FLIGHT PLAN

A SPECIALIST RISK PUBLICATION FOR THE AVIATION SECTOR

Gallagher

Insurance | Risk Management | Consulting

Welcome to the third edition of Flight Plan,
brought to you by Gallagher's Aerospace division.

Flight Plan began in 2021 as a publication designed to keep our clients up to date with the latest developments in aviation safety, quality and risk management issues.

In this publication, we have several articles of interest on challenges faced by organisations today written by colleagues from Sirius Aviation Limited and well known industry Safety expert Daniel Maurino. We have also included my case study on the insurance market support to safety initiatives.

Captain Daniel Maurino is a pioneer and leading expert in the field of Safety Management Systems and will be a guest lecturer in the newly formed Latin American Aviation Safety Centre (LASC). He has written an article on stressing the importance of the management of safety as a business function.

Lessor Challenges and asset management is the focus of an article by Sirius Aviation Director David Price

in which he discusses the importance of maintaining existing assets.

Simon Stewart of Sirius Aviation has written an article on the need for resilience within an organisations' Crisis Management capability. He stresses the need for utilising safety systems to support resilience and that airlines must maintain an effective crisis response capability that adapts to the fluid global situation facing the industry.

Simon Harlow of Sirius Aviation explores Risk Informed Decision Making in a Complex Environment where it is essential to understand human error and plan for the human in the system approach when developing the policies, processes and procedures focused on delivering safe operations within a regulatory framework.

Lastly, with any new market innovation there are significant safety and regulatory and certification challenges that must be overcome with OEMs, Regulators

and Start-up operators working closely together. Sandy Lonsbury discusses the adaptation of the ICAO Safety Management System framework to Unmanned Aircraft Systems (UAS) and how the Unmanned Safety Aircraft Team (USAT) is addressing the potential safety gap.

Please enjoy this edition of Flight Plan. Should you have any questions or comments, do not hesitate to get in touch. We would love to hear from you.

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Crisis Management: **Challenges of the New Normal**

By: Simon Stewart
Managing Director, Sirius Aviation Limited

Crises in the airline industry are nothing new and the industry is still managing the impact of the ongoing Covid-19 pandemic.

Whilst the latest omicron variant is now widespread around the globe, infection rates are in decline and the world is slowly getting used to an endemic, as opposed to a pandemic. Coronavirus and future variants are with us to stay and western countries are now learning to manage and 'live' with the virus.

The only exception to the rule is China, which is now experiencing a rapid spread of the omicron virus, forcing entire provinces into lockdown and bringing into question its zero covid containment approach.

The situation is having a disruptive effect on western supply chains, fuel prices and airline networks. And the war in Ukraine has also resulted in EU carriers experiencing airspace restrictions, lengthening flight durations and increasing fuel costs. This requires airlines to adjust airline network schedules and also raises increased risk for aircraft lessors/ fleet management and the possibility of fuel surcharges on ticket prices.

These ongoing events can be unpredictable and lead to a combination of risk factors that are disruptive to airline business stability, safety and performance. The difficulty in a post Covid-19 world is that not only have airlines and aircraft been working at very reduced rates, but the environment in which they are about to recover operations has changed significantly.

Recovering scheduled services to some semblance of 'Business As Usual' is requiring operators to respond to a myriad of challenges and problems.

network and operating environment, where the vulnerabilities exist, and the controls that are in place upstream and downstream of the airline system to effectively deploy defences.

The key concept behind organisational safety resilience is how operators adjust safety delivery and safety performance during and after the Covid-19 pandemic. The tools available to management teams to support organisational resilience include safety culture and leadership, organisational governance and structure, supporting regulation, assurance and compliance oversight and dynamic risk and crisis management.

In response to the changing nature of the risk landscape airlines should consider:

- adopting a progressive and coordinated management focus on crew planning

- safe recovery and return to service of parked/mothballed aircraft

- managing revenue and cost pressures so that it doesn't unduly reduce acceptable safety levels

- performing fleet management planning (smaller aircraft/large aircraft retirements) with new technologies (propulsion/safety)

- considering possible culture and behavioural changes of staff and suppliers as the company addresses ongoing constraints and critical events

- putting in place an effective supplier management and oversight program

- making sure enough experienced staff are available for the work scheduled (current pilot shortage)

- ensuring continued use of the Safety Management System (SMS) to its full potential

- communicating and collaborating with industry stakeholders on shared safety procedures.

The pandemic has focused attention on how aviation organisations, indeed all organisations, can anticipate, prepare

Aviation businesses need to be resilient to respond to disruptions, but they also need to adapt to challenging conditions too.

for, respond and adapt to change and disruption. Aviation businesses need to be resilient to respond to disruptions, but they also need to adapt to challenging conditions too. And where practical, capitalise on opportunities as the market keeps shifting.

Crisis response and safety resilience

It is essential during this time that airlines maintain an effective crisis response that can adapt to the fluid global situation. The "Covid new normal" phase of living with the virus establishes the foundation for a new flexible way of doing business with a focus on dynamic risk response and safety resilience.

It's vital that operators monitor risk creep, track safety violations and look

for signs of unhealthy risk tolerance. If they uncover anything, operators should deal with it in an appropriate and just manner, and remember that it's natural for individuals and organisations to experience a change in risk appetite in times of crisis.

The risks and necessary controls transcend organisations, which means effective risk management requires a thorough understanding of the airline

Critical Event Management & Organisational Resilience

Contemporary airline emergency response management, crisis management and business continuity are now merging into a new system called Critical Event Management (CEM). CEM started as an integrated business response to crisis events including coordination and control, stakeholder communication and management, ongoing crisis monitoring, and audit and assurance oversight.

Effective crisis management comes down to organisational resilience, which requires a combination of:

- Risk management
- Physical barriers
- Redundancy (spare capacity)
- System back-ups
- Standardised procedures and applied technology.

These factors protect the organisation from threats and allow it to bounce back from disruptions and restore stability.

With social media being able to share information at such a speed these days, it's critical organisations manage crisis communications as soon as an event happens. IATA (2019) guidance material on crisis communications recommends that with the advent of mobile phones, 5G and high speed data networks, airlines need a crisis response strategy fit for the digital era.

The general public can upload content and HD videos of an unfolding emergency situation instantly, leaving airline crisis management teams little time to coordinate and communicate the right messaging (China 737-800 accident, 21 March 2022).

Resilience in crisis management means looking ahead, thinking creatively and anticipating environment changes that could affect safe operations.

An effective integrated organisational response can be achieved by using a dedicated crisis software platform that enables a timely, secure notification, management understanding of the risk environment and tracking of management team decisions and action plans, irrespective of geographical location of stakeholders.

Professor David Denyer of Cranfield University described resilience in his 2017 academic paper titled "Organisational Resilience". He describes it as "*the intrinsic ability of a system or an organisation to adjust its functioning prior to, during, or following changes and disturbances, so that it can sustain required operations under both expected and unexpected conditions*."

Resilience in crisis management means looking ahead, thinking creatively and anticipating environment changes that could affect safe operations. It means applying the SMS to monitor the threats and risks associated with these changes, as well as using risk informed governance to ensure the organisation can flex and absorb disturbances as they happen.

Organisational resilience for airlines can be achieved by implementing an integrated system at an enterprise level to effectively support a pre-planned and coordinated crisis and emergency response in a time critical environment.

Lessor Challenges and **Asset Introduction**

By: Dave Price
Director, Sirius Aviation Limited

The International Air Transport Association (IATA) is forecasting a recovery in fixed wing passenger traffic to be in excess (103%) of 2019 figures by 2024 and for 2022 the traveller numbers are expected to be 83% of 2019 levels.

The demand has also not been seriously impacted by the omicron variant. Although there are some early signs the Ukraine conflict is having a significant impact on certain fixed wing aircraft types, while the pandemic has left the rotary business relatively unscathed.

The fixed wing recovery has been principally affected by the current travel restrictions that governments place on travel (especially in Asia-Pacific). However, the influence of the pandemic on global recovery is far from over and the pandemic has caused significant global airline losses (aviation industry total losses are expected to be $201 Billion in 2020-2022 - IATA World Air Transport Statistics).

With a large proportion of the global fleet still on the ground, airlines have taken on significant capital debt in a fight for survival. A lot of companies are restructuring in an attempt to manage fleet costs and liquidity with lessor payment deferrals and handing back of older aircraft types. Fleet strategies are under review including reductions and a renewed focus on sale and lease back deals with lessors.

For Lessors, the current market environment has limited their options to transfer returned assets to new airline clients. With the global pandemic not behind us yet and the Ukraine conflict impact still to be fully understood, now is the time to give careful consideration to a number of key topics affecting fleet management of leased aircraft.

Insurance Cover

While insurance is a requirement of any leasing agreement, the insurer wouldn't have considered the risks of having large numbers of aircraft in long term storage and the challenges associated with returning them to service at inception of the policy. But it could lead to significant number of unforeseen risks and associated costs.

The added operational risks involved in putting large numbers of aircraft into long term storage are very real and sometimes not always obvious. So it is extremely the important to have full clarity on what is and isn't covered. Aircraft and their critical components and role equipment must be protected, monitored, inspected and stored in approved facilities. Plus, they should strictly adhere to the type certificate holders' requirements or very significant additional risk and costs can happen. We should also not forget the additional ground risks that come with large numbers of aircraft being parked up for long periods of time at airfields and storage facilities that were never designed for that purpose.

Make sure you check 'Aircraft on Ground' cover very carefully and start your insurance renewal review early.

Importance of Maintaining Existing Assets

At a time when there is an unprecedented number of aircraft in storage and whilst we are operating in a market that's still unpredictable, we must make sure they're properly maintained, stored and the associated records are kept up to date. This is vital in avoiding potentially very costly component overhauls, repairs or failures, which could impact the availability of aircraft needed to help recover the business.

Internal corrosion is still one of the primary reasons for unscheduled, in-service failures of critical engine, avionic and gearbox components. This can be the direct result of aircraft or their components not being stored in a suitable manner or environment.

Availability of Parts and MRO suppliers

It's dangerous to assume that existing suppliers have enough stock and capacity to deal with the potential requirements of a large number of aircraft returning to operation without due consideration being given to their immediate, short and medium term needs. This situation is likely to be made worse by the different types of non-essential maintenance, upgrades, and significant component interventions, which could lead to a backlog of heavy Maintenance and Repair Organisation (MRO) work when a significant number of aircraft return to service.

With this in mind, it has probably never been more important to consider the short, medium and long term maintenance requirements, and to share those requirements with our key suppliers.

At a time when there is an unprecedented number of aircraft in storage and whilst we are operating in a market that's still unpredictable, we must make sure they're properly maintained.

Asset values

Older wide-body aircraft that are out of production or soon heading that way, will most likely suffer the most as a result of the pandemic. However, predictions from IATA and other industry bodies suggest that it will take between two to five years before demand for air travel will return to pre-pandemic levels. This means there will be a projected oversupply of aircraft, which will drive down values across all ages and sizes. This should, however, only be in the short to medium term, with newer more economically and environmentally friendly narrow bodied aircraft being the least affected.

During the pandemic, some aircraft were redeployed to the freight market to move large amounts of PPE and to combat the lack of cargo capacity. But now passenger operations are getting back to normal, these aircraft will revert back to their original use. This will unfortunately have a negative effect on their value and may lead to incurring very significant cost to reconfigure them so they can be redeployed for scheduled operations.

Furthermore, after such a period of inaction, it's important for businesses to review how they're maintaining key life cycle cost drivers and if the coverage and values are still fit for purpose.

Closing thoughts

The aviation industry has dealt with the most challenging time in its history and the resilience of the entire sector is quite remarkable, which is a great credit to all that are part of this incredible business.

Now with the success of the vaccines and their rollout and how international governments are now easing travel restrictions, it looks like the worst is behind us. Combine this with the appetite for people to take to the skies seemingly undiminished, we can be cautiously optimistic about the future of the industry. And now start to very carefully plan how to return these idle assets to service in the most cost effective and safest way possible.

Risk Informed Decision Making in a Complex Environment

By: Simon Harlow
Director, Sirius Aviation Limited

Centuries ago, clockmakers started to add extra features to clocks and watches to attract buyers and enhance their reputation. They achieved these additional functions, called "complications", through a combination of mechanical components. These components were completely predictable to the clockmaker who understood the whole system, but almost magical to the untrained eye.
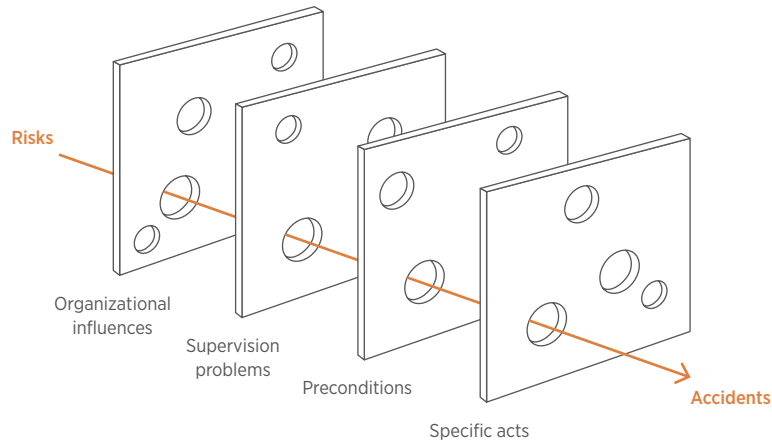
The aviation industry is full of machines, systems, and processes, often so complicated that few, if any, can fully understand their inner workings. Unfortunately, as soon as we encounter external unknowns, such as people, weather, politics, or pandemics, our systems become complex. They form a socio-technical structure, where even a complete understanding of the entire system can't guarantee an accurate prediction of the outcome of any particular sequence of events.

The Swiss Cheese Model

Where a sequence might lead to an adverse result, we need an understanding of the chain of events to interrupt the cause and prevent the accident. The "Swiss Cheese Model' is an appropriate metaphor for this scenario, and arguably the most famous in the aviation world. James Reason first described the model (Human Error: Models and management, 2000) as a simplification of his "Organisational Accident Model". Reason uses slices of cheese as a metaphor – each slice represents equipment, systems, processes, or even human performance, that contribute to the prevention of an accident or undesirable event.

The holes found in swiss cheese represent gaps or weaknesses in systems, processes, or even limits to human performance. The implication of the swiss cheese metaphor is that by identifying a sequence of events that can lead to an accident, identifying the weaknesses in any safety barriers, and mitigating them (moving the holes in the cheese) accidents can be avoided. One should keep in mind that in a complex system an accident sequence may not be as predictable as Reason's metaphor assumes.

Risks

Organizational influences

Supervision problems

Preconditions

Specific acts

Accidents

Our brain can be our worst ally

When we come across a new situation, our brain looks for similarities with previous events and, where possible, picks a previously learned response or even a context. Occasionally, while broadly similar to previous experience, a situation might require a different response, but your brain simply picks the best fit. Just think of all those hire cars you've seen using their wipers as they approach a junction then indicating, even on a dry day.

One of the consequences of the way our brain works is our habit of predicting a result based on past experience, and to match how we interpret the situation with our brain's prediction. So unless events move a long way from our expectation, our brain will fix on those moments that align with our mental model and try and ignore or explain away anything that disagrees with it. This is called "confirmation bias" – we tend to see what we expect to see.

The problem is that it's hard to recognise when we're not seeing the whole picture. Our brain is hardwired to be lazy and take a shortcut to a known solution. When we see a result repeated

again and again from a broadly similar starting position, we assume we've identified and understood the process – we've mastered the "complication" and can be sure of the outcome.

Confirmation bias can lead to catastrophe

It means that we're naturally very poor at dealing with complex, low probability events. Those events where there is a chance of failure, but a series of past successes have told us otherwise, so it's hard to believe a failure might happen.

Take the space shuttle Challenger disaster as an example. The technicians were sure from previous testing that the outside air temperature was too cold for the effective operation of the booster o-ring seals. And they were right. But during previous flights, they'd carried out operations close to those temperatures without any trouble. Despite empirical evidence from testing managers, they convinced themselves that a failure wouldn't happen on this occasion. However, 7 Astronauts died.

Many safety awareness courses use the "swiss cheese model" as the accident model on which safety management is built, and many of those are based on the metaphor rather than the underlying

theories of Reason's "Organisational Accident Model". The problem with this is that many non-safety professionals look at accident prevention through the lens of the metaphor rather than the theory – they believe barriers to be effective or ineffective, and view an accident sequence backwards from the outcome as an inevitable singular chain of events.

The problem is that it's hard to recognise when we're not seeing the whole picture. Our brain is hardwired to be lazy and take a shortcut to a known solution.

Our inability to imagine low probability events means that a period of accident free operations can be seen as cast iron proof of an effective system. Or even worse, reason to start arbitrarily removing barriers (naturally the most expensive ones).

Always keep human error front of mind

It's essential to understand human error and plan for the human in the system approach when developing the policies, processes and procedures focused on delivering safe operations within a regulatory framework. It's also important that, once businesses have put in place these processes, procedures, and risk controls, they regularly monitor them for residual signs of risk and check they're still working as intended. Which is why an Internal Evaluation Program (IEP) is a critical safety assurance component of an integrated Safety Management System.

It's equally vital that decision makers, post-holders and accountable managers are aware of their own limitations and the human factors that affect decision making. Complex systems are not necessarily predictable – our own minds coax us toward what we know, and can sabotage us from properly assessing low probability risks.

Aviation safety, however, is all about managing these complex, low probability high severity risks. Which means we humans are exposed. Regular safety leadership training is essential to ensure that leaders understand the threats to effective decision making that exist within their own psyche. And more importantly, have the skill, confidence, and self-awareness to manage safely.

The Management of Safety as a Business Function

By: Daniel Maurino
Independent Safety Advisor

Since November 2006, the implementation of a system for the management of safety, or Safety Management System (SMS), is an international standard that a broad spectrum of aviation organisations must meet.

Beyond formal definitions, the International Civil Aviation Organisation (ICAO) conceived 'safety management' as *"a managerial process that must be considered at the same level, and along the same lines, as any other managerial processes"*.

SMS was seen as the management system that would provide the organisational structure and the resources necessary to implement that process, which would include *"lines of safety accountability throughout the organisation, as well as at the senior management level"* [1].

SMS has now been extensively implemented throughout the international civil aviation system. But with so many years passed, can we say with confidence that the ICAO original concept is reflected in practice? Or that the marriage between safety management as a managerial process (i.e., a business function) and of SMS as a management system (i.e., the formal structure and resources that support the process) has come together?

The role of SMS

Let's examine the role of SMS further. It's a management system integrated with other management systems, positioned at the same organisational level, adopting the same language and activities, and following procedures common to the management of other business risks (finance, quality, insurance, legal, etc). It allows aviation organisations to address integrate safety risk within every other risk the business needs to manage.

The management of safety through an effective SMS is connected to an overarching goal: keeping the

[1] ICAO Air Navigation Commission Working Paper 8056 (AN-WP/8056, 26/09/2005).

organisation viable. It's the goal of any risk management, regardless of risk type. In the case of SMS, businesses achieve it through allocating resources to address the safety risks the organisation faces as it operates and serves the public.

When allocating resources, businesses need to back it up with evidence. They also need to balance it with the resources they're putting towards other business functions taking care of different risks – all of which could threaten the continued viability of the organisation.

Three essential SMS building blocks

There are three building blocks that help businesses manage safety through an effective SMS.

1. Differentiating roles

First, businesses need to differentiate *accident risk reduction* and *safety risk management*:

- Accident risk reduction (historically known as accident prevention) involves activities that avoid low-probability, high-severity negative events; typically, accidents and serious incidents.

- Safety risk management involves activities that generate information to support how business leaders allocate resource to mitigate safety risk.
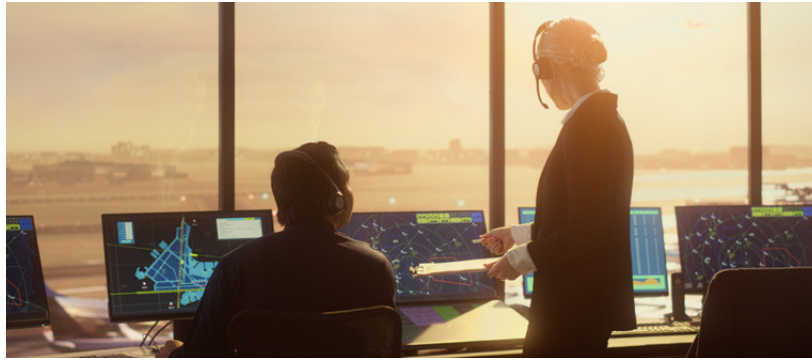
The difference goes far beyond semantics. Safety risk management – under SMS – may help prevent accidents just as, for example, financial risk management may help avoid bankruptcy. But this only occurs if the allocated resources to address safety risk are effective.

This is a fundamental point: allocation of resources through SMS will not turn into safety success if the resulting mitigation activities (the safety programmes) aren't appropriate. This defines the relationship between safety risk management and accident prevention – allocating resources is the job of safety risk management, whereas safety programmes are the job of accident prevention.

2. Monitoring effectiveness and efficiency

The second point is linked with the above and widens the lens of the management of safety as a business function. Failure to achieve accident prevention is one side (more likely, a downside) of the coin. If the resources allocated to the mitigation activities don't achieve – for whatever reason – the desired results, those resources are wasted. And, moral overtones aside, there is no return on investment.

So an effective SMS needs to include monitoring. One that's as close (and as often as possible) to real time to assess the effectiveness and the efficiency of the mitigation activities and to allow the re-allocation of resources to get the desired results (return on investment).

3. Making it a routine for executive management

Lastly, safety management as a business function belongs in the executive boardroom, but not because *safety is our first priority* or similar incantations. It belongs there because, while decisions on risk *evaluation* are fundamentally technical and therefore belong to the technical-operational level, decisions on risk *mitigation* have financial, administrative, and legal edges (and associated costs). So they belong legitimately at the

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History shows that attempts to embed safety into the daily agenda of executive leadership from the usual angle of accident prevention are predestined to fail.

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level of executive leadership.

History shows that attempts to embed safety into the daily agenda of executive leadership from the usual angle of accident prevention are predestined to fail. It's counterproductive to try and force safety collectively among executive leadership. To try capitalising on the moral and ethical nuances underlying accident prevention (the "safety first" claim), or to attempt to turn executive leaders into safety experts.

An accident means to safety what bankruptcy means to finance. No financial officer would think of avoiding bankruptcy as a marker of success to the financial processes. However, safety officers routinely report success of the safety processes as the absence of accidents. From an organisational standpoint, the mismatch in perspectives is evident.

So helping executive leadership see safety risks through an enterprise risk management perspective is essential in successfully developing this building block. This is because the language of risk management is common currency for the board, whereas the language of accident prevention is not.

It's difficult to conclude the examination of the status of industry-wide SMS implementation, and if ICAO achieved what it set out to do back in 2006 – any evidence to support whether theory had been put in practice would likely tell contrasting stories. However it's clear ongoing education is vital, otherwise aviation organisations simply can't make the most of the benefits SMS can bring.

So helping people see things through an enterprise risk management perspective is essential in successfully developing this building block.

How we're promoting safety management in the region

Gallagher and Sirius Aviation, in collaboration with the Pontificia Universidad Javeriana in Bogotá, Colombia, have established the Latin American Aviation Safety Centre (LASC). It helps service provider organisations in Colombia and in the larger Latin American subcontinent to enhance, among other, their safety management process.

It involves a university-level education programme delivered at the University campus in Bogotá that culminates with an official Aviation Safety Certificate issued by the Pontificia Universidad Javeriana (more information regarding the LASC will be forthcoming in the near future). The programme includes – but isn't limited to – a variety of safety management and SMS related courses developed observing the three building blocks of an effective system to manage safety as a business function outlined in this article.

Safety Management Systems for Unmanned Aircraft Systems (UAS)

By: Sandra Lonsbury
Senior Advisor, Partner, Gallagher

Unmanned Aircraft Systems (UAS) is seen as an exciting new development in the aviation market that has attracted significant investment, with start-ups developing new Electric Vertical Take-off and Landing (eVTOL) design concepts.

As with any new market innovation there are significant safety, regulatory and accreditation challenges, and original equipment manufacturers (OEMs), regulators and start-up operators need to work closely together to overcome them.

The travelling public will expect the same safety standards of eVTOL travel that the current aviation industry took decades to achieve. This is a significant challenge considering the timelines proposed for commercial service of UAS & Urban Air Mobility (UAM) aircraft. This article will focus on the Safety Management System (SMS) challenges OEMs and Operators need to prioritise.

Safety Management Manual

The International Civil Aviation Organisation (ICAO) first released guidance on Safety Management Systems through Doc 9859, Safety Management Manual (SMM) in 2006. The 4th edition of the SMM, released in 2018 contains guidance material on safety management principles and concepts, State Safety Programme (SSP) and Safety Management System implementation. All guidance is based upon four components and twelve elements.

Policy & Objectives

Safety Risk Management

Hazard Identification

Assess Risk

Manage

Controls

Safety Assurance

SPI, MOC, Assessments

Monitor, Report

Manage

Reporting

Promotion

Component 1 - Safety Policy

All management systems must define policies, procedures and organisational structures to accomplish the corporate goals.

Component 2 - Safety Risk Management

A formal system of identifying and managing risk is fundamental to controlling risk to acceptable levels. Well-designed risk management within an organisation means understanding operational processes, measuring performance, identifying hazards, and assessing and mitigating risk.

Component 3 - Safety Assurance

Once everything above is in place, the organisation needs to take steps to achieve their safety goals, measure performance and put in place effective risk control processes. They can achieve this through internal audits, investigations, and reporting systems.

Component 4 - Safety Promotion

Safety Promotion is defined as the activities that support the SMS implementation in an organisation, such as training, knowledge sharing, and communication.

UAS Operations

'Unmanned Aircraft' means any aircraft operating or designed to operate autonomously or to be piloted remotely without a pilot on board. According to The European Union Aviation Safety Agency (EASA), this definition includes all types of aircraft without a pilot on board, including radio-controlled flying models (powered fixed wing, helicopters, quad/multi-copters, gliders) whether they have an on-board camera or not.

Since unmanned aircraft systems are still a relatively new component of the aviation system, The International Civil Aviation Organization (ICAO), states and the aerospace industry are working to understand, define and ultimately integrate. As the UAS industry has continued to develop, it's important for the existing ICAO model of SMS to be adapted to uncrewed operations. UAS operations provide a unique set of risk factors that have to be considered. In other words, we must take the existing framework and adapt it to fit evolving needs.

Aircraft operating without a pilot on board presents a wide array of hazards to the civil aviation system. Just as they would with any new airspace redesign, equipment or procedures, operators need to identify these hazards and mitigate the safety risks, so that the aircraft can operate safely in a range of environments.

Michael Huerta, Former Federal Aviation Administration (FAA) administrator stated on 02 August 2016, "We need to incorporate unmanned aircraft and their users into our culture of safety and responsibility. But we need to do it in a way that doesn't stifle the enthusiasm for this growing industry."

In the US, the Unmanned Aircraft Safety Team (UAST) formed to address the growing safety needs of UAS operators and manufacturers. UAST is an industry-government partnership committed to ensuring the safe operations of Unmanned Aircraft Systems (UAS) in the US National Airspace System (NAS).

Since unmanned aircraft systems are still a relatively new component of the aviation system, ICAO, States and the aerospace industry are working to understand, define and ultimately integrate.

The UAST strives to enable the safe integration of UAS by defining consensus-based safety enhancements based on a data-driven process and collaboration amongst members of the UAS industry.

The UAST has identified 3 different levels of operational complexity and risk which will correspond to the type of SMS needed. You can find further detail at dronesafetyteam.org

Choosing the right SMS option

Low Complexity Operations will benefit from a Basic SMS, which can help show the operator how to prepare and act safely.

Medium Complexity Operations will benefit from building on a Basic SMS to establish an Intermediate SMS, which is designed to help standardise safety throughout the operator's organisation.

High Complexity Operations can benefit from an Advanced SMS that builds on the organisation's Intermediate SMS and is designed to help a UAS operator continuously improve safety within their organisation.

It's crucial UAS organisations address all areas of the industry-approved SMS framework. They can achieve this through adaptable SMS components that can be improved and/or modified as the organisation evolves. Risk management practices should also be data driven to allow all stakeholders to understand the acceptable levels of risk.

Measuring performance within safety assurance practices will also help provide a path to continuous improvement. Finally, companies should develop a robust safety culture along with safety promotion activities to support SMS buy in throughout the organisation.

Whilst there are significant challenges still to overcome, this new transport mode is on track to achieve the same safety levels in service as airlines and can provide unsurpassed flexibility in passenger transport, emergency services support and drone delivery services.

Safety Management System

Advanced

Intermediate

Basic

Operational Risk
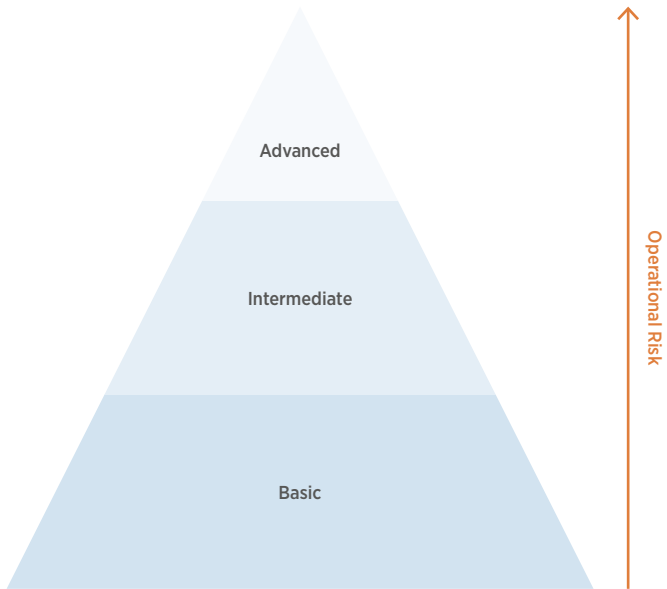
A Case Study on the
Insurance Market Support to Safety Initiatives

By: Eduardo Dueri
Senior Partner. Gallagher

Many factors affect the price an airport operator pays for insurance. Some are internal, such as how well the airport has managed risk and its claims history. While others are completely out of its control.

For example, market capacity and global losses. All of them can have a major impact on the cost of insurance.

In the last ten years, the aviation community has focussed on Safety Management Systems (SMS) as the primary means of assuring aviation safety. SMS is all about understanding the risk exposure of an operation and facilitating risk-based decision-making throughout the organisation in charge of developing it.

Technology and system improvements continue to make significant contributions to aviation safety. Both in terms of aircraft and airport design to support passenger and aircraft movements.

Better safety measures equal better terms

These are all relevant factors in the process of transferring risks via an insurance policy and helping to reduce costs to suit the profile of the insured and their budget. In other words, an effective SMS framework combined with initiatives in safety technology and systems is at the forefront of ensuring safe operations and management of risk.

At renewal, the broker will present what the client is doing in these areas for underwriters to consider. The better the information and risk profile of the client, the better the insurance conditions will be in terms of technical coverages and associated premium costs.

When they enter a contract, underwriters and their clients both share that risk, so any relevant measures to manage and reduce it to an acceptable level will positively influence their policy conditions.

Example: Opain S.A.

Colombian firm Opain S.A. is responsible for the management, modernization, expansion, operation and maintenance of the International Airport El Dorado Luis Carlos Galán Sarmiento, located 15km from Bogotá's centre. Opain is committed to properly fulfil its concession contract. That means providing quality services, demonstrating social responsibility, protecting the environment, as well as the wellbeing, safety and health of its users and employees.

As a stakeholder, it's clear that the market will expect to see the result of the work funded by the safety bursary.

El Dorado International (Bogota) Airport consistently wins awards for excellence and in the 2021 World Airport Awards was voted second in the top 10 of the Best Airports in South America. As the concessionaire, Opain is committed to operational excellence and is continuously enhancing safety and risk management. With the support from Gallagher as their broker and the leading underwriter, this evidence proves they've consistently invested their safety/risk bursary included in the terms of their aviation liability insurance policy.

Safety risk bursaries incentivise good habits

To foster a more robust safety performance, the insurance market has introduced a grant that's set aside from the client's premium. Subject to insurers' approval, the client can invest the grant in relevant safety initiatives.

The amount depends on the size of the risk and, rather than being used to purchase equipment or other hardware,

it's supposed to be used for softer initiatives like risk management, training and bespoke safety consulting. The use of these bursary funds is a way for the insurer to give the insured an incentive to demonstrate that it's committed to improving safety standards.

The process of getting the market to release these funds comes from the discussion the insured has around their risk management needs with their broker. They'll agree to

a specific safety initiative and then get the leading insurer's approval.

As a stakeholder, it's clear that the market will expect to see the result of the work funded by the safety bursary. That could be the gap analysis report on current SMS capabilities against the baseline, or the training and curriculum they used and the participant's feedback, or the recommendations made to improve specific risks and so on. Let's look at a particular real life example.

In this particular scenario and following the diagram below, Opain determines their safety/risk needs based on how their performance matches up with their goals. Once they identify their needs, our team will discuss with them the best product to meet their objectives in aviation safety and risk management.

The team will then create the appropriate solution for Opain, which we submit to the leading underwriter so they can approve the investment of the bursary for that solution.

Working on a mutually agreed time frame and delivery method, our team and the airport will finish the project. Once they do, it's crucial Opain provides feedback to ensure that the project has met its objectives and exceeded airport expectations. Opain will then create a project summary and send it to Gallagher to review with the insurance market. If agreed, this will play an important part in the client's renewal process.

Over the past several years, the team has developed and delivered for Opain training and consulting services on the following topics:

- Airport Emergency Plan Development Workshop

- Basic Accident/Incident Investigation Training

- Operational Risk Management Training

- Operational Risk Management Workshop

- Business Continuity Planning Workshop

- Management of Change Workshop

When insurer and broker work together towards a better and more robust client risk and safety management culture, it can only improve their risk profile and contribute to finding the best cover available. The safety risk bursary is a great way to assure that result.

| NEED IDENTIFIED | PRODUCT CREATED | PRESENTED TO BROKER | APPROVED BY UNDERWRITER | PRODUCT DELIVERED | CLIENT FEEDBACK | SUMMARY TO UNDERWRITER |

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