Kuwait DGCA Journey to Implement SSP

An overview of the steps taken to implement and enhance the State Safety Programme (SSP) **Kuwait DGCA**

Fifth MID Region Safety Summit

(Kuwait, 26-28 November 2024)

KUWAIT

Presented by: Engr. Hussam Al Rasheed

Introduction

Welcome to our presentation on the Kuwait DGCA's journey toward an effective State Safety Program (SSP) implementation. This session showcases our key achievements, highlighting the impactful improvements and strategic steps we've taken to elevate aviation safety standards. Our ongoing efforts have laid a strong foundation for a sustainable and robust SSP framework.

Kuwait DGCA Journey

1. Understanding the Need for SSP and ICAO requirements.
2. Initial Gap Analysis and Action Plan.
3. Building the SSP Framework.
4. Stakeholder Engagement and Collaboration.
5. Capacity Building and Training.
6. Developing a Safety Reporting System.
7. Implementing Safety Risk Management (SRM).

Kuwait DGCA Journey

8. Establishing Safety Assurance Processes.
9. Data Integration and Analysis.
10. Safety Promotion and Culture Building.
11. Regular Review and Continuous Improvement.
12. Implementation and Ongoing Oversight.
13. Reporting and Transparency.

1. Understanding the Need for SSP and ICAO requirements

- Recognize the global, regional and local aviation safety challenges and the need for a structured safety approach.
- We established an SSP foundation of **88%** as per ICAO relevant PQs.
- Emphasize ICAO's requirements and Kuwait DGCA's commitment to enhancing aviation safety.
- Define the objectives of implementing SSP to establish a proactive safety culture.

2. Initial Gap Analysis and Planning

- Conduct a gap analysis to assess existing safety practices and identify areas for improvement.
- Based on the identified gaps, develop a roadmap with clear milestones and timelines.
- Align the SSP implementation plan with Kuwait's national aviation safety objectives.

الطيران المدني
Civil Aviation
State of Kuwait - دولة الكويت

ASD Aviation Safety
إدارة سلامة الطيران Department

ASD SSP Implementation Plan

As of Date 16/01/2024

Origin	Code	Priority	Domain	Task / Question	Action	Owner	Target Date	Completed Date	Statues
ICAO Gap Analysis	1.1-01		SSP	Has [State] established a national aviation legislative framework that addresses the proactive management of safety in the State?	1- Drafting the proposed legislation. 2- Starting the approval process for the concerned government body. (e.g. Parliament, Ministers Council)				Not started
ICAO Gap Analysis	1.2-01		SSP	Has [State] identified the organi that is responsible for coordinat maintenance and implementat the SSP?					
ICAO Gap Analysis	1.2-04		SSP	Does State have an SSP impleme plan in place, which includes the and sequencing of key tasks responsibilities?					
ICAO Gap Analysis	1.2-19		SSP	Has [State] assessed the organiz structure to determine if any ch are needed to support the implementation and maintenar the SSP?					
ICAO Gap Analysis	1.2-05		SSP	Is there a documented statemen the provision of the necessary re for the implementation an maintenance of the SSP?					
ICAO Gap Analysis	1.2-09		SSP	Does the head of organizati responsible for the implementat maintenance of the SSP coordin activities of the different State a organizations under the SS					

Completed
In-Process
Not Started

ASD Safety Priority Plane

As of Date

Origin	Priority	Task / Question	Action/Result	Target Date	New Target Date	Completed Date	status
ICAO Gap Analysis	1- High	Has [State] established a safety policy?	Yes and approved	30/06/2020		30/03/2020	Completed
ICAO Gap Analysis	1- High	Is [State] safety policy endorsed by the State aviation authorities?	Yes, by DGCA President	30/06/2020		30/03/2020	Completed
ICAO Gap Analysis	1- High	Is [State] safety policy reviewed periodically?	yes as stated in SSP Manual	30/06/2020		30/03/2020	Completed
ICAO Gap Analysis	1- High	Is [State] safety policy communicated to the employees in all [State] aviation organizations with the intent that they are made aware of their individual safety responsibilities?	Yes SSP Manual is published online	30/06/2020		30/03/2020	Completed
ICAO Gap Analysis	1- High	Has the SSP documentation been completed, approved and communicated/ made accessible to all stake holders?	Yes	30/06/2020		30/03/2020	Completed
ICAO Gap Analysis	1- High	Does the State periodically review specific operating regulations, guidance material and implementation policies to ensure they remain relevant and appropriate?	Yes, twice a year, statement is in the SSP Manual	30/06/2020		30/03/2020	Completed
ICAO Gap Analysis	1- High	Does the State monitor the safety performance of the service provider?	Yes	30/06/2020		30/03/2020	Completed
ICAO Gap Analysis	1- High	Have the international general aviation (IGA) operators implemented SMS in accordance with Annex 19?	we don't have General aviation (not applicable)	30/06/2020		30/03/2020	Completed
ICAO Gap Analysis	1- High	Have all the approved training organizations in the State, in accordance with Annex 1, implemented SMS?	YES	30/06/2020		30/04/2020	Completed
ICAO Gap Analysis	1- High	Has the State promulgated harmonised regulations to require service providers to implement a SMS?	Yes KCASR 19 and they New updated KCASR 19 Part 1	01/09/2021			Completed
ICAO Gap Analysis	1- High	Has the State provided guidance to the industry on the initial review and acceptance of a service provider s SMS?	yes new KCASR 19 -Part 1, Includes GMs and AMCs	01/09/2021			Completed
ASD	1- High	Communicate with ICAO-MID to request for ICVM Audit	We communicated with ICAO-MID	10/06/2023		07/06/2023	Completed
ICAO Gap Analysis	1- High	Does the head of organization responsible for the implementation and maintenance of the SSP coordinate the activities of the different State aviation organizations under the SSP?	AIG Established	01/11/2023		01/10/2023	Completed
ASD	1- High	Communicate with ICAO-MID to confirm acceptance of cost recovery	We communicated the acceptance of the cost recovery to ICAO-MID	12/06/2023		08/06/2023	Completed
ASD	1- High	ICAO-MID Requested to at least have 75% of our Open PQs closed before accepting the ICVM	New tasks created for AIG, AGA and ANS to complete there PQs	15/07/20			
ASD	1- High	NASP Issue 2 (using the 8 Phases)	Edit or create a new document referencing RASP and				
ASD	1- High	Amend regulation as recommended by Capt. Eric for AIG	Regulation Amendment t				
ICAO Gap	1- High	Does State have an SSP implementation plan in place, which includes the timing and sequencing of key tasks and responsibilities?					

3. Building the SSP Framework

- Develop a robust framework with policies, processes, and procedures per our complexity to SSP needs.
- Establish foundational elements such as safety objectives, policies, and performance indicators.
- Ensure compliance with ICAO's four pillars of SSP: Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion.

4. Stakeholder Engagement and Collaboration

- Identify key stakeholders within and outside the DGCA, including airlines, Kuwait Airport, ANSP and GH.
- Engage stakeholders through regular workshops, training sessions, and consultations.
- Build a collaborative environment to foster a shared commitment to safety goals.

5. Capacity Building and Training

- Invest in training for DGCA personnel and stakeholders to ensure understanding of SSP principles.
- Develop skill sets for effective safety data collection, analysis, and risk management.
- Conduct several workshops on safety risk management and safety assurance techniques with ICAO Med.

Competence

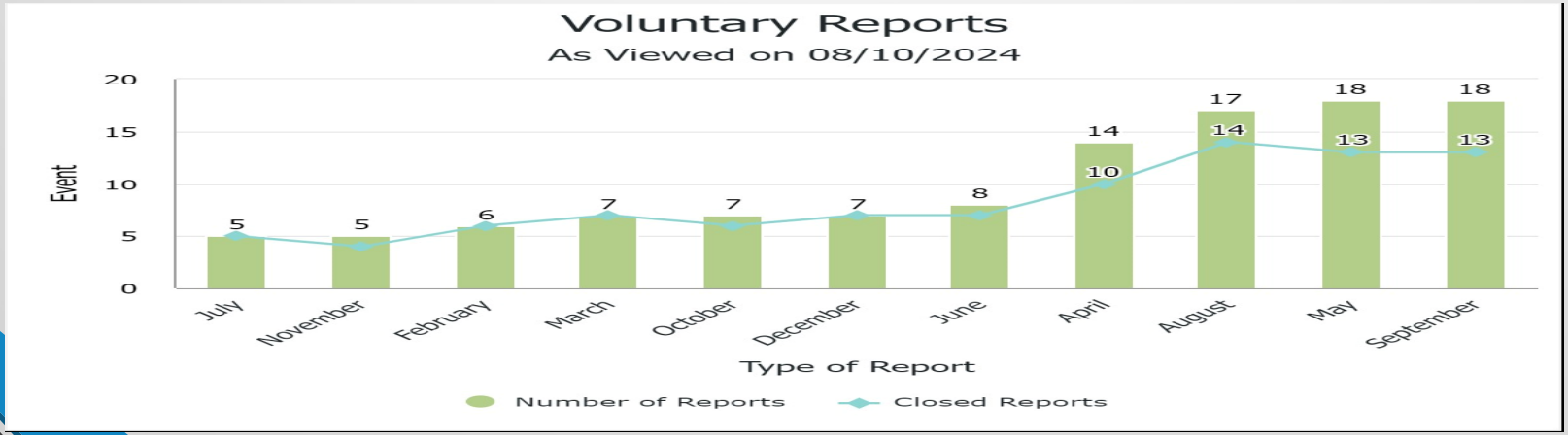
- Trained inspectors on SSP and SMS including oversight and acceptance.
- Created guidance materials for both our inspectors and organisations.
- Developed an audit checklist for SMS oversight.

6. Developing a Safety Reporting System

- Create a structured, accessible safety reporting system for capturing data on hazards, incidents, and trends.
- Encourage a voluntary reporting culture to ensure timely data collection without fear of retribution.
- Integrate safety reporting with existing data sources for a comprehensive view of risks.

Reporting Systems and Data Analysis

- Developed voluntary and mandatory reporting systems to collect data.
- Started analyzing data from audits, inspections, occurrence reports, and voluntary reports (using software currently under test).



7. Implementing Safety Risk Management (SRM)

- Introduce methodologies for identifying, assessing, and mitigating safety risks.
- Establish risk assessment procedures and decision-making protocols for mitigating identified risks.
- Prioritize proactive risk management to address potential issues before they escalate.

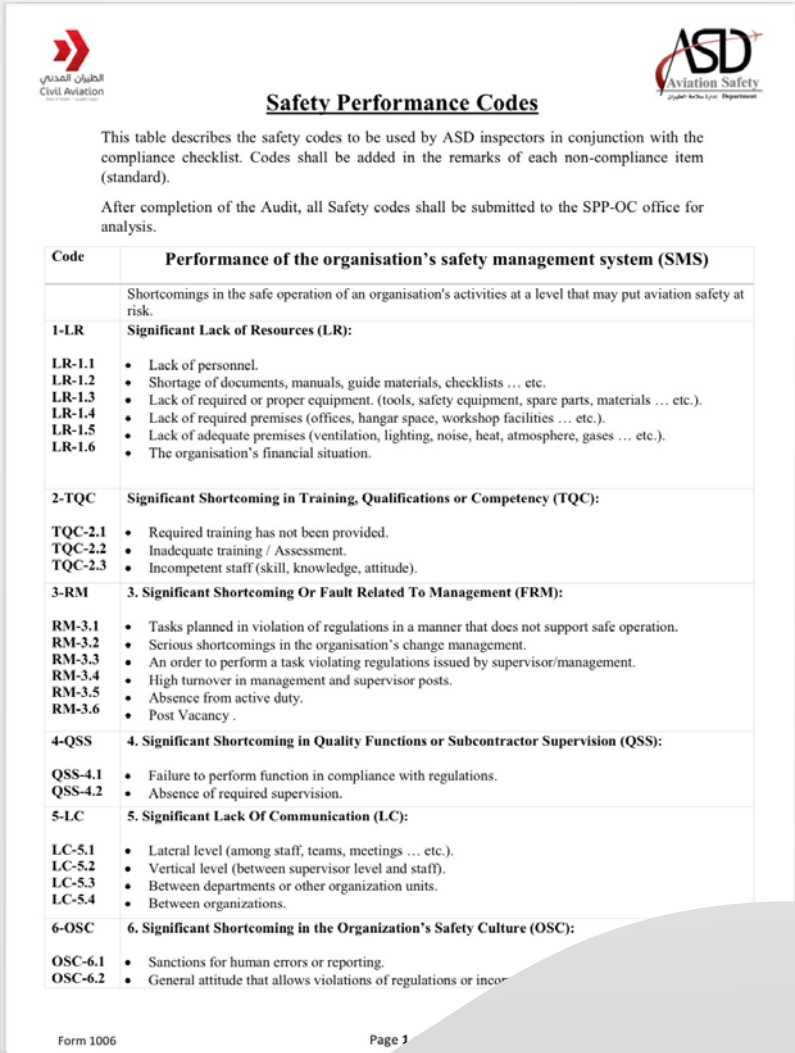
8. Establishing Safety Assurance Processes

- Implement continuous monitoring and auditing systems to ensure the effectiveness of safety controls.
- Conduct regular evaluations and reviews to refine safety processes based on feedback and data.
- Track safety performance metrics and make data-driven adjustments as necessary.

9. Data Integration and Analysis

- Integrate various sources of safety data, enabling comprehensive analysis and insights.
- Utilize advanced data analytics to predict emerging risks and trends.
- Develop dashboards and tools for real-time monitoring and reporting of safety performance.

Safety Performance Code



Safety Performance Codes

This table describes the safety codes to be used by ASD inspectors in conjunction with the compliance checklist. Codes shall be added in the remarks of each non-compliance item (standard).

After completion of the Audit, all Safety codes shall be submitted to the SPP-OC office for analysis.

Code	Performance of the organisation's safety management system (SMS)
	Shortcomings in the safe operation of an organisation's activities at a level that may put aviation safety at risk.
1-LR	**Significant Lack of Resources (LR):**
LR-1.1	• Lack of personnel.
LR-1.2	• Shortage of documents, manuals, guide materials, checklists … etc.
LR-1.3	• Lack of required or proper equipment. (tools, safety equipment, spare parts, materials … etc.).
LR-1.4	• Lack of required premises (offices, hangar space, workshop facilities … etc.).
LR-1.5	• Lack of adequate premises (ventilation, lighting, noise, heat, atmosphere, gases … etc.).
LR-1.6	• The organisation's financial situation.
2-TQC	**Significant Shortcoming in Training, Qualifications or Competency (TQC):**
TQC-2.1	• Required training has not been provided.
TQC-2.2	• Inadequate training / Assessment.
TQC-2.3	• Incompetent staff (skill, knowledge, attitude).
3-RM	**3. Significant Shortcoming Or Fault Related To Management (FRM):**
RM-3.1	• Tasks planned in violation of regulations in a manner that does not support safe operation.
RM-3.2	• Serious shortcomings in the organisation's change management.
RM-3.3	• An order to perform a task violating regulations issued by supervisor/management.
RM-3.4	• High turnover in management and supervisor posts.
RM-3.5	• Absence from active duty.
RM-3.6	• Post Vacancy .
4-QSS	**4. Significant Shortcoming in Quality Functions or Subcontractor Supervision (QSS):**
QSS-4.1	• Failure to perform function in compliance with regulations.
QSS-4.2	• Absence of required supervision.
5-LC	**5. Significant Lack Of Communication (LC):**
LC-5.1	• Lateral level (among staff, teams, meetings … etc.).
LC-5.2	• Vertical level (between supervisor level and staff).
LC-5.3	• Between departments or other organization units.
LC-5.4	• Between organizations.
6-OSC	**6. Significant Shortcoming in the Organization's Safety Culture (OSC):**
OSC-6.1	• Sanctions for human errors or reporting.
OSC-6.2	• General attitude that allows violations of regulations or inco

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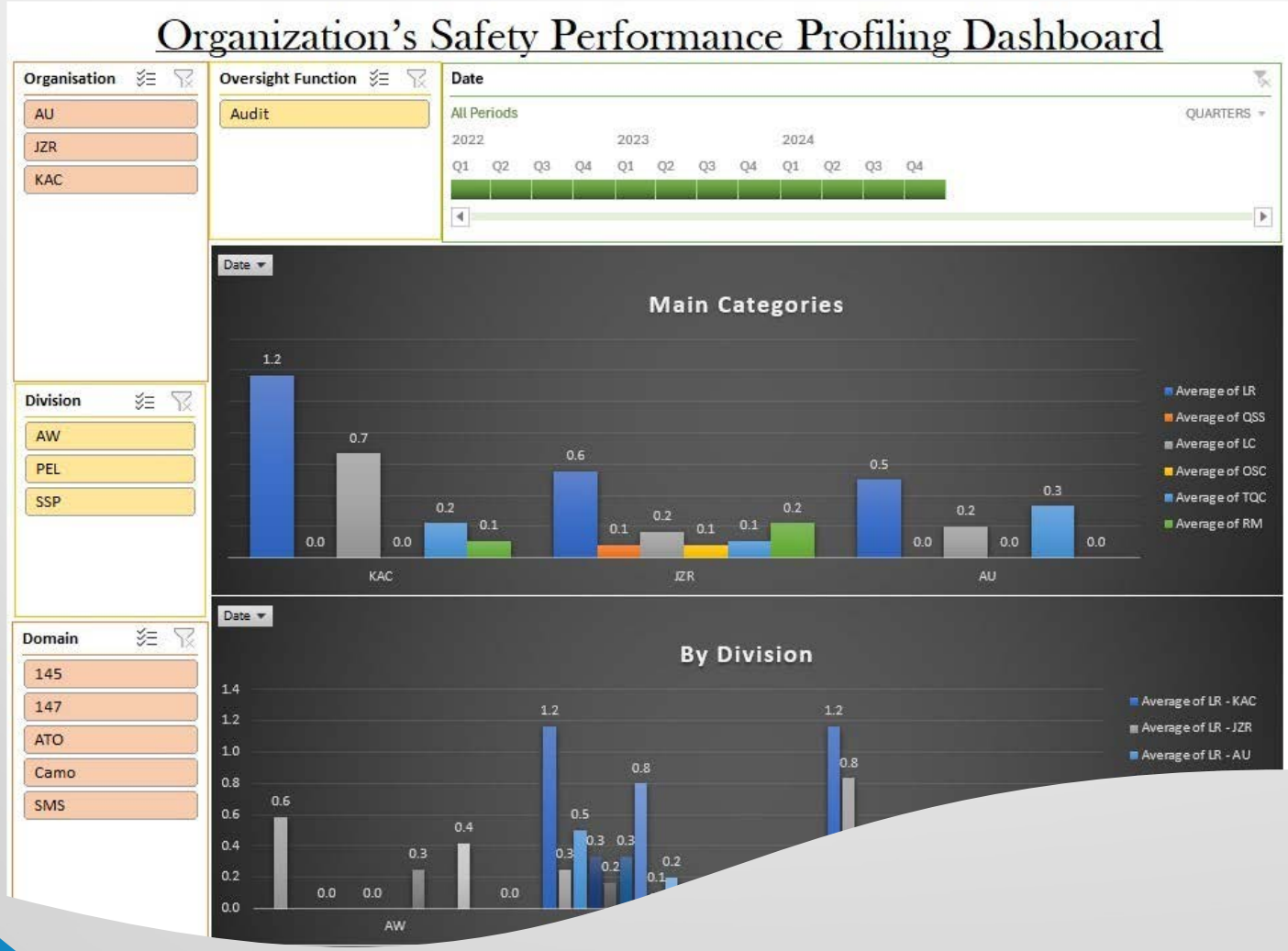
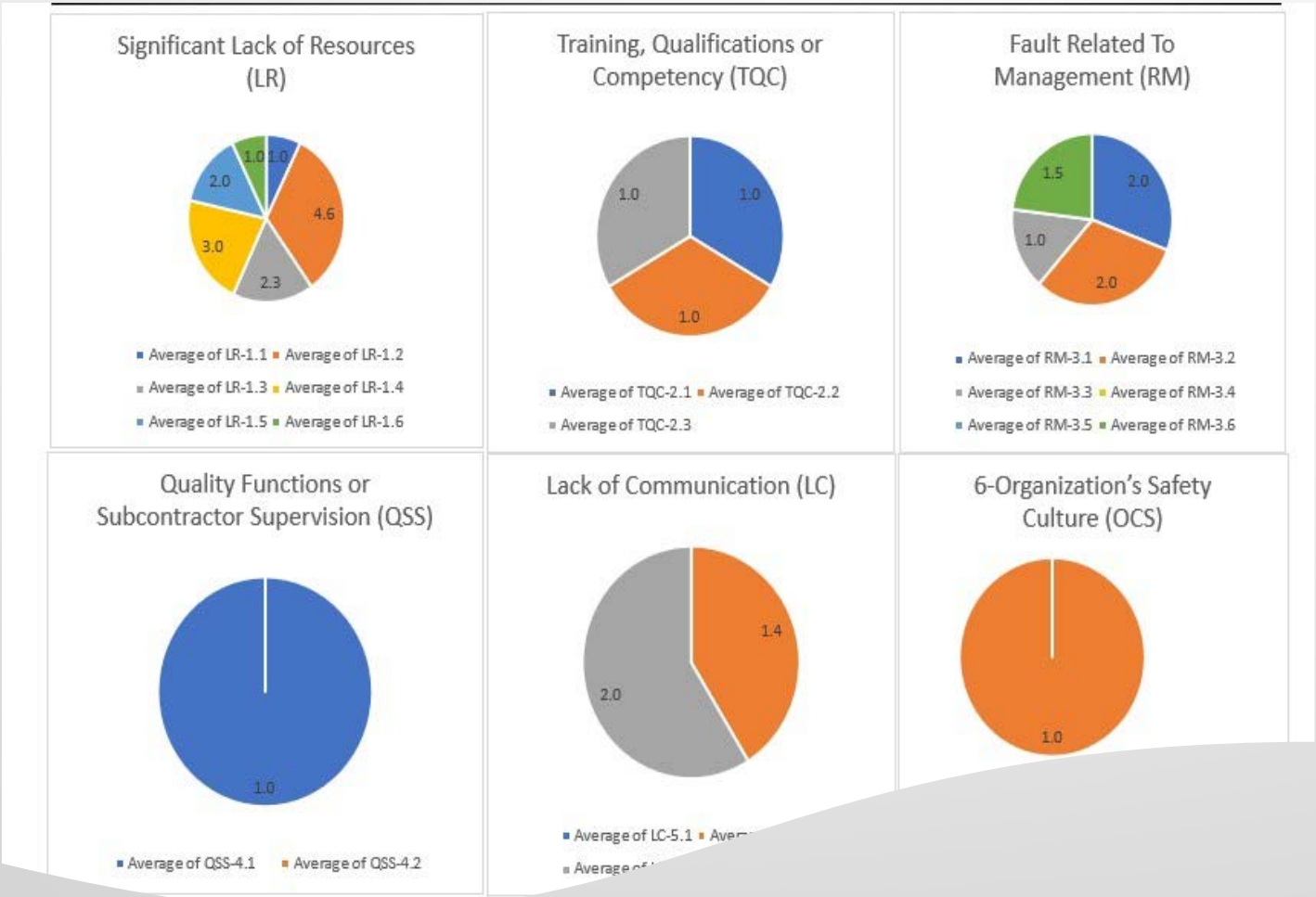
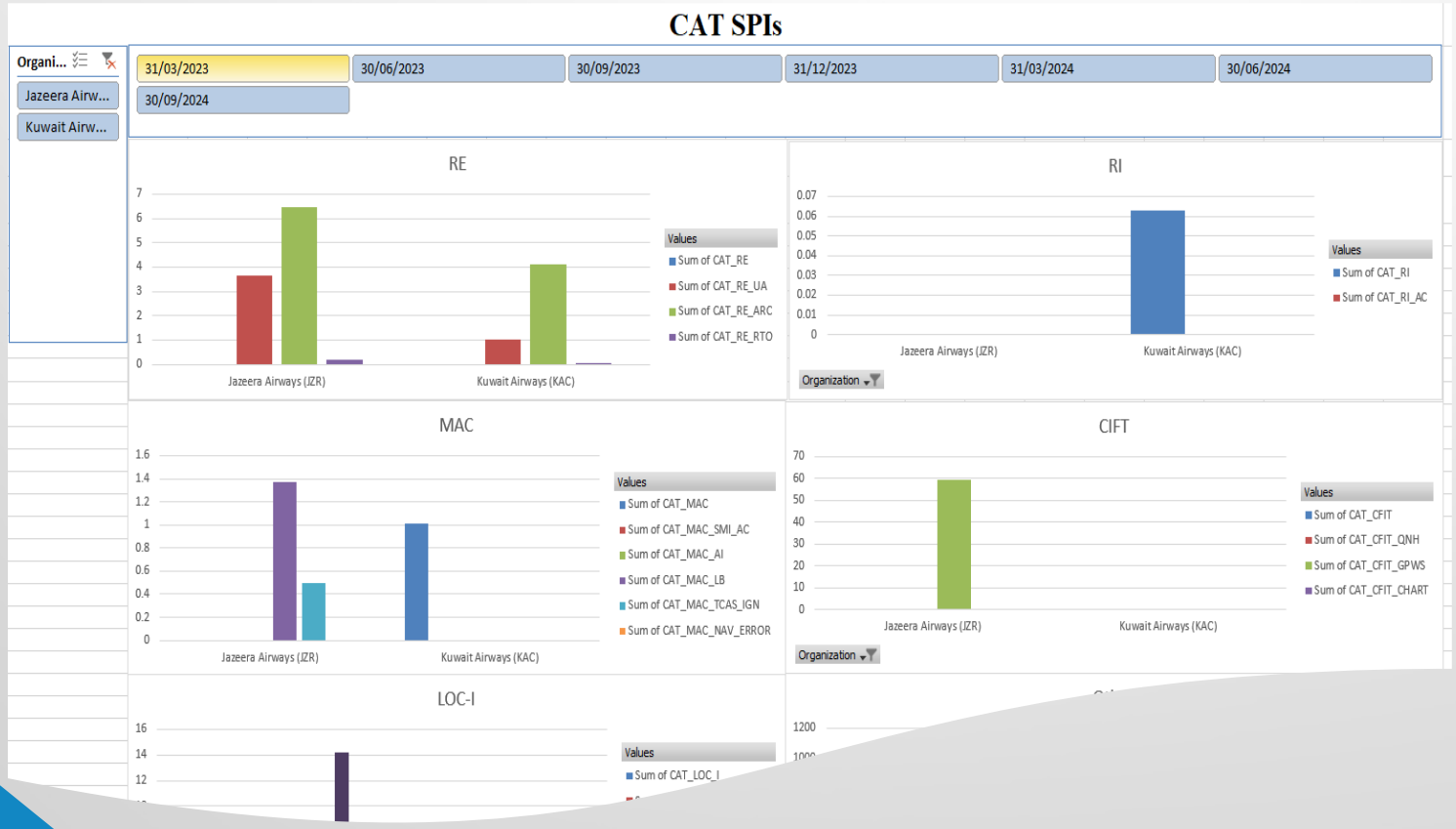
SSP Implementation and Progress



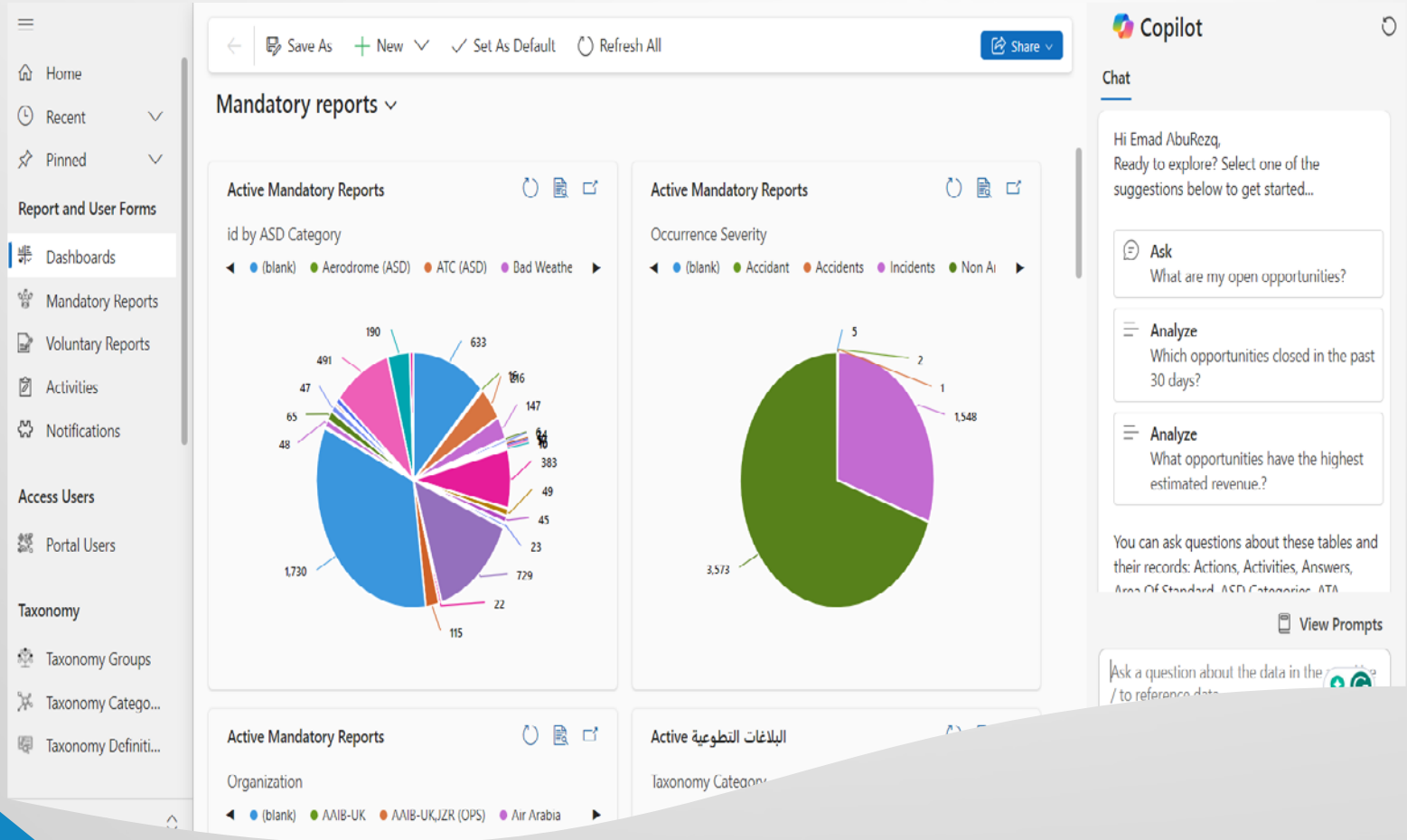
Safety Performance Code



SPIs and SPTs



Kuwait Civil Aviation Safety Pulse



10. Safety Promotion and Culture Building

- Through communication and training, promote a positive safety culture within DGCA and across the industry.
- Highlight success stories and safety improvements to encourage continuous engagement.
- Maintain regular safety communication campaigns to reinforce a proactive safety mindset.

Safety Promotion

Kuwait-SSP

State of Kuwait Safety Programme

Kuwait State Safety Program (SSP)

CAP No.	Title	Iss. / Rev.	Date
KCASR	**KCASR 19 SMS (Part 1)**	Iss. 4 / Rev. 4	Sep. 2021
KCASR	**KCASR 19 SSP (Part 2)**	Iss. 4 / Rev. 1	Sep. 2021
CAP 102	**Kuwait NASP 2023 - 2025**	Issue 2	2024
CAP 104	**Kuwait SSP Manual**	Iss. 1 / Rev. 0	Mar. 2022
CAP 701	**Safety Management Systems (SMS) Guidance for Organisations**	Iss. 1 / Rev. 0	Dec. 2021
CAP 704	**Safety Performance (SPIs, SPTs)**	Iss. 1 / Rev. New	Dec. 2023
Safety Promotion	**How to understand SPIs and SPTs in simple language**	Info	Nov. 2023
System	**SPI System**	Iss. 1 / Rev. Nov	

Edit Table

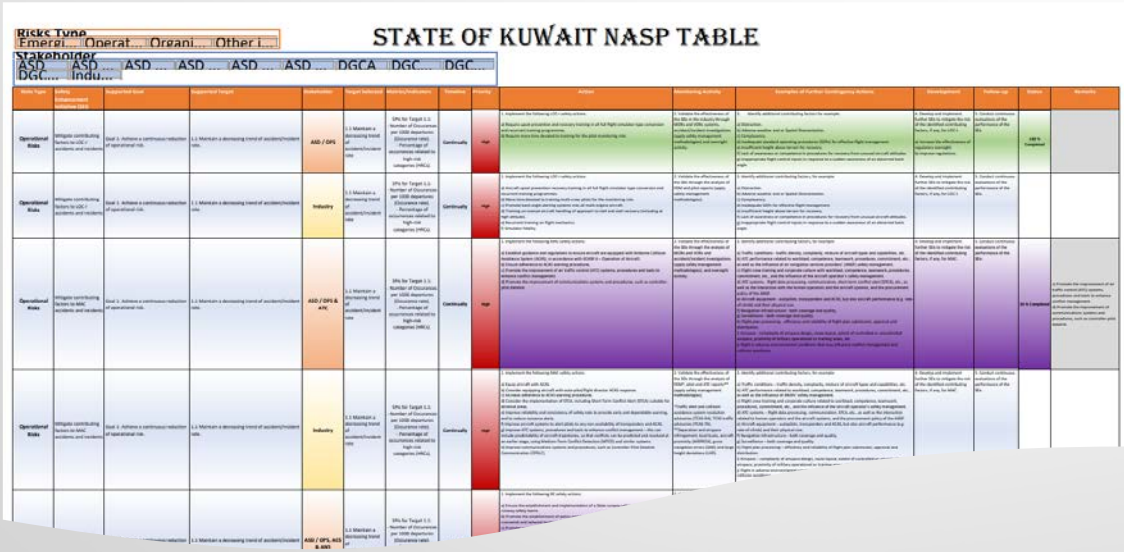
11. Regular Review and Continuous Improvement

- Schedule periodic reviews of SSP components to ensure alignment with evolving aviation needs.
- Conduct internal and external audits to identify improvement opportunities.
- Adapt SSP strategies as required to maintain alignment with international best practices.

12. Implementation and Ongoing Oversight

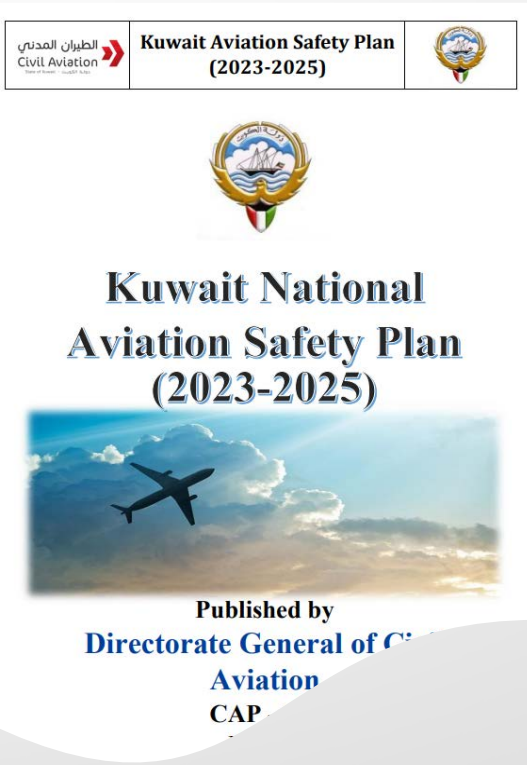
- Achieve SSP integration, where safety management practices are embedded across all functions.
- Continue monitoring and refining the SSP as part of a dynamic, evolving process.
- Regularly report on safety performance to showcase continuous improvement.

13. NASP



STATE OF KUWAIT NASP TABLE

Risks Type	Safety Enhancement Initiatives (SEI)	Supported Goal	Supported Target	Stakeholder	Target Reference	Metrics/Indicators	Timeline	Priority	Action	Monitoring Activity	Examples of Further Contributing Actions	Development	Follow-up	Status	Remarks
Operational Risks	Mitigate contributing factors to LOC-I accidents and incidents	Goal 1: Achieve a continuous reduction of operational risk.	1.1 Maintain a decreasing trend of accident/incident rate.	ASD / OPS	1.1 Maintain a decreasing trend of accident/incident rate	SPIs for Target 1.1: Number of Occurrences per 1000 departures (Occurrence rate); Percentage of occurrences related to high-risk categories (HRCs)	Continually	High	1. Implement the following LOC-I safety actions: a) Require upset prevention and recovery training in all full flight simulator type conversion and recurrent training programmes. b) Require more time devoted to training for the pilot monitoring role.	1. Validate the effectiveness of the SEIs in the industry through ASRs and ASRs systems, Accident/Incident investigations, supply safety management methodologies), and oversight activity.	a) Identify additional contributing factors, for example: b) Fatigue; c) Inadequate or insufficient flight management; d) Insufficient height above terrain for recovery; e) Lack of awareness or competence in procedures for recovery from unusual aircraft attitudes; f) Inappropriate flight control inputs in response to a sudden awareness of an abnormal bank angle.	a) Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for LOC-I. b) Increase the effectiveness of regulatory oversight to improve regulations.	c) Conduct continuous evaluations of the performance of the SEIs.	ASD % Completed	
Operational Risks	Mitigate contributing factors to LOC-I accidents and incidents	Goal 1: Achieve a continuous reduction of operational risk.	1.1 Maintain a decreasing trend of accident/incident rate.	Industry	1.1 Maintain a decreasing trend of accident/incident rate	SPIs for Target 1.1: Number of Occurrences per 1000 departures (Occurrence rate); Percentage of occurrences related to high-risk categories (HRCs)	Continually	High	a) Aircraft upset prevention recovery training in all full flight simulator type conversion and recurrent training programmes. b) Promote more time devoted to training multi-crew pilots for the monitoring role. c) Promote more upset warning systems now, all multi-engine aircraft. d) Training on unusual aircraft handling of approach to stall and stall recovery (including at high altitudes). e) Pre-stall training on Flight mechanics f) Simulator fidelity.	2. Validate the effectiveness of the SEIs through the analysis of ASRs and pilot reports (safety management methodologies).	a) Distraction; b) Adverse systems and or Spatial Disorientation; c) Fatigue; d) Inadequate skills for effective flight management; e) Insufficient height above terrain for recovery; f) Lack of awareness or competence in procedures for recovery from unusual aircraft attitudes; g) Inappropriate flight control inputs in response to a sudden awareness of an abnormal bank angle.	a) Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for LOC-I.	b) Conduct continuous evaluations of the performance of the SEIs.		
Operational Risks	Mitigate contributing factors to MAC accidents and incidents	Goal 1: Achieve a continuous reduction of operational risk.	1.1 Maintain a decreasing trend of accident/incident rate.	ASD / OPS & ATC	1.1 Maintain a decreasing trend of accident/incident rate	SPIs for Target 1.1: Number of Occurrences per 1000 departures (Occurrence rate); Percentage of occurrences related to high-risk categories (HRCs)	Continually	High	a) Establish guidance and regulations to ensure aircraft are equipped with Airborne Collision Avoidance System (ACAS), in accordance with ICAO SARPs - Operation of Aircraft. b) Should adherence to ACAS warning procedures. c) Promote the improvement of air traffic control (ATC) systems, procedures and tools to enhance conflict management. d) Promote the improvement of communications systems and procedures, such as controller pilot datalink	3. Validate the effectiveness of the SEIs through the analysis of ASRs and ASRs and accident/incident investigations (supply safety management methodologies), and oversight activity.	a) Identify additional contributing factors, for example: a) Traffic conditions - traffic density, complexity, mixture of aircraft types and capabilities, etc. b) ATC performance related to workload, competence, teamwork, procedures, commitment, etc. as well as the influence of air navigation service providers' (ANSP) safety management. c) Flight crew training and corporate culture related to workload, competence, teamwork, procedures, commitment, etc., and the relevance of the aircraft operator's safety management. d) ATC systems - flight data processing, communication, electronic conflict alert (STCA), etc., as well as the interaction with the human operators and the aircraft systems, and the procurement policy of the ANSP. e) aircraft equipage - suitability, interoperable and Hi-Fi, but also aircraft performance (e.g. rate of climb) and their physical size. f) Navigation infrastructure - both coverage and quality. g) Flight plan processing - efficiency and reliability of flight plan submission, approval and distribution. h) Airspace - complexity of airspace design, route layout, extent of restrictions or segregation, and flexibility of airspace operational to real-time. i) Flight or aviation environment conditions that may affect air traffic management and collision systems.	a) Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for MAC.	b) Conduct continuous evaluations of the performance of the SEIs.	Q4 is completed	a) Promote the improvement of air traffic control (ATC) systems, procedures and tools to enhance conflict management. b) Promote the improvement of communications systems and procedures, such as controller pilot datalink.
Operational Risks	Mitigate contributing factors to MAC accidents and incidents	Goal 1: Achieve a continuous reduction of operational risk.	1.1 Maintain a decreasing trend of accident/incident rate.	Industry	1.1 Maintain a decreasing trend of accident/incident rate	SPIs for Target 1.1: Number of Occurrences per 1000 departures (Occurrence rate); Percentage of occurrences related to high-risk categories (HRCs)	Continually	High	1. Implement the following MAC safety actions: a) Equip aircraft with ACAS. b) Consider equipping aircraft with wide-view Flight Director HUD response. c) Promote the improvement of ATC systems. d) Consider the implementation of STCA, including Short Term Conflict Alert (STCA) cuboids for terminal areas. e) Improve reliability and consistency of safety nets to provide early and dependable warning and to reduce nuisance alerts. f) Improve ATC systems' ground-based alert ability to any non-availability of transponders and ACAS. g) Improve ATC systems' procedures and tools to enhance conflict management - this can include predictability of aircraft trajectories, so that conflicts can be predicted and resolved at an earlier stage, using Medium Term Conflict Detection (MTCD) and similar systems. h) Improve communications systems and procedures, such as Controller Pilot Datalink Communications (CPDLC).	3. Validate the effectiveness of the SEIs through the analysis of ASRs and ASRs and accident/incident investigations (supply safety management methodologies). Finally, state and collision avoidance system resolution advisories (TCAS RA), TCAS traffic advisories (TA). Preparation and the space infringement incentives, aircraft proximity (AIRPROX), grave navigation errors (GNE) and large height deviations (LHD).	a) Identify additional contributing factors, for example: a) Traffic conditions - traffic density, complexity, mixture of aircraft types and capabilities, etc. b) ATC performance related to workload, competence, teamwork, procedures, commitment, etc. as well as the influence of air navigation service providers' (ANSP) safety management. c) Flight crew training and corporate culture related to workload, competence, teamwork, procedures, commitment, etc., and the relevance of the aircraft operator's safety management. d) ATC systems - flight data processing, communication, electronic conflict alert (STCA), etc., as well as the interaction with the human operators and the aircraft systems, and the procurement policy of the ANSP. e) aircraft equipage - suitability, interoperable and Hi-Fi, but also aircraft performance (e.g. rate of climb) and their physical size. f) Navigation infrastructure - both coverage and quality. g) Flight plan processing - efficiency and reliability of flight plan submission, approval and distribution. h) Airspace - complexity of airspace design, route layout, extent of restrictions or segregation, and flexibility of airspace operational to real-time. i) Flight or aviation environment conditions that may affect air traffic management and collision systems.	a) Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for MAC.	b) Conduct continuous evaluations of the performance of the SEIs.		
				ASG / OPS, AGS & ANS	1.1 Maintain a decreasing trend of	SPIs for Target 1.1: Number of Occurrences per 1000 departures (Occurrence rate)			a) Ensure the establishment and implementation of a State runway safety teams. b) Promote the establishment of runway incursion and runway						



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Civil Aviation

Kuwait Aviation Safety Plan (2023-2025)

Kuwait National Aviation Safety Plan (2023-2025)

Published by

Directorate General of Civil Aviation

CAP

Strategic Safety Priorities

Risks Type	Safety Enhancement Initiative (SEI)	Supported Goal	Supported Target	Stakeholder	Target Selected	Metrics/Indicators	Timeline	Priority	Action	Monitoring Activity	Examples of Further Contingency Actions	Development	Follow-up	Status	Remarks
Operational Risks	Mitigate contributing factors to LOC-I accidents and incidents	Goal 1: Achieve a continuous reduction of operational risk.	1.1 Maintain a decreasing trend of accident/incident rate.	ASD / OPS	1.1 Maintain a decreasing trend of accident/incident rate	SPIs for Target 1.1: - Number of Occurances per 1000 departures (Occurance rate). - Percentage of occurrences related to high-risk categories (HRCs).	Continually	High	1. Implement the following LOC-I safety actions: a) Require upset prevention and recovery training in all full flight simulator type conversion and recurrent training programmes. b) Require more time devoted to training for the pilot monitoring role.	2. Validate the effectiveness of the SEIs in the industry through MORs and VORs systems, accident/incident investigations (apply safety management methodologies) and oversight activity.	3. Identify additional contributing factors for example: a) Distraction. b) Adverse weather and or Spatial Disorientation. c) Complacency. d) Inadequate standard operating procedures (SOPs) for effective flight management. e) Insufficient height above terrain for recovery. f) Lack of awareness or competence in procedures for recovery from unusual aircraft attitudes. g) Inappropriate flight control inputs in response to a sudden awareness of an	4. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for LOC-I: a) Increase the effectiveness of regulatory oversight. b) Improve regulations.	5. Conduct continuous evaluations of the performance of the SEIs:	100 % Completed	
Operational Risks	Mitigate contributing factors to LOC-I accidents and incidents	Goal 1: Achieve a continuous reduction of operational risk.	1.1 Maintain a decreasing trend of accident/incident rate.	Industry	1.1 Maintain a decreasing trend of accident/incident rate	SPIs for Target 1.1: - Number of Occurances per 1000 departures (Occurance rate). - Percentage of occurrences related to high-risk categories (HRCs).	Continually	High	1. Implement the following LOC-I safety actions: a) Aircraft upset prevention recovery training in all full flight simulator type conversion and recurrent training programmes. b) More time devoted to training multi-crew pilots for the monitoring role. c) Promote bank angle alerting systems into all multi-engine aircraft. d) Training on manual aircraft handling of approach to stall and stall recovery (including at high altitude). e) Recurrent training on flight mechanics. f) Simulator fidelity.	2. Validate the effectiveness of the SEIs through the analysis of FDM and pilot reports (apply safety management methodologies).	3. Identify additional contributing factors, for example: a) Distraction. b) Adverse weather and or Spatial Disorientation. c) Complacency. d) Inadequate SOPs for effective flight management. e) Insufficient height above terrain for recovery. f) Lack of awareness or competence in procedures for recovery from unusual aircraft attitudes. g) Inappropriate flight control inputs in response to a sudden awareness of an abnormal bank angle.	4. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for LOC-I.	5. Conduct continuous evaluations of the performance of the SEIs.		
Operational Risks	Mitigate contributing factors to MAC accidents and incidents	Goal 1: Achieve a continuous reduction of operational risk.	1.1 Maintain a decreasing trend of accident/incident rate.	ASD / OPS & ATC	1.1 Maintain a decreasing trend of accident/incident rate	SPIs for Target 1.1: - Number of Occurances per 1000 departures (Occurance rate). - Percentage of occurrences related to high-risk categories (HRCs).	Continually	High	1. Implement the following MAC safety actions: a) Establish guidance and regulations to ensure aircraft are equipped with Airborne Collision Avoidance System (ACAS), in accordance with ICAO SR 6 - Operation of Aircraft. b) Ensure adherence to ACAS warning procedures. c) Promote the improvement of air traffic control (ATC) systems, procedures and tools to enhance conflict management. d) Promote the improvement of communications systems and procedures, such as controller-pilot datalink.	2. Validate the effectiveness of the SEIs through the analysis of MORs and VORs and accident/incident investigations (apply safety management methodologies), and oversight activity.	3. Identify additional contributing factors, for example: a) Traffic conditions - traffic density, complexity, mixture of aircraft types and capabilities, etc. b) ATC performance related to workload, competence, teamwork, procedures, commitment, etc., as well as the influence of air navigation services providers' (ANSP) safety management. c) Flight crew training and corporate culture with workload, competence, teamwork, procedures, commitment, etc., and the influence of the aircraft operator's safety management. d) ATC systems - flight data processing, communication, short term conflict alert (STCA), etc., as well as the interaction with the human operators and the aircraft systems, and the procurement policy of the ANSP. e) Aircraft equipment - autopilots, transponders and ACAS, but also aircraft performance (e.g. rate-of-climb) and their physical size. f) Navigation infrastructure - both coverage and quality. g) Surveillance - both coverage and quality. h) Flight plan processing - efficiency and reliability of flight plan submission, approval and distribution. i) Airspace - complexity of airspace design, route layout, extent of controlled or uncontrolled airspace, proximity of military operational or training areas, etc. j) Flight in adverse environmental conditions that may influence conflict management and collision avoidance.	4. Develop and implement further SEIs to mitigate the risk of the identified contributing factors, if any, for MAC.	5. Conduct continuous evaluations of the performance of the SEIs.	50 % Completed	c) Promote the improvement of air traffic control (ATC) systems, procedures and tools to enhance conflict management. d) Promote the improvement of communications systems and procedures, such as controller-pilot datalink
Operational	Mitigate contributing factors to MAC accidents	Goal 1: Achieve a continuous reduction of operational risk.	1.1 Maintain a decreasing trend of accident/incident rate.	Industry	1.1 Maintain a decreasing trend of accident/incident rate	SPIs for Target 1.1: - Number of Occurances per 1000 departures (Occurance rate). - Percentage of occurrences related	Continually	High	1. Implement the following MAC safety actions: a) Equip aircraft with ACAS. b) Consider equipping aircraft with auto-pilot/flight director ACAS response. c) Increase adherence to ACAS warning procedures. d) Consider the implementation of STCA, including Short Term Conflict Alert (STCA) suitable for terminal areas. e) Improve reliability and consistency of safety nets to provide early and dependable warning, and to reduce nuisance alerts. f) Improve aircraft systems to alert pilots to [illegible] and ACAS. g) Increase [illegible]	2. Validate the effectiveness of the SEIs through the analysis of FDM", pilot and ATC reports"" (apply safety management methodologies).	3. Identify additional contributing factors, for example: a) Traffic conditions - traffic density, complexity, mixture of aircraft types and capabilities, etc. b) ATC performance related to [illegible] commit[illegible]	4. Develop and implement further SEIs to mitigate the risk of the identified	5. Conduct continuous [illegible]		

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Aviation Safety
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