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THE LEADING EDGE

safety at the forefront



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 **SPOTLIGHT**

5th Singapore Aviation Safety Seminar – Making a Difference to Safety

Jacelyn Khoo

Manager

(School of Aviation Safety and Security)



SAVE THE DATE!

The 6th SASS is happening
from 17–20 March 2020.

Global aviation accident rates may have decreased over the years. However, growing global and regional air traffic and an increasingly complex operating environment are causing civil aviation authorities (CAAs) and aviation stakeholders around the world to grapple with aviation safety issues and challenges. How can the aviation industry cope with the demands of a growing aviation sector while ensuring continuous improvement in aviation safety?

The 5th edition of the Singapore Aviation Safety Seminar (SASS), jointly organised by CAAS and Flight Safety Foundation (FSF), aimed to answer this by providing a platform for industry and CAAs to network, share knowledge and stay abreast of arising aviation safety challenges and new initiatives for raising safety standards.

Low Accident Rates Does Not Mean No Accidents

Reiterating the importance of prioritising aviation safety in his opening address, Mr Tay Tiang Guan, Deputy Director-General of CAAS, said, "We cannot overemphasise the paramount importance of aviation safety, especially in the fast growth environment in this part of the world. While global accident rates have been coming down over the years, they still translate to a significant number of accidents and fatalities."

Dr Hassan Shahidi, President and Chief Executive Officer of FSF, echoed the same perspective in his subsequent speech, "While low accident rates may be viewed very positively, we can have no satisfaction when we still count up accidents and lives lost at the end of every year."

Business as Usual is Not Enough

Foreseeably, safety matters such as Global Flight Tracking Systems (GFTS), Cargo Safety and Controlled Flight into Terrain (CFIT) will continue to plague aviation safety in the Asia Pacific region. Similarly, runway safety remains a key priority for States to ensure safe and orderly growth for aviation.

To which, Mr Michael Watkins, Senior Asia/Pacific Air Traffic Representative, Federal Aviation Administration observed that although improving runway

visual aids and status lights, airside drivers' training and Air Traffic Control Centres and Air Traffic Service procedures can help enhance runway safety, operational challenges often limit the effectiveness of these measures. He also identified how increasing volumes of passengers and air traffic further put the regulators' ability in maintaining existing levels of safety to the test.

Technology Offers Exciting Opportunities

Thankfully, technological advancements and ready access to data across more mechanical systems and components have made using Predictive Analytics Tools more feasible than before in driving improved reliability and performance.

In addition, technology not only provides smart maintenance, repairs and operations (MRO) possibilities for optimising human resources and minimising aircraft downtime, but also coping with demands of a growing aviation sector in Asia Pacific. However, it is noted that safety standards must be upheld in the pursuit of digitalisation. Hence thorough evaluation should be conducted on the suitability and feasibility of every technology before their adoption by the aviation sector.



Everyone Has a Part to Play in Safety

Technology aside, the four-day seminar also outlined the importance of engaging both industry and States in elevating aviation safety. Significantly, it reaffirmed the importance of information sharing platforms such as the SASS, which brings together key regulatory, industry and research leaders for critical conversations on safety challenges.

ON THE RADAR

MOU Signings at WCACEF Deepens Bilateral Cooperation

Shermin Toh

*Deputy Manager
(Strategy & Planning)*

CAAS inked four Memorandums of Understanding (MOUs) with Civil Aviation Authority of New Zealand (CAANZ), Transport Canada Civil Aviation (TCCA), International Air Transport Association (IATA) and European Union Aviation Safety Agency (EASA) on the sidelines of the 7th World Civil Aviation Chief Executive Forum (WCACEF), which took place from 8–10 April 2019.

These MOUs represent the commitment from all parties involved to advance shared interests in enhancing aviation safety. As CAAS strengthens our capabilities and capacity, we will continue to explore further cooperation with our bilateral partners in areas of mutual interest, and raise aviation safety standards for our respective air transport sectors.

About the MOUs



CAANZ on Aviation Safety

Cooperate in aviation safety areas such as airworthiness certifications, aircraft maintenance, safety information sharing, training, and joint research projects



EASA on Maintenance Organisations

Lower compliance costs for industry through the reduction of duplicative safety oversight activities by both authorities



IATA on the Use of IATA Operational Safety Audits Results

Allow CAAS to access information from the IATA Operational Safety Audits for purpose of augmenting safety oversight for local and foreign operators



TCCA on Civil Aviation Safety

Collaborate on civil aviation safety topics such as airworthiness certifications, aircraft maintenance, safety information sharing, training, and joint research projects

Making Every Hazard Count

Nick Leow

Head
(Strategy & Planning)

A hazard is anything with the potential to cause harm or damage. Ideally, hazards are identified and mitigated before any safety occurrence happens. However, in practice, hazards can manifest in different forms. Some hazards are more obvious like misplaced tools or lack of proper signage while others like overrun of maintenance tasks and inadequacy in training of personnel may not be as obvious.

The solutions to addressing the risks from such hazards are often complex and could involve multiple stakeholders. To address such risks effectively, one of the important steps is to align the taxonomy to ease reporting and analysis of hazards.

The Safety Management International Collaboration Group (SM ICG) was founded in 2009 by the US Federal Aviation Administration, Transport Canada and the European Aviation Safety Agency to promote a common understanding in safety management, and facilitate State Safety Programme (SSP) and Safety Management Systems (SMS) implementation worldwide. Since its inception, the SM ICG has grown its

membership to 19 member States globally. Singapore is a member of the SM ICG and also part of the seven-member steering committee.

Getting Common Hazards Taxonomy Right

The SM ICG developed a common taxonomy for hazards in 2010 to pave the way for information sharing among stakeholders, downstream hazard analysis and systematic safety risks identification. It was subsequently updated to include hazard examples, providing service providers with a starting point for identifying common and generic hazards across their operations.

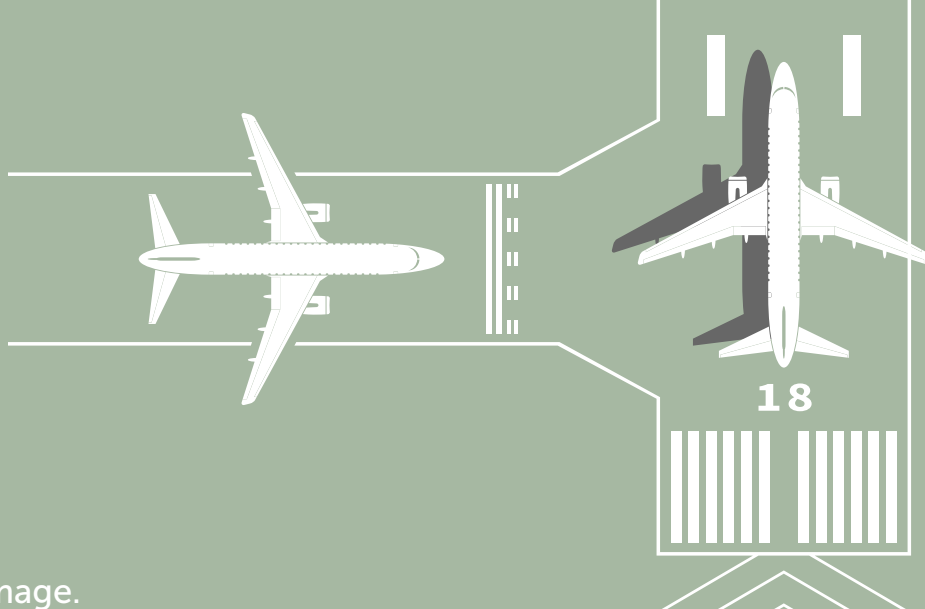
Working with Safety Regulators to Identify Hazards and Risks

Identifying hazards and mitigating associated risks require a concerted effort from both safety regulators and service providers. As the safety regulator, CAAS maintains a State-level hazard database to track safety hazards across the aviation system. In an effort to

improve the richness of hazard data in the State-level hazard database, CAAS actively works with various service providers to share their hazard information. The signing of an MOU between CAAS and the Changi Airport Group in 2018 is one such initiative. CAAS is currently working to get more service providers to come onboard.

In addition, CAAS is also improving the ease of reporting through establishing a State-level voluntary safety reporting system, so that more hazard data can be collected for analysis. Service providers are also encouraged to continue to work on hazard data reporting and analysis within their SMS, including aligning their hazard taxonomy with the State-level hazard dataset to facilitate sharing and analysis of information.

Undoubtedly, everyone plays a part in contributing to the richness of hazard data, shaping safety policies, strategies and training, and, ultimately, improving aviation safety.



The products of SM ICG are published on www.skybrary.aero

CAAS Alcohol Testing and Management Programme: No Drinking and Flying

Foong Ling Huei

Head

(Foreign Operators Surveillance)

At a blood alcohol concentration (BAC) of less than 0.05%, a pilot operating a flight could start to experience mild impairment in attention, coordination and balance. One can only guess the detrimental effects on flight safety as BAC increases.

Case in point, in a report by Australian Transport Safety Bureau, alcohol impairment was identified as a likely contributing cause to the fatal air accident in Hamilton Island, Australia in 2002. In more recent times, a Singapore pilot failed an alcohol test carried out by the Civil Aviation Safety Authority of Australia in Melbourne.

On 31 March 2019, CAAS put in place an Alcohol Testing and Management Programme (ATMP) comprising an Airport Alcohol Testing Programme (AATP) and an Airline Alcohol Management Programme (AAMP). While AATP aims to deter pilots from operating flights under alcohol influence, AAMP resolves to identify and manage pilots engaging in problematic alcohol consumption.

Under the AATP, all pilots operating departing flights from Singapore at Changi and Seletar Airports are subject to random breath tests. Pilots found to have breath alcohol exceeding 0.02 grams of alcohol per 210

litres of breath will be required to cease performing flight duties and may be charged with other penalties. Repeat offenders will face more severe penalties.

Meanwhile AAMP adopts a more rounded approach. Covering four aspects including education, risk-based testing, peer intervention and referral, and holistic treatment and rehabilitation, AAMP is applicable to every Singapore airline. To support airlines in its implementation, CAAS has developed the Collaborative Health Achievement and Motivation Programme (CHAMP) – a customised treatment and rehabilitation programme for pilots and aviation personnel – together with Changi General Hospital (CGH).

With airlines, pilots, unions, and aviation medicine practitioners working collaboratively in synergy, it is expected that ATMP will achieve its goal of minimising risks relating to psychoactive substance use in flying operations.

The Airport Alcohol Testing Programme (AATP)

Who

Singapore and foreign pilots operating commercial air transport or private flights

What

Random breath tests are conducted on pilots operating departing flights from Singapore

Where

Changi and Seletar Airports

When

Any time

Allowable Alcohol Limit

0.02 grams per 210 litres of breath

Penalty

- First time offender – A fine not exceeding S\$50,000 or imprisonment not exceeding two years or both
- Repeat offender – A fine not exceeding S\$100,000 or imprisonment not exceeding five years or both

The Airline Alcohol Management Programme (AAMP)

Who

Every Singapore airline

What

- Airline has to clearly communicate to pilots its policy on alcohol use and effects of problematic alcohol use
- Airline has to conduct alcohol breath test when it assesses risks of pilots misusing alcohol
- Airline has to implement a system that encourages self-disclosure among pilots engaging in problematic alcohol use, and peer reporting of problematic alcohol use
- Airline has to establish a multifaceted medical treatment and rehabilitation programme that treats affected pilots and returns them to flying in a safe manner

Why It Matters – Renewing Changi and Seletar Aerodrome Certifications

Wong Qi Wen

Deputy Head

(Aerodrome Operations Regulation)



Learn about Aerodrome Certification!

Sign up at <http://go.gov.sg/saa-ac>



Aerodrome certification underpins the safety of travelling public and airport operations. That is why CAAS conducts surveillance audits at Changi and Seletar Airports every year and recertification audits every five years to make sure that the infrastructure, facilities and operations comply with Manual of Aerodrome Standards (MOAS) before renewing their certificates.

There have been significant changes at both Changi and Seletar Airports under the Changi Airport Group (CAG) since their last recertification audits in 2014. For Changi Airport, aircraft movement had increased 13% between 2014 and 2018; extensive construction works are also ongoing for Terminal 5, a three-runway system, tunnels and an industrial zone as part of the Changi East Project slated for completion around 2030. Meanwhile, Seletar Airport had developed a new apron and passenger terminal, and put in place additional processes and procedures to ensure safe operations of Firefly flights.

Recertification Audits

Considering these changes and the expiry of aerodrome certificates at both airports in July 2019, CAAS conducted a

series of recertification audits on both airports from mid-2018 to early 2019. As part of the audit, CAAS engaged external consultants for specialised audits on safety management system, safety of ground operations and wildlife hazard management to provide independent assessments and share safety measures insights at major international airports.

Outcomes of the Recertification Audits

After eight months of auditing, the operations and maintenance of Changi and Seletar aerodromes were found to be compliant with

the MOAS. Notably, prompt implementation of measures to address work processes and documentation management gaps by CAG demonstrated the management's commitment and willingness to allocate resources for safety improvement.

The aerodrome certificates for both Changi and Seletar Airports were successfully renewed on 1 July 2019. Till the next recertification audit in 2024, CAAS will continue to conduct annual audits with more focus placed on higher risk areas as part of its risk-based approach.

What Goes on During the 8-month Recertification Audits



Review Changi and Seletar aerodrome manuals and related documentation



Interview members of CAG management, ground staff and CAG's service providers and contractors



Review documentation and records in areas including staff training and competency, aerodrome maintenance, and aircraft rescue and firefighting



Inspect on-site daytime and night-time – pavement conditions, visual aids (markings, signs and lightings) of runways, taxiways and apron, runway incursion preventive measures, and safety of ground handling operations

View from the Top: What It Takes to Soar to Greater Heights

Shermin Toh

Deputy Manager
(Strategy & Planning)

Somerton Sio

Manager
(Flight Operations)

For a man who did not imagine becoming a regulator, Mr Alan Foo, Director (Flight Standards), has enjoyed an illustrious career in safety regulation for over two decades. *The Leading Edge* finds out what fuels his passion after all these years.

Q: Can you share your journey with CAAS thus far?

A: I have enjoyed a rewarding career as a regulator. I see each challenge as an opportunity to make a difference. For example, preparing and going through the ICAO Universal Safety Oversight Audits in 2000 and 2010 has strengthened our team's camaraderie. Then the multi-year effort to modernise our safety regulatory framework has brought greater rigour to the design of our regulatory framework, and introduced clear layers of structure and precision into our safety regulations. It has also seeded the formation of a CAAS rule development team and close collaborations with the industry.

Q: Do you think safety or growth is more important to CAAS?

A: It has to be "safe growth" – we can't do one without the other. If we de-prioritise safety in our pursuit of growth for the aviation industry, it will

catch up with us – sooner or later. Trust in the system may be so damaged by that time that growth may no longer be possible. On the other hand, safety is not an end in itself, but rather, the means to an end. We want to be safe so that we can instil confidence in the system and continue to grow. Tension between safety and growth will always exist, and CAAS will need to continually ensure that they are in balance.

Q: How has your time at ICAO enriched your professional experience?

A: Apart from getting to work with professionals from around the world, I experienced first-hand how ICAO takes on and assimilates diverse perspectives of different stakeholders in its work. Time-consuming as it may seem, this collaborative and deliberative approach has resulted in many time-tested international Standards and Recommended Practices with tremendous global buy-in.

Q: What changes can we look forward to in your role as Director (Flight Standards)?

A: CAAS recognises that safety cannot be assured solely through regulatory compliance. That is why we have increased our focus on the State Safety Programme (SSP) and Safety Management Systems (SMS) in recent years. As the regulator, we want aviation companies to better manage their safety performance through SMS implementation. We are refining our SMS assessment methodology, taking into account the industry's feedback, and will continue to leverage on safety data to aid in our decision-making processes under the SSP. To fully realise the benefits of SMS, CAAS and the industry must work together and evolve the way we manage safety in order to achieve a continuous improvement in safety performance. We have made good progress so far, and I hope to keep up the momentum.



I am glad to have played a role in laying the groundwork for the future of our safety regulatory framework. I look forward to working with industry to drive improvements in safety and safety management in my current role."

– Alan Foo, Director
(Flight Standards)



Register Today AVIATION SAFETY FORUM 2019

Enabling Effective Aviation
Safety Management

2 September 2019
Mandarin Oriental Hotel, 1–5pm

Aviation safety is crucial for the continued vibrancy of our air hub and aviation industry.

Having put in place our safety oversight systems, the next step is to enable effective safety management, with the help of data-driven decision-making. This will help us ensure the safe growth of our air hub and stay ahead in addressing emerging challenges arising from upcoming industry developments.

CAAS welcomes all stakeholders in the aviation community and international safety partners to join us at ASF 2019, which will showcase use cases from the industry on the successful use of technology and data to ensure effective safety management.



More details at www.asf2019.sg

CIVIL AVIATION MANAGEMENT PROGRAMME

Led by more than 30 industry experts from various fields, the flagship programme provides a broad overview of the civil aviation sector, including its major elements, key prerequisites and associated regulatory and operational best practices.



To find out more about upcoming course run dates and register, please visit <http://go.gov.sg/saa-camp> or scan the QR code.

Hear from Past Participant

"The programme is excellent in providing newcomers and middle management a good overview of the aviation industry, especially from the civil aviation perspective."



Diploma In Civil Aviation Management

The Civil Aviation Management Programme is a core module offered under the Diploma in Civil Aviation Management. This diploma is eligible for SkillsFuture Study Award for Singaporeans. Successful applicants will receive a monetary award of S\$5,000, which could be used to defray part of the fees for the diploma.



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