KINGDOM OF BAHRAIN
Ministry of Transportation and Telecommunications

مملكة البحرين
وزارة المواصلات والاتصالات

STATE SAFETY PROGRAMME

KINGDOM OF BAHRAIN

Civil Aviation Affairs - Aviation Safety Directorate

MTT/CAA/ASD/01/2015- Draft Doc 004

Reference: BCAA/ASD/AD/30.04/2015

Edition: January 2015

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Amendments

Record of Amendments and Corrigenda

Note: change logo on cover page 18 July 2024

AMENDMENTS			
NO	**DATE APPLICABLE**	**DATE ENTERED**	**ENTERED BY**

CORRIGENDA			
NO	**DATE OF ISSUE**	**DATE ENTERED**	**ENTERED BY**

FOREWORD

The Kingdom of Bahrain was a signatory to the Convention on International Civil Aviation (Chicago Convention) in 1944, and has been an active member since 1971. A lot of responsibility is placed on the ICAO contracting State to develop and maintain a strong State Safety Program (SSP). The programme is an integrated set of Regulations and activities aimed at improving Aviation Safety.

The CAA's objective is to develop a world class safety environment, in partnership with the aviation industry, by making continuous improvements in aviation safety in the Kingdom of Bahrain. The State Safety Programme (SSP) is a living process that monitors the CAA's safety performance and continues to seek improvements in aviation safety. All CAA personnel must understand their authorities, responsibilities and accountabilities with regard to the SSP and all safety management processes, decisions and actions. In addition, CAA personnel must ensure effective reporting of safety deficiencies, hazards or occurrences, which have the capacity to affect aviation safety.

Any comments regarding content should be addressed to the Director of Aviation Safety in his capacity of State Safety Programme Manager.

Kamal Bin Ahmed Mohammed

Minister of Transportation and Telecommunications

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Type of Document	Manual	
Status of Document	Controlled	

REVISION STATUS

Revision No.	Revision Date	Signature

Title: State Safety Programme for Kingdom of Bahrain
Description: This document is produced by CAA on behalf of MTT in accordance with Annex 19 to Chicago Convention**.** Henceforth, it will be reissued as and when changes are made as per ICAO recommendation.

Status: Current

Review January 2015

Executive Summary

(a) The State Safety Programme includes a regulatory framework and activities within the State to ensure the discharge of the State's obligations under the Chicago Convention.

(b) The Civil Aviation Regulations (CARs) and the Air Navigation Technical Regulations (ANTRs) provide a sound, simple, cohesive legal framework which is, wherever practicable, consistent and compliant with the Annexes to the Convention and suited to the level of aviation activity within the State.

(c) In legal terms, the CAA Requirements do not themselves constitute legislation or regulations: they are the means by which compliance with the legislation may be demonstrated. They are also the means by which the CAA can be satisfied as to the basis for the issue or maintenance of a licence, certificate or approval. However, the CARs do comply with the ICAO generic definition of 'regulations' in ICAO Doc 9734 *Safety Oversight Manual*

(d) All amendments to the CARs and each new or amended CAA Requirement part will be the subject of a full consultation exercise.

(e) By these means the Kingdom of Bahrain can be assured, and demonstrate as required, that the aviation industry within the Kingdom is meeting the agreed international standards and that the regulatory oversight of the industry is adequate.

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KINGDOM OF BAHRAIN
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PART I

STATE SAFETY PROGRAMME

FOR

THE KINGDOM OF BAHRAIN

THE CIVIL AVIATION (SAFETY) REGULATIONS, 2015

The Minister of Transportation and Telecommunications,

Having reviewed the Civil Aviation Law issued by Decree Law No (14) of the Year 2013, particularly Article 5 and Article 47 thereof and;
Following the approval by the Undersecretary for Civil Aviation Affairs (USCA) and recommended by the Assistant Under Secretary for Safety and Aviation Security (AUSAS) Civil Aviation Affairs and in exercising the powers conferred by Article 5 of the Civil Aviation Law, issues this policy in accordance with the above Law.

CHAPTER 1

INTRODUCTION

1.1 Background

Annex 19 to the Chicago Convention requires Contracting States to establish a State Safety Programme (SSP) in order to achieve an Acceptable Level of Safety Performance (ALoSP). ICAO explicitly requires States to establish an ALoSP to be achieved, as a means to verify satisfactory performance of the SSP and service providers' Safety Management Systems (SMS). ICAO describes an SSP as "an integrated set of regulations and activities aimed at improving safety".

The requirement for an SSP recognises that States as well as service providers have safety responsibilities and provides a framework within which service providers are required to establish SMS.

1.2 General

The Kingdom's aviation activity is such that safety strategies tend to be based on relevant global data but the CAA continues to work in partnership with industry and other international bodies such as regulators and accident investigation organisations.

The four safety strategies adopted by the CAA are summarised below and the safety actions to be taken by the CAA under each of the strategies are detailed in the Implementation Plan. These initiatives will achieve the objective of a continuous improvement in safety. The strategies are;

(a) Safety Oversight

The CAA regulates the safety of aviation in Bahrain by approving and overseeing the organisations and individuals involved in Bahraini aviation that fall within its remit. The CAA will continue to use and develop a risk based approach to ensure that Bahraini aviation complies with the Kingdom's legislation and requirements. The regulatory framework ensures the CARs and ANTRs provide a sound legal framework which is, wherever practicable, consistent and compliant with the Annexes to the Chicago Convention, to ensure that the industry is regulated on the basis of a world-recognised best practice. Auditing is an integral part of safety assurance, and in that respect each Directorate has established a vigorous auditing schedule. With the recent introduction of SMS for operations, engineering and training, the Aeronautical Licensing Directorate will assist operators/organisations to establish a fully functioning SMS by 2017 and conduct extensive audits on the progress made by those service providers in the creation of SMS manual, identification of hazards, ALoSP and safety improvement.

In addition, the Bahrain CAA has adopted the EASA based SAFA programme under ANTR Volume I Part III in respect of foreign air operators operating into and out of Bahrain.

(b) Safety Management

The CAA has implemented under ANTR Volume I Part III a comprehensive safety management requirement for the CAA and service providers, which includes air transport operators, maintenance and training organisations, Air Traffic Services and Airport Services. The CAA will work collaboratively with industry to continuously improve aviation safety and address safety issues.

Where required, the CAA will take any necessary actions to ensure safety is not compromised and will ensure that high safety standards are maintained within Bahrain airspace, and its supporting infrastructure, are maintained, with potential risks identified and appropriate mitigating actions taken. The Bahrain CAA will establish an ALoSP to be achieved, as a means to verify satisfactory performance of the SSP and service providers' Safety Management Systems (SMS). This will be the responsibility of the individual Directorates, and established in a consistent manner based on clearly defined criteria.

The Directorate's members on both the State Safety Board and Safety Action Group are accountable for the safety management within that Directorate. They have to provide scheduled reports to Aviation Safety Directorate (ASD) reporting on SMS implementation progress.

(c) Safety Improvement

The CAA will draw upon worldwide and CAA data to identify safety trends applicable to Bahrain aviation, prioritising this information to focus on the most significant safety issues. The resulting safety improvement initiatives will be captured in the Implementation Plan, which will be used as a means of monitoring progress and effectiveness.

(d) Safety Promotion

The CAA will promote safety more effectively through internal and external training, Promotions, communications and dissemination of safety information.

1.3 ICAO Standards

ICAO standards for a SSP as per Annex 19 are contained in the following Annexes;

(a)	Annex 1	-	Personnel Licensing
(b)	Annex 6, Part I	-	Operation of Aircraft
(c)	Annex 6, Part III	-	Helicopters
(d)	Annex 8	-	Airworthiness of Aircraft
(e)	Annex 11	-	Air Traffic Services
(f)	Annex 13	-	Aircraft Accident and Incident Investigation
(g)	Annex 14	-	Aerodromes

ICAO standards also require that the Acceptable Level of Safety Performance (ALoSP) to be achieved is established by the Civil Aviation Authority (CAA). The concept of establishing an ALoSP attempts to complement the current approach to safety management based on regulatory compliance with a performance based approach. Further information is detailed in Attachment D of the Air Navigation Technical Regulations Volume III - Air Traffic Services.

1.4 Aviation Legislation

Under the primary legislation, Civil Aviation Law no 14 (2013), the Competent Minister is responsible for the conduct of civil aviation. The body responsible to the Minister for ensuring compliance with the Civil Aviation Law is the Civil Aviation Affairs, under the responsibility of the Under Secretary for Civil Aviation Affairs (USCA). The actioning body for compliance is the responsibility of Assistant Undersecretary for Safety and Aviation Security (AUSAS). The CAA is responsible for the implementation of the Chicago Convention's Annexes.

The AUSAS is responsible for developing and proposing amendments to primary aviation legislation and for making secondary legislation, such as operating regulations (ANTRs), in areas covered by the ICAO Conventions. The AUSAS has formal delegated powers issued to him for the promulgation of regulations by the Under Secretary for Civil Aviation Affairs (USCA).

On-going changes to ICAO Standards and Recommended Practices (SARPs) and EASA (EU) regulations are also reviewed and analysed for effect on the existing legislative framework, existing implementing procedures and guidance, as well as existing regulatory resources and training.

The regulations issued by the CAA are:

(a) Volume 1 – Flight Safety Air Navigation Technical Regulations

(b) Volume 2 – Aviation Security

(c) Volume 3 – Air Navigation Regulations

(d) Volume 4 – Aerodrome Standards & Certification Regulations

In respect to Safety Management Systems, ANTR Volume 1, Part III, Chapter 9 – Safety Programmes was enacted on 01 August, 2010 with the CAA being responsible for the SSP. The Air Navigation and Airport Operators introduced SMS (CAP08).

The Regulation & Standards Procedures Manual provides CAA staff involved in legislation, regulations and Standards development with the required understanding of the regulatory framework and rule making processes as well as an understanding of their responsibilities in performing these activities.

The methodology contained in that manual is also applicable to the creation of Directorate publications.

The Enforcement Manual is intended for the use and guidance of CAA personnel involved in the administration and compliance with the Civil Aviation Law and Air Navigation Technical Regulations of the Kingdom of Bahrain. All personnel, directly or indirectly concerned with regulatory enforcement activities should employ the applicable procedures contained in this manual.

Individual Directorates have developed processes and guidance material for discharging their functional responsibilities which are documented in local procedural manuals.

1.5 Safety Oversight Responsibility

The CAA is responsible for safety regulation of the civil aviation industry in Kingdom of Bahrain, for the development of policy and aviation industry publications. The CAA is also responsible for the development of policy on the sustainable use of Bahraini airspace and for ensuring the provision of necessary supporting infrastructure for air navigation. The CAA has delegated the responsibility for the operation of Bahrain International Airport to Bahrain Airport Company (BAC) as a licensed service provider.

The CAA is a provider of alerting services for military oversight arrangements or search & rescue provisions. Search & Rescue is carried out by BDF.

The system for safety oversight has eight critical elements which relate to:

1. The provision of primary aviation legislation.
2. The provision of specific operating regulations
3. The establishment of State civil aviation system and safety oversight functions.
4. The establishment of requirements for the qualification and training of technical personnel performing safety oversight functions.
5. The provision of technical guidance, tools and safety-critical information for the technical personnel.
6. The fulfilment of licensing, certification, authorization and approval obligations.
7. The fulfilment of surveillance obligations.
8. The resolution of identified safety concerns.

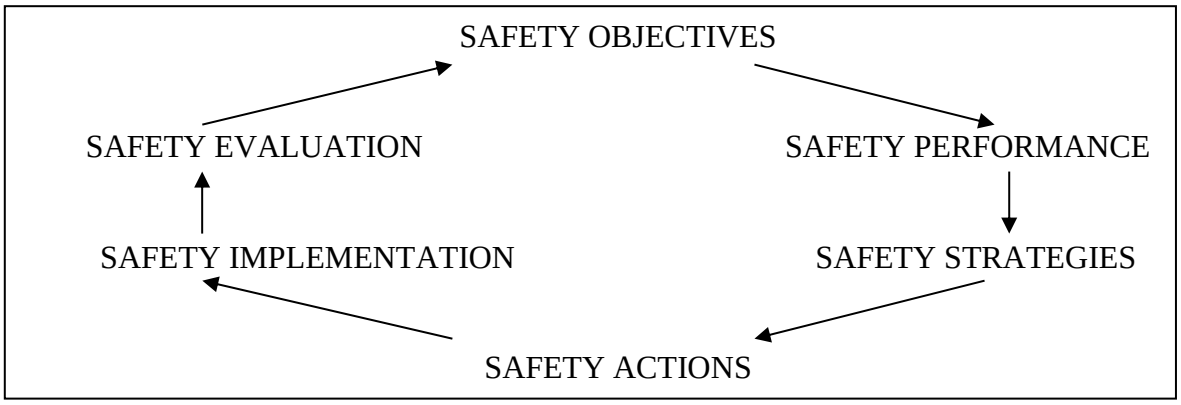
The oversight system is defined and managed through the SSP.

1.6 SSP Methodology

The SSP is a living process that underpins the management of aviation safety and continues to seek improvements in safety performance. It describes the current safety performance of the Bahraini aviation system and outlines the specific strategies and actions the CAA will be taking to achieve a continuous improvement in aviation safety. This SSP has been developed using the ICAO SSP framework within Annex 19 and guidance material, including the ICAO SSP gap analysis document to create an Implementation Plan.

The SSP focuses on safety performance as a driver for safety improvement. The monitoring of safety performance is an essential element in managing safety as it reflects current performance and provides an indicator to monitor the success of any safety strategy. It underpins a safety risk management process where safety objectives are informed by safety performance to define safety strategies which, in turn define safety actions. The implementation of these safety actions should result in safety improvements that meet safety targets and achieve safety objectives.

The Safety Risk Management (SRM) process is as follows;



1.7 Key Components and Elements

In accordance with ICAO guidelines, this document addresses the State Safety Programme for the Kingdom of Bahrain in accordance with guidance contained in ICAO Doc. 9859 Safety Management Manual, 3rd Edition. Each of the four key components is subdivided into elements that comprise the processes or activities undertaken by Bahrain CAA to manage safety. These eleven elements combine prescriptive and performance-based approaches and support the implementation of Safety Management Systems by service providers. The four components and eleven elements of the CAA SSP framework are;

1. State Safety Policy and Objectives – Refer to Chapter 2
   a. State safety legislative framework
   b. State safety responsibilities and accountabilities
   c. Accident and incident investigation
   d. Enforcement policy

2. State Safety Risk Management – Refer to Chapter 3
   a. Safety requirements for the service provider's SMS
   b. Agreement on the service provider's SMS

3. State Safety Assurance – Refer to Chapter 4
   a. Safety oversight
   b. Safety data collection, analysis and exchange
   c. Safety data-driven targeting of oversight of areas of greater concern or need

4. Safety Promotion – Refer to Chapter 5
   a. Internal training, communication and dissemination of safety information
   b. External training, communication and dissemination of safety information

The State Safety Policy Statement and the State Enforcement Policy Statement and an overview of the State Implementation Plan are attached to this State Safety Programme as appendices.

1.8 Definitions and Abbreviations

For the purposes of this document:

State Safety Programme means an integrated set of regulations and activities aimed at improving safety.

Safety performance indicator is a measure (or metric) used to express the safety performance in a system.

Safety performance means a State or a service provider's safety achievement as defined by its safety performance targets and safety performance indicators.

Safety performance target is the desired level of safety performance. A safety performance target comprises one or more safety performance indicators, together with desired outcomes expressed in terms of those indicators.

Note: ICAO Doc.9859 Safety Management Manual describes safety performance indicators and safety performance targets within the concept of an "acceptable level of safety". This concept is used to express safety expectations under a performance-based approach that is designed to complement regulatory compliance.

Safety requirements (initiatives) are the steps that need to be taken to achieve the safety performance targets. They include the operational procedures, technology systems and programmes to which measures of reliability, availability, performance and/or accuracy can be specified.

Service Providers refers to any organization providing aviation services. The term includes approved training organizations, aircraft operators, maintenance organizations, organizations responsible for type design and/or assembly of aircraft, air traffic services providers and certified aerodrome operators, as applicable.

A **hazard** is any situation or condition that has the potential to cause damage or injury.

Risks are the potential adverse consequences of a hazard, and are assessed in terms of their severity and likelihood.

When risks have been assessed, mitigation is then needed: either to eradicate the hazard, or to reduce the severity or likelihood of the risks.

The following abbreviations definitions are used in the Safety Programme and the Implementation Plan.

ADREP	ICAO Accident/Incident Data Report
AIP	Aeronautical Information Publication
ALD	Aeronautical Licensing Directorate
ALoSP	Acceptable Level of Safety *Performance*
ANSP	Air Navigation Services Provider
ANTR	Air Navigation Technical Regulation
BAC	Bahrain Airport Company
BDF	Bahrain Defence Force

CAA	Civil Aviation Affairs (Bahrain)
CAL	Civil Aviation Law
CAP	Civil Aviation Publication
CFIT	Controlled Flight into Terrain
EASA	European Aviation Safety Agency
FDM	Flight Data Monitoring
ICAO	International Civil Aviation Organisation
IIC	Investigator-In-Charge
MTT	Ministry of Transportation and Telecommunications
MOR	Mandatory Occurrence Reporting
PBN	Performance Based Navigation
SAFA	Safety Assessment of Foreign Aircraft
SARPs	Standards and Recommended Practices
SMS	Safety Management System
SPI	Safety Performance Indicator
SPT	Safety Performance Targets
SSB	State Safety Board
SAG	Safety Action Group
SSP	State Safety Programme
USCA	Under Secretary for Civil Aviation Affairs
AUSAS	Assistant Under Secretary for Safety and Aviation Security

CHAPTER 2

STATE SAFETY POLICY AND OBJECTIVES

2.1 General

The management of civil aviation safety is one of the major responsibilities of the CAA of the Kingdom of Bahrain. The CAA is committed to developing, implementing, maintaining and constantly improving strategies and processes to ensure that all aviation activities that take place under its oversight will achieve the highest level of safety performance, while meeting both national and international standards.

Those service providers, who hold Bahraini aviation certificates, shall demonstrate that their management systems incorporate effective means of managing safety. The expected result of this approach is improved safety management, and safety practices, including safety reporting within the civil aviation industry. This process is now regulated.

In Bahrain, all levels of management are accountable for the delivery of the highest level of safety performance within the Kingdom of Bahrain, starting with the Assistant Undersecretary for Safety and Aviation Security for Civil Aviation Authority, who is the Accountable Executive of the SSP. This process has been traditionally followed and is now regulated.

2.2 Objective

The CAA's objective is to develop a world class safety environment, in partnership with the aviation industry, and the ICAO by making continuous improvements in aviation safety in the Kingdom of Bahrain.

Commitment to this objective is demonstrated by the development and implementation of the State Safety Programme (SSP), which sets out the safety oversight arrangements for the CAA. In order to achieve the safety policy and objective, the CAA has established comprehensive safety monitoring and planning processes to identify safety initiatives. The CAA is also committed to complying with all ICAO provisions for SMS. Both the CAA's safety policy and objectives will be reviewed periodically to ensure the CAA's commitment remains relevant and appropriate.

2.3 Safety Policy

The Safety Policy complements the CAA Mission Statement, to further establish the Assistant Undersecretary for Safety and Aviation Security's (AUSAS) commitment to incorporate and continually improve safety in all aspects of its activities within the Kingdom of Bahrain.

A statement of the State Safety policy is included in Attachment 2 to this program.

2.4 State Safety Legislative Framework

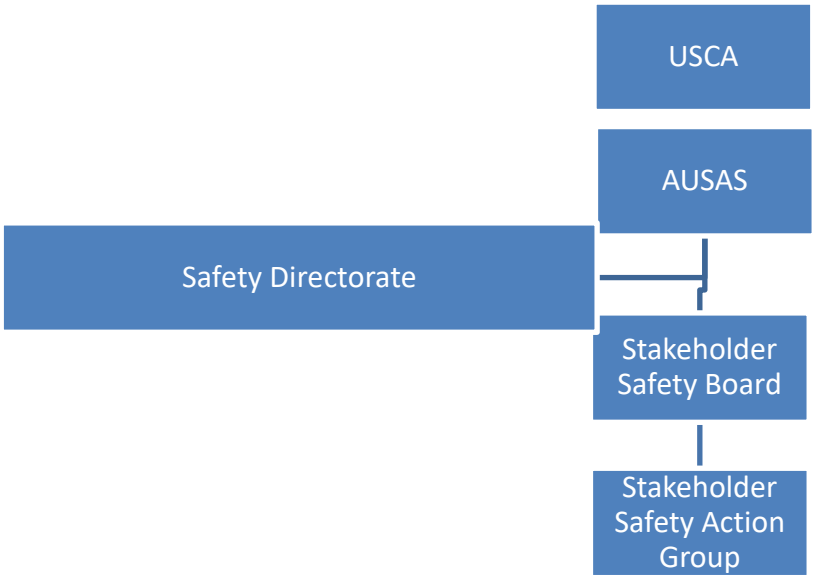
The CAA has promulgated a national safety legislative framework and specific regulations, in compliance with international and national standards, that define how the CAA will oversee and regulate the management of aviation safety in the Kingdom of Bahrain. This includes the CAA's participation in specific activities related to the management of safety in the Kingdom of Bahrain and the establishment of the roles, responsibilities, and relationships of organizations in the system. Amendments are processed in accordance with the CAA Regulation and Standards Procedures Manual.

In the context of the safety policy relating to the development of general rulemaking and specific operational policies, the CAA complies with SARPs wherever possible. However, where the CAA considers it impracticable or inappropriate to transpose ICAO provisions into the ANTRs, it notifies any differences to ICAO and publishes that difference in the AIP in accordance with Article 38 of the Convention. Any differences affecting operators and organisations are stated in the Bahrain AIP.

Under the Regulations and Standards Procedures Manual, all safety legislation is reviewed when required to ensure that they remain relevant and appropriate to the Kingdom of Bahrain.

2.5 State Safety Responsibilities and Accountabilities

The administration of the SSP is managed as follows;



The CAA has identified, defined and documented the requirements, responsibilities and accountabilities regarding the establishment and maintenance of the SSP. This includes the directives to plan, organize, develop, maintain, control and continuously improve the SSP in a manner that meets the CAA's safety objectives. These requirements are promulgated in ANTR Volume 1, Part III, Chapter 9.

2.5.1 USCA

Primary responsibility for the Bahrain SSP rests with the USCA, who has;

(a) ultimate responsibility and accountability for the implementation and maintenance of the SSP;

(b) full authority on human resource issues relating to the CAA;

(c) full authority on major financial issues related to the CAA and the provision of the necessary resources for the implementation of the SSP;

(d) final authority over service provider's certificate management aspects; and

(e) final responsibility for the resolution of all aviation safety issues of the Kingdom of Bahrain.

2.5.2 AUSAS

Secondary responsibility for the Bahrain SSP rests with the AUSAS, who has;

(f) responsibility and accountability for the implementation and maintenance of the SSP;

(g) authority on human resource issues relating to the CAA;

(h) authority on major financial issues related to the CAA and the provision of the necessary resources for the implementation of the SSP;

(i) authority over service provider's certificate management aspects; and

(j) responsibility for the resolution of all aviation safety issues of the Kingdom of Bahrain.

The AUSAS has;

(a) Established the SSP State Safety Board.

(b) Assigned the time required for each task associated with the implementation of the SSP among the different management levels of the State aviation organizations.

(c) Introduced all managerial staff to SSP concepts at a level commensurate with their involvement in the SSP.

(d) Developed and implemented a safety objective and policy.

(e) Made the provision of necessary resources for the implementation of the SSP.

(f) Established the necessary means to ensure that the CAA safety policy is understood, implemented and observed at all levels within Bahraini aviation organizations.

(g) Recommended appointment of the Aviation Safety Director.

In addition to his primary responsibilities, the AUSAS has the following ongoing accountabilities specifically in respect to the maintenance of the SSP;

(a) Provision of adequate staffing;

(b) Funding for the training of staff on SMS;

(c) Provision of data system; and

(d) Funding of safety strategies.

2.5.3 Director of Aviation Safety

The DAS reports directly to the AUSAS on the SSP. His responsibilities include, but are not necessarily limited to:

(a) Managing the SSP implementation plan on behalf of the AUSAS;

(b) Performing/facilitating hazard identification and safety risk analysis;

(c) Monitoring corrective actions and evaluating their results;

(d) Providing periodic reports on the organization's safety performance;

(e) Maintaining records and safety documentation;

(f) Planning and organizing State Safety Board meetings;

(g) Providing independent advice on safety programme matters;

(h) Monitoring safety concerns in the aviation industry and their perceived impact on the organization's operations aimed at service delivery;

(i) Coordinating and communicating (on behalf of the AUSAS) with other Directors and agencies as necessary on issues relating to the management of safety.

In addition to his responsibilities, the Aviation Safety Director has the following ongoing accountabilities specifically in respect to the maintenance of the SSP;

(a) Documenting all SSP meetings;

(b) Maintenance of SSP library;

(c) Submission of all requests to AUSAS on SSP issues;

(d) Organising periodic reviews regarding State ALoS Performance;

(e) Briefing AUSAS on SSP status and performance; and

(f) Preparing any documentation for AUSAS's signature.

2.5.4 State Safety Board

A State Safety Board was established on 14th May, 2015, with the responsibility to plan, organize, develop, maintain control of and continuously improve the SSP in a manner that meets the CAA's safety objectives. The State Safety Board is chaired by the AUSAS or his delegate and consists of;

(a) CAA

(1) Director Aviation Safety

(2) Director Aeronautical Licensing

(3) Director Air Navigation

(4) Director Meteorology

(5) Public Authorities

(6) Selected CAA appointments

(b) Representatives from Bahrain Airport Company (BAC), the operator for Bahrain International Airport as representative for all Bahraini Operators/organisations, when appropriate

(c) Accountable Manager Bahrain Airport Company, when appropriate.

The State Safety Board is eminently strategic, deals with high-level issues in relation to policies, resource allocation and organizational performance monitoring, and meets once every year, unless exceptional circumstances dictate otherwise. The responsibilities of the State Safety Board are to:

(a) Monitor the effectiveness of the SSP Implementation Plan;

(b) Monitor that any necessary corrective action is taken in a timely manner;

(c) Monitor safety performance against the organization's safety policy and objectives;

(d) Monitor the effectiveness of the organization's safety management processes which support the declared corporate priority of safety management as another core business process;

(e) Monitor the effectiveness of the safety supervision of subcontracted operations;

(f) Ensure that appropriate resources are allocated to achieve safety performance beyond that required by regulatory compliance;

(g) Give strategic direction to the Safety Action Group; and

(h) Propose amendments to the SSP and Implementation Plan.

In addition to the above responsibilities, the individual Directors have the following ongoing accountabilities specifically in respect to the safety oversight and development of the SSP;

(a) Provision of adequate and experienced staff;

(b) Training of staff;

(c) Development, maintenance and periodic update of regulations, procedures and industry guidance.

(d) Operation of data system for Aeronautical Licensing and Air Navigation Directorates; and

(e) Safety oversight commensurate with aviation activities;

(f) Identification of hazards and appropriate risk control measures;

(g) Agreement of ALoS Performance in respect to service providers;

(h) Provision of periodic progress reports; and

(i) Safety promotion aspects.

2.5.5 Safety Action Group

Once a strategic direction has been developed by the State Safety Board, concerted implementation of strategies within the CAA must take place, in a co-ordinated manner. This is the primary role of the members of the Safety Action Group (SAG), who are tasked with managing the SSP within their Directorates and comprises of the following appointments;

(a) Chief of Aviation Safety, Audit and Regulations in the Aviation Safety Directorate; and
(b) Chief of Aviation Safety, Rules and Regulations in the Aeronautical Licensing Directorate; and
(c) Safety Manager, Air Navigation Directorate
(d) Chief, Meteorological Operations
(e) Accountable Manager for Safety, BAC

The Safety Action Group is essentially tactical and deals with implementation issues to satisfy the strategic directives of the State Safety Board. The responsibilities of the Safety Action Group are to

(a) Oversee operational safety performance within the functional areas and ensures that hazard identification and safety risk management are carried out as appropriate, with staff involvement as necessary to build up safety awareness;

(b) Coordinate the resolution of mitigation strategies for the identified consequences of hazards and ensures that satisfactory arrangements exist for safety data capture and employee feedback;

(c) Work with their applicable service providers for agreement with the safety performance requirements of their SMS (Acceptable Level of Safety Performance).

(f) Assess the impact of operational changes on safety;

(e) Coordinate the implementation of corrective action plans and convenes meetings or briefings as necessary to ensure that ample opportunities are available for all employees to participate fully in management for safety;

(f) Ensure that corrective action is taken in a timely manner;

(g) Review the effectiveness of previous safety recommendations; and

(h) Oversee safety promotion and ensure that appropriate safety, emergency and technical training of personnel is satisfactorily carried out.

(i) Review specific operating regulations and implementation policies periodically to ensure they remain relevant and appropriate to the service providers.

In addition to the above responsibilities, the nominated individuals have the following ongoing accountabilities specifically in respect of the safety oversight and development of the SSP;

(a) Recommend update of regulations, procedures and industry guidance to maintain international best practice

(b) Capture, storage, development and dissemination of data;

(c) Ensure occurrence reporting (mandatory and confidential) systems functioning;

(d) Auditing of Directorate SMS;

(e) Development of safety awareness initiatives; and

(f) Provision of periodic progress reports on hazards and assessed safety risks.

The SAG shall meet at least twice annually.

2.6 Accident and Incident Investigation

The CAA has established an independent accident and incident investigation process, the sole objective of which is the prevention of future accidents and incidents, and not the apportioning of blame or liability.

The process is in accordance with the Flight Accident/Incident Investigation procedures contained in Technical Procedures Manual (TPM ASR 03) published by the Aeronautical Licensing Directorate (ALD). Such investigations are in support of the management of

safety in the Kingdom of Bahrain. In the operation of the SSP, any CAA official involved in accident/investigation maintains their independence with direct responsibility to the Competent Minister under ANTR Volume 1, Part VI.

The concerned Minister appoints the Investigator-In-Charge (IIC). The IIC should be independent from the regulator, although the regulator may be asked to provide technical expertise.

2.7 Enforcement Policy

The CAA has promulgated an enforcement policy that establishes the conditions and circumstances under which service providers are allowed to deal with, and resolve, events involving certain safety deviations, internally, within the context of the service provider's safety management system (SMS), and to the satisfaction of the CAA. The enforcement policy also establishes the conditions and circumstances under which to deal with safety deviations through established enforcement procedures. This policy is stated in the CAA Enforcement Manual, which also ensures that no information derived from any reporting system established under the SSP or the SMS will be used as the basis for enforcement action, except in the case of gross negligence or wilful deviation.

The CAA is responsible for issuing certificates, licences and approvals for various aviation activities. Effective enforcement is achieved through taking proportionate administrative action against the scope of the holder's permission by changes to the certificate, licence or approval. Where the CAA has reasonable grounds to believe that a potential threat to safety exists such that it can no longer be satisfied that the holder can maintain a safe operation, formal enforcement action will be taken.

CHAPTER 3

STATE SAFETY RISK MANAGEMENT

3.1 General

In the development of a SSP there are two components; safety risk management and safety assurance.
The safety risk management function of an SMS provides for initial identification of hazards and assessment of safety risks. Organizational safety risk controls are developed, and once they are determined to be capable of bringing the safety risk to as low as reasonably practicable, they are employed in daily operations.

The safety assurance function takes over at this point to ensure that the safety risk controls are being practised as intended and that they continue to achieve their intended objectives. The safety assurance function also provides for the identification of the need for new safety risk controls because of changes in the operational environment. The Safety Assurance component of the SSP is addressed in Chapter 4.

There are many different ways of measuring and monitoring aviation safety. This Chapter discusses measures of safety used by the CAA relating to accidents and high risk occurrences and the conclusions drawn from them.

MTT CAA has introduced the State Safety Programme (SSP) starting from mid-2015 to support a risk-based aviation system and the implementation of Safety Management Systems (SMS) by service providers. This will be powered by Q-PULSE (Refer Attachment 3).

To monitor occurrences the CAA has introduced a Mandatory Occurrence Reporting (MOR) System. The system uses a data base to develop the process and to identify high risk occurrences. Each occurrence is assessed and graded by a CAA specialist, thereby permitting the CAA to monitor safety in a systematic way. In addition the CAA shall employ a confidential Voluntary Occurrence Reporting Scheme under ANTR Volume 1, Part VI, which shall be non-punitive and afford protection to the sources of information.

The CAA will use a safety risk analysis process to;

(a) Identify main risks worldwide.

(b) Identify additional risks in Bahrain FIR/ UIR by interrogation of MOR system and active follow-up in respect to the Voluntary Occurrence Reporting Scheme.

(c) Analyse main risks.

(d) Prioritise safety risks.

(e) Develop safety strategies.

The CAA will continue to monitor all safety risks and take action on other significant safety risks that may emerge in the future.

3.2 Safety Requirements for the Service Provider's SMS

The CAA has established the regulatory controls which govern how service providers will identify hazards and manage safety risks. These include the requirements, specific operating regulations and implementation policies for the service provider's SMS. The requirements, specific operating regulations and implementation policies are periodically reviewed in order to ensure they remain relevant and appropriate to the service providers.

ANTR Volume 1, Part III, Chapter requires that the operators and service providers shall have in place an acceptable safety management system in their operation. The operators and service providers shall also develop the SMS implementation plan considering a phased approach of its implementation that shall be approved by the CAA. Operators and service providers include:

(a) Aircraft operators

(b) Maintenance organisations

(c) Maintenance Training Organisations;

(d) Air Traffic Services; and

(e) Airports.

A Civil Aviation Publication CAP 08 – Safety Management System has also been published to assist all service providers with the establishment of an SMS. Air traffic services and Airports have previously implemented a SMS.

3.3 Agreement on the Service Provider's Safety Performance

The CAA will work with the individual service providers to agree the safety performance requirements of their SMS in terms of an Acceptable Level of Safety Performance. The agreed acceptable levels of safety shall be expressed by multiple safety performance indicators and safety performance targets, never by a single one, as well as by safety requirements. They shall be periodically reviewed to ensure they remain relevant and appropriate to the service providers.

Safety Performance Indicators (SPI) - are the measures (or metrics) used to express the safety performance in a system. They should be uncomplicated, easy to measure and enable linkage between the SSP and an operator's/service provider's SMS. They will therefore differ between segments of industry, such as aircraft operators, aerodrome operators or ATS providers.

Safety Performance Targets (SPT) - (sometimes referred to as goals or objectives) represent the desired level of safety performance. A safety performance target comprises one or more safety performance indicators, together with desired outcomes expressed in terms of those indicators. These are necessarily determined by considering what safety performance levels are desirable and realistic for individual service providers/operators. SPT should be measurable and acceptable to the parties involved.

Note: This approach enables safety expectations to be expressed in terms that are performance based, for example (**these are examples only- the actual SPT's will be defined in consultation with stakeholders, as per Implementation Plan)**:

Aircraft Operator

(1) 0.5 fatal accidents per 100, 000 hours for airline operators (SPI) with a 40 per cent reduction in five years (SPT);

(2) 50 aircraft incidents per 100, 000 hours flown (SPI) with a 25 per cent reduction in three years (SPT);

Aircraft Maintenance Organization

(3) 200 major aircraft defect incidents per 100, 000 hours flown (SPI) with a 25 per cent reduction over the last three-year average (SPT);

Aerodrome Operator

(4) 1.0 bird strike per 1, 000 aircraft movements (SPI) with a 50 per cent reduction in five years (SPT);

(5) No more than one runway incursion per 40, 000 aircraft movements (SPI) with a 40 per cent reduction in a 12-month period (SPT); and

ATS Service provider

(6) 40 airspace incidents per 100, 000 movements (SPI) with a 30 per cent reduction over the five-year moving average (SPT);

Operator /Service Provider

(7) Safety committee meetings to be held monthly and whenever necessary (SPI) as long as the intervals between meetings are not greater than 6 weeks (SPT).

The CAA will work with the individual service providers to agree on the safety performance requirements of their SMS in terms of an acceptable level of safety performance (ALoS). The agreed safety performance of an individual service provider's SMS will require periodic review by the CAA to ensure it remains relevant and appropriate to that particular service provider.

To do this in a systematic manner will require safety policies, safety metrics and monitoring methods to be agreed for the different aviation sectors. The acceptable level of safety performance (ALoS) will need to be commensurate to the complexity of individual service providers' specific operations and the resources available to address safety risks. The ALoS must relate to the overall safety performance of the air transport system or certain elements of the system. The Safety Action Group has the responsibility for agreement of the ALoS within their designated areas.

The overall review of the State Safety Programme will consider the following:

1. The aggregated results of risk and safety performance assessments.

2. Analysis of the State's key safety performance indicators at the safety outcomes level, including accidents, serious incidents and incidents.

Establishing acceptable level(s) of safety for the safety programme does not replace legal, regulatory, or other established requirements, nor does it relieve States from their obligations regarding the *Convention on International Civil Aviation* (Doc 7300) and its related provisions. Likewise, establishing acceptable level(s) of safety for the SMS does not relieve operators/service providers from their obligations under relevant national regulations, and those arising from the *Convention on International Civil Aviation* (Doc 7300).

3.4 Accountabilities

The Safety Action Group (SAG) members are each accountable within their own Directorates for ensuring that safety risk management tasks are carried out and for submitting periodic written progress reports, with a recommended action plan, to their applicable Director (in their capacity as a State Safety Board member). (Refer to sub-paragraph 2.5.4)

CHAPTER 4

SAFETY ASSURANCE

4.1 General

As discussed in Chapter 3, there are two components the development of a SSP, safety management and safety assurance. The safety risk management function of an SMS provides for initial identification of hazards and assessment of safety risks. The safety assurance function then takes over to ensure that the safety risk controls are being practised as intended and that they continue to achieve their intended objectives. The safety assurance function also provides for the identification of the need for new safety risk controls because of changes in the operational environment.

4.2 Safety Oversight

The CAA will establish mechanisms to ensure effective monitoring of the eight critical elements of the safety oversight function listed in section 1.5. The CAA, through the State Safety Board, will also establish mechanisms to ensure that the identification of hazards and the management of safety risks by service providers follow established regulatory controls (requirements, specific operating regulations and implementation policies). These mechanisms include inspections, audits and surveys to ensure that regulatory safety risk controls are appropriately integrated into the service provider's SMS, that they are being practised as designed, and that the regulatory controls have the intended effect on safety risks.

4.3 Safety Data Collection, Analysis and Exchange

The CAA will establish mechanisms to ensure the capture and storage of data on hazards and safety risks at both an individual and aggregate level for Bahrain operators and incidents within the Bahrain U/FIR. The CAA will also establish mechanisms to develop information from the stored data, and to actively exchange safety information with service providers and/or other States as appropriate. A data system will permit the CAA to collect, analyse and exchange information.

The Kingdom's size and aviation activity requires a more regional and global data capture to complement the existing Mandatory and Voluntary Occurrence Reporting Systems.

4.4 Safety-Data-Driven Targeting of Oversight of Areas of Greater Concern or Need

The CAA has established procedures to prioritize inspections, audits and surveys towards those areas of greater safety concern or need, as identified by the global analysis of data on hazards, their consequences in operations, and the assessed safety risks. A more global model is being used as Bahrain has a modest aviation industry.

4.5 Accountabilities

The Safety Action Group (SAG) members are each accountable for ensuring that safety assurance tasks, including data collection and analysis, are carried out and that the respective State Safety Board member has a periodic written progress report. (Refer to sub-paragraph 2.5.4)

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CHAPTER 5

SAFETY PROMOTION

5.1 General

The Implementation Plan in Part II focuses on the outstanding and continuing safety actions to be taken by the CAA in developing the State Safety Programme. It does not describe the substantial routine day to day work undertaken by the CAA staff.

5.2 Internal Training, Communication and Dissemination of Safety Information

The State provides training and fosters awareness and two-way communication of safety-relevant information within the State aviation organizations to support the development of an organizational culture that fosters an effective and efficient SSP.

The CAA recognises that the use of an electronic format for regulations, publications, safety information and general industry communication provides a timely and effective means of enhancing the partnership with industry and improving the efficiency within the CAA.

In regard to other safety promotion issues, each Directorate shall be responsible for the following;

(a) Data collection, analysis and exchange;

(b) Development of internal communication methods;

(c) Internal training; and

(d) Review and amendment of regulations and industry publications.

5.3 External Training, Communication and Dissemination of Safety Information

With a fully functioning data system, the CAA will provide education and promote awareness of safety risks and two-way communication of safety-relevant information to support, among services providers, the development of an organizational culture that fosters an effective and efficient SMS.

5.4 Accountabilities

The State Safety Board (SSB) Directors are each accountable for ensuring that safety promotion tasks are carried out within their own Directorates and for making recommendations for CAA initiatives. (Refer to sub-paragraph 2.5.3)

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KINGDOM OF BAHRAIN
Ministry of Transportation
and Telecommunications

مملكة البحرين
وزارة المواصلات والاتصالات

CIVIL AVIATION AFFAIRS

PART II

IMPLEMENTATION PLAN

OF

STATE SAFETY PROGRAMME

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CIVIL AVIATION AFFAIRS

CHAPTER 1

INTRODUCTION

1.1 Objective

The CAA's Objective is to develop a world class safety environment, in partnership with the aviation industry, by making continuous improvements in aviation safety in the Kingdom of Bahrain. This Mission Statement is now supplemented by the State Safety Programme (SSP), which outlines the safety oversight arrangements for the CAA.

The SSP is a living process that monitors the CAA's safety performance and continues to seek improvements in aviation safety. It describes the current safety performance of the Bahraini aviation system and outlines the specific strategies and actions the CAA will be taking to achieve a continuous improvement in aviation safety

1.2 Implementation Plan

The SSP Implementation Plan describes how the CAA will put in practice, in a sequential, principled manner, the processes, procedures and means that will allow the CAA to discharge its responsibilities associated with the management of safety in civil aviation. The development of an SSP implementation plan will allow the CAA to:

(a) Formulate an overarching strategy for the management of safety in the State;

(b) Coordinate the processes executed by the different aviation organizations under the SSP;

(c) Establish the controls that govern how the service provider's safety management system (SMS) will operate;

(d) Ensure that the operation of the service provider's SMS follows established controls; and

(e) Support the interaction between the SSP and the operation of the service provider's SMS.

The Implementation Plan contains Deliverables and Milestones which should be adhered to wherever possible and progress must be reviewed by the CAA Safety Group at every meeting.

Note: Refer to Attachment 1 for Deliverables and Milestones chart for open items.

1.3 Gap Analysis

In order to develop a credible SSP Implementation Plan, a gap analysis of the structures and processes existing in Bahrain was conducted against the ICAO SSP framework. This allowed the CAA to assess the existence and maturity of the elements of the SSP. The components/elements identified as missing or deficient form, together with those already

existing or effective, the basis of the SSP implementation plan. Only the open items are stated.

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CHAPTER 2

SAFETY POLICY & OBJECTIVES

2.1 Safety Legislative Framework

(a) Review, develop and promulgate specific regulations, in compliance with international and national standards, that define how the CAA will oversee the management of safety within the Air Navigation Directorate.

Comment: Open – Milestone 3rd quarter 2016.

(b) Establish a time frame to periodically review the safety legislation and specific operating regulations to ensure they remain relevant and appropriate to the State.

Comment: Open - This is an ongoing process and the ANTRs should be reviewed as and when required

(c) The CAA will complete an ICAO Compliance Checklist on every ICAO Annex to identify any ICAO Standard not implemented in the ANTRs and commence the amendment process to implement the Standard. Any Recommended Practice, not implemented in the ANTRs will be reviewed to determine relevance and possible inclusion as a regulation.

Comment: Open – This will be an ongoing action for review at every State Safety Board meeting.

2.2 State Safety Responsibilities and Accountabilities

(a) Identify, define and document the requirements, responsibilities and accountabilities regarding the establishment and maintenance of the SSP. This includes the directives to plan, organize, develop, maintain control of and continuously improve the SSP in a manner that meets the State's safety objectives. Include a clear statement about the provision of the necessary resources for the implementation of the SSP.

Comment: Open – Milestone 4th quarter 2015 for SSP establishment. The maintenance of the SSP will be an ongoing action for review at every State Safety Board meeting.

(b) Introduce all staff to SSP concepts at a level commensurate with their involvement.

Comment: Open - Milestone 1st quarter 2016 for remaining appropriate staff.

2.3 SSP Documentation

Develop and establish a safety library that documents the requirements, responsibilities and accountabilities regarding the establishment and maintenance of the SSP. The safety library will maintain and update, as necessary, the following;

(a) SSP documentation related to the national safety legislative framework;

(b) the CAA safety policy and objectives;

(c) the SSP requirements;

(d) the SSP processes and procedures,

(e) the accountabilities, responsibilities and authorities for processes and procedures, and

(f) the CAA's acceptable level of safety (ALoS) performance related to the SSP.

Comment: *Open – milestone for 1st quarter of 2016 for the establishment of a CAA safety library under the responsibility of the Safety Programme Manager. The record system must ensure the generation and retention of all records necessary to document and support the SSP activities and provide the control processes necessary to ensure appropriate identification, legibility, storage, protection, archiving, retrieval, retention time, and disposition of records.*

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CHAPTER 3

SAFETY RISK MANAGEMENT

3.1 Safety Requirements for the Service Provider's SMS

(a) Establish the requirements, specific operating regulations and implementation policies for the service provider's SMS (SMS regulatory framework, advisory circulars, etc.) as the controls which govern how service providers will identify hazards and manage and control safety risks.

Comment: – Open -Milestone 2nd quarter 2016 for review of effectiveness of ANTRs and CAP 08.

(b) Establish a time frame for consultation with service providers on those requirements.

Comment: – Open -Milestone for completion of service provider's SMS Manual and establishment of fully functioning system is 1st quarter 2017.

(c) Airport service providers must include and test an Emergency Response Plan (ERP) in their airport manual to ensure that it provides the actions to be taken by the organisation or individuals in an emergency. The ERP must be integrated into the SMS and reflect the size, nature and complexity of the activities performed by the service provider.

Comment: – Open -Milestone 2nd quarter 2016.

3.2 Agreement on the Service Provider's Safety Performance

(a) Develop and establish a procedure for agreement on the safety performance of an individual service provider's SMS including ALoS Performance. Include within the agreed procedure that the service provider's safety performance should be commensurate with:

(1) The complexity of the individual service provider's specific operational contexts; and
(2) The availability of the individual service provider's resources to address safety risks.

The safety performance should be based on;

(1) Safety performance indicator values;

(2) Safety performance target values; and

(3) Action plans.

Comment: – Open - Milestone 1st quarter 2016 for ATS and Airports

- Milestone 2nd quarter 2016 for all other service providers

(b) Measure the safety performance of the service provider's SMS through periodic reviews of the agreed safety performance of the SMS to ensure that safety performance indicators and safety performance targets remain relevant and appropriate to the service provider.

Comment: – Open -Milestone 1st quarter 2017 for all service providers

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CHAPTER 4

SAFETY ASSURANCE

4.1 Safety Oversight

The Aviation Safety Directorate has implemented SMS for the service providers. The Aeronautical Licensing Directorate has implemented the regulations for air operators, maintenance and training organisations to implement SMS. It has been agreed that there will be a transition period before the full benefits of SMS can be realised.

During the initial transition period of 12 months the CAA will maintain appropriate surveillance and guidance to ensure that staff members have the appropriate skills for SMS oversight. For all SMS the CAA shall;

(a) Establish mechanisms to ensure an effective safety oversight function.

(b) Establish mechanisms that guarantee that the identification of hazards and the management of safety risks by service providers follow established regulatory controls.

(c) Establish mechanisms that guarantee that safety risk controls are integrated into the service provider's SMS.

(d) Develop an internal SSP audit programme under the CAA Quality Management System with adequate and experienced staff.

Comment: – Open -Milestone 1st quarter 2017

4.2 Safety Data Collection, Analysis and Exchange

(a) Develop and establish a means of collecting, analysing and storing data about hazards and safety risks at the State level with regional and global input:

(1) Establish a mandatory hazard reporting system.

(2) Develop a State hazard database.

(3) Establish a mechanism to develop information from the stored data.

(4) Establish a means to collect hazard data at both the aggregate State level and at the individual service provider's level; and

(b) Analyse the data and ensure:

(1) Identified regulatory safety risk controls are integrated into the service provider's SMS;

(2) Oversight activities verify that safety risk controls are implemented by service providers.

(c) Review the acceptable level of safety (ALoS) performance related to the SSP ensuring that the combination of safety measurement and safety performance measurement remains consistent with the CAA Safety Policy and Mission Statement.

(d) Review exchange of information.

Comment: – Open -Milestone 3rd quarter 2016 for acquisition of data system and appointment of trained personnel. Paragraphs (b), (c) and (d) remain permanently open.

4.3 Safety-Data-Driven Targeting of Oversight of Areas of Greater Concern or Need

The CAA continues to investigate and rectify any safety risks in Bahraini airspace. The aim is to enhance safety within the U/FIR, identify hazards associated with the use of airspace within the Bahrain U/FIR and the needs of airspace users and to develop a strategy to mitigate those risks whilst meeting the needs of airspace users.

The Air Navigation Services Directorate works to provide improvements to service in terms of volume of traffic managed and the consistency of service provided. In particular;

(a) Establish procedures to prioritize inspections, audits and surveys, based on analysis of hazards and safety risks;

Comment: – Open -Milestone 3rd quarter 2017

(b) Develop risk reduction procedures for the following Safety Performance Indicators;

(1) Loss of ATC separation caused by complexity of airspace;

(2) Infringement occurrences on U/FIR transfer; and

(3) Airprox within Bahrain U/FIR

Comment: – Open -Milestone 3rd quarter 2017

(c) Rationalise the route structure within and adjoining Bahrain FIR.

Comment: – Open -Milestone 3rd quarter 2017

(d) Acquire Surface Movement Radar
Comment: – Open -Milestone 4th quarter 2016

(e) Acquire suitable accommodation for new ACC to overcome space and noise limitations.

Comment: – Open -Milestone 4th quarter 2018

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CHAPTER 5

STATE SAFETY PROMOTION

5.1 Internal Training

(a) Identify internal training requirements.

(b) Develop and provide generic safety training to all staff.

(c) Develop a training programme on key components of the SSP and State and service providers' SMS for staff that includes:

(1) Indoctrination/initial safety training;

(2) On-the-job (OJT) safety training;

(3) Recurrent safety training.

(d) Establish a means to measure the effectiveness of the training under the CAA Quality Management System.

Comment: – Open -Milestone 2nd quarter 2016

5.2 Communication and Dissemination of Safety Information

The CAA should establish;

(a) A means to provide external education, awareness of safety risks and two-way communication of safety-relevant information.

(b) Communication processes within the CAA that allow and ensure that information about the SSP, its functions and processes are made available to the CAA and promoted nationally and internationally.

(c) A formal process for the external dissemination of safety information to CAA service providers and a means of monitoring the effectiveness of this process.

Comment: – Open -Milestone 4th quarter 2016.

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ATTACHMENT 1

STATE SAFETY PROGRAMME IMPLEMENTATION PLAN 2015 – 2019

	2015	2016	2017	2018	2019	Status
Safety Policy & Objectives						
Enact ANTR on SSP & Q-Pulse	3rd Quarter					Open
Hold initial Safety Action Group meeting	4th Quarter					Open
Complete Gap Analysis	3rd Quarter					Open
Complete Implementation Plan	4th Quarter					Open
Publish State Safety Programme & Plan	4th Quarter					Open
Review safety legislation						Permanently Open
Update ICAO Compliance Checklist						Permanently Open
Maintenance & review of SSP						Permanently Open
SSP training for involved staff		1st Quarter				Open
Establish Safety Library		1st Quarter				Open
Safety Risk Management						
Determine effectiveness of ANTR & CAP 08 (SMS)		2nd Quarter				Open
Fully functioning SMS for service providers			1st Quarter			Open
Airport Emergency Response Plan in SMS		2nd Quarter				Open
Agreement on ALoSP - Airports & ANS		1st Quarter				Open
Agreement on ALoSP - ALD service providers (Flight Safety)		2nd Quarter				Open
Measure of safety performance			1st Quarter			Open
Safety Assurance						
Establish mechanism for safety oversight			1st Quarter			Open
Establish audit programme for Airports			1st Quarter			Open
Establish audit programme for ANS			1st Quarter			Open
Establish internal SSP audit under Q-Pulse			1st Quarter			Open
Review of data system with staff		3rd Quarter				Open
Analyse data						Permanently Open
Review ALoS Performance						Permanently Open
Review exchange of information						Permanently Open
Establish ANS inspection procedures			3rd Quarter			

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Establish ANS risk reduction procedures			3rd Quarter			Open
Rationalise Airspace structure			3rd Quarter			Open
	2015	**2016**	**2017**	**2018**	**2019**	**Status**
Acquire ATC Surface Movement Radar	4th Quarter					Open
Acquire New ATC ACC facility					4th Quarter	Open

Safety Promotion						
Establish effective SSP training programme		2nd Quarter				Open
Establish education & comms processes		4th Quarter				Open

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ATTACHMENT 2

AVIATIO SAFETY POLICY

To be attached upon acceptance.

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ATTACHMENT 3

Q-Pulse SSP implementation tool:

BCAA opted to utilize Q-Pulse, a robust system designed to promote a culture where safety occurrences can be reported, investigated and analyzed. The system's management functionality provides;

- Simple yet flexible occurrence reporting process
- Systematic occurrence investigating and risk rating
- Automated occurrence action-tracking with associated business alerts
- Detailed report trending and analysis across all reported occurrence data

Q-Pulse is based on PLAN-DO-CHECK-ACT cycle; this enables a systematic and holistic approach to safety management that integrates the management and analysis of incident alongside proactive SMS activities such as internal audit.

Report, Investigate & Analyze;

Report:
Q-Pulse has been designed to address typical occurrence reporting requirements. Bespoke reports can easily be classified using standard descriptors and causal factors, risk assessment templates available for specific matrices.
Investigate:
Customized incident workflows based on incident type, system enables all findings to be documented and all action to be agreed. By connecting to company email systems, all activities can be communicated and concerned staff can be informed of actions and responsibilities in real- time.
Analyse:
System offers dynamic incident analysis graphs which can be drilled down to the specific details. Incident investigation findings are available for analysis alongside SMS information including internal audit findings, enabling a holistic viewpoint of risk.

Q-Pulse IMS framework
System is consists of a series of integrated modules that interface together to provide a complete frame work to manage aviation safety: From policy and procedure to communication through demonstrable ongoing safety improvement.

Launch Pad:

- Designed specially to promote ownership and interaction between SMS & QMS.
- Provides a short cut for each individual to personal and specific information about safety and quality actions & activities.
- Allows each individual to contribute to safety improvement ideas across the organization

1. **Incident Reporting**

Confidentially capture incidents in a consistent format and trigger investigation workflow & action plan

2. **Audits and findings**

Manage complete audit lifecycle, plan, schedule, prepare, report & track actions through to conclusion.

3. **CA/PA & Issues**

Preventive action (PA) and workflow engine with escalation & notification functionality to drive the implementation of corrective actions (CA).

4. **Document Control**

Centralized accessible document management, with full change control workflow.

5. **Specialized Modules**

Asset, supplier & customer management functionality, mind mapping solution to support with investigation and planning activities.

6. **Competency & Development**

Maintain and demonstrate staff competency & identify training requirements when process & procedure changed

.

7. **Integration**

Ability to integrate with other systems.

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ATTACHMENT 4

Safety Management Systems Policy

The Bahrain CAA has adopted a policy of implementing Safety Management Systems (SMS) requirements for a wide range of certified organisations in our civil aviation system. The SMS policy will be implemented as a series of amendments to Civil Aviation Rules (CARs).

An SMS is a formal organizational system to manage safety. It integrates a range of safety management tools. It includes senior management commitment, hazard identification, risk management, safety reporting, occurrence investigation, remedial actions and education. An effective SMS generates an enhanced safety cultures and provides the necessary management environment for an organization to readily identify and resolve systemic safety problems. Every SMS must address the same key elements, but the size and scope will differ in relation to the complexity of the organization applying it, SMS is now a cornerstone of the regulatory philosophy of the International Civil Aviation Organization (ICAO) which is strongly promoting safety management systems as the basis for certification of various types of operation. In some areas, CARs are not in compliance with ICAO standards.

Bahrain is well placed to implement SMS as the philosophy fits well with our existing approach to safety regulation, and is better suited to achieving our safety performance goals than existing quality assurance and exposition requirements. While these requirements provide an effective management tool, SMS develops them further by focusing more on hazard identification and risk management properly implemented. SMS provide a comprehensive and integrated framework for the organization to appropriately manage its safety responsibilities.

CAR amendments will be introduced in three groups. The initial group will bring CARs into line with ICAO Annexes 6 (Operation of Aircraft), 11 (Air Traffic Services) and 14 (Aerodromes). This will be followed by rules to existing organization quality assurance and implement new requirements for certain other *organisations*. The proposed grouping of rule amendments is set out in "Rules *to be directly affected by SMS implementation and priority grouping order"*. The SMS policy will eventually cover all organisations with safety responsibilities.
SMS rules will

- Require certificated organisations to establish, implement and maintain an SMS appropriate to the size and scope of their organisations
- Be consistent with the ICAO SMS requirements set out in Annexes 6, 11 and 14 and associated manuals
- Be performance based in that they will stipulate what the SMS has to achieve, rather than prescribing in detail what has to be done

- Build on existing exposition/internal quality assurance rules by providing a framework for all regulatory compliance requirements to be integrated into the SMS, especially where those requirements are addressed in other CARs not directly linked at present to the exposition or internal quality assurance rules (e.g. reporting of occurrences).
- Implementation

Bahrain CAA will continue working collaboratively with industry during the rule development process. A steering group will be established at senior executive level to coordinate and oversee SMS implementation within the Bahrain CAA. This group will be chaired by the Director Safety Services. A rule project working group will also be established to address technical issues associated with rule development and assist with industry input to the implementation process.

To assist in meeting the new requirements, the rules will provide for a transition period before full compliance is required. Existing operators will have up to 3 years, as from 2016 when SMS will be mandated to work towards full compliance (i.e. complete integration of all elements of SMS). New entrants to the civil aviation system will be expected to fully comply with SMS from initial entry certification.
Certified organisations will be encouraged to adopt SMS voluntarily in the lead-up to mandated rules. This will provide additional lead time for organisations to develop an SMS prior to the CARs taking effect.

A few operators have already adopted SMS ahead of any regulatory requirement to do so. Others are well on the way CAA education and information programmers will focus on all operations. In all cases, CAA will give clear directions as its expectations in relation to SMS and the performance outcomes to be achieved. Advisory Circulars and other guidance material will be developed explaining how to establish, implement and maintain an SMS. This material will not replace Internal *Quality Assurance protocols and will,* incorporate required information as appropriates.