Hong Kong Aviation Safety Plan

2022 - 2026

This Safety Plan complements the Hong Kong Aviation Safety Programme. It is produced by the Hong Kong Civil Aviation Department in conjunction with the concerned government departments to align with the global and regional aviation safety plans of the International Civil Aviation Organization.

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FOREWORD

In 2019, the International Civil Aviation Organization (ICAO) encouraged States/Administrations to develop a national aviation safety plan (NASP) pursuant to the ICAO Global Aviation Safety Plan (GASP), which detailed harmonised safety guidance for regions and States. The purpose of NASP is to continually reduce aviation risks, through a national aviation safety strategy that has taken into account the global and regional strategies, including the safety goals, targets and indicators. The 2023-25 edition of GASP established targets for States/Administrations to formulate NASPs.

The Civil Aviation Department (CAD) and other concerned authorities of Hong Kong are committed to collaborating with our industry partners and the international aviation community in the journey to maintain a safe, resilient and sustainable aviation system conducive to the advancement of aviation developments.

The **Hong Kong Aviation Safety Plan 2022-2026** (referred as "this plan") is a five-year plan taking into consideration of Hong Kong, China's aviation systems and operational context while strategically aligned with the latest edition of GASP and Asia-Pacific Regional Aviation Safety Plan (AP-RASP). This plan complements the State Safety Programme (SSP) of Hong Kong, China which aims to continually reduce fatalities, risks and occurrences through the development and implementation of aviation safety roadmap, with due consideration of ICAO's overarching global and regional safety initiatives for tackling high risk occurrences.

This plan sets out the strategy for effective implementation of safety oversight system and a risk-based approach in Hong Kong, China to managing safety, as well as safety partnership of the aviation community. Stakeholders are encouraged to support and align their efforts with this plan for the continuous improvement of aviation safety.

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SECTION 1. OVERVIEW OF HONG KONG AVIATION SAFETY PLAN

1.1 Background of National Aviation Safety Plan (NASP)

ICAO published GASP[1] to present the global safety strategy for the triennium and harmonised aviation safety guidance for regions and States to continuously reduce fatalities, risks and occurrences. In the 2023-2025 Edition of GASP, the ICAO outlined a series of safety goals and targets to support such strategy.

Among other things, a new target was also established for each State/Administration to publish an NASP by 2024 in line with GASP and the respective regional safety plan, taking into account the global and regional goals, targets and high-risk categories of occurrences (HRC) to continually reduce fatality risks.

As Hong Kong, China has implemented SSP since 2017 with robust safety data analysis capabilities, the ICAO guidance[2] applicable to States/Administrations with more mature processes was considered when developing this NASP. This plan, developed pursuant to ICAO's NASP format, complements our SSP and reflects the safety needs of our aviation systems while strategically aligned with ICAO's global and regional safety priorities.

1.2 Structure of the Hong Kong Aviation Safety Plan

This plan was developed in alignment with the 2023-25 edition of GASP and AP-RASP. It presents the strategy for enhancing aviation safety from 2022 to 2026. In addition to the foreword, sections include the purpose of this plan, and our strategic approach to managing aviation safety, operational safety risks, other safety issues and the implementation of SEIs are presented in the appendices.

1.3 Relationship between NASP and SSP

This NASP is guided by the SSP, in which SSP assist the States/Administrations to identify hazards and safety deficiencies and determine operational safety risks and organisation challenges. Through the safety data analysis process of SSP of Hong Kong, China[3], Hong Kong, China has the ability to use its hazard identification and safety risk management process as a source of safety intelligence to identify hazards and safety deficiencies, and determine local operational safety risks and organisational challenges for inclusion in the NASP.

[1] GASP (https://www.icao.int/safety/GASP/Documents/10004_en.pdf)
[2] ICAO's Manual on the Development of Regional and National Aviation Safety Plans (Doc 10131)
[3] Hong Kong Aviation Safety Programme (https://www.cad.gov.hk/english/aviation_safety_programme.html)

This plan is one of the key documents produced as part of Hong Kong, China's SSP documentation. It is the means by which the implementation of SEIs generated by the SSP process are defined, driven and drawn from the ICAO Global Aviation Safety Roadmap (Doc 10161) and the AP-RASP. It also allows the determination of initiatives to strengthen the SSP to achieve the safety objectives. Safety intelligence gathered through the SSP may also contribute to other local plans.

From another perspective, our SSP provides safety information to this plan and allows aviation activities to be managed in a coherent and proactive manner, safety performance of the civil aviation system to be measured, implementation of safety actions to be monitored and local safety issues to be addressed.

1.4 Responsibility for the NASP development, implementation and monitoring

The CAD is responsible for the development, implementation and monitoring of this plan in collaboration with other aviation authorities, viz. the Hong Kong Observatory (HKO) and the Air Accident Investigation Authority (AAIA) and industry.

1.5 Operational Context

The airspace of Hong Kong, China is classified into Classes A, C and G according to ICAO specifications. Air traffic is predominantly handled by the Hong Kong International Airport (HKIA) which serves mostly wide body turbojet aircraft. The HKIA is a certified aerodrome. Despite the impact of COVID-19 pandemic, the HKIA maintained Top 1 busiest cargo airport in 2021 and 2022 in Airport Council International (ACI)'s global ranking.

Besides the HKIA, there is a heliport i.e. Sky Shuttle Heliport providing cross-border services.

As of December 2022, there were eight air operator's certificates (AOCs) granted by CAD to commercial operators and among those, six were issued to operators conducting international commercial air transport operations and two were issued to helicopter operators.

In near term, operational challenges related to the recovery from the pandemic and new airport infrastructures arising from the Three-Runway System (3RS) project of the HKIA which comprised the construction of a new runway and associated expansion projects. To this end, safety actions for managing the recovery process to ensure a safe and orderly return of air transport operations from pandemic impacts as well as monitoring changes in Air Traffic Management / Communications, Navigation and Surveillance / Meteorological (ATM/CNS/MET) systems and operations as arisen from the 3RS have been included in the Hong Kong Aviation Safety Roadmap, alongside other safety priorities.

1.6 Safety Issues, Goals and Targets

Global and Regional Priorities

To support ICAO's long term vision of zero fatalities as described in paragraph 1.1, GASP sets out the following goals :-

Goal 1 is to achieve a continuous reduction of operational safety risks.

Goal 2 calls for all States to strengthen their safety oversight capabilities.

Goal 3 calls for the implementation of effective SSPs.

Goal 4 calls for States to increase collaboration at the regional level to enhance safety.

Goal 5 aims to expand the use of industry programmes and safety information sharing networks by service providers.

Goal 6 focuses on the appropriate infrastructure needed to support safe operations.

The GASP aims to continually enhance international aviation safety performance and resilience by providing a collaborative framework for States, regions and industry, and to mitigate the following global and regional HRCs in GASP and AP-RASP :-

1) Loss of Control In-flight (LOC-I)

2) Controlled Flight into Terrain (CFIT)

3) Mid-air Collisions (MAC)

4) Runway Safety [i.e. Runway Excursion (RE), Runway Incursion (RI) and Abnormal Runway Contact (ARC)]

Hong Kong Priorities

This plan addresses safety issues identified based on analyses from mandatory reporting, accident and incident investigations, safety oversight activities and the SSP framework. In developing the safety priorities and SEIs, the operational context in Section 1.5 as well as the above-mentioned ICAO goals and HRCs have been taken into account.

Based on operational safety data, Hong Kong, China experienced a very low rate of HRC occurrences in commercial aviation in recent years, we will continue to closely monitor aircraft operations and occurrence reports relevant to Hong Kong, China as well as the global/regional HRC, with regards to possible precursors for those events.

On organisational issues concerning the effectiveness of safety oversight system, the ICAO implements the Universal Safety Oversight Audit Programme (USOAP) Continuous Monitoring Approach (CMA) to assess a State's capability in providing safety oversight. Hong Kong, China has maintained a high standard of about 94% Effectiveness Implementation (EI) since 2009 through proactive self-assessment and implementation of CMA activities.

With reference to the above, the overarching goal set forth by Hong Kong, China is to "*maintain a safe, resilient and sustainable aviation system conducive to the advancement of aviation developments*", as founded on a roadmap in Section 5 and supported by 6 strategic pillars in line with global/regional strategy as follows :-

Goal 1: Keep operational risks low across all aviation sectors in Hong Kong, China

Monitor aviation systems' operational risks and ICAO's HRCs. Proactive safety strategies will continue to be adopted to keep operational risks low and aviation systems responsive to tackle emerging challenges.

Goal 2: Strengthen Hong Kong, China's safety oversight capabilities

Continue to effectively implement the ICAO critical elements (CEs) and ensure our oversight structure is appropriate to meet the organisational challenges.

Goal 3: Maintain an effective SSP for Hong Kong, China

Ensure the continued effectiveness and improvement of SSP for Hong Kong, China, including our service providers' Safety Management Systems (SMS).

Goal 4: Maintain a close collaboration at a regional level to enhance safety

Promote safety collaboration with partners in this region and support ICAO's initiatives to raise the regional safety oversight capability.

Goal 5: Encourage the participation in industry safety programmes and safety information sharing networks by Hong Kong industry

Encourage service providers to participate in industry programmes which promotes striving for higher levels of safety to complement regulatory requirements, which is in alignment with GASP's goal for industry to contribute in safety information sharing networks within Hong Kong, China and in the Asia-Pacific Region (APAC), and should further enhance industry's safety risk management capability through more active engagement at the regional and global level.

Goal 6: Ensure Hong Kong, China has the appropriate aviation infrastructure to support safe operations

Ensure Hong Kong, China's aviation infrastructure can continue to support operational needs while complying with relevant safety standards.

SECTION 2. PURPOSE OF HONG KONG AVIATION SAFETY PLAN

This plan is a 5-year master plan containing Hong Kong, China's strategic direction for the management of aviation safety from 2022 to 2026. This plan details safety priorities to be addressed by the Hong Kong Aviation Safety Roadmap in the appendices which outlines the SEIs to achieve the safety goals and targets.

This plan was developed with reference to global and regional safety goals, targets and SEIs to mitigate HRCs in GASP and AP-RASP.

SECTION 3. STRATEGIC APPROACH TO MANAGING AVIATION SAFETY

In line with the ICAO's guidance, this document presents the SEIs derived from the SSP processes, including Hong Kong, China's safety risk management process and safety data collection and processing systems, as well as the work undertaken by service providers in the development and implementation of their SMS. This plan was developed with reference to the ICAO practice and updated by the CAD in coordination with stakeholders. It is updated as required, for example after the new edition of ICAO GASP and AP-RASP are published by the ICAO.

The safety goals and targets of Hong Kong, China for the management of aviation safety and their linkage to GASP and AP-RASP are in Table 1. To lead to the attainment of goals and targets, the SEIs comprising operational, organisational and emerging issues have been developed as elaborated in Section 4.4 and the appendices. The respective indicators to monitor the progress made towards their achievements are presented in Section 5. The relationship between Safety Goals, Targets and Actions are shown in Fig. 1.

***Fig. 1** - Relationship between Safety Goals, Targets and Actions*

Table 1 *- Alignment of Hong Kong's safety goals with global and regional goals in the 2023 – 2025 edition of GASP and AP-RASP*

	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
GASP	Achieve a continuous reduction of operational safety risks	Strengthen safety oversight capabilities	Implement effective SSPs	Increase collaboration at the regional level to enhance safety	Expand the use of industry programmes and safety information sharing networks by service providers	Ensure appropriate infrastructure is available to support safe operations
AP-RASP	I. Reduction in Operational Risks	II. Improvements in Safety Oversight and Compliance	III. Consistent and effective SMS and SSP IV. Data-driven regulatory oversight			V. Enhanced aviation infrastructure
Hong Kong	**Keep Operational Risks low** across all aviation sectors in Hong Kong	Strengthen Hong Kong's **safety oversight capabilities**	Maintain an **effective SSP**	Maintain a **close collaboration at a regional level** to enhance safety	Encourage the participation in **industry safety programmes** and safety information sharing networks by Hong Kong industry	Ensure Hong Kong has the **appropriate aviation infrastructure** to support safe operations
	SEI : A1 Target : T1.1-1.5	SEI : B2 Target : T2.1-2.5	SEI : B3 Target : T3.1-3.2 (Note : *SSP was fully implemented in HK, China in 2017*)	SEI : B4 Target : T4.1-4.3	SEI : B5 Target : T5.1-5.4	SEI : B6 Target : T6.1
						

SECTION 4. HONG KONG SAFETY PERFORMANCE

4.1 Safety Performance Overview

According to the ICAO, the global and regional HRCs were the leading causes of fatality risks and hull losses. CAD has closely monitored operational safety issues (OPS) relevant to Hong Kong, China, occurrence reports and global/regional HRCs as possible precursors.

4.2 Operational Performance

Accidents and Serious Incidents are occurrences meeting the respective criteria in the ICAO Annex 13 - Aircraft Accident and Incident Investigation. Reports of those occurrences are published in https://www.tlb.gov.hk/aaia/eng/investigation_reports/index.html. To align with the methodology of ICAO safety reports as far as possible, statistics of large aircraft with maximum takeoff weight above 5,700 kg are shown in Table 2 & 3 below.

Table 2 *- Summary of accidents and serious incidents occurred in Hong Kong, China – large aircraft*

Year	Accident in HK, China		Serious Incidents in HK, China
	Fatal	Non-fatal	
i) Commercial air transport occurrences in Hong Kong, China			
2020 @	0	0	1
2021 @	0	0	1
2022 @	0	0	0
ii) General aviation aircraft occurrences in Hong Kong, China			
2020 @	0	0	0
2021 @	0	0	0
2022 @	0	0	0

Table 3 *- Summary of accidents and serious incidents involving Hong Kong registered aircraft – large aircraft*

Year	Accident of HK registered aircraft		Serious incidents of HK aircraft
	Fatal	Non-fatal	
i) Occurrences involving commercial air transport aircraft registered in Hong Kong, China			
2020 @	0	0	1
2021 @	0	0	0
2022 @	0	0	0
ii) Occurrences involving general aviation aircraft registered in Hong Kong, China			
2020 @	0	0	0
2021 @	0	0	0
2022 @	0	0	0

@ Global Covid-19 pandemic caused a prolonged decline in air traffic since 2020, which was slowed down to about 30% of pre-pandemic level in 2022.

From Table 2 & 3, there was zero fatal accident between 2020 and 2022 in large aircraft operations, and nil occurrence in the ICAO HRC categories.

With rare cases of fatalities and low number of Accidents / Serious Incidents, safety risks of the aviation system remained low. Despite low number of HRCs identified from the safety data collection and processing systems, the aviation authorities and industries stayed vigilant and proactively managed safety occurrences or events as identified from mandatory/voluntary reporting submitted to CAD or AAIA, accident and incident investigations, safety oversight or safety management activities related to ICAO's SSP/SMS frameworks. Safety priorities developed from the review of operational performance are in Section 4.4.

4.3 Other Safety Performance

In addition to monitoring OPS issues, Hong Kong, China also monitors organisational issues (ORG) as part of the implementation of SSP of Hong Kong, China. Those issue are given priority since they are aimed at enhancing and strengthening safety oversight capabilities and the management of aviation safety at the high level.

The ICAO has prescribed eight CEs to States/Administrations' aviation safety oversight system and implements the USOAP CMA scheme to assess the States' safety oversight capability through measuring the EI scores on all fronts.

Hong Kong, China is committed to the effective implementation of CEs, as part of its overall safety oversight responsibilities, which emphasise the commitment to safety in respect of its aviation activities. The CEs are presented in Fig. 2. The EI scores of Hong Kong, China against the global and regional scores are shown in Table 4.

***Fig. 2** - ICAO's CEs of a State's Safety Oversight System*

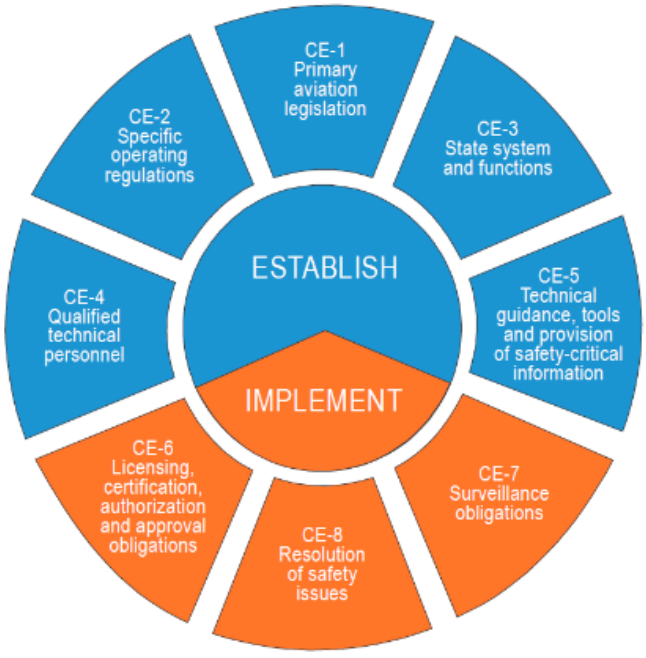


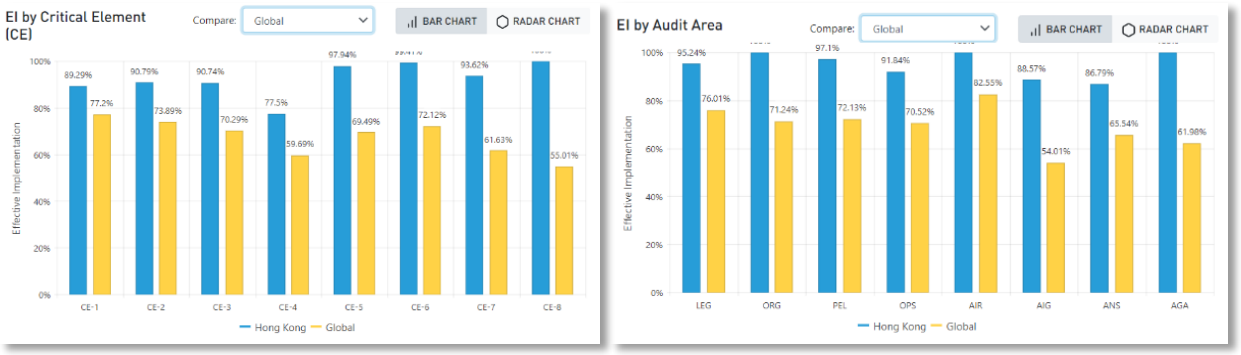
Table 4 *- ICAO USOAP CMA EI scores (as of 30 Mar 2022) (https://soa.icao.int/USOAP/CMAOnline/StateProfileDashboard.aspx)*

	Overall EI	EI score by CE #							
		CE-1	**CE-2**	**CE-3**	**CE-4**	**CE-5**	**CE-6**	**CE-7**	**CE-8**
HK	94.4%	89.29%	90.79%	90.74%	77.5%	97.94%	99.41%	93.62%	100%
APAC	64.4%	69.97%	67.6%	64.15%	51.59%	63.51%	72.25%	58.55%	50.6%
Global	67.5%	77.2%	73.89%	70.29%	59.69%	69.49%	72.12%	61.63%	55.01%
	Overall EI	**EI score by audit area ***							
		LEG	**ORG**	**PEL**	**OPS**	**AIR**	**AIG**	**ANS**	**AGA**
HK	94.4%	95.24%	100%	97.10%	91.84%	100%	88.57%	86.79%	100%
APAC	64.4%	67.71%	62.35%	66.27%	65.99%	77.81%	47.71%	63.46%	60.47%
Global	67.5%	76.01%	71.24%	72.13%	70.52%	82.55%	54.01%	65.54%	61.98%

\# Eight CEs are: Primary aviation legislation (CE-1), Specific operating regulations (CE-2), State system and functions (CE-3), Qualified technical personnel (CE-4), Technical guidance, tools and provision of safety-critical information (CE-5), Licensing, certification, authorisation and approval obligations (CE-6), Surveillance obligations (CE-7), Resolution of safety issues (CE-8) *(Source : ICAO Annex 19)*

* Eight audit areas are: primary aviation legislation and specific operating regulations (LEG), civil aviation organisation (ORG); personnel licensing and training (PEL); aircraft operations (OPS); airworthiness of aircraft (AIR); aircraft accident and incident investigation (AIG); air navigation services (ANS); and aerodromes and ground aids (AGA).

The snapshot in ICAO CMA Website in March 2022 is shown below :-



ORG issues are those that do not fall into the OPS category, such as systemic issues which may impact the effectiveness of safety risk controls, or emerging issues (ERG) arising from new concepts of operations or technologies that might impact safety in the future but has insufficient data for data-driven analysis. Similar to OPS, ORG or ERG issues may be identified from USOAP data, or other safety data developed from the SSP of Hong Kong, China. These issues may be organisational in nature and relate to challenges associated with the conduct of States' safety oversight functions or implementation of SSP/SMS, as well as safety issues in the ICAO GASP and AP-RASP, or other sources developed from the Regional Aviation Safety Group Asia and Pacific Regions (RASG-APAC) governance. Safety priorities relating to organisational or emerging issues are in Section 4.4.

4.4 Safety and Strategic Priorities

Past data showed a good safety performance of Hong Kong's aviation system, owing to the concerted efforts by the industry and regulators on proactive safety management of incidents, lower risk occurrences and emerging issues. Although the probability of region/global HRCs was low, they were included in the Hong Kong Aviation Safety Roadmaps in the appendices, which include the following safety priorities monitored by the SSP of Hong Kong, China :

a) Small aircraft flying activities [**OPS**]

Domestic flying activities are low, and access for private flying was limited by the COVID-19 pandemic. Nonetheless, the flying club has enhanced operational and training standards, SMS and safety culture. Effectiveness of actions will be reviewed after flying activities resume. (HK SEI A1.5.2)

b) Runway safety [**OPS / ERG**]

To mitigate runway incursion risks, safety enhancement actions were taken which included collaborations with air operators to address the issue of prolonged runway occupancy, and fine-tuning of Advanced Surface Movement Guidance and Control System (A-SMGCS) to provide timely alerts to air traffic controllers when the runway was still occupied. Effectiveness of actions will be reviewed as traffic resumed to the pre-pandemic level. [**OPS**] (HK SEI A1.4.7)

In 2016, the aerodrome operator embarked on the expansion and development projects at the HKIA including the construction of a new runway. The projects were planned for completion in 2024. Apart from compliance with regulatory and ICAO requirements, risk management principles have been adopted by the aerodrome operator, CAD and HKO in various ATM/CNS/MET enhancement plans and will continue to do so until completion of projects. [**ERG**] (HK SEI B6.1-3)

c) Oversight on small unmanned aircraft operations [**OPS/ERG**]

With a view to safeguarding public safety while accommodating technological development and diversified uses of small unmanned aircraft (SUA), the new Small Unmanned Aircraft Order (Cap. 448G) was enacted in 2021. Risk-based approach was adopted based on weight of small unmanned aircraft and operational risk level. The implementation of new requirements since December 2022 such as registration and labelling of SUA, registration of remote pilots, training and assessment, equipment, operating requirements and insurance, etc. and related publicity campaigns are launched by the CAD. (HK SEI B2.2)

At the same time, the Airport Authority Hong Kong (AAHK) continues to maintain unmanned aircraft detection capability at the HKIA. (HK SEI A1.3.4)

d) COVID-19 pandemic and recovery operations [**ERG/OPS**]

The global COVID-19 pandemic has posed an unprecedented impact and disruption to air traffic. Changes have been proactively managed under the SSP/NASP of Hong Kong, China, and safety risks were holistically reviewed in line with the global and regional practices. Ongoing actions have been adopted post pandemic to mitigate potential risks of:-

- Decrease in proficiency of air traffic controllers and flight crew (HK SEI A1.5.3)
- AOC holders' "Return-to-normal" operations, (HK SEI A1.5.4), and
- Increase in new/infrequent operators driven by increase in demand for cargo capacity. (HK SEI A1.5.5)

e) Safety collaboration amongst key stakeholders for ongoing SSP implementation [**OPS/ORG**]

Enhance safety information exchange between CAD and industry to strengthen the continuous monitoring of safety performance as follows:-

- Conduct a study with industry to align Safety Performance Indications (SPIs) with ICAO practices for monitoring trends of global/regional HRCs, or tracking precursors to facilitate safety benchmarking. (HK SEI A1.5.6)
- Enhance safety information exchange between CAD and service providers to strengthen the capability of developing actionable insights or safety intelligence, as well as benchmarking and improvements of safety performance (HK SEI B3.2.1)

f) Enhance safety culture/just culture in Hong Kong's aviation system [**ORG**]

Identify areas for improvement as follows:-

- Conduct a study on safety/just culture with SMS service providers, e.g. promotion of a positive culture, identify potential areas for improvement (HK SEI B3.2.2)
- Promote voluntary reporting systems with a view to enhancing awareness on those systems (HK SEI B3.2.3)

SECTION 5. HONG KONG AVIATION SAFETY ROADMAP

In line with GASP and AP-RASP practices, aviation safety roadmaps comprise SEIs which may be derived from lessons learned from operational occurrences and from a data-driven approach. These SEIs may include actions such as rule-making, policy development, targeted safety oversight activities, safety data analysis or safety promotion.

Table 5 shows the Hong Kong aviation safety goals and the respective SPIs and Targets established for 2022-2026, whereas Table 6 gives an overview of actions needed to achieve the safety goals. Action plans for the ongoing maintenance of low operational safety risks are outlined in the OPS roadmap in Appendix A, and actions associated with the enhancement of safety oversight capabilities and ongoing improvement of the SSP of Hong Kong, China are in the ORG roadmap in Appendix B.

***Table 5** – Hong Kong, China's Safety Goals, Safety Performance Indicator and Targets, 2022-2026*

	Hong Kong Target	Target (Indicator / threshold)	Indicators / Metrics	ICAO Ref. No.
Goal 1: Keep operational risks low across all aviation sectors in HK	1.1	Maintain accident rate of non-HK registered large aircraft in HK territory below the pre-defined threshold.	Accident rates	G1 T1.1
	1.2	Maintain accident rate of HK registered large aircraft below the pre-defined threshold.	Accident rates	G1 T1.1
	1.3	Maintain accident rate of small aircraft below the pre-defined threshold.	Accident rates	G1 T1.1
	1.4	Maintain occurrence rate of high-risk categories (HRC) accident or serious Incident in CAT Category below the pre-defined threshold.	Measured in safety reviews	G1 T1.1, AP T1*-T3*
	1.5	Proactive safety management actions not covered in **Goal 1.1-1.4**	Presence of actions in safety reviews	N/A
Goal 2: Strengthen HK's safety oversight capabilities	2.1	ICAO CMA audit result - EI Score or self-assessment PQ score above 90%.	EI score in USOAP CMA	G 2 AP T10*, T15*-18*
	2.2	Differences filed to the ICAO below 5%.	% of differences in ICAO CMA	G 2, AP T17*-T18*
	2.3	No significant safety findings on Hong Kong, China or our airlines by ICAO, FAA or EU.	No. of significant findings	G 2 AP T8*
	2.4	Adequate human resources in safety regulatory offices – No office had vacancy below the pre-defined threshold.	Measured in safety reviews	G 2
	2.5	More than 80% of safety personnel has completed SSP/SMS training.	% completion of training	G 2
Goal 3: Maintain an effective SSP	3.1	Develop the NASP for Hong Kong, China and issue it to ICAO for publish by 2023.	HK NASP issued to the ICAO	G 3 AP T12*
	3.2	Complete SSP implementation assessments with key authorities by 2024.	% completion on ICAO CMA Website	G 3 AP T11*

	Hong Kong Target	Target (Indicator / threshold)	Indicators / Metrics	ICAO Ref. No.
Goal 4: Maintain a close collaboration at a regional level to enhance safety	4.1	Continuous representation at ICAO APAC RASG-APAC and APRAST.	Continuous attendance of meetings	AP T5
	4.2	Continuous response to ICAO correspondences in a timely manner.	Continuous response to ICAO correspondence in a timely manner	G 4 AP T6*, AP T13
	4.3	Periodic review on the development of AP-RASP's target for aircraft heavier than 27,000kg to participate in flight data sharing initiatives and share the information with HK operators to consider participation.	Periodic check on RASG's development (at least one check by 2026)	AP T14*
Goal 5: Encourage the participation in industry safety programmes and safety information sharing networks by HK industry	5.1	HKIA's voluntary participation in ACI Airport Excellence programmes (as reviewers of other aerodromes).	Participation of HKIA in the ACI programmes	G5 T5.1
	5.2	ANSP's voluntary participation in CANSO programmes.	Participation of ANSP in CANSO activities	G5 T5.1
	5.3	Positive number of HK AOC holders and ground handling agents voluntarily participated in IATA Operational Safety Audit and Safety Audit for Ground Operations schemes.	Participation of HK AOC holders & ground handling agents in IATA Schemes	G5 T5.1 AP T9*
	5.4	Review ICAO's development on "globally harmonised metrics"[4] with service providers to incorporate those metrics in their SPIs as appropriate.	Periodic SPI review with service providers against ICAO guidance if available (at least one check by 2026)	G5 T5.1
Goal 6: Ensure HK has appropriate aviation infrastructure to support safe operations	6.1	Provision of new/enhanced aviation infrastructure to support safe operations of HKIA under Three-runway System (3RS).	Completion of 3RS of HKIA by 2024	G6 T6.1

ICAO Ref. # : G – GASP Goals ; T - GASP Targets ; AP T - AP-RASP Targets

*** :** AP-RASP's Actions and Targets suggested by APRAST for inclusion in NASPs.

(For details on SEI, please refer to Table 6, Appendices A and B)

[4] Example of ICAO SPI guidance (https://www.icao.int/safety/Pages/Indicator-Catalogue.aspx)

Table 6 – Overview of safety actions to achieve the safety goals of Hong Kong, China, 2022-2026

Goal	Target	Safety Enhancement Initiative (SEI)	Critical Element
Operational Roadmap			
1. Keep Operational Risks low across all aviation sectors in Hong Kong	1.1 - 1.4	Mitigate contributing factors to CFIT accidents and incidents.	CE-2, CE-5, CE-7
		Mitigate contributing factors to LOC-I accidents and incidents.	
		Mitigate contributing factors to MAC accidents and incidents.	
		Mitigate contributing factors to Runway Safety accidents and incidents (i.e. RE, RI, and ARC).	
	1.5	Proactive safety management actions e.g. monitoring of aviation occurrences or precursor events not covered in **Goal 1.1-1.4** or management of external risks.	
Organisational Roadmap			
2. Strengthen Hong Kong's safety oversight capabilities	2.1 – 2.3	Ensure Hong Kong's aviation safety standards and/or safety oversight capabilities are in line with ICAO Standards and Recommended Practices and leading aviation authorities' practices wherever possible and applicable to Hong Kong's aviation environment.	CE-1, CE-2, CE-7
	1.5	Maintain ongoing surveillance of aviation industry to assure compliance with regulatory requirements, and application of risk-based/performance-based data-driven regulatory approach to monitor aviation safety performance and new/emerging threats.	CE-2, CE-4, CE-5, CE-6, CE-7
	2.4 - 2.5	Ensure sufficiency of trained human resources for safety oversight and safety management.	CE-4
3. Maintain an effective SSP	3.1	Enhance collaboration with key aviation stakeholders to support ongoing SSP implementation.	CE-3, CE-5
	3.2	Ensure the continuous improvement of Hong Kong's SSP and the associated governance.	CE-3
4. Maintain a close collaboration at a regional level	4.1	Strengthen Hong Kong's role and engagement in ICAO APAC safety forums.	N/A
	4.2 - 4.3	Continue to respond to ICAO's correspondence in a timely manner, contribute information on operational risks, SPIs and emerging issues when required to RASG-APAC and align with safety priorities in ICAO GASP and AP-RASP.	N/A
5. Encourage the participation in industry safety programmes and safety information sharing networks by HK industry	5.1 - 5.4	Encourage industry participation in ICAO, IATA, ACI, CANSO or other leading industry safety programmes and review of ICAO's "globally harmonised metrics".	CE-7
6. Ensure Hong Kong has the appropriate aviation infrastructure to support safe operations	6.1	Ensure Hong Kong, China has the appropriate air navigation service infrastructure to support safe operations of HKIA under 3RS.	N/A
	6.1	Ensure Hong Kong, China has the appropriate aerodrome infrastructure to support safe operations of HKIA under 3RS.	N/A
	6.1	Ensure Hong Kong, China has the appropriate meteorological infrastructure to support safe operations of HKIA under 3RS.	N/A

SECTION 6. MONITORING IMPLEMENTATION

Hong Kong, China will continuously monitor the implementation of the SEIs listed in the Hong Kong Safety Roadmaps in the appendices, and periodically measure safety performance of our civil aviation system, to ensure the intended results are achieved. The indicators listed in Section 5 of this plan will be used to measure safety performance of the civil aviation system and monitor each safety target. Progress made in achieving the safety goals and targets will be shared with key stakeholders to review effectiveness of actions or fine-tune as needed.

In addition to the above, the NASP of Hong Kong, China will be reviewed regularly to keep the identified operational safety risks, safety issues and selected SEIs updated and relevant. In the event that the safety goals and targets are not met, the root causes will be analysed. If critical operational safety risks are identified, reasonable measures will be taken to mitigate them as soon as practicable, and ad hoc update of the plan may be arranged.

A standardised approach will be adopted to provide information at the regional level for reporting to the RASG-APAC. This allows the region to receive information and assess operational safety risks using common methodologies.

Any questions regarding this plan and its initiatives and further requests for information may be addressed to the following:

Strategic Safety Office

Civil Aviation Department Headquarters
1 Tung Fai Road, Hong Kong International Airport
Lantau, Hong Kong

E-mail: sso@cad.gov.hk

Website: https://www.cad.gov.hk

Appendix A – Hong Kong Operational Safety Roadmap

1. Keep Operational Risks low across all aviation sectors in Hong Kong, China

HK SEI A1.1	**Mitigate contributing factors to CFIT accidents and incidents.**			
Action ID	Action	Completion	Lead	Stakeholders
HK A1.1.1	Engage HK's industry in the ongoing implementation of APRAST's SEIs for CFIT risks and update APRAST's SEI monitoring tools.	Ongoing	CAD	• HK AOC Holders • ATMD
HK A1.1.2	Continue to review and optimise the Minimum Safe Altitude Warning as per established practice in an on-going manner for mitigating CFITs while minimising nuisance alerts.	Ongoing	CAD	• ATMD • AESD
HK A1.1.3	Enhance the use and monitoring of harmonised flight operations SPIs amongst Hong Kong AOC holders in mitigating contributing factors to CFIT risks.	Ongoing	CAD	• HK AOC Holders
HK A1.1.4	Enhance safety promotion to ensure adherence to Terrain Avoidance Warning Systems (TAWS) warning procedures.	Ongoing	CAD	• HK AOC Holders
HK A1.1.5	Enable TAWS installed on HK AOC aircraft to meet the latest standard of ICAO Annex 6 Part I.	Ongoing	CAD	• HK AOC Holders
HK A1.1.6	Continue to implement the Approach/Departure Path Monitor in HK Air Traffic Management System which provides air traffic controllers with an audio and visual warning when an arrival or departure aircraft deviates off the defined final approach path or the SID path.	Ongoing	CAD	• ATMD
Goal(s) / Target(s) /	HK G1 / T1.1, T1.2, T1.3, T1.4, T1.5 / GASP G1 / T1.1 / AP-RASP GI/ T1*[5], T4* /			

[5] APAC Targets marked with "*" are those suggested by AP-RASP for inclusion in NASP.

HK SEI A1.2	**Mitigate contributing factors to LOC-I accidents and incidents.**			
Action ID	Action	Completion	Lead	Stakeholders
HK A1.2.1	Engage HK's industry in the ongoing implementation of APRAST's SEIs for LOC-I risks and update APRAST's SEI monitoring tools.	Ongoing	CAD	• HK AOC Holders
HK A1.2.2	Enhance the use and monitoring of harmonised flight operations SPIs amongst Hong Kong AOC holders in mitigating contributing factors to LOC-I risks.	Ongoing	CAD	• HK AOC Holders
HK A1.2.3	Promote the effective implementation of latest Upset Prevention and Recovery Training (UPRT) training standards for flight crew.	Ongoing	CAD	• HK AOC Holders
Goal(s) / Target(s) /	HK G1 / T1.1, T1.2, T1.3, T1.4, T1.5 / GASP G1 / T1.1 / AP-RASP GI/ T1*, T2*, T4* /			

HK SEI A1.3	**Mitigate contributing factors to MAC accidents and incidents.**			
Action ID	Action	Completion	Lead	Stakeholders
HK A1.3.1	Enhance the use and monitoring of harmonised flight operations SPIs amongst Hong Kong AOC holders in mitigating contributing factors to MAC risks.	Ongoing	CAD	• HK AOC Holders
HK A1.3.2	Promote the use of updated versions of Airborne Collision Avoidance Systems (ACAS) and adherence to ACAS warning procedures.	Ongoing	CAD	• HK AOC Holders
HK A1.3.3	Enable the ACAS installed on HK AOC aircraft to be equipped with the latest version accepted by ICAO.	Ongoing	CAD	• HK AOC Holders
HK A1.3.4	Adopt the established mechanism of unmanned aircraft threat assessment and continue to maintain the unmanned aircraft detection capability at HKIA.	Ongoing	AAHK	• CAD • Air operators
Goal(s) / Target(s) /	HK G1 / T1.1, T1.2, T1.3, T1.4, T1.5 / GASP G1 / T1.1 / AP-RASP GI/ T1*, T4*/ *(Nil APRAST SEI for MAC. CAD will check and update the APRAST's monitoring tools for MAC when needed)*			

HK SEI A1.4	**Mitigate contributing factors to RS accidents and incidents.**			
Action ID	Action	Completion	Lead	Stakeholders
HK A1.4.1	Engage HK's industry in the ongoing implementation of APRAST's SEIs for RS risks and update APRAST's SEI monitoring tools.	Ongoing	CAD	• ATMD • HK AOC Holders
HK A1.4.2	Enhance the use and monitoring of harmonised flight operations SPIs amongst Hong Kong AOC holders in mitigating contributing factors to RS risks.	Ongoing	CAD	• HK AOC Holders
HK A1.4.3	Encourage expanded use of technologies (e.g. Head-up Display (HUD), Enhanced Vision (EVS) etc.) for enhancing flight crew situational awareness near runways.	Ongoing	CAD	• HK AOC Holders
HK A1.4.4	Establish the provision and timeline for applicable HK aircraft to be equipped with Runway Overrun Awareness and Alerting System (ROAAS) according to ICAO's mandate.	2023	CAD	• HK AOC Holders
HK A1.4.5	Continue Runway Safety Team activities and engage stakeholders in risk reviews.	Ongoing	AAHK	• HKIA Runway Safety Team
HK A1.4.6	Continue review of HKIA's risk management actions of aerodrome occurrences or precursor events (e.g. RI, foreign object debris, runway friction, aerodrome facilities availability) with the airport community.	Ongoing	AAHK	• CAD • Airport community
HK A1.4.7	Monitor effectiveness of SEIs for RI risks[#] as traffic resumed to the pre-pandemic level. *# - Collaborations with operators to address prolonged runway occupancy and fine-tuning of A-SMGCS to provide timely alerts to air traffic controllers.*	2024	CAD	• ATMD • AESD
Goal(s) / Target(s) /	HK G1 / T1.1, T1.2, T1.3, T1.4, T1.5 / GASP G1 / T1.1 / AP-RASP GI/ T1*, T3*, T4* /			

HK SEI A1.5	**Proactive safety management actions.**			
Action ID	Action	Completion	Lead	Stakeholders
HK A1.5.1	Proactive monitoring of aviation occurrences or precursor events other than those in **Goal 1.1-1.4** (e.g. GPWS, IFSD, fleet age, foreign object debris, CNS degradation/failure).	Ongoing	CAD	• CAD • Industry
HK A1.5.2	Review effectiveness of enhancement actions for small aircraft flying activities by the flying club, which relate to enhanced operational and training standards, SMS, safety culture etc., when flying resume after COVID-19.	2024	CAD	• HK Aviation Club
HK A1.5.3	Monitor risk mitigating actions by AOC holders and ATMD to address the decrease in proficiency of :- • Flight crew due to a lack of flying, or • Air traffic controllers due to insufficient exposure to high density air traffic before the COVID-19 pandemic.	2024	CAD	• HK AOC Holders • ATMD
HK A1.5.4	Monitor AOC holders' safe "Return-to-normal" operations during recovery from COVID-19, e.g. implementation of guidance for ensuring airworthiness of aircraft after long term parking, operational readiness through AOC holder resumption plan, etc.	2024	CAD	• HK AOC Holders
HK A1.5.5	Manage external risks with a risk-based approach & enhanced surveillance on new/infrequent operators.	2024	CAD	• Air operator
HK A1.5.6	Conduct a study with industry on the appropriateness to align SPIs with ICAO practices for monitoring trends of global / regional HRCs, or tracking precursor events, to facilitate safety benchmarking.	2026	CAD	• CAD • Industry
HK A1.5.7	Review the incident classification of Loss of Separation and RI incidents against international practice.	2025	CAD	• CAD
Goal(s) / Target(s) /	HK G1, 2.3 / T1.1, T1.2, T1.3, T1.4, T1.5 / GASP G4, G5 / T4.3, T5.1 / AP-RASP GIV/ T13 /			

Appendix B – Hong Kong Organisational Roadmap

HK SEI B2	**Strengthen Hong Kong's safety oversight capabilities.**			
Action ID	Action	Completion	Lead	Stakeholders
HK B2.1	Conduct periodic self-assessment of ICAO compliance checklist and PQ and note APAC targets on AGA & AIG's EI scores & related targets.	Ongoing	• CAD • HKO • AAIA	• CAD • HKO • AAIA
HK B2.2	Enhance oversight of small unmanned aircraft (SUA) by enacting new regulations, implementing new requirements and PR campaign to raise public awareness of drone safety.	2025	CAD	• CAD • SUA operators
HK B2.3	Continue the periodic review of human resources and training needs, conduct recruitment exercises and provide training as required.	Ongoing	• CAD • AAIA • HKO	• CAD • AAIA • HKO
Goal(s) / Target(s) /	HK G2 / T2.1, T2.2, T2.3, T2.4, T2.5 / GASP G2 / T2.1 / AP-RASP GII/ T10*, T15*, T16*, T17*, T18* /			

HK SEI B3	**Maintain an effective SSP.**			
Action ID	Action	Completion	Lead	Stakeholders
HK B3.1.1	Develop the Hong Kong Aviation Safety Plan in alignment with the ICAO format and issue to ICAO for publication on ICAO NASP website.	2023	CAD	• CAD • HKO • AAIA • AAHK
HK B3.1.2	Review Hong Kong's safety policies against ICAO's SSP PQs' maturity level, and outline actions needed to achieve a present and effective maturity level.	2024	CAD AAIA	• CAD • AAIA
HK B3.1.3	Replace CAD's aviation safety occurrence reporting system and enhance the collection, monitoring and analysis of reports and risk management capabilities.	2024	CAD	• CAD • Industry
HK B3.2.1	Enhance safety information sharing between CAD and industry to strengthen the capability of developing actionable insights, as well as benchmarking and improvement of safety performance.	2026	CAD	• CAD • Service providers required to have an SMS
HK B3.2.2	Conduct a study on safety/just culture with SMS service providers, e.g. promotion of a positive culture, identify potential areas for improvement.	2026	CAD	• CAD • Service providers required to have an SMS
HK B3.2.3	Promote voluntary reporting systems to industry.	2026	• CAD • AAIA	• CAD • AAIA • Service providers required to have an SMS
Goal(s) / Target(s) /	HK G3 / T3.1, T3.2 / GASP G3 / T3.1, T3.2, T3.3 / AP-RASP GIII/ T11*, T12* /			

HK SEI B4	**Maintain a close collaboration at a regional level.**			
Action ID	Action	Completion	Lead	Stakeholders
HK B4.1.1	Continue to attend ICAO APAC meetings, take up leadership roles to support APAC members to meet AP-RASP requirements and regional priorities.	Ongoing	CAD	• CAD • HKO • AAIA • Industry
HK B4.2.1	Continue to respond to ICAO's request addressed to the official HKCAD email in a timely manner :- i) Request for reply through State Letter, ii) RASG-APAC's request for contribution of information on operational risks, SPIs and emerging issues, or regional mechanism developed for data collection, analysis and sharing, or iii) Progress update on alignment with global and regional priorities under GASP and AP-RASP.	Ongoing	CAD	• CAD • AAIA • HKO
HK B4.3.1	Support AP-RASP's target to pursue a 50% increase in participation in flight data sharing initiatives by air operators, with aircraft of mass 27,000kg above to participate in flight data sharing initiatives.	Ongoing	CAD	• CAD • HK AOC holders
Goal(s) / Target(s) /	HK G4 / T4.1, T4.2, T4.3 / GASP G4 / T4.3 / AP-RASP G I & G IV / T5, T13, T14* /			

HK SEI B5	**Encourage the participation in industry safety programmes and safety information sharing networks by HK industry**			
Action ID	Action	Completion	Lead	Stakeholders
HK B5.1.1	Establish a baseline for current level of participation of industry programme by industry.	2023	CAD	Industry
HK B5.1.2	Engage the industry in reviewing and updating the targets, and how those programmes may be used to inform regulatory oversight.	2026	CAD	Industry
HK B5.1.3	Refer to details in **SEI** Action A1.5.6 and B4.2.1	Ongoing	CAD	Industry
Goal(s) / Target(s) /	HK G5 / T5.1, T5.2, T5.3, T5.4 / GASP G5 / T5.1 / AP-RASP G II / T9* /			

HK SEI B6	**Ensure HK has the appropriate aviation infrastructure to support safe operations.**			
Action ID	Action	Completion	Lead	Stakeholders
HK B6.1	Ensure Hong Kong, China has the appropriate air navigation service infrastructure to support safe operations of HKIA under 3RS.	2024	CAD	Industry
HK B6.2	Ensure Hong Kong, China has the appropriate aerodrome infrastructure to support safe operations of HKIA under 3RS.	2024	AAHK	CAD
HK B6.3	Ensure Hong Kong, China has the appropriate meteorological infrastructure to support safe operations of HKIA under 3RS.	2024	HKO	CAD
Goal(s) / Target(s) /	HK G6 / T6.1 / GASP G6 / T6.1 / AP-RASP G V/ T17* /			

Abbreviations

3RS	Three-Runway System
AAHK	Airport Authority Hong Kong
AAIA	Air Accident Investigation Authority
ACI	Airport Council International
AESD	Air Traffic Engineering Services Division of CAD
ANSP	Air Navigation Service Provider
APAC	Asia-Pacific Region
AP-RASP	Asia-Pacific Regional Aviation Safety Plan
APRAST	Asia Pacific Regional Aviation Safety Team
ARC	Abnormal Runway Contact #
AOC	Air Operator's Certificate
ATM	Air Traffic Management
ATMD	Air Traffic Management Division of CAD
CAD	Civil Aviation Department of Hong Kong, China
CANSO	Civil Air Navigation Services Organisation
CFIT	Controlled Flight into or toward Terrain #
CMA	Continuous Monitoring Approach
CNS	Communications, Navigation and Surveillance
EI	Effective Implementation
GASP	Global Aviation Safety Plan
HK	Hong Kong, China
HKIA	Hong Kong International Airport
HKO	Hong Kong Observatory
HRC	High-Risk Categories of Occurrence
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
LOC-I	Loss of Control In-flight #
MAC	Mid-air Collisions #
MET	Meteorological
NASP	National Aviation Safety Plan
RASG-APAC	Regional Aviation Safety Group Asia and Pacific Regions
RE	Runway Excursion #
RI	Runway Incursion #
RS	Runway Safety [i.e. RE, RI and ARC] #
SEI	Safety Enhancement Initiative
SMS	Safety Management System
SPI	Safety Performance Indicator
SSP	State Safety Programme
USOAP	Universal Safety Oversight Audit Programme

- Occurrences which are ICAO global/regional HRCs