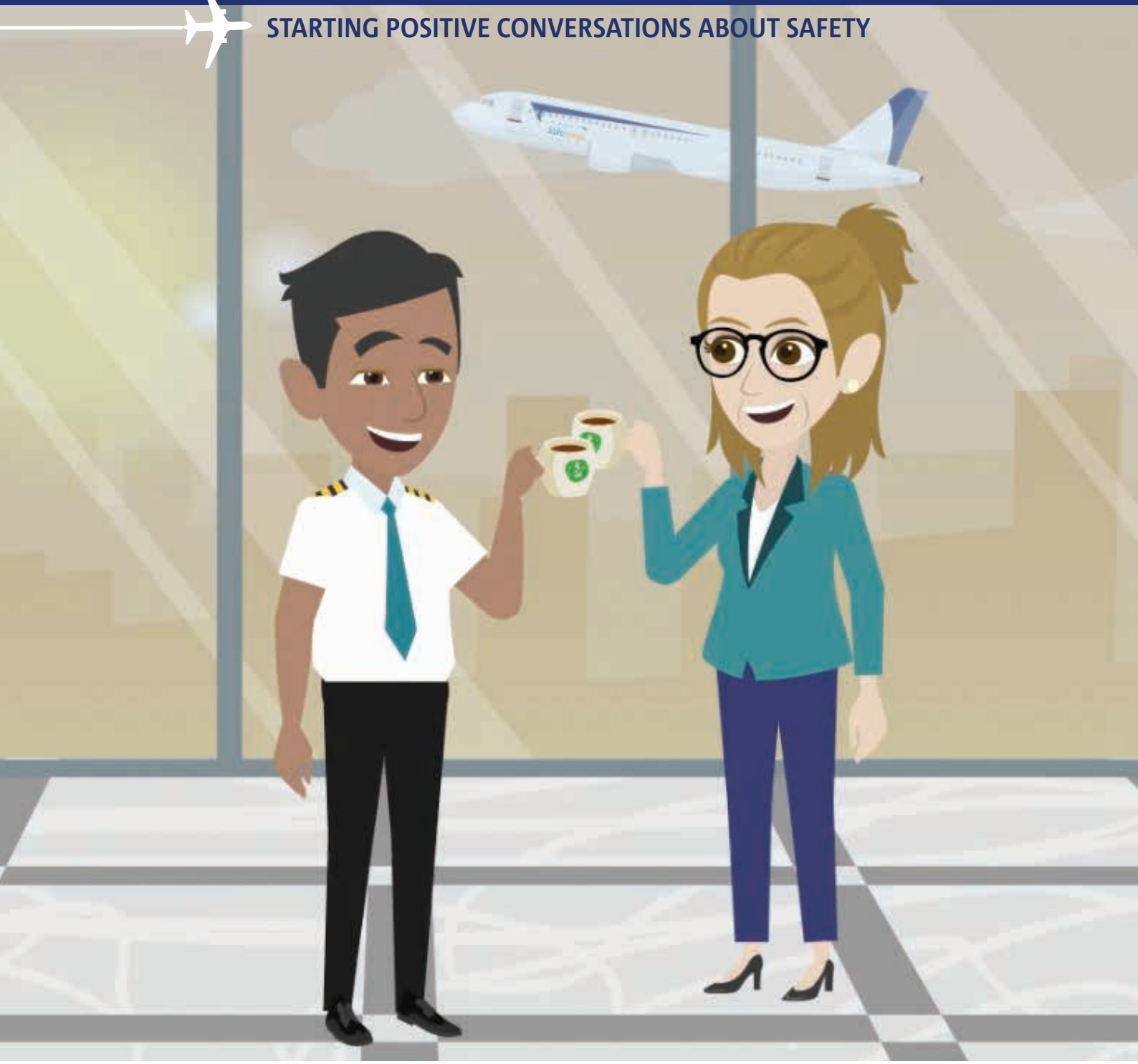
CONVERSATION AVIATION

#01
2024

STARTING POSITIVE CONVERSATIONS ABOUT SAFETY



EASA
European Union Aviation Safety Agency

together 4safety

#01
2024

Contents

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Foreword by Maria Rueda

EASA SM Director

Firstly, I would like to introduce myself. I am Maria Rueda and I joined EASA on October 1, 2023 as the new Strategy and Safety Management Director. On behalf of the EASA senior leadership team, I would like to welcome you to the first Edition of Conversation Aviation magazine for 2024.

From a safety perspective, it has already been a challenging start to the year. Events in Japan and the US remind us that we can never take safety for granted. Compliance, proactive risk management and a positive safety culture are the foundations that safe and effective operations are built. It is vital that we never forget the hard-won lessons of our industry's past as we reflect on some of the other challenges that aviation has been presented with in the past year.

- Conflict has impacted many aspects of our operations. It has reduced the available airspace, led to signal jamming that has impacted satellite navigation and presented new cyber threats.
- The industry has been challenged to keep pace with technological changes. Artificial Intelligence (AI) is rapidly developing and we find ourselves at the dawn of a whole new aviation epoque as Urban Air Mobility (UAM) becomes a reality.
- More broadly, there are growing pressures to further address the sustainability of aviation and the challenges of extreme weather. Taking positive steps that will make our industry more environmentally friendly is key to the long-term success of aviation.
- Finally, in the post-pandemic world, many experienced staff are retiring or leaving aviation for other industries. This raises succession issues across the industry and underscores the importance of inspiring the next generation. The task of charting improvements that will attract aviation professionals of the future to join our exciting industry falls to the present organisations.

On a more positive note, last summer the long-awaited full-scale post-pandemic recovery finally arrived with traffic levels reaching 99% of pre-COVID levels. Our ability to collaborate across the industry enabled us to share the lessons learned and help us to prepare together.

The result of our collaborative efforts was a more successful summer and a continued improvement in traffic levels into the autumn. We can achieve great things as an industry when we work together. Such collaboration is at the heart of the concept of Conversation Aviation. The theme for the New Year 2024 Edition is, *Collaborating for operational success in a challenging world.*

Having outlined many of the challenges ahead, let's start the year thinking about them more positively. Let's see them as areas where we can work together and find solutions, seek improvement and manage situations. Thankfully, the next edition of the European Plan for Aviation Safety (EPAS) has recently been launched. Contained are clear actions covering all these topics and many others that have been identified by the data-driven, European Safety Risk Management (SRM) process.

As already described, there are many exciting developments in aviation, but we should never lose sight of the purpose of our safety work – to keep both the travelling public and our staff safe every day. In this edition of Conversation Aviation, we are highlighting the top safety issues for each of the different stakeholders in the operational workforce, which have been drawn directly from Volume III of the EPAS (Safety Risk Portfolios). This edition also has a reboot of the famous Dirty Dozen and will provide lots of practical tips on how the safety issues can be managed in your operation.

I hope you will find the content interesting, and I wish you a safe, healthy and collaborative New Year! ■

Safewings

Leadership and the Dirty Dozen

From EASA - John

A new year is upon and for this first edition of Conversation Aviation 2024 we will be focusing on the importance of collaboration to help us achieve operational success in a challenging world.
It is an exciting time for our industry, but we also face a number of major challenges that bring with them new safety risks that we need to understand and mitigate effectively to keep our staff and the travelling public safe.

Safety issues, familiar challenges and the need to know what is coming over the horizon

The 2024 version of the European Plan for Aviation Safety (EPAS) is coming very soon. In Volume III we have updated the list of safety issues across the different domains. This edition of Conversation Aviation has been written from a Domain perspective, focussing on some important things for each of the different operational staff groups.

Each article will highlight the most important safety issues that are outlined in the EPAS Volume III. These safety issues are identified through the European Safety Risk Management (SRM) process that analyses the occurrences reporting under Regulation (EU) 376/2014 (that you might know as the occurrence reporting regulation) along with other available sources of data. The analysis is supported by expert judgement from EASA's collaborative groups and advisory bodies.

This approach is hopefully useful to help Safety Managers and their teams consider how the different safety issues relate to your own organisation and its operation. We also hope you find each of the domain specific articles useful for your own safety promotion with the different staff in your company.

The Dirty Dozen and the Safety Map

Having outlined the safety issues, we then also link them back to the Dirty Dozen to help make them easier to understand and to think about practical mitigation. The Dirty Dozen were originally developed by the FAA in US as 12 items that could then be used on a calendar across the months of the year.

This is something we are also planning for this year so be prepared for specific focus topics each month.

In case you haven't heard of the Dirty Dozen before, they are 12 things related to human and organisational factors that are common safety challenges our staff face in their day-to-day work. They also help organisations to put in place practical risk mitigations for their safety issues that actually help front line workers to deliver safe and effective operations.

The Dirty Dozen are complacency, distractions, fatigue, pressure, stress and norms then matched with a lack of communication, knowledge, teamwork, resources, assertiveness and awareness. These are already useful as individual items but its even better to link them to Rasmussen's space of possibilities model (of which more later) and its three pillars of Knowledge, Teamwork and Resources.

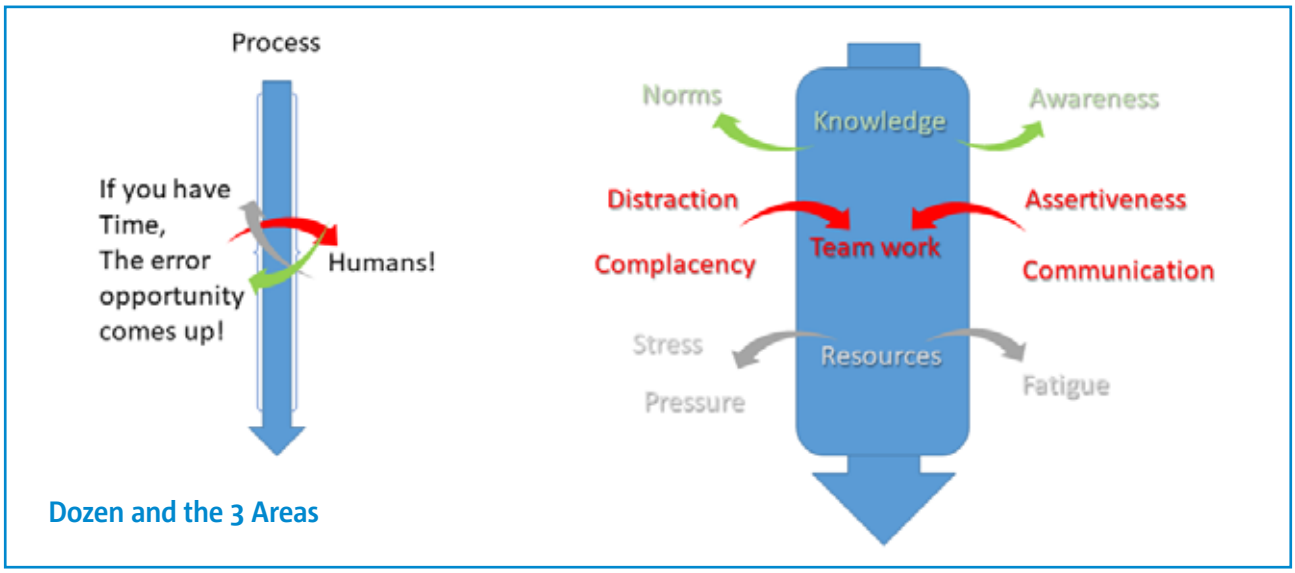
The most important thing is not to forget the specific operational task you are doing. Then be clear what are the risks or safety issues associated with that task that might lead to an accident or harm to someone. Finally, how are you going to manage those risks to an acceptable level. That is what safety is all about.

Some of the wider challenges in aviation

While operational staff face all sorts of day-to-day challenges like weather, operational delays, technical problems etc, there are many other wider things that will have an impact on our ability to operate safely. As our SM Director, Maria Rueda discussed in her foreword, our industry has to cope with a difficult world that is changing more rapidly than perhaps at any time in our lives.

Conflict has impacted many aspects of our operations. It has reduced the available airspace, led to jamming that has impacted satellite navigation and brought new cyber threats. We also to keep pace with rapid technological change such as Artificial Intelligence (AI), while Urban Air Mobility (UAM) is almost a reality that will see the dawn of a whole new type of aviation. There are also growing pressures to accelerate our actions on sustainability and weather changes continually impact our operations.

At a strategic level, the whole industry also has to find ways to deal with the post-COVID situation that has seen many experienced staff retiring or leaving the aviation for other industries. Our long term need for trained, skilled and competent staff will require us to inspire the next generation by creating organisations they want to work for in roles they will feel fulfilled in and that can assure them a long-term future.



Dozen and the 3 Areas

This has a clear link to the left side of our EASA Safety Map, where we cover Mindset, People and Resources. The people element of the map talks about "having enough competent people", where competence is knowledge put into action and then directly link to norms and awareness in the Dirty Dozen.

Teamwork then cuts across all 3 areas on the left side of the map; the mindset the organisation and its people have when using the resources available to perform a specific operational tasks or activity. This then covers distraction, complacency, assertiveness and communication in the Dirty Dozen.

Finally, the Resources part clearly links to fatigue, pressure and stress – 3 areas we must focus on as an industry if we are going to manage our risks effectively to ensure safe and effective operations.

Leadership and the Dirty Dozen

The importance of collaboration and working together

When it comes to these strategic topics, what does this mean for you and your organisation? The reality is that no individual organisation can solve these challenges alone. This is why collaboration is so important. It is important to know the difference between cooperation and collaboration. Cooperation is mostly what we do in aviation, working together to help our organisations achieve our own goals. But these strategic issues are so important to the long term success and even survival of our industry that the only way forward is true collaboration – where we have a shared goal for the industry and do all we can to achieve that together.

There are also two other dimensions that should form a part of our collaboration (and not just cooperation) activities. The first is where the individual safety issues cross domain boundaries and need to have a common set of goals, messages and activities. The second are the more seasonal things, like summer ramp-up, winter operations and other such topics that require collaboration at the top level to align as an industry but then with associated cooperation that enables you as organisations to get on with the detail as you need to for your own operation alone.

The image below help to show what that looks like when we insert different strategic topics and safety issues – hopefully this helps to see what everything looks like and where we can work together.

Our call to action for 2024

What this means for the year ahead (and beyond) is that our safety efforts split in two:

- We cooperate operationally on how we can understand the day-to-day safety issues, think about them in simple, practical terms and solve them to meet the specific needs of our own organisation and its operational needs.
- At the same time, it is important we understand what topics are of such strategic importance that we need to really collaborate to achieve a shared goal for the good of the industry.

We look forward to continuing our safety journey together, to help you build safe and successful organisations and set the industry on the best course for a long-term, successful future. ■

What's Ahead of Us This Year?

From Nuno our Safety Manager

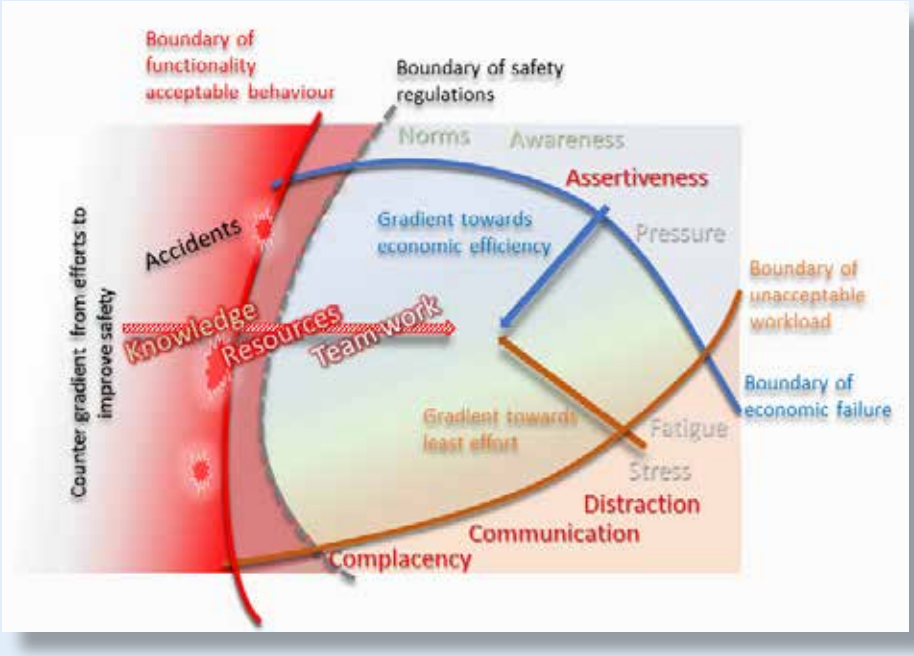
Happy New Year everyone. As the year starts, it's good to reflect a little on what happened last year, what we have learned and where we can improve to manage our risks more effectively. But the main thing is to always look forward. The world is continually changing and evolving so the way we manage safety in our operation needs to do the same – always look forward.

Safety is a value, not a priority!

It's easy for an organisation to say that safety is our number one priority – but what does that really mean. As an organisation that has to make money to survive, this can never be nothing more than nice words. The reality is something much more complicated but perhaps the most important conversation we can have here at Safewings.

Here is a picture of something called the Rasmussen "drift to danger migration model". Sounds fancy or management rubbish, depending on your point of view. This diagram shows that when you operate above the blue line, costs are too high and we risk economic failure. At the bottom, orange line – anything outside this space is beyond what we can achieve safely as human beings, this is the boundary of unacceptable workload. Finally on the left is the boundary of the safety regulations that aim to protect us from accidents on the left side of the diagram. Now we know from history of any potentially high hazard industry like aviation that compliance is not enough to prevent accidents so we need to understand our risks and mitigate them effectively, in addition to complying with the rules. There is no point dying but safe in the knowledge that you followed all the rules.

So the challenge is to operate effectively in the safety space in the middle of diagram. To be efficient enough that we stay in business, while ensuring we all have an acceptable workload and then ensure we are both compliant and managing our risks to an acceptable level. These are our conflicting priorities that we have to continually discuss and balance together.



What this means is that we see safety as a value that runs through everything we do, how we act and interact.

It also helps if we think about this in two parts, the things we do to plan and prepare for everyday work and then more active things we do once the work starts. This could be flying (obviously) or a maintenance task, or loading an aircraft, or indeed anything else.

What's Ahead of Us This Year?

Planning and preparation - applying the safety map

At both an organisational and team level, the first thing we do is to apply the concepts in the Safety Map to ensure that we have everything in place before a task or operational activity starts.

You can see the different parts of this in the image below. The key thing is to ensure we are always asking ourselves the right questions. Firstly we need to be clear about the task ahead, at team level be clear about what you are about to do – what is the purpose of the operational activity you are about to perform?, what does good look like?

Then on the left side of the map, it is important to go into it with the right mindset – being open to discussing the challenges you might face, ensuring everyone on the is included and that they feel part of the team. From a people perspective, ensuring we have enough competent people who are operationally ready and fit for duty. That is a key role for the operational managers and we are continually improving on the "operationally ready and fit for duty" part to help you all perform to the best you can. Then in terms of resources, we need to ensure that we have everything in place to do the job. At a task level this is also very important to think about before you start.

On the right side of the map, the Compliance Monitoring team are, perhaps unsurprisingly, always looking to ensure we are operating in line with EASA rules and keeping us on track when things change. They also look after our own internal processes and procedures. In any organisation, local procedures can grow and if we are not careful they become outdated or too complicated, resulting in you having to build in your own work arounds to keep the operation moving. This is why its important to always use the reporting system to tell us when our local procedures lead to operational issues for you.

The next part of the map are the risks we face in our operation. This is where we take a multi-layered approach. At organisational level, we work to identify and mitigate all the risks you might face every day. Then at a personal same the same should be true for any operational activity – think ahead at the planning phase and consider if there is anything new or different today. What does that mean for the specific risks you face? Maybe the team composition involves some new or perhaps there are some specific weather conditions that you need to pay particular attention to.

This is something we will specifically be focussing on in this edition of the magazine. For each of the different jobs you do across the airline, we have dedicated articles about the top safety issues you might face in 2024 and how you could mitigate them. (Of course the list of safety issues and mitigations are not exhaustive)

In the active phase – Apply your knowledge, use your resources and work together

Having planned whatever you are going to do on the day, prior to the flight or the maintenance work, of whatever task you are about to do – the next thing is to actively go and do it. This is where we come back to the Safety Space of Mr Rasmussen again. There are three key things to remember (well there are a lot more – but this is approach is slightly easier to remember and they link nicely to the Dirty Dozen that are also easy to apply during any task.

- **Knowledge:** Apply what you know to the task in hand as best you can in the situation (as Senor Sinfuego said in the Mamma Mia 2 – we can do our best, that is all we have).
- **Resources:** Use all the resources available to achieve your goal.
- **Work Together:** Communicate, collaborate and work together to help everything go smoothly. Not just within Safewings, but with everyone you need to complete the flight or task successfully.

For all these things, if you come across something new that your knowledge did prepare you for – report it so we can improve our training. If you don't have enough resources – tell us so we can better get the resources where its needed. If you have teamwork challenges, talk about it afterwards and report that too so we can all learn how to get better.

Keep in mind the "Dirty Dozen"

In the article that follows you will learn more about the Dirty Dozen, different things that either help you complete a task safely and effectively or that might make success for difficult. When you think about these as you go about your work, things will go more smoothly.

Enjoy the rest of the magazine, we are sure you will find lots of useful tips.

The Dirty Dozen:
Bringing Human Factors to Life

From Gunnar our HF Manager

In a complex organisation like here at Safewings, its difficult to translate our safety and risk management discussions into practical information and actions that you can take every day in your different jobs and roles. At the same time, we talk a lot about Organisational and Human Factors and it's important that we bring this to life so you can understand your role in managing risk and preventing accidents.

A great way to do this is through something called the "Dirty Dozen". You might have heard of them before. They were initially put forward by Gordon Dupont in 1993 while working for Transport Canada and the adopted by the US Federal Aviation Administration (FAA) and other regulators as a framework for recognizing the psychological and environmental aspects of human error. The Dirty Dozen was first used in aircraft maintenance – they are a dozen because 12 things fitted nicely on the 12 months of a calendar.

The Dirty Dozen as a way to help reduce the risk of our top safety issues

The whole point of the Dirty Dozen is to use them as practical things to think about every day. Obviously there are 12 of them - six of them are things you need to ensure successful and safe operations and the other six are things that could lead to an increase in risk. Throughout this edition of the magazine.

Its about Safewings as an organisation as well as you

Obviously you have a huge part to play in ensuring safety in our operations every day. Whether you are a pilot, cabin crew, engineer, ground staff or anything else – you are our first line of defence against the operational risks that we face. You are the ones continually identifying and mitigating risks to keep our passengers and all our staff safe. But there is only so much that you can do alone. Your success relies on the wider organisation providing everything you need to do your job. This is why our reporting system is so important. When you identify challenges in doing your job, report it to our Management System through the button on the Intranet to tell the safety and learning team about it. The problem will then be investigated and will hopefully lead to a new safety action to improve things. You will always get feedback on any reports you submit.

Introducing the Dirty Dozen

The Dirty Dozen covers a wide spectrum of human factors, each link closely together as part of the landscape our day-to-day operations. Here's a comprehensive rundown:

1. COMPLACENCY:

Familiarity can lull us into a false sense of security. If we have a sense of overconfidence or routine this can lead us to act the way we think we should and not specifically in the right way for the situation.

2. FATIGUE:

Human performance reduces considerably when we are fatigued. Managing work schedules and ensuring adequate rest is vital for our safety and those of our passengers.

3. KNOWLEDGE:

The absence of essential knowledge is a direct path to errors. Continuous learning and training are vital to ensuring safe operations.

4. PRESSURE:

Unrealistic deadlines and expectations can put people under pressure that can lead to errors. Balancing efficiency with doing things in the right way is key. We should always try to factor in the time to do everything that needs to be done.

5. TEAMWORK:

Safe and effective operations require many different people to work together in perfect harmony. It is easier to manage operational risks and hazards when everyone plays their different roles as part of a team and not as an individual.

6. COMMUNICATION:

Safe operations require everyone to know what is going on. This requires continually communication and sharing of information, between colleagues and with people from other organisation.

7. NORMS:

Deviating from established standards and practices can introduce risk. Upholding and reinforcing norms is critical for safety but we should also avoid group think that could lead to safety issues. If you see a process or practice that doesn't fit the situation, report it.

8. RESOURCES:

It is important that we have enough competent people who are operationally ready and fit for duty and that we have the right tools, equipment and infrastructure in place.

9. ASSERTIVENESS:

Failing to question or voice concerns can mean risks are not identified by everyone or might lead to errors. It is important that we have a mindset in every team that encourages assertiveness so that everyone in the team can speak up.

10. DISTRACTION:

A momentary lapse of attention can have lasting repercussions. Ensuring a distraction-free environment is crucial – this is particularly important at key parts of a flight or other tasks where focus is important for success.

11. STRESS:

Excessive stress also impacts our ability to performance to our best and impairs judgment, especially when coupled with some of the other parts of the Dirty Dozen. We should identify and mitigate stressors so please use the reporting system to help us minimise stress for everyone.

12. AWARENESS:

Good decision making requires everyone to have a complete picture of the situation. This part of the Dirty Dozen is particularly linked to Communication, which is how we build the full picture and situational awareness can be impacted by pressure and stress especially.

The Dirty Dozen:
Bringing Human Factors to Life

What you can do

• ***Think about the Dirty Dozen as you go about your day:*** When you think about the different parts of the Dirty Dozen, it makes it easier to identify situations where error inducing situations might build up. Many of our training programs now integrate human factors education to help set things specifically in the context of the day-to-day jobs that you all perform. This helps you to be aware of common pitfalls and are equipped to avoid them.

• ***Report, report, report:*** There is only so much that you can do yourself as an individual or within your operational. This is why safety reporting is so important. If you identify a situation involving any of the Dirty Dozen, please report it through the internet so that others can learn from it and particularly so that the Safety and Learning Team can help put in place mitigations at an organisational level.

Conclusion

The Dirty Dozen has emerged as a vital tool in recognizing and mitigating human error in aviation. By continuously addressing these human factors, aviation authorities and organisations like ours are making strides in enhancing the safety and reliability of aviation operations. Our commitment to understanding and improving human performance in aviation is an ongoing journey, one that requires the collective effort of the entire industry. As aviation continues to evolve, the principles embodied in the Dirty Dozen remain a guiding beacon, illuminating the path toward a safer aviation future. ■

View from the Flight Deck:

NEW YEAR - NEW CHALLENGES

Rachel is one our Captains on the Airbus A330 and fleet training manager.

A New Year is here which probably means a whole load of new resolutions, plans and possibly challenges heading our way. But before we know it, it will suddenly be several months in and we all start to say "gosh, isn't this year flying by...". So, to help it 'fly by' more safely, productively and (very importantly!) enjoyably, here is a look back at the highlights and lowlights we can learn from in 2023 and use to plan forward for 2024 in our '2024 Cockpit Calendar'.

2023 REVIEW

January

January 2023 kicked off with the closure of the Philippines' airspace because of an issue with the power to their ATC and navigation systems, followed by the FAA's NOTAM system crashing. Not a great start to a year, but a good reminder for us as we head into the next New Year of how of how being ready and resilient for events is really important in this industry. Now is not the time to be complacent. How can we do that? Well, a lot of it comes from teamwork, communication and looking after our resources.

February

Ah, the Chinese weather balloons, who can forget those. Disruptions to operations and airspace are going to happen, and it's really important that us pilots aren't the cause! Knowing what airspace we should and shouldn't fly into, checking NOTAMs for sudden closures, and especially understanding local laws and regulations is how we can play our part in this. This can be fatiguing. February 2024 is going to be a particularly busy month for those who operate over the Atlantic because big changes to NAT HLA procedures come into effect in March. So, we've added this here as a reminder.

March

This month saw announcements on new airlines and new airline alliances. So, let's use March 2024 as the month to build connections and think about the big aviation team and how we are supporting it... or where we can get support within it! Whether that is support with our own mental health and well-being, or supporting someone else, building our own career connections or helping coach and mentor someone else, there are so many ways to do this. Knowledge is the key to unlocking these resources.

April

Sudan saw big conflict escalation leading to most flights being suspended to the region after several aircraft were damaged in HSSS/Khartoum and EASA released a new CZIB on it.

2024 is likely to see several major conflicts which impact or continue to impact aviation and for us in the flight deck that means a responsibility to understand the mitigations we can help put in place if we are flying into or over some of these volatile regions. The newly revised ICAO Doc 10084 has a brilliant appendix on this which is worth a read.

Don't let the pressure get to you.

The main things for pilots to consider are:

- Check your systems are functioning and monitor their accuracy. Navigation accuracy is especially important, as is a functioning transponder to ensure you can be identified
- Keep in two-way comms at all time, monitor 121.5 and follow all ATC clearances carefully
- Know which airspaces are prohibited, or have warnings and restrictions in place and ensure you don't accidentally stray into them

May

In June 2023 (yes, I know this is May's update) 1% of all US flights were cancelled, mostly due to inclement weather. We often think 'Winter is Worst', but summer weather threats can be as disruptive and it is worth thinking about them *before summer properly starts* (that's why this is in May!) Big summer storms in the usual *hot spots* mean more airspace

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View from the Flight Deck:
NEW YEAR - NEW CHALLENGES

disruption and diversions, and of course hurricane season across the Atlantic means we need to be thinking a lot more about routes, turbulence, fuel monitoring, diversion planning and weather risk awareness.

In fact, May 2023 also marked a particularly nasty month for turbulence related incidents worldwide. CAT over the NAT (sorry, couldn't resist the rhyming) is on the rise so keep checking those SigWx charts and keep providing AIREPs so everyone gets a heads-up and can look after their crew and passengers. Teamwork I key to keeping safe in this environment.

June

On June 23, a ramp staff at KSAT/San Antonio airport in the USA was ingested into a Delta Air Lines engine and killed. The safety and well-being of the ***whole*** aviation team is so important and we can all do more to look after everyone in that team through maintaining good procedures and safety standards, and by looking out for one another. So, we say June 2024 should be about to focusing on ramp communication, and on ensuring the whole team is safe and secure.

July

On July 13 a new datalink mandate came in for France. Basically, if above FL195 and ATN equipped, you must use CPDLC. CPDLC, Datalink, ADS-B - all these new flanged technologies are really helping us stay safe in the skies, but they can go wrong from time to time. There was the ICAO ops bulletin on risk related to altimeter setting procedures following a very near miss into Paris.

Falling into 'norms' and becoming complacent with the procedures and safety protocols can only lead to more incidents. So, we reckon a refresh on our MELs, on what equipment we need where, what to do if it breaks, and how to use it to support safety (rather than being overly reliant on it) is something all pilots should think about from time to time.

August

NATS had a major issue leading to huge disruptions to UK airspace, and big delays for anyone heading in or over it. This meant big to three big 'F' words for pilots to deal with - fuel, FTLs and fatigue. Disruptions tend to impact all three of these to varying degrees and while we generally have a lot of support on the fuel one, looking after FTLs and fatigue can be more challenging, but just as critical.

Being well-rested, fit and happy at the start of work is so important because who knows what sudden, unexpected events might pop up due to a lack of resources, and it is really hard to judge. Ask yourself "am I ok now?" But also "will I still be ok if...", and think about starting these conversations with your crew and colleagues as well (remember your colleagues are also resources). So, when you think about your contingency fuel, have a little think about your own 'contingency energy' too, and that of your colleagues.

September

A Russian aircraft landed in a field. The A320 Ural Airlines flight suffered a hydraulic system failure and diverted to UNNT/Novosibirisk airport which had a longer runway able to support the increased landing performance required. Unfortunately, the increased fuel consumption and strong headwinds meant they ran out of fuel before reaching the diversion airport.

Understanding our systems, and understanding what certain failures mean in terms of fuel and performance penalties is really important. A review of the decision-making models we use, thinking about how we run-through our options, how we prioritise tasks, how we assert our expertise and a focus on improving our tech knowledge could help prevent similar events such as this one.

(And remember - if there is a fuel penalty, this probably needs to be applied not just to your trip but your diversion and final reserve fuel as well!)

October

We saw the 5G interference concerns in the US decrease... only to be replaced with a growing threat from GPS Jamming and Spoofing. While jamming is a known problem, reports of spoofed positions in the Iraq region have been on the rise. Pilots should look out for information on this from their operator and manufacturers. Don't be distracted. Know the signs and symptoms, what actions to take, file AIREPs and report to ATC any degradations in your systems asap.

November

Eurocontrol and CANSO held a big conference on Sustainable Skies, looking at 'Contrails in Focus'. The focus on aviation efficiency and environmental impact is going to gain more and more momentum, which means two things to think about as pilot.

One - possible security events related to protestors. Don't let this stress you. Work with you operator and airport authorities on this one.

Two - thinking about what we can to support projects for improving our environmental impact. We can also focus on things like CDAs, fuel efficiency, noise abatement procedures and make sure we are aware of all airport regulations and procedures for helping with environmental efficiency and sustainability.

December - The Big RoundUp

December 7th is International Civil Aviation Day. It is all about thinking about the significant of civil aviation in connecting people, cultures and economies. But we can also use December as time to round up what we've learned and experienced ourselves through the year both individually and within our role and airline. Awareness is key to improvement.■


EASA
European Union Aviation Safety Agency
together 4safety
Safety Week 2024
22-26 April
"Safety is more than a priority,
it is a core value at the heart of our industry"

View from the C Suite

From Milena CEO

I'm very proud of all the team here at Safewings for the hard work, dedication and passion that you have shown over the last year. It is due to your dedication and professionalism that we have had both a profitable and safe year in 2023!
The years since the start of the COVID pandemic have brought huge challenges and we have only managed to be successful by facing them together as one team.

It is great to see that Safewings has become a place that people want to work. As we have expanded and grown, it has been pleasing to see experienced staff come from other organisations because they see the benefit of our approach that puts people at the heart of our operation. We have also been able to attract new, young people at the start of their careers while also helping all staff to grow their career and feel they have a long-term future at Safewings. There will be more exciting initiatives that we will be introducing in 2024 to strengthen this.

First and foremost in our people strategy is being able to retain the knowledge and experience of the professionals we have. We aim to create a collaborative, one-team approach that encourages you to share your knowledge and experience with each other so that we can perform to our best, together. We will be creating and implementing a peer-to-peer mentoring and coaching program to enable and strengthen and formalise this approach.

Welcoming the next generation

We will also be looking to the future and the next generation of aviation professionals (NGAP) by becoming more active in our local communities and schools. We will take the opportunity to showcase the wide variety of job roles we have here at Safewings and in the aviation industry in general. We will implement content creation into our marketing strategies to engage with NGAP and make sure that we have new and enthusiastic people joining us and the industry in the future. Fostering a community and culture where people want to work and prosper is a priority for all us.

I am sure we all want to be work for a great organisation, its important to work together to make that a reality. We should also never become complacent about that, our culture and mindset needs to be nurtured continually.

Collaboration is key

This is why it is vital to step out of the different operational, work specific silos where we spend most of our time and collaborate with each other across the organisation. Reach out across the organisation to understand where our day-to-day work connects, how our work impacts the risks of others and then where we can improve the interfaces and relationships.

As an organisation we also collaborate with EASA through their Data4Safety programme and are members of their Collaborative Analysis Groups (CAGs). This enables us to

collaborate with other industry partners, pool our data and take part in collective decision making for the greater good of the whole aviation community.

New Year – New challenges

As we start a new year, we will face many new challenges that await us and the aviation community in general. There will also be many familiar challenges to deal with as well. This is where having a seasonal mindset is also important.

We know that the start of the year will bring cold, wet and unpredictable weather across our network – we might even have some snow to cope with. Then from March onwards birds and wildlife become more of a risk. Before you know it, the Easter holidays will see us heading into the summer season and hopefully a continued increase in flights. Then after the school holidays, we have an increase in Passengers with Reduced Mobility and a higher risk of Lithium Batteries.

The Dirty Dozen and Safewings as an organisation

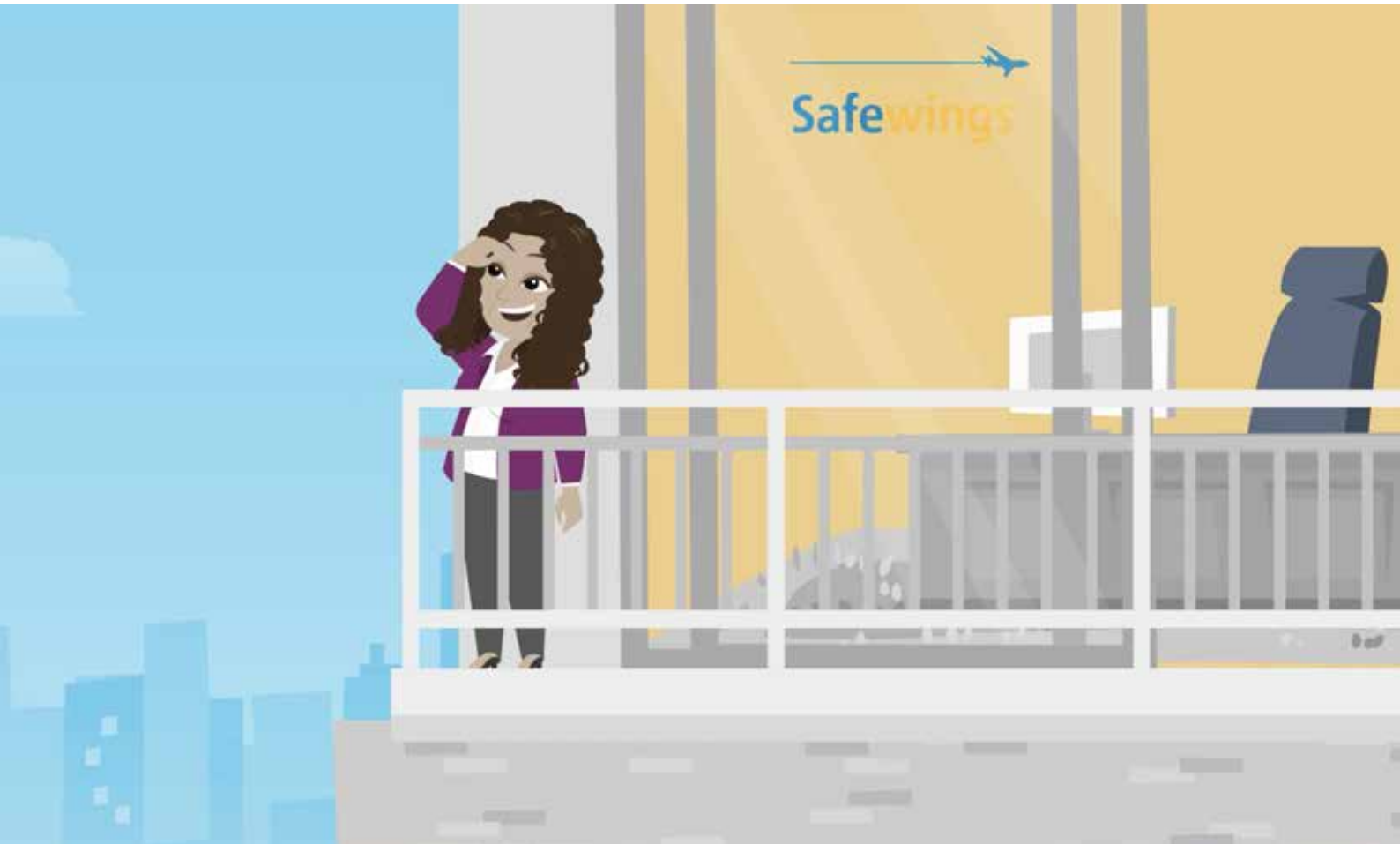
The previous articles from Nuno and Gunnar have talked about the Dirty Dozen and how it is a great way to think about Human Factors and mitigating our safety risks. At an organisational level, we are committed to continuous improvement and this relies a lot on your safety reports. When you spot something that could be improved or find a challenge in your work that the organisation can help with, please report it so we can improve things. We might not be able to fix everything and we might have to prioritise some improvements but mitigating our key risks is vitally important.

We have done some work to group the different aspects of the Dirty Dozen with the three key pillars of the active part of the operation. Here is what that looks like:

- **Lack of Knowledge;**
  - Awareness,
  - Norms,
- **Lack of Teamwork;**
  - Distraction,
  - Complacency,
  - Assertiveness,
  - Communication,
- **Lack of Resources;**
  - Pressure,
  - Stress,
  - Fatigue

Our job at the C-Suite is to make sure that we can do everything possible to give the knowledge, resources and teamwork that are required for us all to grow. We need to continue to work as a team with a positive mindset to support each other through the new year and times ahead, not just for ourselves, but for NGAP and the future of the aviation industry.

From the C-Suite, we want to thank everyone for their support and encourage that we maintain this momentum into 2024 and beyond. ■



Soaring to Safety:

Mitigating Compliance and Risk Challenges for the Flight Deck

From Flight Crew – Claudio

Hey everybody, Claudio here, reporting from the flight deck. On one hand, it feels great to be back to a full roster, but on the other hand, it's starting to take its toll on my body and mindset. This demanding role comes with a set of compliance requirements and risk challenges that are vital to address and maintain for everyone's safety.

As such, I've compiled a list of some the top safety issues that we face as the year starts along with some of the potential mitigations that can to help prevent occurrences from happening.

Keeping up with technological advances

Before we get to the aircraft, we assume that the aircraft is airworthy, that all maintenance has been carried out and the aircraft is safe to fly. We can become complacent with this assumption; as flight crew our number one priority is to the safety of passengers, crew, and the aircraft itself. This includes handling in-flight emergencies, turbulence, and various safety protocols. Whilst operating advanced avionics systems and navigating through evolving technology can be demanding, these evolutions do generally positively support better decision making during inflight emergencies and actioning of various safety protocols

Mitigation: Maintenance teams play a crucial role in ensuring that all systems are operational and safe to use but as flight crew we should continuously learn and develop. We should update ourselves continuously on the aircraft's systems and stay informed about technological updates. Extensive training and regular drills help flight crew stay prepared for emergencies.

Compliance with Regulations and Company Procedures:

Flight crew must adhere to a myriad of national and international regulations as well as our own company procedures. This can become overwhelming, especially as new routes open up and new adventures begin.

Mitigation: Get back to the basics. Airlines must maintain compliance management systems to monitor and facilitate adherence to national and international regulations, so we should adherence to standard operating procedures and maintain open communication with the organisation. This can be done through robust reporting systems for incidents, near-misses, safety concerns, or non-compliance issues. Create a mindset where flight crew members feel comfortable reporting incidents or raising concerns.

Dealing with unusual situations

The evolution of flight crew training through Evidence Based Training (EBT) and CRM helps us to be more prepared for unusual situations such as emergencies, medical incidents and security threats.

Mitigation: Robust organisational procedures plans should be in place, and flight crew members should be thoroughly trained in implementing them. Regular drills and simulations are vital for preparedness. Expect the unexpected and be ready for it. It is better to be overprepared than underprepared.

Crew Fatigue and Mental Health:

We know this story, don't we? We talk about it all the time and stress the point that our mental health matters. But we need to take it seriously. Fatigue and mental health issues can impact flight crew performance, potentially leading to errors in critical decision-making. Near misses happen all the time, and it's unacceptable.

Mitigation: We need to 'put on our own oxygen mask before helping others'. If we are not 100% then how can we manage the situations that can potentially lead to crisis. Airlines should implement efficient scheduling practices to provide adequate rest between shifts. Flight crew members should have access to mental health support and resources to manage stress and anxiety.

Flight crew members are the linchpin of aviation safety and passenger satisfaction. Compliance with regulations, safety protocols, and technology operations is vital to the success of every flight. By implementing mitigation strategies, airlines can empower their flight crew to tackle compliance and risk challenges effectively, ensuring safe and efficient flight operations. The skies remain secure and travellers reach their destinations safely, thanks to the dedication and preparedness of flight crew professionals. So, to recap, the top priorities to mitigate risk challenges are:

- Continuous Training; Regular training programs are essential to keep flight crew members updated on compliance requirements, safety protocols, and the operation of advanced avionics systems.
- Effective Communication; Encourage open and clear communication among the flight crew, ensuring that all crew members can voice concerns and share information during the flight. ■

Cabin Crew Safety Challenges

Effective Mitigation Strategies:

Navigating Compliance and Risk Challenges for Cabin Crew

From Sven - Cabin Crew

Hi there, Sven here from the cabin crew team. This year has been 'interesting'. It's great that passenger numbers were back to great capacity but this also brought with it some challenges, especially from a risk perspective. Here are my views on what we dealt with this year; what we can anticipate and how to improve within the cabin crew environment.

Passenger Safety:

Cabin crew must adhere to rigorous safety protocols, including handling emergency equipment, managing in-flight emergencies, and ensuring passenger safety during take-off and landing. Ensuring security on board by identifying and addressing potential threats, including terrorism and unruly passengers.

Mitigation: Comprehensive and ongoing safety training is essential. Regular drills and simulations help cabin crew maintain proficiency in emergency procedures. Vigilance, adherence to strict security protocols, and immediate reporting of suspicious activities or passengers is crucial. Cabin crew should communicate to the flight deck as part of effective CRM and work closely with security personnel and authorities when necessary

Cultural Sensitivity and Diversity:

Ensuring that all passengers, regardless of their backgrounds, feel respected and welcomed on board.

Mitigation: Training in cultural sensitivity and diversity is critical. Cabin crew should be equipped to handle different cultural expectations and preferences with grace and respect.

Sexual Harassment and Discrimination:

Preventing and addressing incidents of sexual harassment and discrimination on board flights.

Mitigation: Airlines must have clear policies and procedures to address and prevent such issues. Cabin crew should receive training on recognizing and reporting such incidents promptly.

Conflict Resolution and De-escalation:

Handling passenger disputes and de-escalating potentially volatile situations during a flight.

Mitigation: Cabin crew should undergo conflict resolution and de-escalation training to ensure they can handle difficult situations calmly and professionally.

In-Flight Medical Emergencies:

Responding to in-flight medical emergencies and providing appropriate care to passengers.

Mitigation: Cabin crew should coordinate closely in the cabin and with flight deck during medical emergencies. Ensure all medical kits are kept stocked and that telemedicine support is accessible when needed.

Additional mitigation factors include:

- Cabin crew should be well-versed in safety procedures during turbulence and should be prepared to assist passengers in staying safe and comfortable during such situations.
- Airlines must establish crew scheduling practices that prioritize adequate rest between shifts. Cabin crew should be encouraged to seek support for mental health concerns, and stress management resources should be readily available.
- Regular and ongoing training is vital for cabin crew to stay current on compliance requirements, safety protocols, and risk mitigation strategies.
- Encourage open and clear communication between crew members. This enables them to share concerns, exchange information, and support one another during challenging situations.
- Implement robust reporting systems for incidents, safety concerns, and non-compliance issues. It is essential that cabin crew members feel safe and supported when reporting incidents or raising concerns.
- Offer mental health and well-being support services to cabin crew, including access to counselling and resources for stress management.
- After significant incidents or difficult flights, conduct debriefing sessions to assess crew performance and identify areas for improvement. Encourage a culture of continuous

As cabin crew we play a vital role in ensuring the safety, well-being, and comfort of passengers on every flight. Compliance with safety and security regulations and the ability to mitigate risks effectively are paramount. By implementing the mentioned mitigation strategies, airlines can empower their cabin crew to handle compliance and risk challenges professionally, ensuring a safe and pleasant travel experience for all passengers. The skies remain secure and welcoming, thanks to the dedication and preparedness of cabin crew members. ■

Maintenance Safety Challenges

Proactive Mitigation Strategies:

Navigating Compliance and Risk Challenges in Aviation Maintenance

From Helena, our Engineer

Aviation maintenance is a vital aspect of ensuring the safety and reliability of aircraft. This part of the industry faces numerous compliance requirements and risk challenges that demand meticulous attention. In this article, we'll explore the top compliance and risk challenges associated with aviation maintenance and provide effective strategies for mitigating them.

Technological Advancements:

Aviation is at the centre of technological innovation and as such maintenance personnel need to stay current with rapidly advancing aviation technology and avionics systems.

Mitigation: Continuous training and education are crucial for maintaining proficiency in handling advanced technology. Access to technical support and troubleshooting resources is essential. Make sure there is a continuous line of communication with the maintenance control centre and double check the manual every time.

Tool and Equipment Maintenance:

Ensuring that maintenance tools and equipment are well-maintained and calibrated is essential to prevent errors and accidents.

Mitigation: Regular maintenance and calibration schedules for tools and equipment are vital. Training on proper tool usage and maintenance procedures should be provided to both maintenance personnel and also stores personnel. Simple mistakes such as forgetting to unwind a torque wrench can lead to faulty equipment that leads to components being torqued incorrectly.

Supply Chain Risks:

The availability of genuine, high-quality aircraft parts and materials can be challenging, and the use of counterfeit or substandard parts poses significant risks. This has been very evident of late with unapproved parts and components flooding the market.

Mitigation: Establish a robust supply chain management system, conduct thorough quality control checks on materials, and work closely with reputable suppliers to ensure the authenticity of parts.

Human Error:

Human error can lead to mistakes in maintenance procedures, which may result in safety risks and operational issues. This can be caused by a multitude of reasons, from working hours, mental health, miscommunication, misinterpretation....the list goes on.

Mitigation: Training programs focusing on error prevention and thorough quality control processes help mitigate the risk of human error. Additionally, there are a few elements to focus on:

- Continuous Training; Regular training programs for maintenance personnel are essential to keep them updated on compliance requirements, safety protocols, and the operation of advanced avionics systems.
- Effective Communication; Encourage open and clear communication within the maintenance team, fostering a mindset where personnel can voice concerns, share information, and collaborate effectively.
- Standard Operating Procedures; Implement standardized maintenance procedures to ensure consistent and safe practices. Regularly review and update these procedures as needed.
- Quality Control; Maintain rigorous quality control processes, including regular inspections and audits of maintenance procedures, to identify and rectify issues promptly.
- Reporting Mechanisms; Implement a comprehensive reporting system for incidents, near-misses, safety concerns, or non-compliance issues. Encourage personnel to report incidents and raise concerns without fear of reprisal.
- Working Hours; The maintenance environment is a little unique with the mindset of 'get the job done' and working hours and breaks seem to be forgotten. Not taking care of your mental and physical limits will undoubtedly lead to error and/or incidents. Take care of yourself and do what is necessary to operate at 100% of your capabilities. ■

Records and Admin Safety Challenges

Keeping Everything in Order:

Mitigating Compliance and Risk Challenges in Records Keeping and Administration

From Elaria, Record Office

Hi there, my name is Elaria and I'm new to the aviation industry. I was inspired to get into aviation by my uncle and I'm loving it. That being said, it has been a challenge to learn everything and adapt to the fast-paced working environment. Originally, I took the job in technical records and documentation control as I thought it would be a great way to learn about the industry and figure out what I wanted to do next in my career. I've found, however, that this job is critical to the success of multiple departments and simple mistakes can have huge impacts.
I know I still have a lot to learn and thankfully I have a great team of mentors that are supporting me as I learn. Here are a few of the challenges I've faced so far and the teachings I've been given to prevent them in the future.

Data Accuracy:

Ensuring the accuracy of aviation records, including maintenance logs, pilot licenses, and operational records, is critical for safety and compliance. It's very easy to make a mistake and this can cause timely delays.

Mitigation: Implement comprehensive training programs for personnel responsible for record keeping. Implement data verification processes to catch inaccuracies early.

Understanding Regulatory Compliance:

The aviation industry is highly regulated, with numerous requirements governing record keeping and administration. I'm still working my way through all the regulations and there is still a lot I don't know. It's difficult to comprehend at times. Especially now with new procedures for cyber security, protecting sensitive aviation records from unauthorized access or data breaches is a growing concern.

Mitigation: Stay informed about regulatory changes and ensure all personnel are trained in compliance requirements. Utilize compliance management systems to track and manage adherence. Invest in robust cybersecurity measures, including encryption, access controls, and regular security audits. Educate personnel on cybersecurity best practices.

Loss of Records:

The loss of essential aviation records, whether due to physical damage or digital corruption, can be detrimental to operations and regulatory compliance. The organisation uses a number of systems from third party operators. I made a mistake the other day by accidently clicking the wrong button and there was no prompt to notify or ask if I was sure, as I ended up deleting a lot of records.

Mitigation: Maintain secure backups, both physical and digital, to safeguard against record loss. Regularly test data recovery processes to ensure they are effective.

Aviation records keeping and administration play a crucial role in the aviation industry, ensuring the safe, efficient, and compliant operation of aircraft. However, this essential function is not without its challenges.

The most effective mitigation in all cases is continuous learning and development. Ensuring that personnel responsible for records keeping and administration are well-informed and trained in compliance requirements is crucial.

Implement data verification processes to double-check the accuracy of records. This can include periodic audits and cross-referencing data sources for inconsistencies. Utilize compliance management systems to track regulatory changes and monitor adherence to compliance requirements. These systems can send alerts and reminders to keep records up-to-date.

Encourage personnel responsible for records keeping and administration to obtain certifications in records management. Certification programs can provide the knowledge and skills needed for compliance. These are fantastic transferrable skills that can be carried over to all parts of the aviation industry. ■

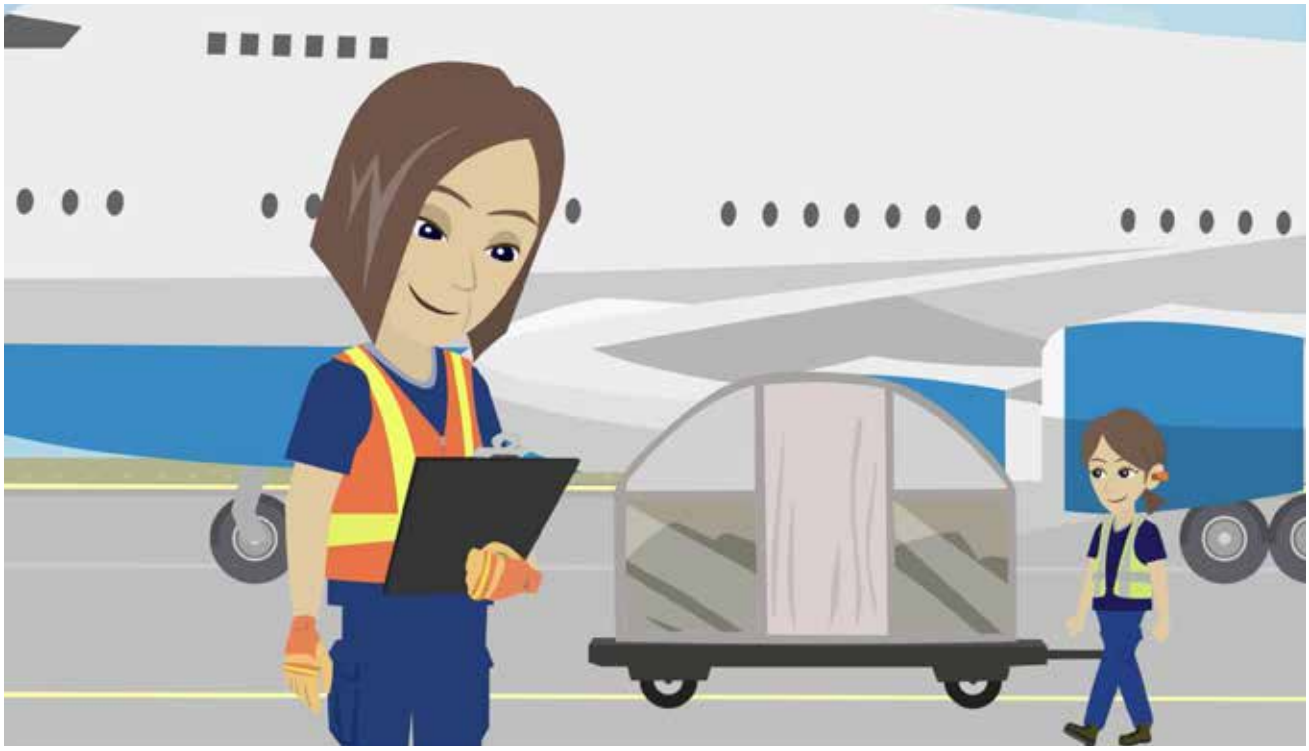
Ramp Safety Challenges

Clearing the Runway:

Mitigating Compliance and Risk Challenges from the Ramp

From Valentina, our Ground Handler

Hi there, I'm Val from the ramp team. I love the ramp as is a critical component of the aviation industry, encompassing the activities necessary to prepare an aircraft for flight or upon arrival. This function is indispensable, yet it faces a range of compliance and risk challenges that demand unwavering attention. In this article, we'll explore the top compliance and risk challenges associated with aviation ground handling and provide effective strategies for mitigating them, especially as the skills are very transferrable.



Safety Compliance:

Ensuring the safety of passengers, ground personnel, and the aircraft itself is paramount in aviation ground handling. The aviation industry is heavily regulated, with numerous requirements governing ground handling operations.

Mitigation: Stay informed about regulatory changes and ensure all ground handling personnel are trained in compliance requirements. Implement compliance management systems to monitor and manage adherence to strict safety protocols, and regular safety audits and inspections are crucial for promoting safety. Continuous learning and development is needed in this regard.

Ramp Congestion and Damage to Aircraft:

Congestion on airport ramps can lead to safety risks, as ground vehicles and equipment move about. The risk of aircraft damage during ground handling operations, such as collisions, equipment malfunctions, or improper handling, is a significant concern.

Mitigation: Efficient scheduling and coordination of ground handling activities are essential to prevent congestion. Promote clear communication and clearly define pathways and zones for vehicles and equipment on the ramp. Personnel should receive thorough training in aircraft handling procedures. Regular equipment maintenance and safety checks can prevent equipment-related incidents.

Security and Environmental Risks:

Ensuring the security of baggage and cargo is crucial to prevent theft or tampering. Ground handling operations, including refuelling and de-icing, can pose environmental risks if not managed correctly.

Mitigation: Implement stringent security protocols for handling baggage and cargo, including regular screening, tracking, and monitoring procedures. Educate personnel on the importance of security. Implement strict environmental management practices, including spill containment systems, proper disposal of hazardous materials, and compliance with environmental regulations.

Aviation ground handling is an indispensable part of the aviation industry, ensuring the smooth and safe operation of flights. Safety and compliance are non-negotiable in this critical function. By implementing the mitigation strategies outlined in this article, aviation organizations can empower their ground handling personnel to navigate compliance and risk challenges effectively, ensuring the safe and efficient handling of aircraft. This, in turn, ensures that the runway remains clear and aviation operations continue to uphold high standards of safety and compliance. ■

Ops Control Safety Challenges

Mitigation Strategies for Smooth Operations

Navigating Compliance and Risk Challenges in Operations Control

From Gemma, Ops office

Hello, I'm Gemma from the flight operations department. I'm passionate about my role as operations control is a critical component of the aviation industry, responsible for planning, coordinating, and monitoring flights. It faces numerous compliance requirements and risk challenges that require meticulous attention. Here are some of the challenges we face and how to overcome them.

Weather-Related Risks:

Adverse weather conditions can pose risks to flight operations, including turbulence, thunderstorms, and low visibility.

Mitigation: Operations control personnel should receive meteorological training and have access to real-time weather information. Decisions regarding flight rerouting or delays should be made based on informed assessments.

Crisis Management and Emergency Response:

Responding to in-flight emergencies, security threats, or unexpected disruptions in a timely and efficient manner is a crucial aspect of aviation operations control.

Mitigation: Operations control centers should have comprehensive crisis management plans in place. Personnel should be trained in handling various emergency scenarios and have access to real-time communication with flight crews.

Human Error:

Human error in flight planning, coordination, or data input can lead to safety risks and operational disruptions.

Mitigation: Training programs that emphasize error prevention, thorough quality control processes, and clear communication between operations control personnel and flight crews help mitigate the risk of human error.

There are a number of other strategies that can support ops controllers including (but not limited to):

- Continuous Training; Regular training programs for operations control personnel are essential to keep them updated on compliance requirements, safety protocols, and crisis management procedures.
- Effective Communication; Encourage open and clear communication within the operations control team. Fostering a culture where personnel can voice concerns, share information, and collaborate effectively is essential.
- Standard Operating Procedures; Implement standardized operating procedures to ensure consistent and safe practices. Regularly review and update these procedures as necessary.
- Quality Control; Maintain rigorous quality control processes, including regular inspections and audits of operations control procedures, to identify and rectify issues promptly.
- Reporting Mechanisms; Implement a comprehensive reporting system for incidents, near-misses, safety concerns, or non-compliance issues. Encourage personnel to report incidents and raise concerns without fear of reprisal. ■

ATM Safety Challenges

Clearing the Skies:

Navigating Compliance and Risk Challenges in Air Traffic Control

From Cate, our Air Traffic Controller

Air traffic control (ATC) is a crucial element of aviation safety and efficiency, ensuring the orderly flow of aircraft in the skies. However, ATC faces various compliance requirements and risk challenges that demand meticulous attention. Especially as we are separate from the airlines and abide by separate regulations and procedures. This article delves into the top compliance and risk challenges in ATC and outlines practical strategies for mitigating them effectively.

Safe Air Space and Communication:

Ensuring safe aircraft separation, clear communication, and the swift resolution of emergencies are paramount in ATC. We are subject to a multitude of national and international regulations, which must be closely followed.

Mitigation: ATC personnel must undergo rigorous training, conduct regular simulations, and strictly adhere to safety protocols. Effective communication systems and redundancy in equipment are also vital. Continuous training and regular updates on regulations are essential. ATC facilities should maintain compliance management systems to ensure adherence to the rules. Open and effective communication between ATC personnel, pilots, and other stakeholders is vital for ensuring safety and adherence to regulations.

Technological Compliance:

As with every part of the aviation industry, ATC relies heavily on advanced technology, which must be maintained and operated flawlessly.

Mitigation: Regular equipment maintenance, redundancy in critical systems, and a swift response to technical issues are key. ATC personnel should be proficient in using the technology at their disposal. Technicians should be readily available to address technical issues.

Crisis Management and Emergency Response:

Responding to in-flight emergencies, natural disasters, or acts of terrorism requires robust crisis management.

Mitigation: ATC facilities should have comprehensive emergency response plans, conduct regular drills, and collaborate closely with relevant agencies and aviation stakeholders. Establish and maintain clear, standardized operating procedures for ATC, especially during emergencies. Regularly review and update these procedures as needed.

Human Error and Fatigue:

Fatigue or human error among ATC personnel can lead to critical mistakes in aircraft coordination.

Mitigation: Adequate rest periods, efficient shift scheduling, and mental health support are essential for minimizing the risk of fatigue. Continuous training and performance assessments can help mitigate human errors. Peer-to peer support and a mindset of support is essential in these environments. ATC personnel should also have access to mental health resources to manage stress and anxiety.

Air traffic control is the backbone of aviation safety and efficiency. Compliance with regulations, safety protocols, and technology operations is crucial to maintaining the orderly flow of aircraft. By implementing the mitigation strategies outlined in this article, ATC facilities can empower their personnel to navigate compliance and risk challenges effectively, ensuring safe and efficient air traffic management. The skies remain secure and well-organized, thanks to the dedication and preparedness of air traffic control professionals. ■

GNSS Interferences and Conflicts

Following EASA analysis of recent data from the Network of Analysts and open sources that has concluded that GNSS jamming and/or spoofing has shown further increase in the severity of its impact, as well as an overall growth of intensity and sophistication of these events, the Agency has updated the SIB on Global Navigation Satellite System (GNSS) Outage and Alterations Leading to Navigation / Surveillance Degradation.

The SIB (2022-0) was first published on March 17, 2022 and then updated to Revision 1 (R1) on February 17, 2023. You can access this Revision 2 that has been published today, on the EASA SIB Tool.

This revision includes the information outlined below (the main updates from the previous version are also highlighted).

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Examples of symptoms of suspected GNSS spoofing for aircraft

These are the things pilot's might observe while flying due to spoofing (no changes).

- Incoherence in navigation position, such as GNSS/FMS position disagree warnings;
- Abnormal differences between Ground speed and True airspeed;
- Time shift;
- Problems with INS/IRS.

GNSS Interferences and Conflicts

The list of the most affected flight information regions (FIR)

No changes, the list is as follows:

- The Black Sea area:
- FIR Istanbul LTBB, FIR Ankara LTAA
- Eastern part of FIR Bucuresti LRBB, FIR Sofia LBSR
- FIR Tbilisi UGGG, FIR Yerevan UDDD, FIR Baku UBBA
- The south and eastern Mediterranean area, and the Middle East:
- FIR Nicosia LCCC, FIR Beirut OLBB, FIR Damascus OSTT, FIR Tel-Aviv LLLL, FIR Amman OJAC, north-eastern part of FIR Cairo HECC
- FIR Baghdad ORBB, north-western part of FIR Tehran OIIX
- Northern part of FIR Tripoli HLLL
- The Baltic Sea area (FIRs surrounding FIR Kaliningrad UMKK):
- Western part of FIR Vilnius EYVL, north-eastern part of FIR Warszawa EPWW, south-western part of FIR Riga EVRR
- Arctic area:
- Northern part of FIR Helsinki EFIN, northern part of FIR Polaris ENOR

Examples of issues that a degradation of GNSS signal (including Satellite Based Augmentation Systems (SBAS) and Ground Based Augmentation Systems (GBAS)) could generate.

These are the problems this could cause to the safety of the flight – SIB revised to extend its applicability to aircraft and equipment manufacturers and address the cases of spoofing.

- Temporary or non-recoverable failure or degradation of PNT information provided by GNSS possibly resulting in:
- Inconsistent flight guidance possibly resulting in route deviations, uncommanded turns, and potential airspace infringements;
- Loss or misleading surveillance system (e.g. corrupted Automatic Dependent Surveillance-Broadcast (ADS-B), TAWS (e.g., false PULL UP alert triggered by TAWS during cruising phase), wind shear, terrain and other surface functionalities);
- Loss or misleading time dependent systems (e.g. clock, fuel computation system, flight management system);
- Inconsistent, potentially misleading aircraft position, and ground or wind speed on the navigation display.
- Inability to use GNSS for navigation, including waypoint navigation;
- Inability to conduct or maintain GNSS based Area Navigation (RNAV) and/or required Navigation Performance (RNP) operations.

Recommendations for CAAs, ATM/ANS providers and Air operators (including helicopter operators – with specific information on both jamming and spoofing that flight crews and relevant flight operations personnel should be aware of)

CAAs should:

- Ensure that contingency procedures are established in coordination with ATM/ANS providers and airspace users, and that essential conventional navigation infrastructure, particularly Instrument Landing Systems, are retained and fully operational;
- Implement appropriate and proactive mitigating measures as a matter of high priority, including the issuance of NOTAMs, e.g. describing affected areas and related limitations (as appropriate and determined at State level).
- Facilitate the establishment by ATM/ANS service providers of a process to collect information on GNSS degradations, in coordination with the relevant National Telecommunications Authorities, and promptly notify the related outcomes to air operators and to other airspace users;
- Initiate discussion at a national level to restrict the usage of GNSS jammers;
- Confirm that contents of this SIB are duly considered by air operators, including helicopter operators, ATM/ANS providers, and aircraft and equipment manufacturers.

ATM/ANS providers should:

- Establish a process to collect information on GNSS degradations, in coordination with the relevant CAAs, National Telecommunications Authorities, and promptly notify the related outcomes to air operators and to other airspace users;
- Assess the impact of loss or anomalies of GNSS-based timing on CNS systems;
- Issue NOTAMs to provide relevant information to airspace users (as appropriate and determined at State level);
- Provide reliable surveillance coverage that is resilient to GNSS interference, as well as maintain essential conventional navigation infrastructure operational (Instrument Landing Systems, Distance Measuring Equipment (DME), Very High Frequency omnidirectional range (VOR)) in support of conventional navigation procedures;
- Ensure that their contingency plans include procedures to be followed in case of large-scale GNSS jamming and/or spoofing events.

- Monitor the traffic closely to prevent any deviation from the flight track/route.

Air operators, including helicopter operators, should:

- Ensure that flight crews are aware of and trained on the importance of prompt reporting by means of a special air-report (AIREP) to air traffic services of any observed interruption, degradation or anomalous performance of GNSS equipment or related avionics (e.g. map shifts, suspected GNSS spoofing, position and duration of the GNSS interference);
- Evaluate different scenarios based on their operations in order to provide the flight crew with timely information to increase awareness of jamming and spoofing;
- Ensure that GNSS outage or spoofing topic is included in the flight crew ground recurrent training, highlighting the identified operational scenarios to recognize, react in a timely manner to different jamming and spoofing cases;
- Assess operational risks and limitations linked to the loss of on-board GNSS capability, including any on-board systems requiring inputs from a reliable GNSS signal;
- Ensure that operational limitations introduced by the dispatch of aircraft with inoperative radio navigation systems in accordance with the Minimum Equipment List, are considered before operating an aircraft in the affected areas;
- Ensure, in the flight planning and execution phase, the availability of alternative conventional arrival and approach procedures (e.g. an aerodrome in the affected area with only GNSS, including augmentation, approach procedures should not be considered as destination or alternate).
- If subject to FDM requirements and necessary data are available, use FDM programme to identify and assess GNSS spoofing events.
- Concerning spoofing: contact aircraft or equipment manufacturers for instructions on how to deal with spoofing cases of their products and apply them.

GNSS jamming specific recommendations for Air operators, including helicopter operators:

- Ensure that flight crews and relevant flight operations personnel:
- Are aware of possible GNSS jamming ;
- Verify the aircraft position by means of conventional navigation aids when flights are operated in proximity to the affected areas;
- Check that the navigation aids critical to the operation for the intended route and approach are available;
- Remain prepared to revert to a non-GNSS arrival procedure where appropriate and inform air traffic services in such a case; and
- Report (AIREP) to air traffic services any observed irregularities.

GNSS spoofing specific recommendations for Air operators, including helicopter operators:

- Ensure that flight crews and relevant flight operations personnel:
- Are aware of possible GNSS spoofing;
- Continuously monitor aircraft position using non-GNSS navaids and all available automatic navigation accuracy calculations, including the Estimated Position Uncertainty (EPU) figures.
- Monitor the GNSS time versus non-GNSS time sources.
- Closely monitor the ATC Frequencies in the vicinity of spoofing area.
- Apply the manufacturer's instructions for the aircraft type on dealing with suspected spoofing, non-exhaustive list of examples of possible instructions could be such as:
  1. being ready to select HDG mode and manually adjust the flight course.
  2. being ready to ask for verification vector from ATC as long as needed.
  3. being ready to crosscheck with and switch to using alternate PNT such as IRS and/or available ground facilities (Multi-DME and VOR/DME).
  4. being ready to exclude the GNSS signals within affected area.
  5. being ready to disable automatic INS/IRS updating
- report (AIREP) to air traffic services any observed irregularities.

Aircraft and equipment manufacturers, should:

- Support Air operators, by providing instructions to follow on how to deal with suspected GNSS spoofing events, when using their products.

Air operators are also reminded to report the suspected GNSS alterations and higher risk jamming occurrences to aircraft manufacturers and support their investigations by providing relevant information according to Regulation (EU) No 965/2012, ORO.GEN.160 (b). ■

Enhancing Pilot Training Through CBTA Data-Driven Insights into Learning[1]

1. Introduction: The Demand for Pilots

CAE estimates that 284,000 new Commercial & Business Aviation pilots will be required world-wide over the next 10 years2. Asia Pacific and North American will be the major geographic regions where demand is greatest for commercial and business aviation pilots respectively (see Figure 1).

To fulfil the need for 284,000 pilots, the approach to the pilot training of the past will not get us to where we need to go in the future. CAE therefore foresees a future where there will be a renaissance of new methods to illustrate and simulate situations for training, enhancement of training methods and approaches, whilst improving quality and reducing costs of the training itself.

This paper will discuss how Commercial Aviation Pilot Training will be enhanced through 'Competence-Based Training and Assessment' (CBTA) and the insights into the subsequent learning provided by simulator and instructor evaluation(s) data.

Figure 1 – Worldwide Demand for Commercial & Business Aviation Pilots

1 Article by: Richard J Kennedy, Andrew CK Lim and David Owens - Civil Global Training Organization, CAE

2 www.cae.com/aviation-talent-forecast-2023/

2. CBTA for Commercial Aviation Pilot Training

Pilot training standards need to be elevated beyond the threshold of “ready to pass a regulatory test” to “being mission ready,” and this is being achieved through the adoption of Competency-Based Training and Assessment (CBTA) principles. The paradigm shift in pilot training from historically prescriptive methodologies to CBTA recognizes that, although the industry has delivered an exemplary aviation safety record, current training and licensing standards must evolve to address today’s rapidly changing demographics, technology, and operating environments. This shift is also the result of measuring training efficacy using data from training and customers’ line operations.

The commercial aviation industry is therefore well into the second decade of its journey to transition from so called 'Maneuvers-Based Training' to CBTA. Historically pilots have been evaluated on their ability to perform a given exercise to a level of mastery (e.g. rejected take off, go-around, engine failure, etc.). This contrasts with the CBTA paradigm, where pilots are instead presented with situations in training that are highly challenging and require a mixture of technical and non-technical skills to demonstrate resilient flight operations.

The approach to developing resilience in flight crews is increasingly focusing upon training and evaluating 'good performance' during stressful or unexpected situations. This requires the pilot to demonstrate competencies including effective leadership, situation awareness, knowledge, decision-making, problem-solving and communication which can then be applied to similar situations and exercises to that being assessed.

The principal means for training for resilience include simulation, case studies and even role-playing exercises that are designed to mimic the real-world scenarios helping flight crews to develop the ability to adapt to unexpected events, maintain focus and composure under pressure and work effectively as a team. Furthermore, debriefing and reflection sessions after each training session will review what was learned and how this learning can be applied in the future.

Figure 2: Simulator Telemetry Data

- Helps instructors detect parameter exceedances which would not be possible to monitor from the instructor seat.
- Supports the instructor in providing effective de-brief to pilots based on objective data.
- As the technical competencies are best evaluated through telemetry data it allows the instructor to focus more of their effort on evaluating the non-technical competencies.

Figure 3: Telemetry Data Analytics

- Provides the means to tailor training content based on objective training data.
- Facilitates insight into how a particular fleet / experience level of pilots responds to challenging situations in a training environment.
- Provides evidence for good performance, and mastery of specific competencies, as well as identifying where performance could be improved.

Figure 4: One Engine ILS Approach Example

Enhancing Pilot Training Through CBTA Data-Driven Insights into Learning

3. Data-Driven Performance Evaluation

A key question is ***what constitutes good performance of commercial airline pilots and how can we measure its various elements within a flight training environment?*** In other words, "What A Good One Looks Like" (WAGOLL) requires unpacking and, to that end, there are two main sources of training performance data that are available:

1. The performance evaluations performed by the training instructor(s).

2. The data which can be extrapolated from the training device.

Performance evaluations are based upon the CBTA paradigm described previously whereas telemetry data is essentially the in-situ collection of measurements or other data at remote points and their automatic transmission to receiving equipment for monitoring.

With a focus upon source 2) above, Figures 2 and 3 further describe the type of telemetry data that is obtained from the Full Flight Simulator (FFS) and how this data may be analyzed to provide insights on the performance of the pilot.

CAE Rise™[3] is a technology based-upon Full Flight Simulator (FFS) telemetry data enabling data-driven insights into the performance of pilots for the range of challenging situations that are presented in a flight training environment. The system consists of a tablet computer application and cloud-based analytics engine that uses the telemetry data to provide instant feedback to the instructor of outcomes relevant to the application of procedures and flight path management.

Rise allows operators to benchmark their performance against wider industry whilst providing data-driven insights that can be used to tailor training programs. A graphical example of the data-driven insights from by Rise is provided in Figure 4.

4. Calibration of Data: Instructor Grading vs Exceedance Rates

When calibrating evaluations, comparison of independent sources of data will provide confidence of the quality of the grading data. Having different sources of data available to the training manager, allows a comparison of Instructor grade sheet data with simulator telemetry data of exceedances and deviations from SOPs.

3 https://www.cae.com/civil-aviation/aviation-software/cae-rise/

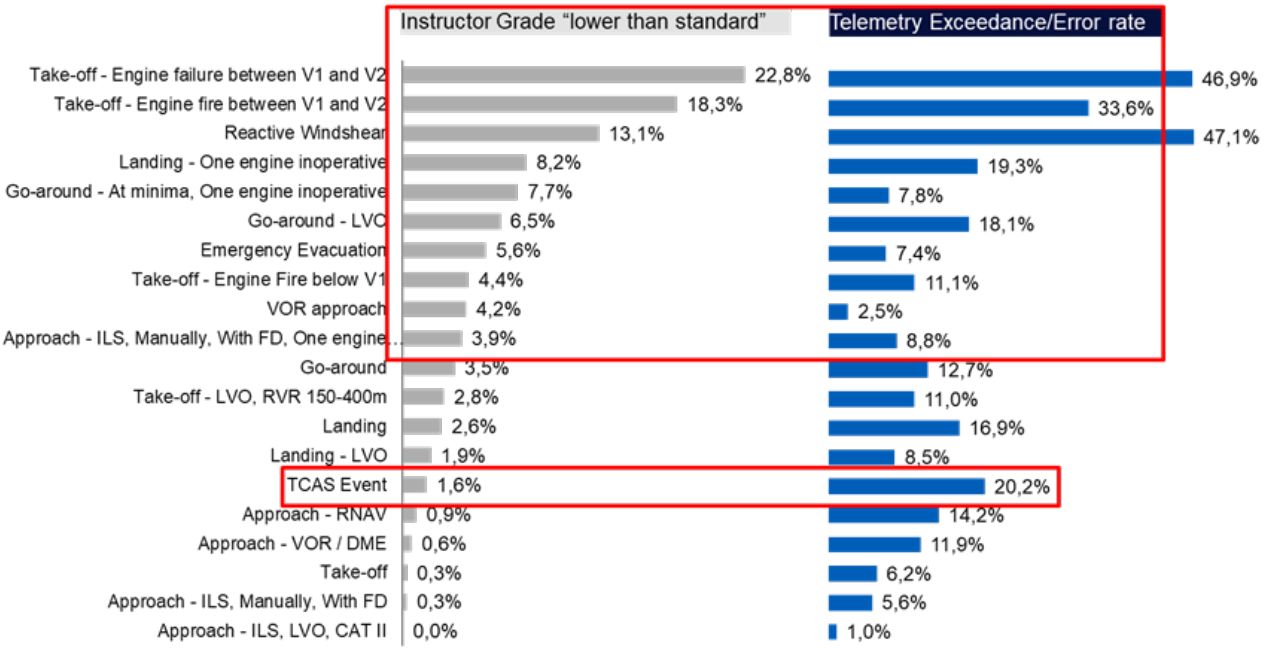


Figure 5: Examples of Instructor Evaluations vs Telemetry Data

An example of the use of data is the comparison of instructor substandard maneuver grades with the telemetry exceedance and error rates. One case, highlighted in Figure 5 is for a TCAS Event. In terms of instructor evaluations, this can be seen to be graded "less than standard" at around 2 % of the time. However, the telemetry data indicates an exceedance of agreed tolerances or SOP errors for around 20% of the time.

The TCAS Event example above contrasts with "Go-around – At Minima, One engine inoperative" case. With 7.7% of Instructor Grade lower than standard compared with 7.8% of Telemetry Exceedance, it is an example of near perfect concordance between the Instructor Evaluations and telemetry data.

5. Looking Forward with CBTA and Data-Driven Learning

Given that regulatory acceptance of CBTA for other-than-recurrent training is still evolving, the industry is taking a gradual approach in the transition of existing curricula. As a first step, existing task-based curricula are being revised to use the language of competencies, observable behaviors (OBs), and Threat and Error Management (TEM). Existing training tasks/elements are mapped to relevant competencies and OBs, with an assessment of relevant competencies required at the end of each simulator lesson. The intent is to gradually familiarize instructors, clients, and regulators with the principles of CBTA.

In parallel Artificial Intelligence (AI) will be increasingly deployed to conduct the mapping of tasks, subtasks, aircraft malfunctions and conditions to the relevant OBs required for a "full" CBTA implementation.

6. Summary and Conclusions

This paper has described the evolution of commercial aviation flight training towards a full Competency-Based Training and Assessment (CBTA)-based paradigm. To support assessment and evaluation, it has been shown that data plays a crucial role. As well as providing insights on performance, instructor grading and simulator telemetry data can be compared to provide confidence in the quality of the assessments.

The success of the aviation industry is based upon the confidence passengers have in the safety of the air transport system. In the same way that aircraft have evolved, so too must the training that is delivered to pilots. It must prepare and give them the confidence to take decisive action at a critical moment. CBTA is key to developing the behaviors that result in resilient outcomes and making air travel even safer in the future. ■

Operating in an environmentally friendly way – **Enhancing fuel management**

Sustainability is a key part of the modern world of aviation. The world expects our industry to do everything it can to protect the environment. There are 4 key areas where the industry is focussing our environmental efforts, these are know as the ICAO "Basket of Measures". You can read more about these in this article on the EASA Air Ops Community.

For operators it naturally the "ATM and operations" area where you are able to influence sustainability the most yourselves. This is about how we operate aircraft and how they interact with the wider aviation system. One of the key goals is be as efficient as possible with the amount of fuel that is used for different flights, while always ensuring that safety is never compromised.

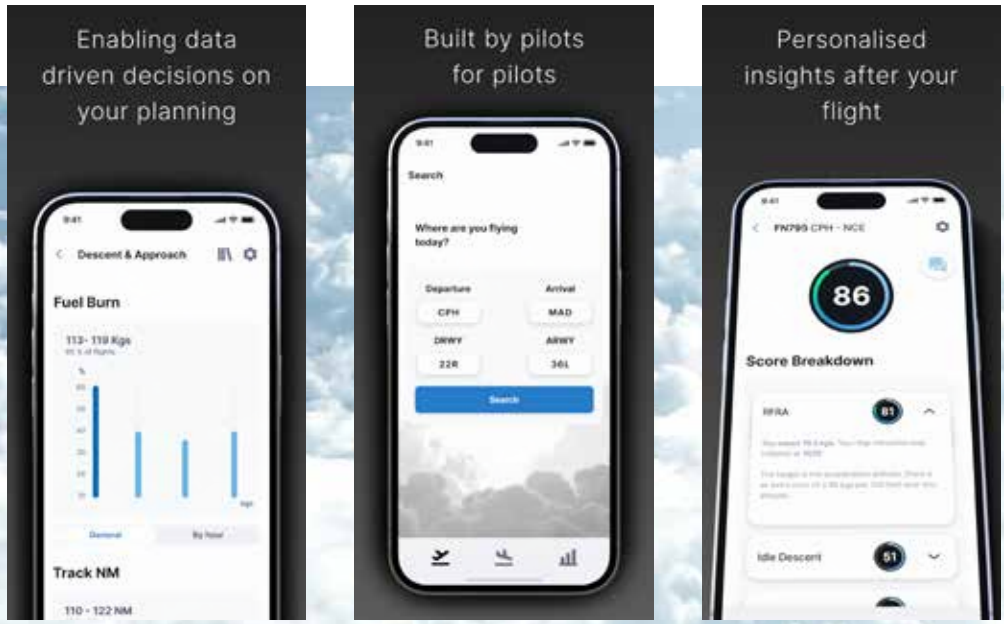
In this article you will learn about the Danish operator Jettime's adoption of FuelVision technology to enhance operational efficiency and safety. Thanks to their Chief Pilot, Kristian Plambeck and CRM and Human Factors Trainer, Birgitte Johansen.

The reality: passengers are starting to make decisions based on perceptions of social responsibility

Jettime are a charter operator, flying with one of the industry's highest load factors from Denmark, Sweden, Norway and Finland. Knowing our passengers were keen to make choices on who they flew with based on their perception of an airline's environmental credentials and social responsibility we were keen to lower the CO_2 emissions per passenger-kilometer. This it likely the goal for many operators.

Environmental sustainability – a key value for Jettime and our staff

In today's climate of heightened environmental awareness, it is not just passengers who are increasingly selective about the airlines they support based on sustainability credentials. Pilots and other staff members are also in pursuit of employers that reflect their values. They are ever more conscious of the



environmental footprint of their profession and seek to align with companies that are proactive in reducing that impact. This synergy between company values and those of our crew members not only enhances job satisfaction but also instills a sense of pride in being part of Jettime's progressive ethos. This will become an increasingly important consideration for many aviation organisations.

Collaboration to improve efficiency while maintaining the highest levels of safety

By 2025, our goals is to achieve a 10% reduction. Currently, we are at an 8% target. To enable us to achieve these ambitious goals, Jettime has created a synergy with FuelVision as a progressive stride toward optimized decision-making and refined operational proficiency. At the heart of this alliance lies the seamless incorporation of the FuelVision efficiency mobile app alongside the sophisticated Aircraft Performance Monitoring (APM) system. These tools that are transforming the way Jettime pilots and the operational department navigate their daily duties.

Integrating FuelVision to build awareness and create new habits

Founded by experienced airline pilots, FuelVision resonates with pilots through its user-centric design. Its introduction into our operations has been instrumental in:

- **Enhancing fuel efficiency**: Pilots receive historical data synthesized into actionable insights, fostering a more conscious approach to fuel planning and management.
- **Promoting sustainable flight operations**: Tailored recommendations inform our crew on the most eco-friendly practices for each phase of flight.
- **Increasing pilot engagement and job satisfaction**: The interactive loop between FuelVision's evolution and pilot feedback cultivates a tool that not only satisfies operational needs but also enriches the flying experience. In addition, pilots receive daily feedback encouraging a growth mindset and feedback culture.

Safety as a paramount consideration

Jettime's relentless pursuit of safety intertwines with our efficiency goals. FuelVision's platform support both objectives by empowering pilots with data-driven decision-making capabilities, ensuring that operational choices for efficiency are made without compromising our safety-first mindset.

It can be hard to define safety. While the historical mindset is that safety is the absence of accidents, as more knowledge has been gained in safety-critical industries, safety is perhaps better described as the ***presence*** of something, that something being the people working at the sharp end who are creating safety within the system (Dekker, 2006, Hollnagel, 2014). If the design of the aircraft, a procedure, or an application is not making sense to the users, the outcome will not be optimal. By ensuring our pilots have the best tools to assist them in daily life, we are increasing safety margins and ensuring an efficient operation.

According to Hollnagel (2009), operators in safety-critical industries find themselves balancing safety and efficiency in a so-called ETTO principle (Efficiency - Thoroughness trade-off), where being too thorough has the downside that it is time consuming, where being too efficient might compromise safety as the corner-cutting can be on the boundary for safe operations. We believe that with the implementation of FuelVision's methods, our pilots will be better dressed to perform more efficiently ***as well as*** in a safe manner.

The impact of FuelVision on Jettime's operations

The introduction of FuelVision has had a tangible impact on Jettime's operations. This has lead to reduced environmental impacts while also fostering a sense of pride and satisfaction among our pilots. This has not only improved our internal operations but also strengthened our position in the industry as an employer of choice for pilots seeking to align with an organization that prioritizes sustainability.

Having our pilots take responsibility in this key area and providing them with the tools to lead by example is an important cornerstone to increase intrinsic motivation. Naturally this is beneficial for everyone in our operation.

First and foremost, having motivated crew who are excited about improving safety and performing in a more efficient manner is helping us achieve our operational goals. This really helps to create a valuable company culture. By having a trusting company culture where we share information with each other, we are aiming to increase several of the core competencies among our pilots, e.g., leadership and teamwork, decision making and problem solving, knowledge, and application of procedures. This further enhances the safety and sustainability of our operations!

Conclusion and Future Directions

Jettime's engagement with FuelVision is a key step in our commitment to better operations and a healthier planet. We are actively navigating the intersection of efficiency, safety, and sustainability. By adopting new technologies and encouraging shifts in our approach, we aim to contribute positively to our industry's environmental future.

In conclusion, Jettime is pioneering practical changes within the aviation sector, striving to harmonize the demands of flying with environmental care. Partnering with FuelVision, we're advancing towards a reality where our flights reflect a deep-seated pledge to be as efficient, safe, and environmentally considerate as possible. ■

#haveasafeflight

EASA
European Union Aviation Safety Agency

together 4safety