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Agenda Item 5: ICAO / Member State / Industry Presentations

SINGAPORE’S APPROACH TO STRENGTHENING SAFETY CULTURE

(Presented by Singapore)

SUMMARY

Singapore launched an inaugural aviation sector-wide longitudinal safety culture survey in March 2023 to monitor and strengthen aviation safety culture in Singapore as air travel recovers from the COVID-19 pandemic and grows in the coming years. The survey was structured based on the Singapore Aviation Safety Culture Framework, comprising questions across five safety culture dimensions and four socio-cultural factors.

The Civil Aviation Authority of Singapore (CAAS) is also developing a Best Practices Handbook on Safety Culture, which will include recommendations and examples of good practices to strengthen safety culture.

This paper shares insights from Singapore’s aviation safety culture survey, and invites the meeting to:

- a) Note the approach taken by Singapore to monitor and strengthen safety culture in its aviation sector; and
- b) Share experiences by different States in implementing initiatives to strengthen safety culture in their respective aviation sectors.

1. INTRODUCTION

1.1 Safety culture is the set of enduring values and attitudes regarding safety issues, shared among all members at every level of an organisation. It is an expression of how safety is perceived, valued and prioritised by management and employees in an organisation. Safety culture involves various dimensions that are ultimately manifested in the behaviour of people.

1.2 The importance of a positive safety culture is well-recognised within the aviation industry. It significantly influences how effectively safety is being managed. A strong and positive safety culture is essential for effective safety improvement programmes and strengthens an organisation’s safety resilience when dealing with a crisis. This has been acknowledged by international aviation organisations, global industry associations, aviation authorities and service providers. With the projected air traffic growth in coming years, safety culture needs to be a key area of focus within the aviation industry.

1.3 A positive safety culture is not something that simply happens. It needs to be cultivated within organisations, at every level, by everyone in their respective roles. Operational personnel who exhibit safe behaviour encourage peers and colleagues to put safety first. Senior management and

supervisors who are truly committed to safety inspire by applying safety culture principles in their decision making and actions. Safety mindsets start to take root when organisations continually seek to improve safety culture and drive safety improvement through policies and processes.

2. DISCUSSION

2.1 Safety has always been a top priority for the aviation sector in Singapore. The Civil Aviation Authority of Singapore (CAAS) regulates over 200 organisations¹ with more than 14,000 personnel² and continually strives to strengthen the safety regime, safety leadership, and in particular - safety culture, to build a firm foundation for safety assurance across the entire eco-system.

Singapore Aviation Sector Safety Culture Survey

2.2 In March 2023, CAAS launched the Singapore Aviation Sector Safety Culture Survey to monitor and strengthen aviation safety culture in Singapore as air travel recovers from the COVID-19 pandemic and grows in the coming years.

2.3 The wide-ranging survey comprised 81 questions across five safety culture dimensions - trust, awareness, communication, commitment, improvement, and four socio-cultural factors - hierarchy, cohesion, control and achievement. The questions were customised to suit the operating context in Singapore and based on the Singapore Aviation Safety Culture Framework that CAAS developed with the Netherlands Aerospace Centre (please see Annex).

2.4 The survey is part of a series of initiatives that CAAS has launched to further strengthen aviation safety in Singapore. In particular, as the aviation sector was ramping up operations coming out of COVID in early 2022, CAAS together with around 100 aviation leaders endorsed the Charter for a Strong and Positive Safety Culture in Singapore, expressing their shared commitment to jointly uphold safety standards and strengthen safety culture in their respective organisations. The survey was the next natural step following the launch of the Safety Charter - the survey results would provide aviation companies with insights on how safety is perceived, valued and prioritised by their workers, identify areas for improvement and guide safety enhancement initiatives. Furthermore, CAAS will conduct the survey every two years to allow for longitudinal analysis to identify emerging trends and developments.

Insights from the Inaugural Survey

2.5 The inaugural sector-wide safety culture survey, which was conducted from March into April 2023, was completed by close to 4,000 aviation personnel including those in operational, safety-related, training and management roles across some 400 aviation companies, including airlines, the aerodrome operator, ground handlers, maintenance organisations, design and production organisations, training organisations and freight forwarders.

2.6 The overall survey results show that there is a positive safety culture within the Singapore aviation community, with about 7 in 10 of those surveyed strongly agreeing or agreeing with statements that indicate as such:

- a) **COMMITMENT:** About 8 in 10 strongly agree or agree with statements that they are committed that safety is a key consideration in decision-making and is given due priority when faced with other competing pressures.

¹ These include airlines, aerodrome operator, air navigation service provider, maintenance organisations, design and production organisations and training organisations.

² These include some 2,000 aircraft maintenance engineers, 3,100 pilots, 9,100 cabin crew, and 500 air traffic control officers.

b) **TRUST**: About 6 in 10 strongly agree or agree with statements that they trust one another that safety is the motivation of their actions and operate on a mutual understanding of acceptable behaviours.

c) **COMMUNICATION**: About 7 in 10 strongly agree or agree with statements that they communicate actively in the reporting, alerting and sharing of safety information.

d) **AWARENESS**: About 8 in 10 strongly agree or agree with statements that they are keenly aware of the safety risks that they are exposed to and may be generating for others.

e) **IMPROVEMENT**: About 7 in 10 strongly agree or agree with statements that they are driven to seek improvement in safety, recognising that safety is a continuous journey and not a destination.

The Way Forward for Singapore

2.7 Safety culture is organic; it requires continual nurturing and improvements will take time. The inaugural survey provides a baseline against which further improvements can be made. As a next step, CAAS will conduct focus group discussions with management and workers of various aviation companies to dive deeper and develop initiatives to strengthen the safety culture, focusing on two key areas:

- a) **Strengthening trust between management and operational staff** by facilitating a clearer understanding of what constitute acceptable and unacceptable behaviours, as well as reinforcing an environment where workers feel safe to proactively report unintentional mistakes without fear of reprisal.
- b) **Fostering a positive safety culture amongst all aviation workers**, particularly in relation to domains that have seen a significant number of entrants who just joined the aviation sector in the last one and a half years, who now comprise over 20% of the aviation workforce.

2.8 CAAS is also working with the Netherlands Aerospace Centre and aviation stakeholders to develop a Best Practices Handbook on Safety Culture for the sector, which will include recommendations and examples of good practices to strengthen safety culture. The handbook will be based off the same Singapore Aviation Safety Culture Framework (see [Annex](#)) as the safety culture survey. We invite interested States to reference the handbook when published, to adopt recommendations and good practices that may be relevant and useful to strengthening safety culture their aviation sectors.

Working Towards Collective Benefit

2.9 As we have noted in development of the Singapore Aviation Safety Culture Framework, safety culture is influenced by different factors and may manifest differently in different cultures and operating contexts. There is no one single solution to enhancing safety culture across States, but there are good practices and learning points that can be shared and adapted to each of our own cultural and operating environments.

2.10 We therefore encourage States to share experiences in their safety culture improvement journeys, including learning points and good practices in the implementation of initiatives to strengthen safety culture in their respective aviation sectors, so that we may all collectively benefit from the cross-pollination of ideas and solutions.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

- a) Note the approach taken by Singapore to monitor and strengthen safety culture in its aviation sector; and
- b) Share experiences by different States in implementing initiatives to strengthen safety culture in their respective aviation sectors.

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Singapore Aviation Safety Culture Framework



Safety culture is the set of enduring values and attitudes regarding safety issues, shared among all members at every level of an organisation. It is an expression of how safety is perceived, valued and prioritised by management and employees in an organisation, and is ultimately manifested in the behaviour of people. It significantly influences how effectively safety is being managed.

A positive safety culture requires continual effort and cultivation within an organisation by every individual in their respective roles. Operational personnel who exhibit safe behaviour encourage peers and colleagues to put safety first. Senior management and supervisors who are truly committed to safety inspire others by applying safety culture principles in their decision-making and actions. Safety mindsets take root when organisations continually seek to improve their safety culture and drive improvement through policies and processes.

In a positive safety culture, safety is the core value of the organisation and is recognised as essential for the continuity of its operations. In such a desired state, people and organisations demonstrate the key elements expressed in the Singapore Aviation Safety Culture Framework, and:

- **Commit** that safety will be a key consideration in decision-making and is given due priority when faced with other competing pressures;
- **Trust** one another that safety is the motivation of their actions, and operate on a mutual understanding of acceptable behaviours;
- **Communicate** actively in the reporting, alerting and sharing of safety information;
- Are keenly **aware** of the safety risks that they are exposed to, and may be generating for others; and
- Are driven to seek **improvement** in safety, recognising that safety is a continuous journey and not a destination.

The development of a safety culture will be influenced by the prevailing societal or corporate cultures. Different socio-cultural norms influence how people behave and will indirectly impact the safety culture of the organisation. Efforts to nurture a safety culture require an understanding of the cultural practices and norms that shape the behaviour of individuals and organisations and need to leverage the dynamic interactions of the various following socio-cultural factors:

Annex

- **Hierarchy:** Degree to which power is distributed between those in-charge and subordinates.
- **Cohesion:** Degree to which action is taken for the benefit of individuals versus that of the group.
- **Control:** Degree to which people prefer structure and certainty, versus flexibility and improvisation.
- **Achievement:** Degree to which people focus on the ends versus the means taken to achieve the ends.

Please see the Appendix for examples of survey statements pertaining to each of the dimensions/factors.

Examples of Survey Statements Pertaining to Each Safety Culture Dimension or Socio-cultural Factor

Safety Culture Dimensions

COMMITMENT

- I feel it is important for me to contribute to improving safety in my organisation.
- Middle management acts as a role model for safety.
- Senior management adequately balances safety against commercial and operational priorities.
- Colleagues in my organisation are committed to safety.
- My organisation's investments in safety are sufficient.

TRUST

- It is clear to me what behaviours are acceptable and not acceptable.
- I feel comfortable raising safety concerns or issues in my organisation.
- Mistakes made in my organisation are dealt with fairly, regardless of job function or seniority.
- Incident investigations in my organisation are focused on finding contributing factors, and not on finding someone to blame.

COMMUNICATION

- I regularly discuss safety-related matters with people in my organisation.
- When there are changes in my area of work which can affect safety, I am kept informed in a timely manner.
- Information related to significant safety incidents is communicated to relevant parties in my organisation.
- The safety information that I receive includes information shared by other organisations in the Singapore aviation community.
- I feel comfortable putting in a voluntary report on my own unintentional mistake, so that others can learn from it.

AWARENESS

- I am aware of the hazards in my area of work.
- Information from my organisation's safety reporting system is shared with staff to raise awareness of hazards at work.
- I am alert to new situations or conditions that may create hazards.
- My organisation proactively looks at new situations or conditions that may create hazards.
- Attention to safety is important in the work I do.

IMPROVEMENT

- The training provided by my organisation is sufficient for me to safely perform my job.
- After a safety occurrence, my organisation takes timely action to prevent similar occurrences.
- In my organisation, we learn from safety occurrences to prevent future incidents.
- I contribute to safety improvements in my job.
- When addressing safety issues in my organisation, personnel with relevant knowledge and experience are always involved.

Socio-cultural Factors

HIERARCHY

- In my organisation, subordinates are afraid to contradict their direct boss.
- I do not criticise others or point out their mistakes because this may embarrass them.

COHESION

- When I interact with other people, I am concerned about their expectations of me.
- I hesitate to ask for help because I think my request will be an inconvenience to others.

CONTROL

- Employees should never break a company's rule, even when breaking the rule may be in the company's best interest.
- A good manager would have a precise answer to a staff's questions about his or her work.

ACHIEVEMENT

- It is important that I am recognised for good job performance.
- It is important that I have opportunities for a job promotion.

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