull and liability in 2015, compared to 19% and 13% respectively the previous year.

Quarter three

Significant claims in the third quarter of 2014 saw the airline insurance market begin to harden. As suggested in last year's airline insurance market review, this was unlikely to be a long term change in market direction, despite underwriters' assertion that current levels of premium would be unsustainable in the long term. As expected, the third quarter of 2015 saw the long-term soft conditions in the airline insurance market reassert themselves.

Lead hull and liability premium income fell by 12% during the quarter, and over half of the airline insurance programmes placed enjoyed reductions in their lead hull and liability of more than 10%.

This was despite healthy increases in exposure, with passenger movement forecast to grow by 10% and average fleet value by 9% during the course of 2015/16 airline insurance programmes.

Some suggested that the softening conditions were simply a short term response to the post-loss hardening in 2014. This has proved to be wishful thinking on the part of underwriters and conditions continued to be soft as 2015 progressed.

The majority of activity in the insurance markets occurred during July when 90% of the quarter's lead premium was placed.

Quarter four

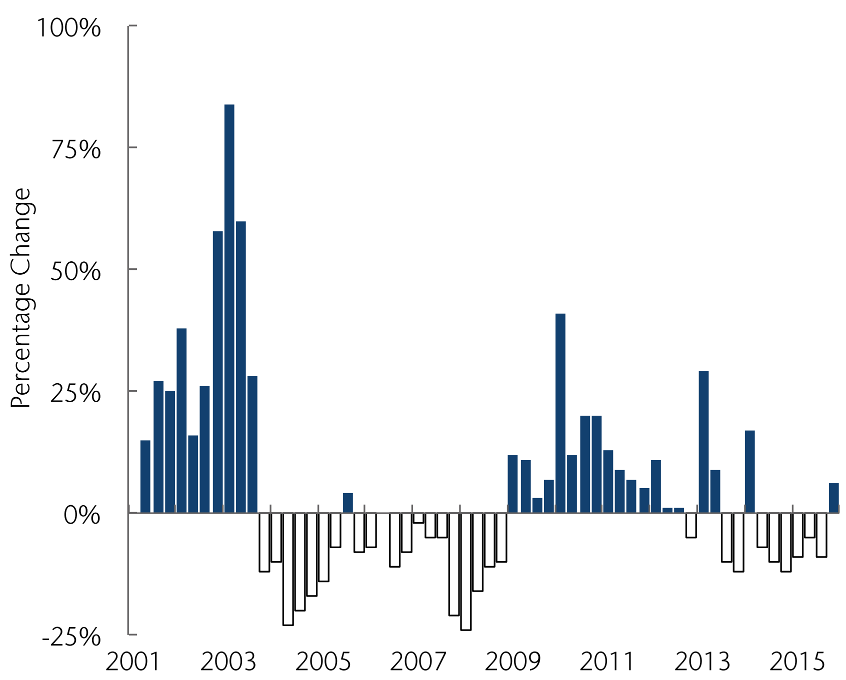
Of the 101 lead airline insurance programmes placed in the airline insurance market during the final quarter of 2015, 87% saw the cost of insurance fall. 90% of the programmes that enjoyed reductions saw prices fall by more than 10%.

This has occurred at the same time as fairly healthy exposure growth. Average fleet value rose by 7% on average, with more than 60% of programmes forecasting an increase in fleet value during the course of their 2015/16 airline insurance policies.

Similarly, passenger numbers are forecast to rise on average by 7%, with nearly 70% of airlines that report passenger number forecasts expecting a rise. More than 25% of the renewals during the final quarter forecast passenger number rises of more than 10%.

More than half of the airline insurance programmes and in the region of 70% of the lead hull and liability premium was placed during the final quarter. This dominance has existed throughout the history of the airline insurance market, reflecting the belief that renewing en masse means that you will receive better treatment from the insurance markets.
On current evidence there seems little reason to argue.

Average quarterly percentage premium change 2000-2015

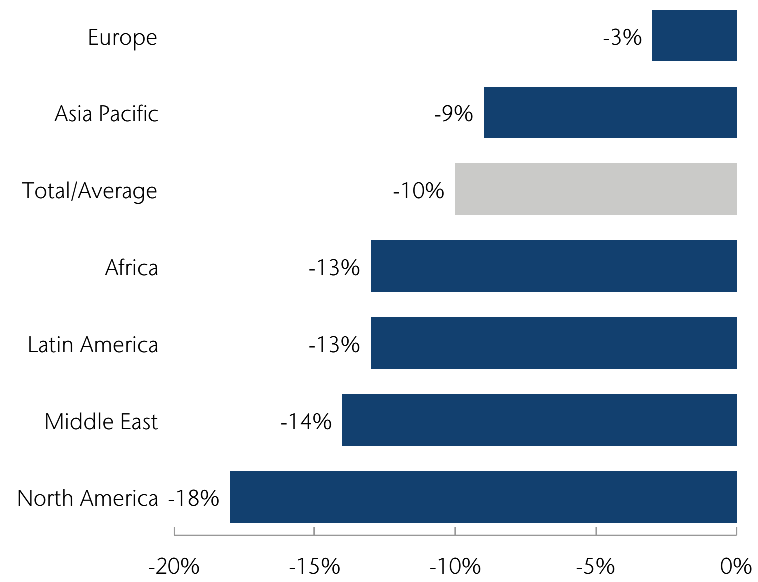


Source: Aon market data

Regional Analysis

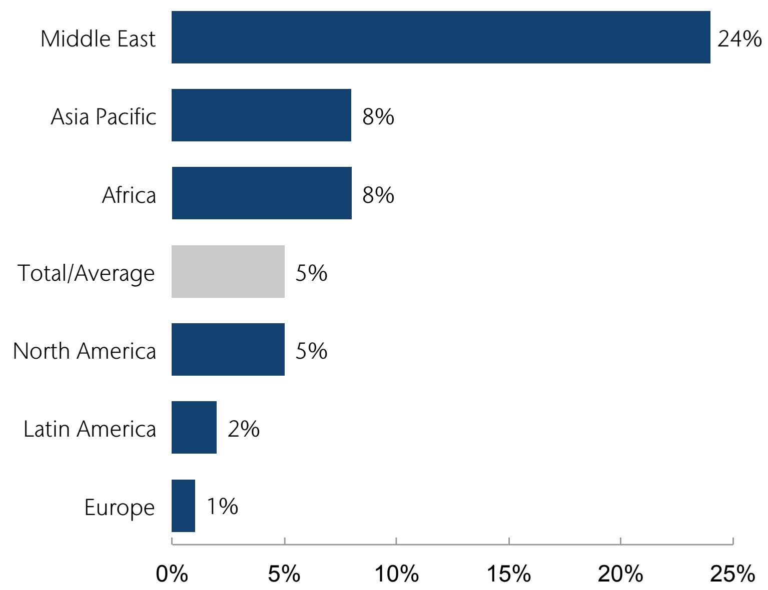
Investments in aviation industry in the Middle East continue to draw the eye, while claims in Europe changed the profile of the year.

Percentage lead hull and liability premium change by region 2015



Source: Aon market data

Percentage average fleet value change by region 2015



Source: Aon market data

Africa

The African airline industry continues to hold relatively steady. In 2010 it delivered around 5% of the total global lead hull and liability premium and in 2015 it delivered the same proportion.

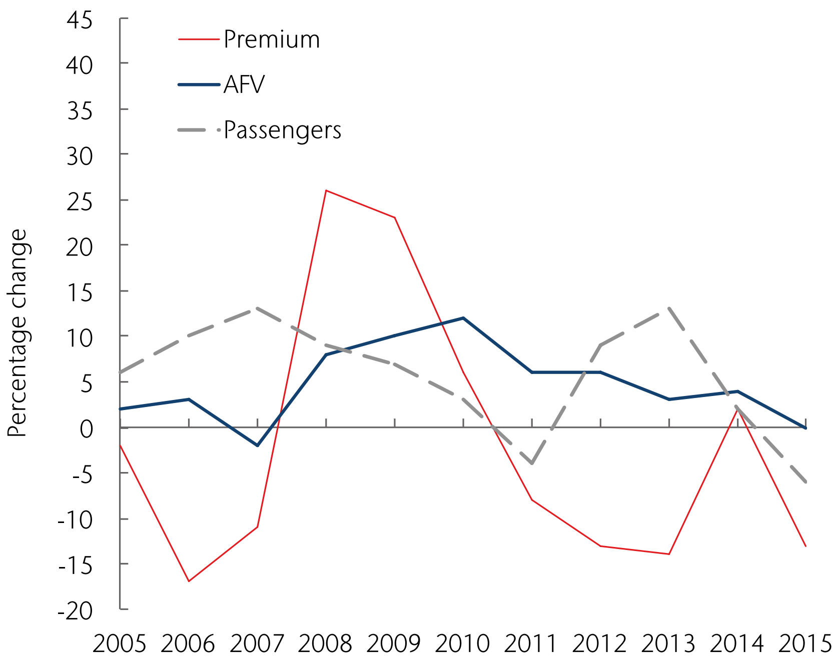
Unusually, airlines in the region forecast fairly stable exposure, flat in terms of average fleet value and -6% in terms of passengers, compared to an average global growth of 7% for both measures. Interestingly, the passenger movement decline is not the result of a single fleet forecasting reductions: just under 50% of airlines in the region expect passenger numbers to fall during the course of their 2015/16 insurance programmes.

The majority of these airlines are based in the north of the continent, suggesting that political instability may be having an impact on the airline sector. Aon's 2016 political risk map has further insights into the changing political dynamics in the region [http://www.aon.com/2016politicalriskmap/].

After a decline in the average aircraft value in 2014, there has been a 5% rise in 2015. The region now has the fourth highest average aircraft value, although it lags considerably behind the Middle East, Asia Pacific and, to a lesser extent, Europe.

In 2007, airlines in Africa forecast that they would carry 33 million passengers. In 2015, that number had risen to just under 57 million.

Africa: regional premium and exposure movement 2005-2015



Source: Aon market data

Claims

	1995-2014 Average	2014	2015	2015 versus 2014 Movement
Number of Incidents	8	10	4	-60%
Value of Claims (US$m)	$108	$111	$31	-90%
Number of Fatalities	111	110	8	-93%

There were four incidents during 2015 that meet criteria for inclusion in this report, only one of which involved fatalities. As a result, total claims for the region in 2015 were USD 31 million, well down on the long term average of USD 118 million.

The numbers are a significant improvement on 2014 when there were 10 incidents that caused the loss of 110 lives and around USD 306 million of claims. This highlights the fact that while risk is virtually impossible to eliminate from the airline industry, massive safety improvements have been made over the last ten years and major incidents are significantly less frequent than they used to be.

2015/16 insurance forecasts

	2014	2015	% Change
Total Renewals	12	17	42%
Premium (US$m)	$67	$58	-13%
Total AFV (US$m)	$20,646	$20,651	0%
Total Passengers (m)	60	57	-6%
Average Liability Limit (US$m)	$1,000	$1,029	3%
Cost per Passenger (US$)	$1.12	$1.03	-8%
Credit Balance (US$m)	-$67	-$324	-386%
Average Aircraft Value	32.35	34	5%

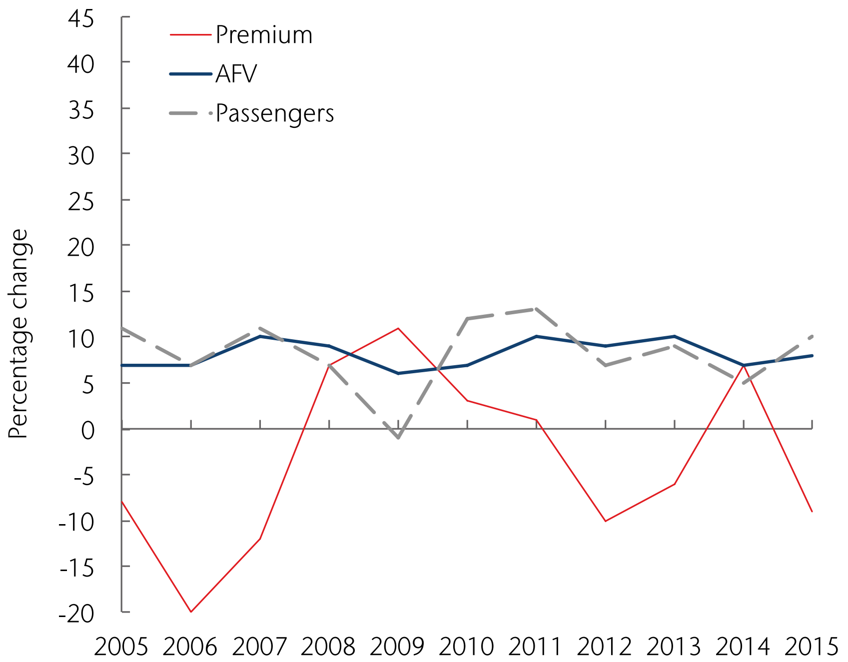
Asia Pacific

Despite the second highest premium income (albeit less than $1m away from being the first) for any region, the five year credit balance for the Asia Pacific region has now fallen below break-even point, reflecting the large losses that have taken place in 2014 and 2015. Despite this lack of profitability the region still benefits from the second lowest cost per passenger after North America, which may be influenced by the fact that the hull values in the region average over twice that of their North American counterparts.

These losses meant that the regions premium declined by 9% compared to a global average reduction of 10%. The premium reduction came at the same time as average fleet value forecasts grew by 8% and projected passenger numbers grew by 10% compared with a 7% projected global growth on both measures.

By most measures, the airline industry in the Asia Pacific region is the largest or second largest in the world. Average fleet value represents 37% of the global total, with the second largest, Europe, representing 25%. Passenger numbers are around a third of the global total and its average aircraft value has nearly doubled over the last year and is starting to catch up with the Middle East. Of the 44 airlines in the region where it is possible to extrapolate data, more than 25% have seen their average aircraft value rise by more than a fifth as a result of the introduction of the next generation of wide-body aircraft.

Asia Pacific: regional premium and exposure movement 2005-2015



Source: Aon market data

Claims

	1995-2014 Average	2014	2015	2015 versus 2014 Movement
Number of Incidents	19	27	20	-26%
Value of Claims (US$m)	$341	$984	$262	-77%
Number of Fatalities	215	710	91	-87%

After the catastrophic double loss in 2014, 2015 was significantly calmer. There were 21 incidents in the region, two more than the long-term average, but the claims total of around USD 259 million is comfortably below the USD 348 million long term average and 74% less than the total for 2014.

The 91 recorded fatalities were also well below the 215 average. There were only two incidents involving fatalities in the region, one of which involved an aircraft that was nearly 30 years old. Half of the recorded incidents involved aircraft older than 16 years.

2015/16 insurance forecasts

	2014	2015	% Change
Total Renewals	51	55	8%
Premium (US$m)	$429	$391	-9%
Total AFV (US$m)	$335,985	$362,662	8%
Total Passengers (m)	1,090	1,200	10%
Average Liability Limit (US$m)	$1,215	$1,369	13%
Cost per Passenger (US$)	$0.39	$0.33	-17%
Credit Balance (US$m)	$84	-$18	-157%
Average Aircraft Value	$54	$53	2%

Europe

Europe had an unusual year. The average lead hull and liability premium change was -3%, well short of the -10% global average. Exposure growth was also relatively weak, with a 1% improvement in average fleet value and a 6% projected increase in passenger numbers. It was also one of only two regions where the average aircraft value actually declined.

Looking more closely at the individual numbers and a different picture emerges. Over 70% of European airline insurance programmes enjoyed a reduction in their lead hull and liability premium. Over 80% of those reductions were 10% or greater.

There were three carriers in Europe that saw their lead hull and liability premium rise by more than 30%, one of which was the one of the largest programmes in Europe where the policy was responding to a catastrophic loss. Removing this programme from the data would mean that airline programmes in Europe would have on average received a 13% reduction in their lead hull and liability premium, far more in line with the 10% global average reduction.

Europe: regional premium and exposure movement 2005-2015

Source: Aon market data

Claims

	1995-2014 Average	2014	2015	2015 versus 2014 Movement
Number of Incidents	16	11	10	-18%
Value of Claims (US$m)	$86	$60	$582	754%
Number of Fatalities	1,870	0	362	N/A

Two losses represented all but one of the 362 European fatalities covered by standard airline insurance policies and 64% of the claims value for the year. The fact that one of these losses was in some ways the result of safety measures put in place following the 9/11 attacks on America highlights the difficulties facing the aviation industry as it seeks to eradicate risk.

2015 was the first time since 2009 that the total value of claims was higher than the long term average and the first time in six years that the total number of fatalities was over 50.

2015/16 insurance forecasts

	2014	2015	% Change
Total Renewals	65	67	3%
Premium (US$m)	$404	$391	-3%
Total AFV (US$m)	$243,284	$245,423	1%
Total Passengers (m)	1,0289	1,086	6%
Average Liability Limit (US$m)	$1,018	$1,019	0%
Cost per Passenger (US$)	$0.39	$0.36	-8%
Credit Balance (US$m)	$1,238	$927	-25%
Average Aircraft Value	$78	$85	8%

Latin America

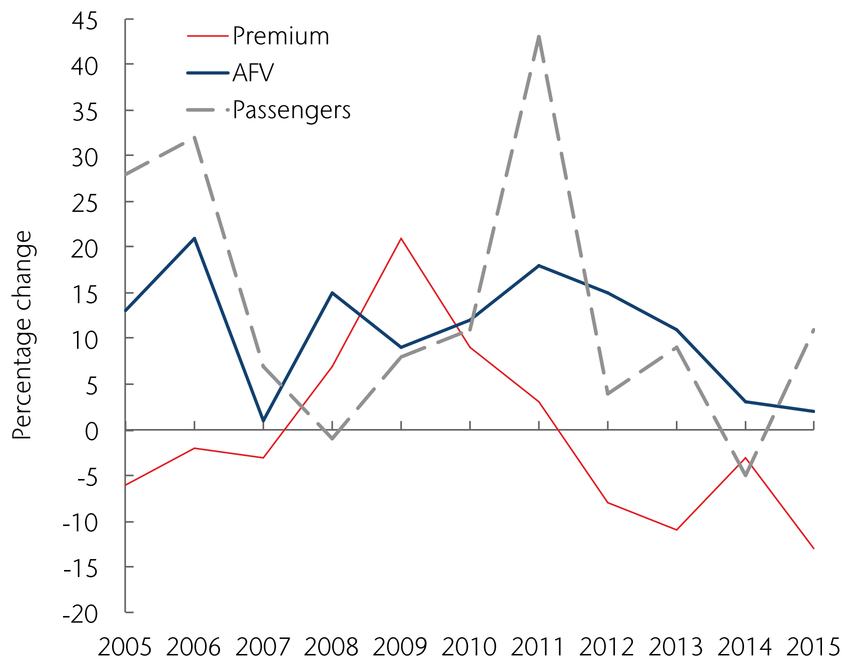
Airline insurance programmes in Latin America enjoyed a positive reception from the insurance markets in 2015, with premium falling on average by 13% while average fleet values and passenger numbers were forecast to grow by 2% and 11% respectively.

Two years ago airlines in the region were very bullish about their exposure growth, projecting 13% and 15% increases in AFV and passengers respectively. This then calmed to 3% and 1% in 2014. The fluctuations are likely to reflect the fleet renewal process that took place as the world economy recovered. This has subsequently evolved into concern about the economic health of the region and fleet investments have slowed.

Latin America contributes a relatively low level of lead hull and liability premium, although the region's largest group is placed under the European-based IAG group placement.

Average aircraft values have been virtually static for the last two years. Five-year credit balance has stayed relatively stable.

Latin America: regional premium and exposure movement 2005-2015



Source: Aon market data

Claims

	1995-2014 Average	2014	2015	2015 versus 2014 Movement
Number of Incidents	8	5	1	-60%
Value of Claims (US$m)	$113	$14	$8	-16%
Number of Fatalities	88	0	0	N/A

It has been another exceptional year for the aviation industry in Latin America from a claims perspective. With only a single loss, 2015 was the fourth consecutive year where total claims have been lower than USD 20 million compared to a long term average of USD 113 million. It is the second year in a row where there have been no fatalities covered by a standard aviation hull and liability policies.

This is despite the continued growth in exposure witnessed in the region over the last decade.

2015/16 insurance forecasts

	2014	2015	% Change
Total Renewals	14	17	21%
Premium (US$m)	$80	$70	-13%
Total AFV (US$m)	$33,010	$33,739	2%
Total Passengers (m)	159	178	11%
Average Liability Limit (US$m)	$962	$1,007	5%
Cost per Passenger (US$)	$0.50	$0.39	-22%
Credit Balance (US$m)	$109	$106	-2%
Average Aircraft Value	$31	$31	-1%

Middle East

The Middle East continued its unprecedented growth in 2015, forecasting 9% increase in passenger numbers and a 24% increase in average fleet value. As a result of this, the average aircraft value in the region has risen to more than USD 108 million, more than four times North American levels. While there are a number of caveats one should make before looking at direct comparisons between regions, it is safe to say that the growth of the aviation industry in the region has been astonishing (see page 20 for further details).

Average aircraft values have risen once again in 2015 increasing by 8 percent which is almost $5m higher than the previous year. This reflects the introduction of next generation aircraft across the fleet as the region strives to invest to move away from its reliance on oil revenues.

Even with the relentless growth the industry has enjoyed and it's healthy five year credit balance the region still has the second highest premium per passenger in the world.

Middle East: regional premium and exposure movement 2005-2015

Source: Aon market data

Claims

	1995-2014 Average	2014	2015	2015 versus 2014 Movement
Number of Incidents	3	3	1	-67%
Value of Claims (US$m)	$55	$10	$40	290%
Number of Fatalities	20	0	0	N/A

There was no major claims activity in the Middle East during 2015 and it is now five years since there was a fatality in the region covered by standard airline insurance policy. There have only been 12 incidents that meet the criteria for inclusion in this report in the last five years, an impressive result given the growth in exposure that taken place in the region.

2015/16 insurance forecasts

	2014	2015	% Change
Total Renewals	20	18	-10%
Premium (US$m)	$98	$85	-14%
Total AFV (US$m)	$95,610	$118,111	24%
Total Passengers (m)	181	198	9%
Average Liability Limit (US$m)	$1,389	$1,458	5%
Cost per Passenger (US$)	$0.54	$0.43	-21%
Credit Balance (US$m)	$213	$284	34%
Average Aircraft Value	$78	$85	8%

North America

Airlines in North America performed fairly much in line with the market averages. Despite its maturity, airlines in the region have forecast a 4% increase in passenger numbers as well as a 5% increase in average fleet value. Average aircraft value is expected to rise by 14%, although it still lags well behind Africa with the lowest average value of aircraft by some margin.

North America has the highest five year credit balance of any of the regions, suggesting that there it still some way for prices in the region to fall before the bottom of the market is reached.

It should be pointed out however that liability awards are generally very high in the region (even if other parts of the world are catching up) and, if there is a catastrophic loss, credit can move into deficit very quickly.

North America has the lowest average aircraft value of any of the six regions, highlighting the challenges that the industry has faced in the region. The fact that it also has the lowest insurance cost per passenger also underscores the region's maturity from an aviation perspective.

North America: regional premium and exposure movement 2005-2015

Source: Aon market data

Claims

	1995-2014 Average	2014	2015	2015 versus 2014 Movement
Number of Incidents	14	7	6	0%
Value of Claims (US$m)	$243	$46	$79	72%
Number of Fatalities	56	0	8	N/A

There were only six incidents in North America that meet the criteria for inclusion in this report. The eight fatalities were the result of a single incident which involved the first loss of life since 2012 covered under standard airline liability policies. In total there have only been 115 fatalities in the decade. On average, the region has suffered 56 fatalities each year between 1995 and 2014.

There was just less than USD 80 million of claims in the region during 2015 in North America, compared to a long term annual average of USD 243 million. Only one of the incidents was valued at more than USD 20 million and all of the aircraft involved were more than five years old.

2015/16 insurance forecasts

	2014	2015	% Change
Total Renewals	20	28	40%
Premium (US$m)	$320	$264	-18%
Total AFV (US$m)	$178,486	$188,239	5%
Total Passengers (m)	850	885	4%
Average Liability Limit (US$m)	$1,260	$1,283	2%
Cost per Passenger (US$)	$0.38	$0.30	-21%
Credit Balance (US$m)	$1,043	$907	-13%
Average Aircraft Value	$23	$27	14%

Sector Analysis

Compared to 2014/15 policies, the premium reductions were fairly consistent across the sector in 2015/16, with average lead hull and liability premium change within 8% of the global average in all sectors.

	Total Renewals		Premium		Fleet Value	
	2015	% change	2015 (US$m)	% change	2015 (US$bn)	% Change
Flag	67	0%	$782	-8%	$659,599	8%
International	18	-14%	$92	-15%	$82,149	7%
Charter	22	-8%	$40	-18%	$20,415	-1%
Regional	43	2%	$133	-12%	$49,848	3%
Cargo	13	-	60	-13%	$49,848	3%
Other	7	-	$5	-11%	$4,050	1%
Low-Cost	32	7%	$147	-8%	$103,923	7%
Total/Average	202	0.00%	$1,259	-10%	$968,824	7%

	Passengers		Cost per Passenger		Credit Balance	
	total (m)	% change	total (US$)	% change	2014	2015
Flag	2,161	8%	$0.36	-15%	$1,045	-$88
International	318	7%	$0.29	-21%	$464	$483
Charter	93	1%	$0.43	-19%	$151	$139
Regional	264	2%	$0.50	-14%	$244	$221
Cargo	N/A	N/A	N/A	N/A	$117	$250
Other	4	33	$1.38	-34%	$28	$26
Low-Cost	763	8%	$0.19	-15%	$569	$547
Total/Average	3,603	7%	$0.35	-16%	$2,619	$1,577

Flag

There has been a change in recent years. Five years ago underwriters competed strongly for inclusion on a flag carrier's insurance programme, but they have become slightly more reticent recently, with lead hull and liability premium only falling by 8% on 2015/16 policies compared to a global average of 10%.

That said, the reduction is coupled with 8% increases in both average fleet value and passenger numbers. Given that the flag carrier sector is by far and away the largest in the industry and provides over 60% of the lead hull and liability premium and 60% of the passengers, even a small reduction has a significant influence on overall results.

Another reason why the market has cooled its ardour for the flag sector is that the majority of major claims that have occurred over the last few years have been within the sector. As a result, it has a five-year deficit with the insurance market. Give the size of the carriers involved in the sector this is likely to be turned around fairly quickly.

International

The international sector is the third largest in the airline industry in terms of lead hull and liability premium, passenger numbers and average fleet value.

Carriers in this sector tend to enjoy positive reaction from the insurance market, with lead hull and liability premium falling by 15% on average for 2015/16 policies. It was one of three sectors to receive on average reduction on 2014/15 policies.

One of the key reasons for the sector's positive response from underwriters is that it has been the relatively profitable. Five-year credit balance is approaching USD 500 million, but this is based on only 18 programmes in the sector, making it the most profitable sector in the industry by some margin. As a result, there is strong competition to be involved in the sector.

Charter

After strong growth in forecast passenger numbers in 2014/15 policies, charter airlines have projected a calmer 1% increase for 2015/16 policies. As a result, the sector's premium reduction is the largest of the sectors, falling 18% compared to a global average of 10%.

The real cost of insurance continued to fall in the sector, declining on average by 19%, compared to a 7% decrease for 2014/15 policies.

Average aircraft values remained static in the sector, reflecting the end of the fleet renewal cycle that began as the global economic recovery commenced.

Regional

Regional airline insurance programmes once again received positive treatment from the insurance markets with a 12% reduction in lead hull and liability premium, coupled with increases of 3% in average fleet value and 2% in passengers.

The regional airlines have one of the highest insurance costs per passenger, although it has been falling steadily for the last couple of years.

In 2011, some underwriters were expressing concern that the rapid growth of the regional sector in the immediate aftermath of the global financial crisis could mean safety levels and crew training may be compromised. At the time the sector carried round 210 million passengers annually and had a five-year deficit of USD 158 million with the insurance markets.

This concern does not seem to have been borne out, or perhaps it has helped sharpen focus on working practices in the sector. Carriers in the regional sector forecast that they would carry 264 million passengers during the course of its 2015/16 insurance policies and has now built up a five-year credit USD 221 million with the insurance markets.

Cargo

For the second year in a row, cargo airlines are expecting to increase the average fleet value by round 3%. Despite this, lead hull premium for the sector has fallen by 13% on average.

More than 75% of cargo airlines saw the cost of insurance fall, and all of the 13 cargo airlines that meet the criteria for inclusion in this report now have a positive five-year credit balance with the insurance markets.

Fleet values in the cargo sector, which could be used as a gauge of economic confidence, continue to improve slightly, rising by 3% on 2015/16 insurance policies. The sector's fleet value was expected to rise by the same percentage on 2014/15 policies.

The cargo sector is now the third most profitable sector over five years although in 2014 it was the fourth most profitable. This jump aptly reflects the influence of the miss-factor on insurance policies.

Low-cost

After a rare, albeit minimal, increase in the price of lead hull and liability premium in 2014/15, low-cost carriers enjoyed an 8% reduction in premium for 2015/16 policies. Of the low cost carriers, 23 of the 32 covered in this report enjoyed a reduction in the cost of led hull and liability premium, and only one suffered a significant increase, the result of a major claim.

Despite this claim, the sector remains one of the more profitable, boasting the highest five-year credit balance in the industry.

Living up to its name, the low-cost sector enjoyed the lowest cost of insurance per passenger by some margin.

Fleet Value Analysis

For the third year in a row, the largest fleets in the world did not receive the best treatment from the airline insurance markets. In the past, fleets valued at more than USD 5 billion would attract very positive reception from the markets because it was perceived that their maintenance and safety records were very good and their size meant that underwriters could fulfil much of their targets with a single stroke of a pen.

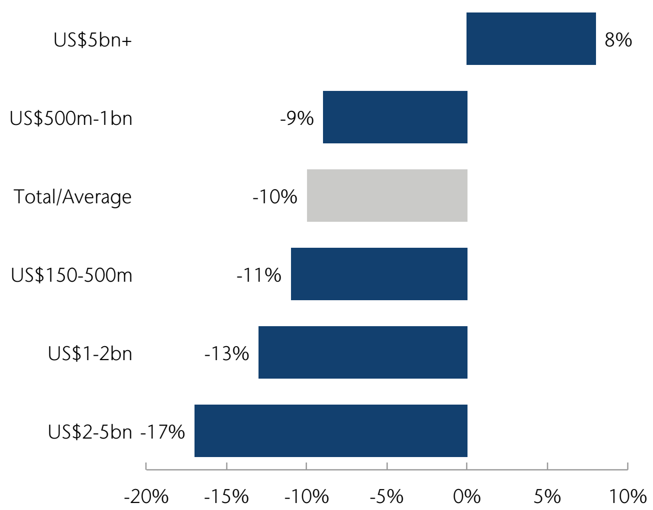
This perception appears to have faded as discussed on page 10 and once again it is fleets in the mid-range that have fared best from the insurance markets.

There are a number of reasons for this change, but one of the most important is the airline industry's changing claims profile.

Over the last few years improvements in training, working practices and equipment right across the industry have meant that the number of incidents has fallen, but when claims do occur they can be very expensive. The simple logic now is that the larger your fleet, the more likely you are to have one of these rare, expensive claims, and as a result the largest fleets, while still attractive, have lost some of their veneer.

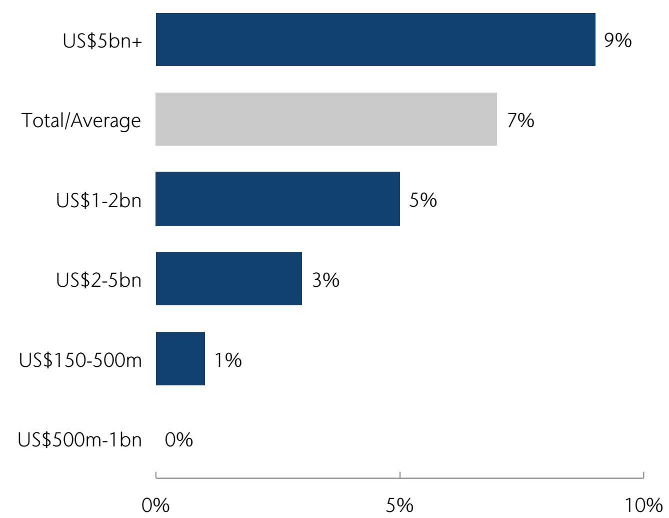
Underscoring this point, five-year credit balance has slipped into the red for the largest fleets this year as a result of major claims at five of the 45 airline insurance programmes that fit into this bracket. It should be pointed out however, that their size and contribution to the airline insurance market in terms of premium mean that the five year credit balance for the band is likely to recover quickly.

Percentage lead hull and liability premium change by average fleet value



Source: Aon market data

Percentage average fleet value change by average fleet value



Source: Aon market data

Inclusion criteria/notes

The information featured in this report is representative of market trends only. With vertical or fragmented marketing, sourcing exact percentage rate movements and/or shifts in premiums can sometimes prove difficult.

Our analysis is therefore representative of airline programmes with an insured average fleet value equal to or greater than USD 150 million. Average fleet values are the average projected value of a fleet during the entire length of an insurance programme, rather than at a specific date.

Flag carriers are classified as national airlines, international carriers are airlines that fly intercontinental but are not flag carriers.

Rate and premium movement percentages are based on the London net lead hull and liability terms.

Five year credit balance describes the difference between the total value of claims and the total amount of premium collected over five years.

Insurance cost per passenger is worked out by taking the total cost of hull and liability premium for an industry segment and dividing it by the total number of expected passengers.

Where airlines have replaced their programmes or have implemented short-term policies, the full annual figures have been used for calculation purposes on their accounts. If placements have changed, through the addition or deletion of airlines, no allowance has been made in the expiring figures.

Unless otherwise stated, all data is based on Aon market data. Aon loss data is based on information from Aon Benfield Aviation Reinsurance. Loss data excludes 9/11. The loss regions are based on the domicile of the airlines involved, rather than where the loss occurred.

It should also be noted that for comparison purposes all local currencies are converted to US dollars.

This review focuses on western built, non-military aircraft and airline organisations.

Unless otherwise stated long-term loss refers to the period 1995 to 2014.

Please note figures may differ due to rounding.

Due to the sensitive nature of the issues involved, the losses overview features only those incidents with an incurred hull and liability loss value of USD 1m or above.

We must point out that due to the nature of this type of document, Aon cannot be held responsible for any loss or damages caused through the use of any information contained herein. While we try to comment on issues we know to be fact, we are fully aware that in gathering the information contained herein from various sources there is always the possibility of inaccuracy. We can therefore only claim that the information is correct to the best of our knowledge at the time of publication.

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