

Q2 Edition 2022

PLANE TALKING

A SPECIALIST RISK PUBLICATION
FOR THE AVIATION SECTOR



Insurance | Risk Management | Consulting

Executive Foreword

Welcome to the second quarter (Q2) 2022 edition of Plane Talking brought to you by Gallagher's Aerospace team.

In this edition, we cover a broad range of topics from commentary on current aviation market conditions and losses, to a summary of the latest market moves and Gallagher news. Additionally, we are pleased to present coverage from our Gallagher Re and D&O colleagues as well as feature articles from Richard Schönherr, Head of Aviation Direct at Munich Re and Matthew Borie, Chief Intelligence Officer, Osprey Flight Solutions. We are deeply grateful to each of these contributors for their participation and interesting insights.

In our last edition, we reported that the Russia/Ukraine conflict had brought uncertainty to the market outlook and pricing trend, and as we reach the halfway-point of 2022, the situation hasn't resolved. These losses continue to be seen by insurers as a significant unknown and ultimately it is their

cumulative size that will affect how the market behaves and to what degree (if any) rates will rise and conditions will harden. The financial reporting of insurers in the coming quarters is likely to provide greater insight into how they really believe things might play out.

For now, the core rating trends in most aviation sectors remain relatively stable, albeit insurers are reacting in some coverages such as War where we are now seeing significant rating uplift. As the pace of development of Russia-related claims becomes clearer, we would anticipate the onset of some upward pricing pressure.

In an increasingly challenged market, where volatility and uncertainty are commonplace, it remains critical that insurance buyers make sure they are partnered with the right broker with

the resource and proven experience to navigate the current landscape and deliver a tailored solution at the lowest price. Not all brokers are equal, but fortunately, I am able to say with absolute confidence that Gallagher continues to lead the way, offering aviation and aerospace insurance buyers proven expertise, innovation and an unrivalled value proposition.

We hope you enjoy this edition. Please don't hesitate to get in touch.



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Lead Lines – Aviation insurance must change

Author: Richard Schönherr
Head of Aviation Direct at Munich Re

“Back to normal” – is what many expect once a crisis is over. This begs the question: is “back to normal” a viable option for aviation insurance?

The need for a healthy, sustainable market is undisputed. However, we need to look at where we come from as a sector and consider the changing operating environment to determine where we need to go.

Until now, things that would be considered standard in other lines of insurance have hardly ever been found in aviation. This includes the likes of aggregate limits and layers in liability. However, these may be required in the future. Historical product design has come under pressure in recent years, with losses exceeding premium income, and some coverage elements becoming unviable for insurers.

The insurance industry did its utmost to support clients through their pandemic-related challenges. Premium breaks and other creative ways were used to help

airline clients manage cash flow and ease the economic difficulties of COVID-19.

After the rate increases in 2019, many insurers managed to move their portfolios back into profitability and the aviation industry braced for a break and for profitable growth into 2022. Then Russia attacked Ukraine. The subsequent sanctions and issues with trapped aircraft have thrown the aviation insurance market back into turmoil.

This raises questions about the sustainability of the aviation insurance sector itself and draws attention to systemic risks in the industry.

Even if losses normalise as traffic volumes recover, insurers will need to assess if they can proceed based on pre-COVID trends and figures. Future losses are likely to remain at a higher level.

Even if losses normalise as traffic volumes recover, insurers will need to assess if they can proceed based on pre-COVID trends and figures.



Lack of talent

The entire aviation industry is desperately looking for talent. Pilots, cabin crew, engineers, and ground handlers are in high demand. The workforce has been scaled back, and many are not willing to return. Experienced employees took early retirement. Now, a less experienced workforce combined with greater time and cost pressures could adversely affect (attritional) losses.

Supply chain woes

Supply-chain constraints are another factor. Spare parts are not readily available, there are constraints on MRO capacity, and repairs for some new materials are complex. These factors could all raise the cost for hull claims beyond previous levels.

Rising inflation

Even without any change in loss frequency or underlying exposure, inflation levels have risen significantly. Social inflation – mainly in the US, but also in other jurisdictions – is another concern for insurers, given the large limits provided in aviation.

ESG pressures

Lastly, there is an increasing focus on ESG criteria. Underwriters will increasingly screen their portfolios and assess measures to limit their CO2 footprint. Environmental concerns are increasingly relevant in aviation, and this may play a greater role when allocating risk capital.

Conclusion

All these factors make for increased uncertainty for aviation insurers. Uncertainty usually leads to higher risk-capital costs and higher margins. Management teams are looking at aviation portfolios more critically to evaluate how moderate past performance and future uncertainty can be leveraged into a desirable business.

Clearly, this will require a multi-faceted approach. A simple, short-term increase in rates would be a quick fix, but the market needs courageous decisions on more fundamental amendments. Aggregate limits are key to reducing uncertainty, and layering the current single-stretch liability limit would help gauge appropriate protection levels.

Increased deductibles can match hull-value developments, and insured retentions may avoid pure money swap transactions,

while sub-limits for per-passenger liability coverage could potentially tackle the social inflation problem.

The aviation insurance model needs to be fundamentally re-evaluated, to create a strong marketplace that can withstand future challenges and still offer the products and stability expected from the aviation industry.

A new challenge for the sector is inevitable. We do not know what to expect or when it will materialise, but we have to take steps now to future-proof the industry.

It is critical that the industry adopt a proactive approach. At Munich Re, we look to partner with our clients to help them take full advantage of the opportunities ahead. Getting there requires changes, both in terms of cover and in the way we do business (for instance, through the use of data and automation in underwriting and trading).

We look forward to driving and supporting these initiatives.

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Reinsurance Dynamics & the Impact on the Direct Market

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A high level of uncertainty currently exists around the future of direct aviation pricing levels, with the Russia-Ukraine conflict potentially representing a major market claims event.

With a substantial portion of any major aviation claim feeding through to reinsurance protections purchased by direct insurers, the cost and availability of such protection will be subject to the same uncertainties seen in the direct market. In this article, we explore the potential impact of the conflict on the reinsurance market, how this affects insurers and subsequently how this may influence pricing trends for aviation insurance buyers.

Reinsurance

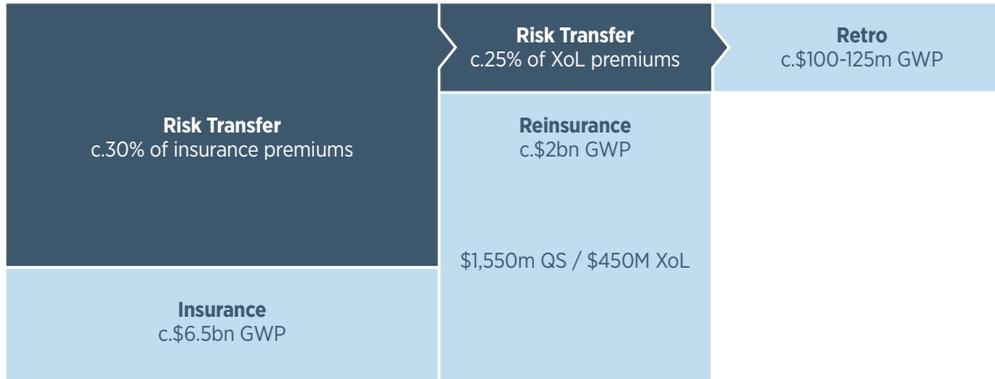
The reinsurance market is a well-known but often misunderstood element within the insurance ecosystem. The reinsurance world mirrors the direct market in many

ways, with reinsurers having specialist divisions to underwrite individual classes. However, this is contained within fewer companies, who aggregate risk in ever larger pools as the original risk moves through the (re)insurance capital chain. As a rough guide, around 30% of direct aviation premiums are transferred to the reinsurance market – 75% of this on a proportional basis (quota share or QS), whereby reinsurance premiums are directly related to original premiums and a commission is paid to cover the insured's expenses, 25% of this on a non-proportional basis (excess of loss or XOL), whereby markets determine premium based off a loss exceeding the insured's retention. The implication of this is while the QS reinsurers' results will approximate the direct insurers, the XOL market generally responds above the low level, attritional claims, whilst paying the lion's share of the large catastrophe losses. Given this inherent volatility, many reinsurers also look to reinsure their portfolio with retrocession (retro) reinsurers – where a premium is paid to transfer reinsurance risk after taking their own retention, with these retro reinsurers being at the top of the (re)insurance capital chain.

The reinsurance world mirrors the direct market in many ways, with reinsurers having specialist divisions to underwrite individual classes, however this is contained within fewer companies, who aggregate risk in ever larger pools as the original risk moves through the (re)insurance capital chain.



Aviation (Re)insurance Capital Value Chain



Losses	Attritional & medium size high frequency / low value	Large & cat (xs c.\$250m)	Cat (xs minimum of \$500m) low frequency "tail risk"
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Reinsurance acts as a hedge for insurers to protect their balance sheet. As insurers aggregate risk and mutualise losses from all aerospace sub-classes, reinsurers in turn mutualise losses from a portfolio of insurers, and aggregate risks from other lines of business such as Marine,

War, Terrorism, and Political Violence. At every stage, the objective for (re)insurers is to aggregate non-correlating risk and to dampen volatility, reducing capital requirements thereby supporting a higher return on their capital.



Excess of Loss (XOL)

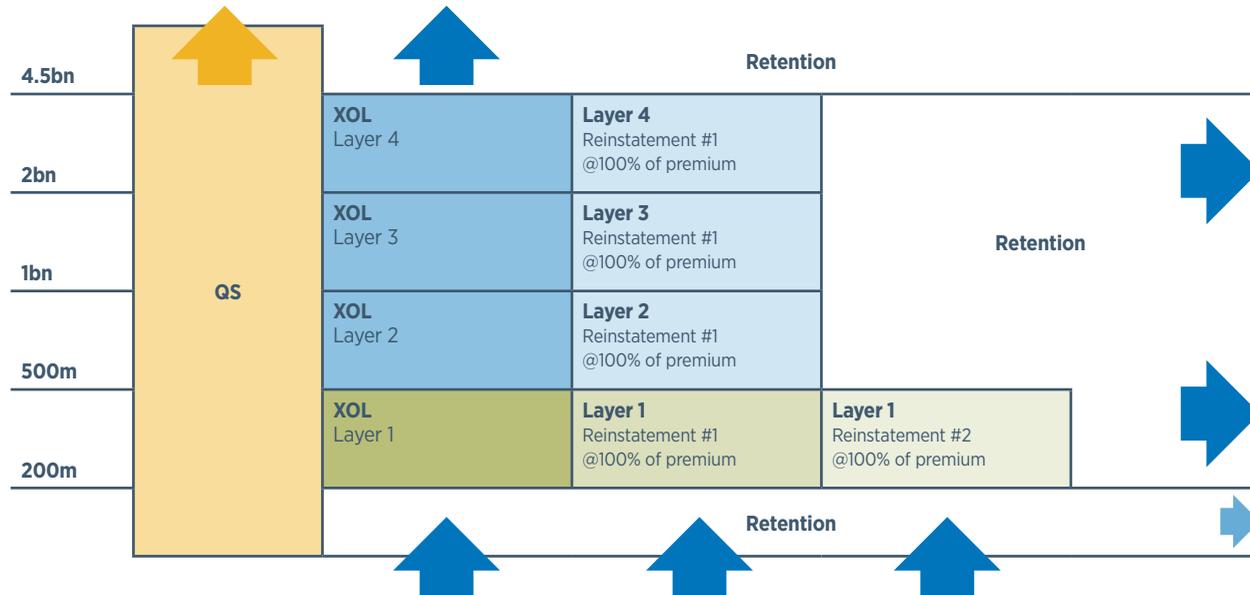
For aviation specific programmes, average retention levels mean that market losses below USD250m are retained by direct insurers, with XOL programmes typically responding to losses above this level. XOL cover is placed in layers, each with its own 'leader' responsible for quoting and basic administration, with between four and six layers on a programme, allowing

reinsurers to vary their involvement at different loss levels, depending on risk appetite. The amount of cover (vertical limit) purchased by an insurer will depend on their own risk appetite and/or market conditions but it's often purchased up to an equivalent market loss of USD4.5bn, or 2x their maximum line deployed on any one risk. Each layer has its own event limit, and should a loss to the layer occur, will have its own terms for additional premium to be paid

to reinstate the limit (reinstatement premium). These reinstatements (or sideways cover) are also limited in number (typically 1-3 times), and if exhausted would require new terms and conditions to be negotiated, meaning that insurers buying XOL can never truly protect against worst-case multiple loss scenarios. With the aviation All Risks insurance product offering unlimited sideways cover (i.e., insurers are exposed to the full policy limit for each aircraft

irrespective of how many aircraft are involved in a loss), insurers in this class are therefore forced to run the threat of tail risk (events modelled in the tail of a probability distribution) on their balance sheet, with multiple sideways losses exhausting their reinstatements. This is in addition to the more obvious threat of insufficient vertical cover (i.e., the limit of the reinsurance is exhausted by the size of an individual loss event).

Example of reinsurance programme & retentions



Composite Layers

With reinsurers aggregating risks across many different classes, the natural progression is for these to be grouped where there is appetite to do so. Whilst aviation All Risks XOL has typically remained a stand-alone product, we have seen insurers in the aviation Hull War class protect these portfolios within composite layers i.e., where many lines of business are covered under a single limit.

Whilst aviation All Risks XOL has typically remained a stand-alone product, we have seen insurers in the aviation Hull War class protect these portfolios within composite layers i.e., where many lines of business are covered under a single limit.

The aim for these layers is to group non-correlated classes and reduce the total limit purchased by insurers (and therefore cost), whilst keeping capital requirements low.

Meanwhile, from a reinsurers perspective, they will receive a higher premium rate for their capacity and reduced capital charge compared to individual 'pillars' of capacity being deployed for each class. These layers have recently come under scrutiny due to the specific circumstances of the Russian invasion of Ukraine, with 'non-correlating' classes now potentially correlating, and questions over the level of detail known by reinsurers pricing these covers.

Russia-Ukraine Conflict

There's approximately USD1.1tn of airline aircraft value at risk globally, and Russia makes up around 3% of this value at USD32bn of exposure.

Russian airlines also lease a disproportionately high percentage of the aircraft they operate. Globally, 51% of aircraft are leased, whereas Russia leases 86% of their total (US 27%, China 63%, Major European 61%, India/Brazil both 85%).

Aircraft leasing companies purchase contingent cover for their potential exposure if an airline policy fails to respond to a loss. In 2021, the contingent market was estimated to generate roughly USD150m for Hull and Liability cover, and about USD25m for Hull War cover.

Raw numbers:

- 750 aircraft operating in Russia, of which 388 are western-leased aircraft, totalling USD14.7bn
- 53 lessors, of which 20 are Russian or Chinese.
- Average western-leased hull sum insured of USD40m.
- Estimated Hull War aggregate limits for the western-leased aircraft covered under contingent policies of USD12.5bn*.

For perspective, Lloyd's of London standard modelling for severe losses envisages a five aircraft event for Hull War, and two maximum Hull & Liability lines for All Risks Losses.

Whilst significant uncertainty exists surrounding the likelihood and size of any loss materializing, put in the context of the World Trade Center attacks (WTC), Russia-Ukraine could be up to 4x the initial WTC reserve, and 7x the final loss amount to the aviation market.

*Based on Cirium data, Gallagher Re estimated hull agreed values and hull war aggregate limits (where known).



What happens next?

Given the scale of the potential contingent airline exposure in Russia, there are no comparable loss examples for us to explore. If we want to look for parallels, however, we might explore the precedent from the WTC attacks in 2001, which represented a seismic change for the insurance industry. The backdrop to this event was the aftermath of the Dot-com bubble bursting, with large investment losses followed by a period of interest rate cuts to boost the economy, and rapid reversal once inflationary pressure started to build. This uncertain macro environment was coupled with poor underwriting results, which led to consecutive unprofitable years in aviation from 1998 to 2000. The shocking nature of the attacks led to an instantaneous reaction, with systemic insurance product change, dramatic price increases in all classes, and consequently a new excess AVN52 third-party liability war coverage emerging. Capacity, which had been falling prior to 2001, bottomed out, leading to hard market conditions.



Within the reinsurance market, coverage restrictions meant retentions for insurers increased by more than 2x, and cover was amended to be 'Losses Occurring During' the policy period (compared to the more generous Risks Attaching cover previously available). Minimum premium rates charged by reinsurers at the top of programmes move from c.2% to 4%, which then exerted more pressure on the insurers to raise prices.

As we move into the second half of 2022, we can see many of the same conditions that existed in the build-up to WTC; a period of loose monetary policy, followed by increasingly hawkish central bankers attempting to control inflation in the face of sluggish growth, and now an aviation (re)insurance market faced with the potential of a significant unmodelled loss event. The wide range of outcomes for the (re)insurance market from the Russia-Ukraine war mean we have not seen the speed of reaction that WTC precipitated, but that does not preclude similar drastic responses if pessimistic scenarios are realised.

“

History doesn't repeat itself, but it often rhymes”

– Mark Twain

The Domino Effect

Whilst the questions over the coverage and size of the Russia-Ukraine loss event are answered, insurers are in the unenviable position of underwriting a portfolio, whilst speculating on the availability and price of reinsurance coverage when their respective reinsurance programmes renew. Meanwhile, reinsurers making these decisions are equally forced to price business now based on considerable uncertainty around the availability of retro capacity. Once these terms and conditions solidify in the retro market, each participant down the capital chain will be able to reassess their individual economics and amend terms and conditions accordingly. The nuances of this potential loss event mean that it could yet fall to aviation (All Risks) (re) insurers, or to marine composite (Hull War) (re)insurers, or in some degree to both, which will create vastly differing pressures in either of those markets.

Consequently, reinsurance costs for insurers are likely to rise, which will be felt differently in the market; larger insurers with economies of scale can dilute these increases more easily than smaller players.

In the short term, the lack of clarity is likely to see a focus on Hull War coverage and an increase in aviation retro costs, plus renewed focus on other potential systemic risks in the class. Whilst not all reinsurers are reliant on retro cover, this squeeze on capacity and coverage will be felt to varying degrees by reinsurers.

Consequently, reinsurance costs for insurers are likely to rise, which will be felt differently in the market; larger insurers with economies of scale can dilute these increases more easily than smaller players. Although in a verticalised market (where the premiums are quoted by a leader and negotiated with each following insurer, often at a discount to the lead price), the larger the cost squeeze, the more likely for reverse verticals appearing (i.e. following markets achieving prices above the leader). This chain of action and reaction is influenced by a multitude of decision-makers, each with their own circumstances and objectives, creating a domino effect down the capital chain.

As we enter a new phase for the world economy, with elevated inflation, rising interest rates, all under the looming threat of recession, it is helpful to understand how the existing insurance ecosystem has developed and risen to all previous challenges and threats. The extremely competitive and unique product that insurers offer aviation clients has evolved with support from a willing reinsurance community, who collectively have remained committed through extremely difficult periods. Until the true impact of the Russia-Ukraine conflict reveals itself, we can benefit from understanding the inter-dependency that exists in the (re)insurance world, but also that within these complex and varied links, the true resilience of the market remains.

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In focus: Airlines

The core All Risks airline insurance market is currently stable despite ongoing events and global challenges, and there is still strong appetite and competition amongst insurers.

As we reach the halfway point of 2022, things haven't changed too much in the airline insurance market, from Q1.

Placements remain a complex engagement and the fallout from the Russia/Ukraine conflict continues to represent a significant unknown, bringing added challenges and uncertainty to the future pricing trend and market landscape.

All Risks premium and rating trends

The core All Risks airline insurance market is currently stable despite ongoing events and global challenges, and there is still strong appetite and competition amongst insurers. The average All Risks rating level for Q2 remained largely flat with 'as before' rates seen on a number of renewals. In some instances where exposures were up, and premium growth realised, rate reductions were also achieved.

As mentioned, there remains uncertainty around future rating levels with lessor claims from the Russia/Ukraine conflict seen by the insurance market as a major claims event. However, most All Risks underwriters remain flexible, and are continuing to treat each airline individually on its own merits. Many insurers have, however, become more cautious in recent weeks and some underwriters are now

having to run their decisions through higher management for approval, which is causing additional complexities and challenges. The 'three-tier' market remains evident with a distinct divide exhibited between the renewal results of low-limit buying risks, such as low-cost carriers, those with higher limits/values and those with losses or deemed to be unprofitable on a premium versus historic claims basis.

We would anticipate additional pricing pressure in the coming months as the direction of the lessor claims from Russia becomes clearer and the market reacts. Lessor losses continue to represent the biggest unknown as to what the ultimate loss to the market will be, with much dependent on whether claims fall on the War or All-Risks policies, or possibly some element of both. Understandably, given the size of the figures in question, neither class of insurer seems willing to commit or comment with both parties seemingly waiting to see who moves first, but some lessors have now filed lawsuits and others look likely to follow. At present, most insurers appear to be taking a step approach to their reserving, so Q1 financial disclosures were low and most excluded aviation.



It is likely these aviation reserves will be slow to appear in full as insurers hold back waiting to see what happens next. When these do start to filter through and be recognised in insurers' figures, this may start to produce some insurance market reaction and upwards pricing pressure. A substantial portion of any claims will also feed through to the reinsurance market by way of the protections purchased by direct insurers. Consequently, reinsurance costs for insurers are likely to rise. As our colleagues from Gallagher Re discuss in their article (see page 5), this may produce a 'domino effect' down the capital chain, whereby all parties seek to pass on price increases to their clients in order to protect margins and stay in business. Ultimately though, until the questions over the coverage and size of the Russia-Ukraine loss event are answered, we cannot say for certain how the market will behave, and to what degree (if any) rates rise and conditions harden. We have not seen the speed of

reaction that many had predicted, and in the short term, this lack of clarity is likely to see a continuation of the current All-Risks rating trend with the greatest pricing pressure focused on Hull War and Excess War TP coverage. The financial reporting in the coming quarters is likely to provide greater insight into how things might play out.

Despite promising signs of recovery from the pandemic, the industry is also contending with a host of other concerns such as staff shortages and rising jet-fuel prices, and it remains a crucial period for airlines. In the All-Risks market, the positive exposure numbers being presented by airlines on their renewals in 2022 will deliver a natural growth in premium, and this should help temper any future market reaction, to some degree. As our Lead Lines author discusses, going forwards the aviation insurance model needs to be fundamentally re-evaluated, to create a stronger marketplace that can better withstand future challenges.





Capacity

There is sufficient capacity for airline risks and overall levels remain theoretically high across all core coverages. The Russia/Ukraine conflict has, however, prompted insurers to assess their positions and exposures, and many are undertaking internal reviews of their portfolios, which include aviation. It is a developing situation, but already we have seen an overall price hardening towards aviation War and Excess War Third Party (TP) business – both AIG and Talbot, have now exited these lines.

Yet, while some insurers are scaling back, it is important to mention that not all insurers are exposed to losses from Russia/Ukraine. With airline rates having increased substantially in recent years and now again under upwards pressure, some players see this as an opportunity. Indeed, several existing markets are now actively seeking increased lines on airline business, and we are aware of two All-Risks markets that are looking to expand to start writing War and Excess War TP business in the coming months. There are also reports of a new aviation

War MGA looking to enter the market, backed by Ascot. Meanwhile, Everest Re has formally announced plans to enter the aviation class and start writing airline, GA, and aerospace risks from the fourth quarter. However, while these factors are positive, increasing rates have been influential in these decisions and it is unlikely that these insurers will seek to undermine current pricing sentiment, at least not drastically.

Looking ahead, given the current situation, it is difficult to predict future capacity levels. But we anticipate that most insurers will remain committed to the class, and options will be available.

Environmental, Social & Governance (ESG) considerations

ESG is becoming more prominent in insurance discussions, and we anticipate this will have a greater influence on future airline renewals and capacity, particularly in 2023 and beyond. While many insurers are still in the early stages of integrating ESG into their underwriting, a handful are now starting

to decline or impose line size restrictions on airlines they perceive to have poor ESG credentials. This could be an area of concern for some airlines should this approach become more commonplace. Notably Lloyd's of London recently advised its syndicates, for the first time, that they must submit an ESG strategy and framework as part of the planning process for 2023. For now, it remains unclear as to what direction each insurer will take, how they will score ESG performance, and how any ratings will be utilised in decision making and pricing.

Importantly, the integration of ESG into underwriting will also provide new options, with several insurers known to be exploring providing additional capacity to airlines that meet predetermined rating standards. Most recently, Beazley launched a new multi-line ESG syndicate for 2022, which can write additional lines on aviation business, at the same policy terms and conditions of their main syndicate line. Gallagher are active in this area and are working with industry bodies and service providers on several ESG initiatives which we hope will assist airlines and add value.

There is sufficient capacity for airline risks and overall levels remain theoretically high across all core coverages.



Hull War and Excess War Third Party

With the prospect of substantial losses and a general heightened geopolitical instability, these aviation coverages are under the most pricing pressure. On Hull War renewals, insurers are now applying significant increases, and similarly, Excess War TP rates have increased, albeit at a more modest level. On top of AIG and Talbot's exit, some existing markets have paused quoting any new business while they review their portfolios and positions. We are also seeing a harder position in respect of terms and coverage with underwriters attempting to cross-out elements of wording or impose new exclusions.

Looking ahead, we would anticipate continued pricing pressure on these coverages but to what degree (if any) rates will further increase will depend on how the overall loss picture develops.

Airline losses

Notwithstanding losses from the Russia/Ukraine conflict, we recorded a steady flow of airline claims activity in Q2, but, positively no major fatal losses. However, there were two high-profile airline incidents in Q2, both of which involved runway excursions and must be considered fortunate in that there was no loss of life, as the aircrafts were

substantially damaged. On 21 June, a RED Air MD-82, suffered a gear collapse during landing at Miami International Airport, FL, exiting the runway before coming to a stop and catching fire. There were 130 passengers and 10 crew members onboard all of which were safely evacuated with only minor injuries reported. On 12 May, we also saw a Tibet Airlines A319 skid off the runway during an aborted landing at Chongqing-Jiangbei International Airport, China. The aircraft lost both its engines and landing gear, before sliding to a stop and catching fire. Thankfully, there were no fatalities amongst the 120 persons on board. This incident was the second to have occurred in China in recent months following the tragic fatal China Eastern Airlines crash earlier in March. From an insurance perspective, while both of these aircraft sustained significant damage, their age and types are likely to produce relatively minor value claims.

Aside from the above, other airline loss activity was unremarkable. Looking ahead, considering the current state of the market, conditions are delicately balanced and any major airline or aviation market losses could exacerbate the situation and lead to a more severe reaction from insurers.

Future outlook

- Continued uncertainty and fall-out from the Russia/Ukraine conflict
- The ultimate size of loss will affect how the market behaves and how things play out
- In the short term, this lack of clarity is likely to see a continuation of the current All-Risks rating trend with the greatest pricing pressure focused on Hull War and Excess War TP coverage
- Heightened risk selectivity and underwriter focus on terms and policy coverage

Conditions are delicately balanced and any major airline or aviation market losses could exacerbate the situation and lead to a more severe reaction from insurers.





Historical MANPADS threat

Author: Matthew Borie, Chief Intelligence Officer, Osprey Flight Solutions

Aviation is a sector inherently exposed to risk and is particularly vulnerable to shifting international political and security situations.

In this article, we explore the ongoing threat of MANPADS to civil aviation, the countermeasures being taken by airlines and airports and what mitigation actions the industry can take to ensure the ongoing safety of flights.

Manportable air-defense systems (MANPADS) are essentially shoulder-fired missiles used to target aircraft, usually guided by an infrared (IR) seeker. MANPADS are short-range air-defence systems intended for attacking and defending against low-flying aircraft at altitudes of up to FL260. Because MANPADS are easy to transport, conceal, and use – and because a single successful attack against an airliner would have serious consequences for the international civilian aviation industry – they are particularly attractive

weapons to violent-non state actors (VNSAs). With most aircraft flying above FL300, MANPADS pose no threat to aircraft at a typical cruising altitude. However, aircraft are vulnerable as they move through that threat window during ascent after take-off and descent before landing.

The proliferation of MANPADS globally is of paramount concern to the civil aviation community. Of the 500,000–750,000 MANPADS believed to be in circulation, some 99 per cent are estimated to be in state inventories. However, that still leaves as many as 7,500 of these weapons in the hands of VNSAs globally – predominantly in conflict zones. Although civilian aircraft are unlikely to be directly targeted, MANPADS in possession of VNSAs pose an acute threat to aircraft operating at airports or overflying airspace below FL260 within conflict zones. Additionally, VNSAs with MANPADS pose a nascent threat to civil aviation activities in locations where the enduring threat of terrorism is present, including countries outside or near conflict zones.

MANPADS are short-range air-defence systems intended for attacking and defending against low-flying aircraft at altitudes of up to FL260.



MANPADS: MOMBASA IN THE PAST – UKRAINE AT THE PRESENT

Mombasa 2002

There is major concern and proof that air-defence weapons can be trafficked to locations outside of conflict zones or failed states and used to target civil aviation. This stems from a coordinated attack which occurred on 28 November 2002, where Somali-based AQ VNSA sympathisers fired two SA-7 GRAIL MANPADS at an Arkia Israel Airlines commercial aircraft with 271 people on board, as it took off from Moi International Airport (HKMO/MBA) in Mombasa, Kenya. Both missiles narrowly missed the aircraft, but the act marked the first time MANPADS had been used to attack a civilian airliner outside a conflict zone. The Mombasa incident highlighted to governments worldwide – and the state of Israel in particular – the unique threat MANPADS pose to commercial aviation outside of known conflict zones.

There is major concern and proof that air-defence weapons can be trafficked to locations outside of conflict zones or failed states and used to target civil aviation.

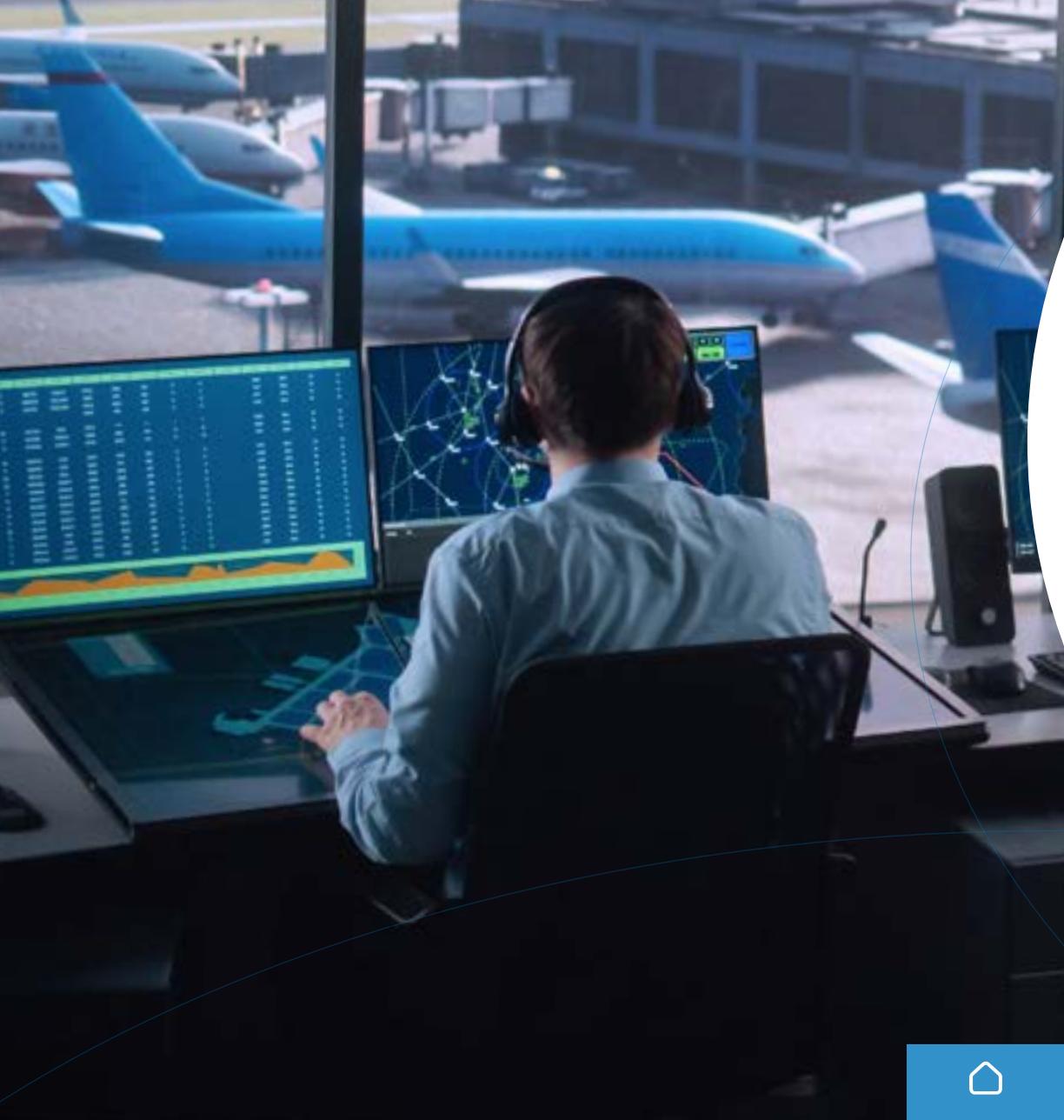
The Ukrainian military has received a large number of MANPADS (in addition to its pre-war internal stockpile) and should Ukraine fall to Russia, a resistance movement or insurgency is likely.



Ukraine 2022

Osprey Flight Solutions is continually assessing the potential second/third-order effects of the Russian invasion of Ukraine. On 1 May, the Security Service of Ukraine stated it had disrupted a Russian “sabotage and reconnaissance group” false flag operation to shoot down a commercial passenger aircraft over Russia or Belarus using an illicitly acquired US-made FIM-92 Stinger MANPADS. Beyond the primary concern of the current armed conflict, we are analysing potential future scenarios regarding weapons proliferation into or out of Ukraine. The Ukrainian military has received a large number of MANPADS (in addition to its pre-war internal stockpile) and should Ukraine fall to Russia, a resistance movement or insurgency is likely. In addition, in the event of a Ukrainian defeat, it would potentially fall into ‘failed state’ status, so the potential for weapons trafficking from the country to areas abroad would become a distinct possibility. Under either scenario, MANPADS proliferation both within and outside of Ukraine would be a serious concern.





Countermeasure Actions vs MANPADS

These incidents have prompted the aviation operators and the security agencies to take several measures to secure commercial aircraft against the threat of MANPADS.

The first measures taken by aviation operators and the security agencies has involved re-evaluating flight routes of commercial aircraft within the country, and developing takeoff and landing protocols, which included procedures dedicated to minimising the exposure to MANPADS engagements.

Several countries and international airports have received assistance from the US Department of Homeland Security (DHS) via an International MANPADS Assist Visit (MAV). The MAV programme is also conducted in cooperation with the US Transportation Security Administration (TSA). US DHS/TSA MAV teams have assisted cooperating countries in conducting multiple vulnerability

assessments of international airports to identify potential launch areas around the installation and develop mitigation strategies to counter the threat of MANPADS.

In the years after the Mombasa incident, the Israeli government developed its Flight Guard system to defend civilian aircraft from MANPADS. The Flight Guard system is an external pod installed on the belly of a commercial aircraft which incorporates a radar-based missile approach warning system (MAWS) and an infrared countermeasure (i.e., 'flare') dispenser, designed to defeat MANPADS. In addition, the state of Israel has reportedly invested over USD75 million in the "C-MUSIC" system, which is the commercial version of the Sky Shield for military use, to defend air assets from MANPADS. C-MUSIC is an external pod installed on the belly of a commercial aircraft which integrates a MAWS, laser, and an infrared sensor to 'deflect' incoming MANPADS via jamming.

Risk Mitigation Considerations

Counter-MANPADS systems are not a solution to surface-to-air threats. The Flight Guard and C-MUSIC as well as all the other counter-MANPADS systems available in the commercial market only defend against IR-guided missiles. Such systems are not effective against radar-guided conventional surface-to-air missile (SAM) systems capable at high altitudes well above FL260. For example, Malaysian Airlines flight MH17 (shot down over Eastern Ukraine in July 2014) and Ukraine International Airlines flight PS572 (downed near the Iranian capital Tehran in January 2020) were both engaged by radar-guided conventional SAM systems. In short, counter-MANPADS systems would have provided no defence against the conventional SAM systems that downed either MH17 or PS572.

Ensuring access to comprehensively sourced threat intelligence via a provider such as Osprey Flight Solutions, and developing a robust relationship with the host nation civil aviation authority, as well as security agencies within the country of operations, is crucial to understanding the

terrorism threat environment related to air operations. The next logical step would be to conduct a MANPADS vulnerability assessment with government entities. This would allow for mitigation measures to be developed for operations both with and without the installation of counter-MANPADS systems on commercial aircraft. Development of several different routing options and trajectory profiles for take-off and landing from the airport of operation would be an ideal outcome.

Osprey Flight Solutions is the leading provider of aviation security risk management solutions for the air transport industry.

Osprey Flight Solutions is the leading provider of aviation security risk management solutions for the air transport industry – we believe the Osprey system is set apart as an industry

resource for understanding the risks in the global aviation operating environment. Through our collaboration with Gallagher Aerospace, we are continuing to explore and develop specialist solutions to real problems facing the aviation industry. We can provide Gallagher clients with access to our service, our analytics, and our data, allowing airlines and aviation organisations to make informed decisions. In the current environment with heightened global instability, underwriters are looking closely at their clients' latest operational safety and loss control measures, and the Osprey system remains a useful tool in allowing clients to differentiate themselves and demonstrate enhanced risk mitigation, which we are confident will be viewed favourably.

Would you like to talk?

MATTHEW BORIE
Chief Intelligence Officer
Osprey Flight Solutions
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In focus: General Aviation (GA)

Current events have brought uncertainty to the long-term trend and market outlook.

But as we reach the halfway point of 2022, conditions remain positive for most general aviation insurance buyers with healthy competition helping to temper rates.

Rates and Premium

The COVID pandemic hit air travel hard, but flight activity in the GA sector has returned to pre-pandemic levels, in most countries and sub-segments. The recovery of the GA sector has been far quicker than in the commercial airline sector, in which IATA predicts traffic won't fully return to pre-pandemic levels until 2024.

Many GA insurance programmes are now growing as flight activity increases and clients add additional aircraft to their fleets. Insurance values are increasing too, and in some cases this is leading to the requirement for higher limits and levels of coverage. Bigger fleets are a much more complex renewal process, as opposed to single aircraft owners

and operators whereby rating is largely individual and dictated by an insurers, pricing model. For medium to large GA operations, rating requirements have continued to soften throughout 2022, with 'as before' quotes from the leader usually a starting point for negotiations. The following market is softening with healthy competition amongst underwriters participating on risks below lead terms, which in turn is reducing the overall composite price. Where there is organic premium growth, some element of rate discount is achievable, but pricing levels still vary significantly between risks in different geographies and operational sub-sets, and individual loss records remain a major influence on results.

With aircraft flying more and exposures higher, insurers are underwriting cautiously. In general, underwriters are asking more questions around GA risks, looking closely at pilot proficiency and age, as well as, ratings, training and flight hours, particularly for those operating higher-value equipment. This adds additional complexity to renewal negotiations. Importantly, GA clients need to be aware that any changes in operations and process that increases their exposures or perceived risk will draw added underwriter scrutiny.

Many GA insurance programs are now growing as flight activity increases and clients add additional aircraft to their fleets.



It is also important to note that we are also seeing a harder position in respect of certain terms and coverage, with some underwriters stipulating minimum pilot and training requirements, attempting to remove elements of wording, or imposing exclusions. Early engagement with your broker to discuss your coverage and insurance renewal is essential.

Capacity

There is plenty of capacity for most GA risks. While typically written by the same insurers as airline business, comparatively, this business requires the participation of fewer markets and in some cases – risks can often be written 100% by a single insurer. The Russia/Ukraine conflict has prompted many insurers to review their portfolios and assess their positions, but fortunately, so far this has had minimal impact on capacity in this business sector. While it is a developing situation and we can't rule out any future negative impact, we are aware of at least one market (Everest Re) with plans to start writing GA Hull and Liability risks from Q4, and we would expect capacity levels to remain stable in the short-term.

Hull War and Excess War Third Party

Capacity levels and leader options have reduced in recent months, and these covers are those most under pricing pressure. Underwriters are now applying significant rate increases to aviation business, that includes those GA risks that purchase this cover. While often only accounting for a small portion of a GA buyer's total insurance spend, the scale of increases being targeted is now having more of an impact on the overall programme premium/result, and is something that should be factored into renewal budgeting.

Losses

Tracking losses in the GA sector and producing any meaningful statistics is notoriously difficult, due to the highly diverse nature of this business. GA equipment can range from UAVs and small light aircraft up to large commercial helicopters and business jets. Overall, the majority of GA losses fall into the small aircraft/private aviation category and are minor from an insured value standpoint. However, loss activity amongst the larger commercial GA operations does occur and it can be costly, particularly when passenger fatalities and newer aircraft are involved.

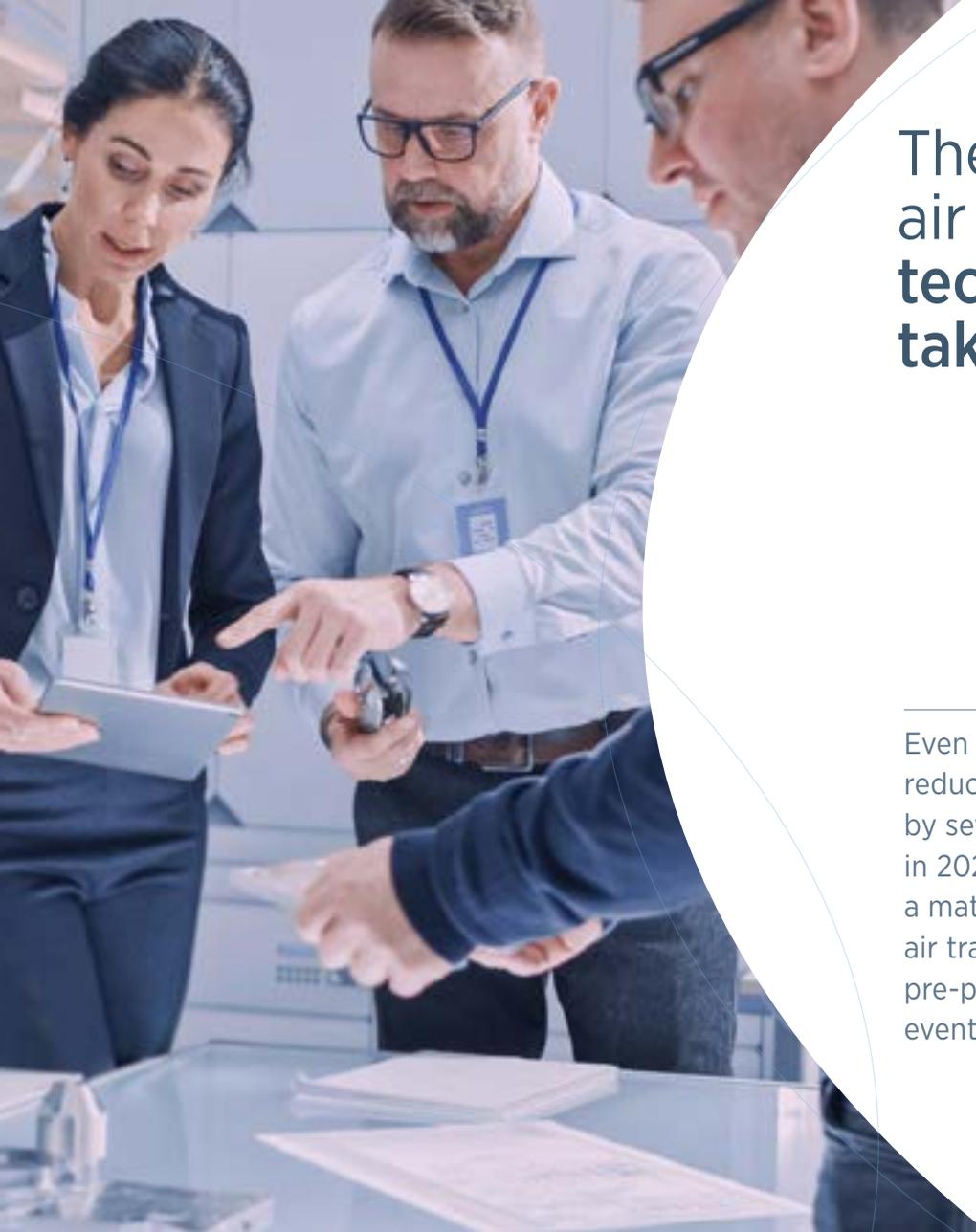
In in the second quarter of 2022, we observed two notable fatal losses, including the crash of a Caverton Helicopters DHC-6 Twin Otter 400 in Cameroon where 11 people were killed and a Tara Air DHC-6 Twin Otter 300 crash in Nepal where all 22 passengers died. From an insurance perspective, fortunately the values of these two losses shouldn't be too significant due to the aircraft types and age, amongst other factors.

In general, GA losses are, however, becoming more costly. The high hull values of newer GA aircraft, which can be worth in excess of USD80 million, are one element, as are increasing repair costs and supply chain issues. Rising liability awards, particularly in the US, are also a significant factor, and in recent years there have been some notable pay-outs. With GA aircraft typically referred to in the insurance industry as any fixed-wing or rotor-wing aircraft fitted with 50 passenger seats or less, the potential risk exposure in this business sector is clear to see.

Future outlook

- Continued uncertainty and fall-out from the Russia/Ukraine conflict
- Potential upwards pressure on pricing
- Heightened risk selectivity and underwriter focus on terms and policy coverage
- Individual loss records and policy specifics will remain a major factor in pricing
- Additional major loss activity in the wider aviation sector could harden the market.





The new air travel technologies taking flight

Even though COVID likely reduced carbon emissions by several hundred tons in 2020, it's surely only a matter of time until air travel goes back to pre-pandemic levels and eventually exceeds them.

Aviation accounts for about 2.5 per cent of global emissions – a lot less than people might first assume.

But according to a recent article in the New York Times, that percentage could triple by 2050 if the industry keeps growing at its current rate without making any attempt to curtail its carbon footprint.

Even though COVID likely reduced carbon emissions by several hundred tons in 2020, it's surely only a matter of time until air travel goes back to pre-pandemic levels and eventually exceeds them.

The UN set the industry a net zero target by 2050, and in October of last year, most major airlines signed up to that target. So, what have these companies got in the pipeline to make good on their promise?

Electric tech transforming the domestic scene

The electric aircraft revolution is well underway. More than 200 global companies are developing electric concepts, with several of them already completing successful test flights. However, there is a limit to the distances these planes can travel, and it comes down to the weight of the batteries.

Venkat Viswanathan, a Carnegie Mellon University mechanical engineering professor and aviation battery expert says: “You probably need like three, four times the weight of the airliner [in batteries] to be able to power that, which is why you can't make them.”

However, lightweight batteries can generate more than enough power to run smaller aircrafts for shorter, domestic journeys. From an emission standpoint, this is a monumental breakthrough, as about half of the flights routes worldwide cover less than 500 miles.

United Airlines' 19 seat planes from Heart Aerospace are due to take flight in 2026, with short-haul domestic flights going out from Chicago and San Francisco. Mesa Airlines and Finland's Finnair have also invested in Heart's ES-19s.

Wright Electric is working on the largest electric plane to date – the 186-seat Wright 1 – and EasyJet is hopeful of taking it to the commercial market by 2030. Wright is also working on the 100-seater Wright Spirit, where it's retrofitting BAE planes from aerospace company BAE Systems.



Wright say it's much easier to tick off regulatory standards this way, potentially reducing federal certification by half the time. The time it takes for regulatory bodies to sign off these new technologies can take several years, so any way we can safely fast track that process is good news for the industry's map to net zero.

Hydrogen and electricity combine to take us further

Going long haul isn't coming any time soon on electric only, though, which is why the industry is just as invested in finding a hydrogen-powered concept, or a hybrid that combines elements of both.

Encouragingly, we're way past the 'proof of concept' phase. Many manufacturers and start-ups now have aircraft and engines in development and are actively testing. Boeing flew the first single-seater, hydrogen-powered plane in Madrid in 2008. And in 2016, German research agency DLR, the University of Ulm and a company called H2FLY, flight tested the first four-seater hydrogen plane in Stuttgart Airport.

Now the challenge is to bring a commercial plane into the picture. A project called HEAVEN is developing a powertrain to turn a propeller at high-speed using electric power, while experimenting with similar liquid

hydrogen storage systems to those used in cars.

The powertrain turns hydrogen into torque, which then turns the propeller. HEAVEN report that it's very efficient and quiet to run, producing a similar noise to the engine of a standard car.

If all goes to plan, the plane is scheduled to test sometime in 2022. HEAVEN is also doing a lot of supporting research to keep track of how economically viable these projects are, while running safety tests and simulations – all key metrics and processes to help fast track these technologies into our daily lives.

Hydrogen-powered turbines could be the long-haul answer

But to get to a future where hydrogen-powered planes can really start to cover long distances, turbines will have to play a part in the story. Again, work is well underway to reach that goal. Airbus revealed three different concept hydrogen planes in 2020, with plans to have them in service by 2035.

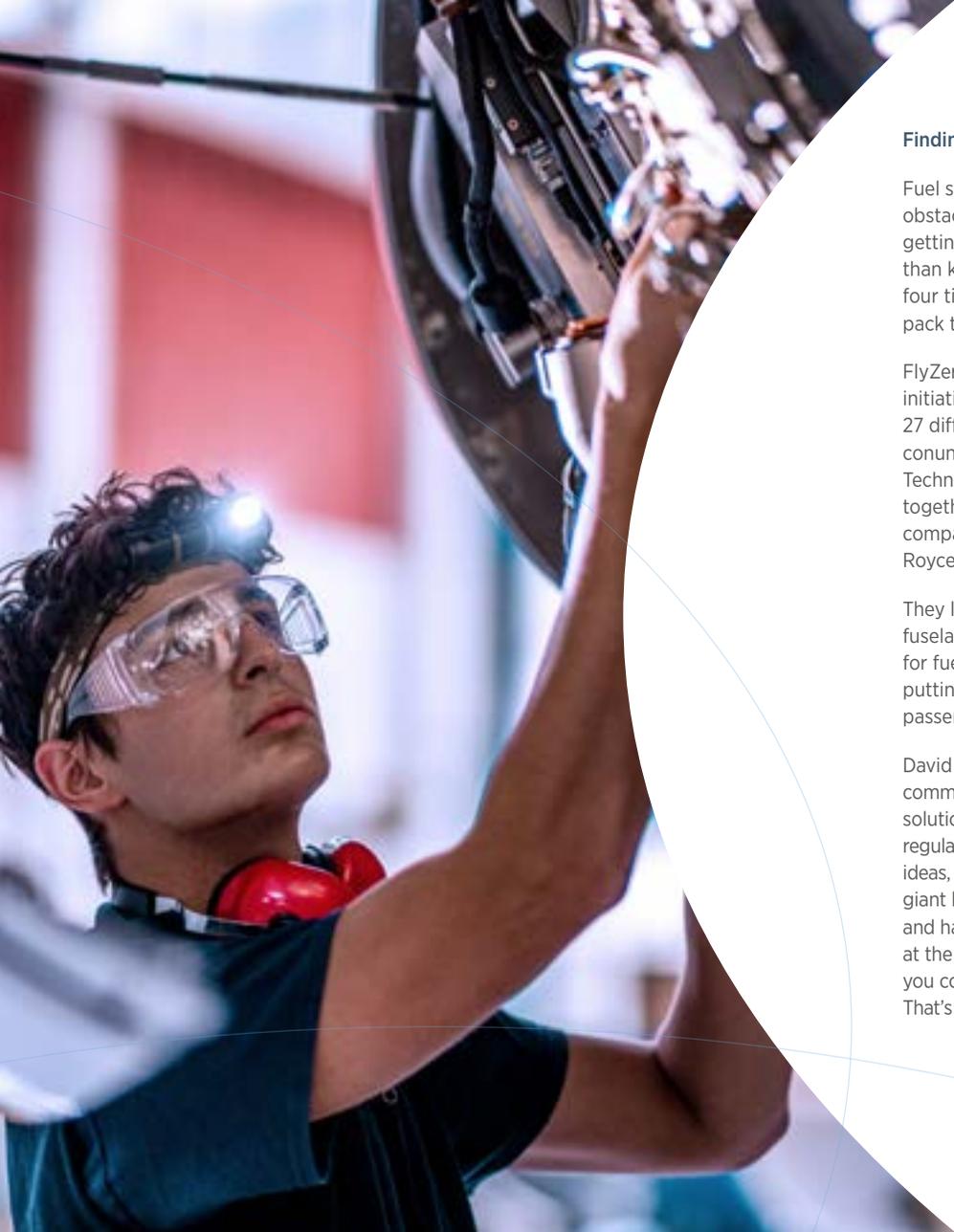
The first in the series will use a turbofan design. Airbus predicts it will be able to fly across continents, carry 120-200 passengers, and reach a range of 2,000+ nautical miles. It'll be powered by a modified gas-turbine engine running on hydrogen through combustion.

Their second concept is a turboprop design, carrying up to 100 passengers. It's a concept that will use a turboprop engine instead of a turbofan but will be powered by the same turbine technology. Airbus expects it to reach up to 1,000 nautical miles, making it ideal for short-haul flights.

But to get to a future where hydrogen-powered planes can really start to cover long distances, turbines will have to play a part in the story.

And finally, they're developing a 'blended-wing body' design, which will carry up to 200 passengers and reach similar distances to the turbofan model. The wings will merge with the main body of the aircraft and create a larger-than-usual fuselage, allowing Airbus to experiment with how they store and distribute hydrogen fuel.





Finding fuel space

Fuel storage has been one of the biggest obstacles stopping hydrogen concepts getting off the ground. Although lighter than kerosene, liquid hydrogen needs four times as much volume on board to pack the same punch.

FlyZero is another ground-breaking joint initiative in the UK, which has looked at 27 different ways of solving the storage conundrum. Led by the UK's Aerospace Technology Institute (ATI) it brings together over 100 experts from multiple companies, including GE Aviation, Rolls Royce, and Spirit AeroSystems.

They looked at concepts with two fuselages (one for passengers and one for fuel), gondola designs, and even putting fuel tanks above where the passengers would sit.

David Debney, chief engineer at FlyZero comments on the struggle to find a solution that would pass through current regulatory standards: "We looked at wacky ideas, for example, where you could put a giant hydrogen tank between the wings and have two cabins, one at the back, one at the front, but they'd be separate. And you couldn't get from one to the other. That's not allowed under the regulations."

Like Airbus, FlyZero announced three final concepts at the beginning of the year – one being a mid-sized aircraft, which they predict could fly non-stop from London to San Francisco.

Safety versus innovation

New innovations inevitably bring new risks for the industry to consider, and hydrogen-powered aircraft are no different. Thankfully, the global industry has been working with hydrogen for decades now – oil refineries and fertilizer producers, for example, have been working with the gas for over 40 years, so the safety standards and regulatory bodies relating to its use are well established.

It's now just a case of making sure the aerospace industry doesn't lose sight of the chemical it's working with. Hydrogen is highly flammable and takes very little energy to ignite, so every element of these aircrafts needs to go through robust safety protocols. That's everything from new composite engines to battery combustion, to fuel lines, right down to storing the chemical and transferring it across airports.

However, time is also against us – the industry has UN targets to meet, but outdated safety frameworks could

stand in the way of fulfilling them. In an interview with the BBC, Arlette van der Veer, senior manager of radical innovation at KLM Royal Dutch Airlines said just that: "Safety is the sole purpose of everything we do... but what I discovered in my research is that there are some mindsets and approaches from the 1960s or 1970s that still prevail today despite all the new testing methods.

"If I designed the most perfect aircraft... but there is no fuselage, it's not cylindrical, it would be a case of the computer says 'no'. The certification authorities need to develop certification methods for aircraft designs that they have never seen before."

So, while safety should always be front of mind, regulators can't always rely on the current safety standards to judge these new designs – there must be an ongoing effort by the industry to continually review their safety frameworks, and make sure they're just as forward thinking as the innovations they're considering.



AI transforming efficiency and reducing emissions

There are other technologies that are helping companies save on emissions right now. Airlines are drawing on AI to make their jet fuel consumption more efficient. Air France, Norwegian, DHL, Oman Air and Aerolineas Argentinas, amongst many others, have all invested in Sky Breathe – a technology that pulls on big data and AI to analyse flight records and find smarter routes to save on fuel.

Sky Breathe estimate that in 2019 they saved their customers about 190,000 tons of fuel and reduced CO2 emissions by 590,000 tons. To put that in tangible terms, that's the equivalent of the carbon captured by just under 10m trees over a ten-year period.

US Federal Aviation Administration (FAA) is also upgrading its system in a project called Next Gen to improve air traffic control operates. It will help schedule tighter landings and take offs, and decrease delays where planes circle airports or sit on the tarmac for too long.

Curtailing contrails would be a big industry win

Contrails - the condensation clouds that form at the back of a plane's engine - produce a mix of water vapor, aerosols, and nitrogen oxides, which absorb more

energy than they send back into the atmosphere. An EU commission found these can potentially be three times as damaging than CO2 alone.

But they only form in narrow channels in the atmosphere where the weather reaches the right level of cold and humidity.

So, if airlines could avoid these pockets, it would radically reduce their collective carbon footprint. A Japanese research paper found that changing routes could reduce the impact of contrails by 59%.

It's normally just a case of shifting flight paths 2,000 feet up or down. And even though that deviation can affect efficiency and require more fuel, it wouldn't be nearly as costly as the impact that contrails can cause.

However, these channels change from day to day and pilots need accurate reports to help pre-empt when they should change path. The industry is currently working towards a future where pilots can report contrails in real time, just like they do with patches of turbulence.

Still work to do and investment needed

The industry is really making headway in its net zero mission, and we've only just scratched the surface of the projects out there driving the industry towards its renewable future.

But it's an industry that's still in recovery mode from the past two years. The pandemic has put a huge financial dent in its economy and it's going to take some time for airlines and subsidiary companies to bounce back. Which means urgent projects like the ones mentioned in this article could fall behind in their projected time frame.

The industry is really making headway in its net zero mission, and we've only just scratched the surface of the projects out there driving the industry towards its renewable future.

Given the near-term need for emissions reduction, the short-term emphasis is likely to fall on other solutions such as sustainable aviation fuel (SAF) as the most direct way to make substantial reductions in net carbon emissions, with projects involving hydrogen and electric seen as a more long-term solution.

Regardless, to maintain momentum and stay on track with UN net zero targets, the industry needs investment, otherwise the progress up to this point could all be in vain.





In focus: Aerospace Infrastructure

Author: Claire Vincent, Senior Partner,
Gallagher Aerospace

Everything was starting to look far more positive for insurance buyers in 2022. However, there is a huge asterisk now hanging over this.

You are finally sitting on a sun lounger with the protection of a sunshade, enjoying a refreshing cold drink after two years of no holidays and a lot of stress.

Life is feeling so much calmer and the future looks brighter. Then all of a sudden you see the dark clouds heading in your direction. They look so dark that it is almost inevitable that it will rain, but you can't quite determine exactly when and what protection the sunshade is going to provide in the event of a downpour. This is where aerospace infrastructure sits within the aviation insurance market right now.

After initial signs of the hard market slowing down at the end of 2021, we saw further moderation in Q1 2022. As we reach the mid-point of 2022, we can report that the pricing curve has continued to flatten, with no more significant premium increases being applied as a generality. The insureds' revenues and activities have also been bouncing back, so everything was starting to look far more positive for insurance buyers in 2022. However, there is a huge asterisk now hanging over this as the crisis in Ukraine continues, and

the potential for market changing losses develops. These losses are not borne in the specific aerospace infrastructure sector, so you would expect some protection from being directly impacted. However, it remains to be seen whether this is going to be enough to protect the manufacturers, Maintenance Repair and Overhaul (MROs), airports, Air Navigation Service Providers (ANSPs), groundhandlers, refuellers, etc, as we are all part of the global aviation market.

Insurers will increasingly feel the pressure to recoup losses and cover the increased costs associated with providing capacity in the aviation insurance market and, as was explored in the Gallagher Re article (page 5), the pressure from reinsurers where all aerospace risks are mutualised will be as tough on this sector as it is on airlines. This is demonstrated with underwriters currently providing stable terms coupled with short validity periods, which enable them the opportunity to react quickly if they are required to.



We advise our clients it is best practice to approach the market early with a clear message, and we would stress the importance to act decisively when presented with fair terms and conditions.

What we are likely to see is a clear focus on any form of All-Risks / Contingent cover across the aviation market, which the infrastructure sector will not be immune from. For the Original Equipment Manufacturers (OEMs) and MRO's, there can often be elements of All-Risks / Contingent All-Risks cover included within their policies with no specific premium ratings, as this had previously been considered as a benign aspect of their overall business and exposures.

Capacity

There remains a theoretical abundance of capacity within the aerospace infrastructure sector of the market. It was restricted in recent years with line discipline, but we have seen insurers slowly looking to deploy more and write increased shares on what they see to be good business. That said, there is a feeling this could be temporary, as insurers look at recent events and the cost of maintaining large capacity. We have seen several new entrants join the aviation market in recent years, but as a whole we are yet to see them engage in the infrastructure sector.

Profitability and loss ratios are still dominating pricing across the board, but to differing degrees across the sub-sectors within the infrastructure market. The more loss active accounts will find capacity far more restrictive, which prevents competition and pressure on premium pricing. For example, Manufacturer Hull losses continue to challenge the loss ratios of OEMs. What are seemingly minor but then turn out to be expensive aircraft damage incidents, are restricting capacity for MRO's and groundhandlers. Insurers have been able to bank the premium for the last couple of years from the airport and service provider sectors, as the activities and level of losses have been so low, due to the pandemic. As such, airports and service providers are now in a much better position with more positive loss ratios, and greater capacity and options available. However, as aviation operations increase around the world, these loss ratios could deteriorate, and so capacity and premium levels could become challenged once again.

It is best practice to approach the market early with a clear message, and we would stress the importance to act decisively when presented with fair terms and conditions.

The air navigation service provider (ANSP) sector tends to buy some of the largest policy limits in the infrastructure sector, but currently capacity remains available as there hasn't been a major air traffic controller (ATC) loss for several years. This business remains a loss free catastrophe risk, but as the cost of capital increases, achieving those larger limits may require some creative policy structuring.

Losses

We again are pleased to report that we are unaware of any major losses reported on the infrastructure portfolio. The wider industry challenges – the Russia/Ukraine conflict and social inflation – remain the same as they did in Q1. If social inflation continues, or worst still, gathers pace, this will further ratchet the pressure on the market to react with higher premiums or change the way in which cover and the associated liability limits are provided.

Future outlook

- There will be a focus on key risk exposures and covers, particularly for those with any potential contingent exposures included
- Loss frequency will be analysed as operations return to pre-pandemic levels
- Premium increases should continue to level out with some adjustment needed for growth
- Capacity is stable with no signs of major changes yet
- The Russia/Ukraine situation represents uncertainty around the longer-term trending.

Would you like to talk?

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Directors' and Officers' (D&O) insurance

Author: Steve Bear
Executive Director - Financial & Professional Risks, Gallagher

Even before the pandemic, the D&O market was in a state of flux, with many insurers correcting rates after years of soft market pricing.



The D&O liability insurance market has been a hardening market over last few years and an extremely challenging environment for aviation buyers.

However, as we reach the mid-point of 2022, despite ongoing global uncertainty, conditions are improving, and we are now optimistic about client outcomes in the coming months.

Pre-pandemic backdrop

Even before the pandemic, the D&O market was in a state of flux, with many insurers correcting rates after years of soft market pricing.

From the early 2000's through to 2015, there was a glut of cheap D&O capacity driven by a very benign claims environment and underwriting profits, but it proved to be unsustainable. As losses started to hit the D&O market (as well as the front pages of newspapers) around 2015/16, insurers woke up to the long-tail nature of D&O claims and realised they had been inadequately reserving for historic claims.

As multi-million dollar payments left the market, capacity receded and in some cases insurers closed their doors entirely. Premiums started to increase at double-digit rates and competition for new business became less and less.

Then the Pandemic hit, and the perceived economic fallout amplified the problem several fold.

Insurers retrenched and stopped writing new business, with the COVID impacted industries such as aviation most affected. Clients were left with no option but to renew with their existing carriers, at percentage increases sometimes running into the hundreds.

Those insurers left willing to renew reduced their limits, from soft market norms of say USD/GBP/EUR 10m-15m to as low as USD/GBP/EUR 2.5m, and any appetite for primary D&O for aviation almost completely dried up. As these limits reduced and premiums spiralled, many clients had no choice but to reduce their overall programme of D&O insurance, leaving the company balance sheet and the individuals at board level with reduced protection; all in the face of unprecedented wider global uncertainties.

Despite this market turmoil, Gallagher's specialist Aerospace and Financial Risks teams have been working tirelessly in the background to be ready.

The current scene

As we transition out of the pandemic and adjust to a new normal, positively the D&O market has now started to improve.

The first quarter of 2022 has been an interesting one in the D&O market, with competing options returning for our insureds, and the aviation sector especially has given significant cause for optimism. Insurers are once again looking to write new D&O lines for airlines and associated services, with some clients securing a doubling of limit for less than half of the expiring premium, but uncertain times still lay ahead.

The Russian invasion of Ukraine was a moment for many underwriters to stop and reflect on their approach. Such a huge geopolitical incident can give rise to a shift in the market, but on the most part, particularly from a D&O perspective, it has proved to be a specific issue for a small number of companies - due to either having Russian exposure or having had sanctions imposed upon them.

As aircraft take to the sky once more, a backlog of demand and struggles to satisfy it have come to the fore, and insurer focus

on ESG is at an all-time high. No more so than in the commercial aviation sector.

As international borders reopen without restriction, lockdowns and COVID-19 measures are looking to be a thing of the past, and most carriers have a healthy level of bookings. D&O underwriters now have more comfort around businesses concerning COVID-19 controls. However, with difficult worldwide events hitting the headlines recently, supply chain and operating disruptions have caused some headwinds that are contributing to the market not softening at too great a pace.

A recent surge in "Greenwashing" allegations have also shifted the focus; whilst good governance remains (and always was) a key underwriting consideration for any D&O insurer, the uptick in social inflation and the outrage that accompanies it is forcing regulators to sit up and take notice, with resulting investigations hitting the bottom line of insurers.

Advice for businesses seeking D&O cover

With so much uncertainty, it remains vitally important to work with an experienced broker, to find the right solution with the right level of coverage from the most suitable insurer.

Gallagher's panel of preferred insurers and products for Aviation D&O coupled

with our specialist knowledge in the sector make us the perfect strategic partner for the industry, and we remain optimistic about client outcomes for the remainder of 2022. In fact, we already have a growing number of aviation success stories in 2022.

With capacity increasing, overall limits returning to pre-pandemic levels and premium savings now achievable, Gallagher's highly experienced team are ideally placed to capitalise on improvements in the market and successfully circumnavigate the uncertainty and challenges that lie ahead.

Would you like to talk or find out more?

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In focus: Space

Author: Peter Elson
CEO, Gallagher Aerospace

As we conclude the first half of 2022, the year has so far proved relatively stable for space insurers.

The small increase in capacity at the beginning of the year coupled with no major insured losses reported to date has continued to build insurer confidence and appetite for risk.

Insurers are competing to secure their preferred participations on target placements, especially for the more “standard” GEO launch placements (noting the historically small number of these being placed in 2022) and in-orbit fleet programmes with healthy spacecraft. Capacity remains strong for non-distressed risks requiring low to moderate sums insured, and can be leveraged to the benefit of buyers. Risks with high sums insured requiring more capacity or presenting a challenging technical risk profile inevitably attract a more restrained level of interest. However, there is adequate appetite for these risks at elevated pricing levels.

We would expect to see this trend continue in 2022, even though many space insurers are still acutely aware of the severity of losses they met not so long ago. Consequently, several insurers are unwilling to support what they view as challenging technical risks, and their reticence has been intensified by the historically low premium levels generated

this year. As such, the market is poised to react quickly in the event of the current run of success being broken by a large claim.

As previously reported, a number of new technologies are beginning to come into the space insurance market. Underwriters are now being approached with placements including the Ariane 6 launch vehicle and software-defined satellites from multiple manufacturers, with early benchmarks for pricing and capacity beginning to crystallise. Based on our initial experiences, many underwriters appear receptive of these new technologies, willing to work with operators and manufacturers to ensure they obtain a full understanding of these products - an important process that Gallagher is actively supporting.

As previously reported, a number of new technologies are beginning to come into the space insurance market.



The current conflict in Ukraine continues to have a significant affect on supply chains throughout the space industry. Nevertheless, we note that major manufacturers are finding solutions to enable manufacturing, transportation and satellite launch programmes to carry on. Recent press reports have highlighted a number of very large claims presented to aviation all risks and aviation war insurers. These losses are starting to generate significant concern throughout the broader aviation and aerospace market. As these claims develop it's possible we may see some contagion into capacity and pricing within a heavily aligned space insurance market.

The development of the Small-Sat sector shows no signs of slowing, with both funding and merger and acquisition activity reaching an all-time high. Funding appears to be entering the sector from all angles, with an excess of USD15bn generated from venture capital, private equity, seed funding, debt financing, and initial public offerings last year alone. And a first for the sector has been healthy M&A activity demonstrating the increased maturity of the Small-Sat industry. That said, there are many challenges ahead as new, smaller launch companies jostle for market position alongside proven technologies in a testing commercial environment.

Behind all this activity sits an evolving Small-Sat insurance sector that is beginning to converge with client needs on coverage, and to some extent, pricing. What the industry now needs is a growing stream of Small-Sat clients routinely buying insurance cover, with full support from brokers and underwriters to make this business viable in its own right.

Gallagher's Space team continues to move forward with a clear client-first mind-set, providing innovative and intelligent products alongside key strategic insights to our clients. This, coupled with market leading delivery and service standards, ensures that Gallagher remains ideally positioned to provide the best insurance broking services for our clients.

Would you like to talk?

PETER ELSON

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Gallagher update

Gallagher expands its Aerospace team

We are pleased to announce the following new appointments to our global Aerospace practice:

- **Charlie Stafford** has joined as a Junior Account Handler based in London, UK.
- **Charlotte King** has joined as a Junior Space Account Handler based in London, UK.
- **Ethan Fletcher** has joined as a Junior Account Manager based in London, UK
- **Imogen Skinner** has joined as a Junior Broker based in London, UK.
- **Joe Pickford** has joined as a Junior broker based in Singapore.
- **Lauren Fullerton** has joined as a Data Support Analyst based in London, UK.
- **May Pattullo** has joined as a Claims Assistant based in London, UK.
- **Mia Ollari** has joined as a Claims Handler based in London, UK.
- **Nick Skelton** has joined as an Account Manager based in London, UK.
- **Sandra Lonsbury** has joined as a Risk Management Senior Advisor, based in London, UK.
- **Wajudat Ilmouka** has joined as an Account Manager based in USA.

Gallagher establishes new Aerospace Risk Management Services team

To help support our airline and aerospace clients with safety risk management solutions and to strengthen our value proposition, we are pleased to announce we have established a new in-house Aviation Operational Risk Management team.

Managed by Gallagher Senior Partner Eduardo Dueri and lead by industry specialist Sandra Lonsbury, the team will specialise in providing aviation advisory services and support throughout the world and across the full spectrum of the aviation sector.

Services and solutions available can include:

- Safety Management System (SMS) support
- Crisis management and business continuity planning
- Operations governance
- Safety assurance and compliance
- Safety risk management
- Management of change facilitation
- Incident / accident response training and support
- Safety culture and safety promotion assistance
- Training programmes and ad-hoc advisory capabilities

For more information, please contact your Gallagher account executive or email us [here](#).





Market Personnel News in Q2

AIG

Mark Sperring has been named as Head of UK Aerospace as part of a wider reorganisation of AIG's aerospace team. Three new leadership roles have been created focusing on airlines and deductibles, manufacturers and airports and general aviation. **Chris Collins** will become International Head of Airlines and Deductibles, **Paul Talbot** has been promoted to Head of Manufacturers and Airports for the UK, and **Graham Allen** will join the team in July, from Chubb, in the newly created role of International Head of General Aviation. Additionally, **Duc Tu** has been promoted to Senior Underwriter, General Aviation, **Alice Hawkins** has joined as Airline Deductible Underwriting Assistant and **Richard Kempson** has joined as an Underwriting Analyst, Airlines. **Will Green** has also joined from Talbot as Underwriting Manager, Airlines.

Source: Market knowledge and publicly available information.

AXA XL

Mariana Penteado Potts has joined the UK & Lloyd's Aviation team as an Underwriter.

Chubb Global Markets

Sarah Karchargis has joined as an Aerospace Underwriter. She was previously an Aviation Underwriter at Starr Insurance Companies.

Everest Re

Paul Trueman has joined to lead the company's entry into the class. Based in London, he was previously Underwriting Manager at Global Aerospace.

Global Aerospace

James Dowlen will join the team, taking on the role of Client Executive Airlines, based in London. He was previously Underwriting Manager – Airlines at AIG. Additionally, **Ryan Burdon** has joined from Price Forbes as Underwriter, Aerospace in London, and **Jessica Yanecko** has joined as an Underwriting Analyst, based in New Jersey, USA. **Dominic Frost** has been promoted to Underwriting Manager, Airlines, based in London.

Helvetia

Remo Pigozzo will join the team effective 1 September 2022 as a Senior Underwriter based in Zurich. He was previously Senior Underwriter Aviation at Swiss Re.

Lancashire

Matthew Thomas has joined as Active Underwriter for Syndicate 3010. Additionally, Michael Bush has been promoted to Aviation Underwriter.

Liberty Specialty Markets

Peng Lim will join the team in November 2022 as Head of Aviation Claims in London. Lim is currently Global Head of Aviation, at Kennedys' law firm based in Singapore.

Swiss Re

Chris Churcher has joined as an Aviation Claims Specialist based in London.

Starr Companies

David Howe has started a new position as Senior Underwriter.

Tokio Marine Kiln

Nomdo Kruis has joined as Underwriter - Aviation based in Singapore. He was previously Underwriter, Aviation Direct at Munich Re.



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It reflects our understanding as at 07.07.22, but you will recognise that matters concerning COVID-19 are fast changing across the world. You should not act upon information in this bulletin nor determine not to act, without first seeking specific legal and/or specialist advice. Our advice to our clients is as an insurance broker and is provided subject to specific terms and conditions, the terms of which take precedence over any representations in this document. No third party to whom this is passed can rely on it. We and our officers, employees or agents shall not be responsible for any loss whatsoever arising from the recipient's reliance upon any information we provide herein and exclude liability for the content to fullest extent permitted by law. Should you require advice about your specific insurance arrangements or specific claim circumstances, please get in touch with your usual contact at Gallagher.

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