

**Opening Address by Mr Han Kok Juan,
Director-General, Civil Aviation Authority of Singapore,
At the Aviation Safety Forum 2024,
Crowne Plaza Changi Airport Hotel, Singapore,
26 April 2024 9.30am**

It gives me great pleasure to join all of you today at the Aviation Safety Forum, an annual meeting of Singapore aviation leaders and professionals on aviation safety, to take stock and chart the way forward.

2 As of end 2023, air passenger volume at the Singapore Changi Airport had recovered to 86% of pre-pandemic levels, from 4% in 2021 and 47% in 2022. We ramped up operations quickly to meet air travel demand and did it smoothly and safely.

3 For the first quarter of 2024, air passenger volume exceeded pre-pandemic levels. Barring unforeseen circumstances, we expect this growth trajectory to continue and for us to achieve 100% or more for the full year. With this, workload will increase, alongside more intense and complex operations. A new, less experienced post-pandemic workforce, changes in weather patterns, concerns with original equipment manufacturers and disruptions to operations due to conflicts elsewhere will present new safety challenges.

4 The aviation eco-system is a complex and highly integrated one, comprising many companies, big and small and many aviation professionals, including pilots, air traffic controllers, maintenance engineers and ground staff; the Civil Aviation Authority of Singapore, as the country's aviation safety regulator, oversees more than 200 companies, 220 aircraft and 14,000 personnel. As the Singapore aviation sector approaches full recovery this year, I urge that we step up safety vigilance, at all levels, and in all parts of the eco-system.

5 One specific area I would ask the eco-system to pay closer attention to is runway safety, which we have made the sole focus of this year's forum. In January this year, Japan had a tragic collision of a Japan Airlines aircraft and a Coast Guard plane at Haneda Airport. Singapore is not immune to runway safety risks. In 2002, a foreign

freighter aircraft overran the runway at Changi Airport during a landing in poor weather. In 2018, a foreign flying display aircraft participating in the Singapore Airshow skidded off the edge of the runway at Changi Airport during take-off. Thankfully, in both cases the aircraft occupants escaped unharmed, and Singapore has not had any runway accidents since. Notwithstanding this, we cannot take runway safety for granted and must continue to strengthen our safety regime and practices.

6 Runway operations involve aircraft operating at high speeds, in close proximity, sometimes interacting with other ground vehicles. Ensuring runway safety involves complex systems and procedures, and requires close collaboration amongst pilots, air traffic controllers, aerodrome operators, and various ground services, in a dynamic operating environment. For example, during bad weather, which we are seeing more of, close collaboration between air traffic control and pilots is required to facilitate timely decision-making for aircraft, whether to safely continue the landing or go-around. When an aircraft has just landed but needs more time to clear the runway due to poor visibility, the air traffic control needs to be aware and be able to manage other incoming traffic in a timely fashion.

7 To ensure runway safety, our aviation community has worked together to put in place various preventive measures which we must continue to enhance and reinforce. Let me highlight three key areas today.

a) First, technology. We have and need to continue to invest in and leverage new technologies, including drawing on safety data to level-up our safety capabilities in pre-empting and preventing runway incidents. Technology can enable and support human performance and alleviate workload amidst constraints in manpower. For instance, we currently have the A-SMGCS (Advance Surface Movement Guidance Control System) and microwave barrier detectors at runway holding points to help detect and prevent runway incursions. Such technologies can help our aviation personnel avoid incidents. Technology can also help us monitor and analyse safety data, to identify any uptick in occurrences early and take mitigation measures.

b) Second, human factors. We have and need to continue to sharpen our understanding of the interplay between human factors, and systems and procedures. Human performance can lead to different outcomes within the same operating environment, due to variability in skill levels, workload and interpretation of procedures. Training is one way of addressing these. It is just as important, if not more so, to design

our systems and procedures with people in mind, taking into account human factors and human performance limitations. For instance, even as we introduce technological and system safeguards, we have to consider the extent to which humans are able to cope with rapid technological change and the delicate balance needed to avoid complacency and over-reliance on automation. Some other examples of this include studying the effects of workload on performance and updating procedures to provide greater clarity and reduce miscommunication. Our people are at the heart of our aviation system, interfacing with all aspects of operations, but people are not infallible. Human performance may slip on some days. What is important is that we design and build defences to account for this.

c) Third, collaboration. We have and need to continue to collaboratively invest in systems, people, structures and platforms to ensure that safe processes and practices can be scaled up to meet future operational demand. We need to create structures that foster collaboration across the ecosystem. For example, we have set up Runway Safety Teams, comprising representatives from the aerodrome operator, Air Navigation Service Provider, airlines, and other stakeholders. They meet every two months to monitor runway-related safety issues, discuss the management of runway-related safety risks, and implement initiatives to improve the safety of runway operations. These are important platforms for building the habit of tight coordination among the parties involved in runway operations. With the stronger focus on runway safety this year, I encourage stakeholders to engage with these teams, to drive the sharing of perspectives so we can form a common picture of hazards related to runway operations and holistically strengthen the safety of runway-related operating procedures.

8 Ensuring aviation safety is, and will always be, a top priority of CAAS. It is non-negotiable. In 2022, CAAS published Singapore's first National Aviation Safety Plan, to take a whole-of-ecosystem approach to strengthening the safety regime in Singapore. The National Aviation Safety Plan 2022 to 2024 brought together various stakeholders to set out coordinated responses to safety challenges as we emerged from the COVID-19 pandemic. It comprised 50 concrete actions to strengthen the critical foundations of our safety regime. I am happy to report that we are on track to completing these safety actions. CAAS is now developing Singapore's National Aviation Safety Plan for the next triennium from 2025 to 2027, to deal with post-COVID

challenges. The safety landscape has changed significantly in the last few years. The new safety plan is a timely update for us to identify new challenges and lay out a comprehensive roadmap of actions to address them, in consultation with companies, unions and workers. CAAS targets to publish the new plan by the first quarter of 2025.

9 As aviation is cross-border, ensuring aviation safety requires us to work closely together with other regional partners. In the last few years, we have stepped up regional collaboration to share information and best practices. For instance, we participate in the ASEAN Foreign Operator Safety Assessment programme, to exchange ramp inspection data and address adverse safety trends early. In 2023, we collaborated with the Flight Safety Foundation to establish the Asia Pacific Centre for Aviation Safety in Singapore, and to co-organise the first Asia Pacific Summit for Aviation Safety. The second Summit will be co-organised with the Flight Safety Foundation and the Civil Aviation Authority of China and held in Beijing in August this year. This second Summit will allow the Asia-Pacific region to come together to take stock of the latest safety challenges and discuss how to address them through regional collaboration. There are many common challenges that confront us, which require all of us to work together to handle them effectively. Discussions at this important regional meeting in Beijing will also help inform CAAS's National Aviation Safety Plan for the next triennium.

10 The Singapore aviation sector has recovered strongly and safely from the COVID-19 pandemic and is now well poised to soar to even greater heights. As we do so, let us continue to prioritise safety and to stay vigilant. I hope that today's discussions will offer new perspectives and solutions to enhance runway safety and operational safety in general. The lessons we learn today must go beyond this Forum and translate into a personal commitment to safety throughout our entire aviation ecosystem, from senior management to the operational staff on the ground. Let me end by thanking all the speakers and panellists for your participation and by expressing my heartfelt thanks to all members of the Singapore aviation community for your unwavering commitment to keeping our skies safe. We rode through the turbulence of the COVID-19 pandemic. Let us now soar safely together.