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Agenda Item 6: Analysis of the Effective Implementation (EI) of States Safety Oversight Systems

CURRENT STATUS OF EFFECTIVE IMPLEMENTATION OF THE STATES SAFETY OVERSIGHT SYSTEMS IN THE NAM/CAR REGIONS

(Presented by Secretariat)

EXECUTIVE SUMMARY

This working paper presents a detailed analysis of the status of the Effective Implementation (EI) of the State Safety Oversight System (SSO) in the States of the NAM/CAR Region.

Action:	The suggested action is presented in Section 6.
<i>Strategic Objective:</i>	<ul style="list-style-type: none">• Safety
<i>References:</i>	<ul style="list-style-type: none">• <i>Convention on International Civil Aviation (Doc 7300)</i>• <i>Annex 19 to the Convention on International Civil Aviation, Safety Management</i>• <i>Safety Oversight Manual Part A The Establishment and Management of a State's Safety Oversight System (Doc 9734)</i>• <i>ICAO iStars</i>

1. Introduction

1.1 States have agreed, under the framework of the *Chicago Convention*, to certain principles and arrangements in order that international civil aviation may be developed in a safe and orderly manner. For that, Contracting States should establish and implement a system that enables to satisfactorily discharge their international obligations and responsibilities to develop and conduct civil aviation in a safe and orderly manner.

1.2 Safety oversight is defined as a function by means of which States ensure effective implementation of the safety-related Standards and Recommended Practices (SARPs) and associated procedures contained in the Annexes to the *Convention on International Civil Aviation* and related ICAO documents. Safety oversight also ensures that the national aviation industry provides a safety level equal to, or better than, that defined by the SARPs. As such, an individual State's responsibility for safety oversight is the foundation upon which safe global aircraft operations are built. Lack of appropriate safety oversight in one Contracting State therefore threatens the health of international civil aircraft operation.

1.3 ICAO Contracting States, in their effort to establish and implement an effective safety oversight system (SSO), need to consider the Critical Elements (CE) for safety oversight. CE are essentially the safety defence tools of a safety oversight system and are required for the effective implementation of safety related policy and associated procedures. States are expected to implement safety oversight critical elements in a way that assumes the shared responsibility of the State and the aviation community.

1.4 The effective implementation of the CEs is an indication of a State's capability for safety oversight.

2. Universal Safety Oversight Audit Programme (USOAP)

2.1 The 32th session of the Assembly (22 September – 2 October 1998) adopted Assembly Resolution A32-11 — *Establishment of an ICAO Universal Safety Oversight Audit Programme (USOAP)* with the objective of monitoring the safety oversight obligations of all State's entities in ensuring the implementation of all ICAO safety-related SARPs.

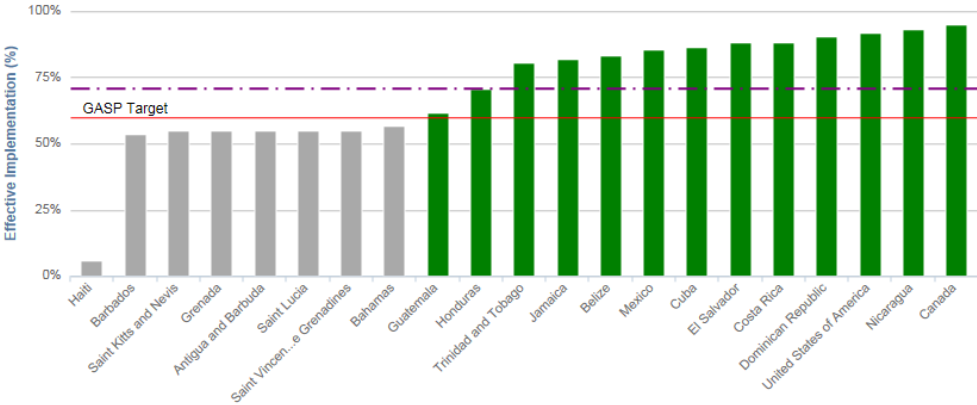
2.2 Protocol Questions (PQs) are the primary tool for assessing the level of effective implementation of a State's safety oversight system. They are based on ICAO SARPs, PANS, ICAO documents, other guidance material and taking into consideration the CEs.

2.3 PQs are organized by audit areas. The following eight audit areas have been identified in the USOAP:

- 1) Primary aviation legislation and civil aviation regulations (LEG);
- 2) Civil aviation organization (ORG);
- 3) Personnel licensing and training (PEL);
- 4) Aircraft operations (OPS);
- 5) Airworthiness of aircraft (AIR);
- 6) Aircraft accident and incident investigation (AIG);
- 7) Air navigation services (ANS); and
- 8) Aerodromes and ground aids (AGA).

3. USOAP Regional Results for the NAM/CAR Region

3.1 The ICAO NACC Regional Office is responsible for 21 States. All States in NAM/CAR region have received a USOAP-Continuous Monitoring Approach (CMA) audit. The current average USOAP score for States in NAM/CAR is 70.87%, which is above the world average of 64.69%. 61.9% of the States in the NAM/CAR have achieved the target of 60% EI, as suggested by the Global Aviation Safety Plan (GASP). *Source: iStars*



3.2 Regional EI by Critical Element:

- a) CE-1 79.68 %
- b) CE-2 75.14 %
- c) CE-3 72.18 %
- d) CE-4 62.2 %
- e) CE-5 76.4 %
- f) CE-6 72.46 %
- g) CE-7 58.49 %
- h) CE-8 63.36 %

3.3 Regional EI by Audit Area:

- a) LEG 77.42 %
- b) ORG 79.01 %
- c) PEL 84.77 %
- d) OPS 81.44 %
- e) AIR 79.58%
- f) AIG 68.64 %
- g) ANS 61.54 %
- h) AGA 57.56 %

4. Regional performance analysis in the NAM/CAR Region per Audit Area

4.1 Highlights of Issues Identified in the LEG Area

4.1.1 Legislation and specific operating regulations – General:

- 48% of States have not established a process for determining the need to amend its specific operating regulations or, if necessary, its primary aviation legislation, taking into consideration ICAO provisions and their amendments
- 48% of States have not established procedures for identifying and notifying to ICAO differences between ICAO SARPs and its legislation and practices, if any
- 53% of States' legal framework lack provisions for the granting of exemptions and/or have not established associated procedures for granting exemptions
- 73% of States have not implemented provisions to reflect the transfer of the functions and duties as envisaged by Article 83 bis of the *Chicago Convention*
- Only 3 States (14% of States) have established and implemented a process to ensure the identification and publication in the State's AIP of significant differences between the SARPs/PANS/SUPPS and the State's regulations and practices

4.2 Highlights of Issues Identified in the ORG Area

4.2.1 State civil aviation system and safety oversight functions – Resources and Establishment and implementation of an SSP:

- 53% of States have not established a mechanism to ensure that each safety oversight authority has sufficient personnel to meet its respective national and international obligations.
- No State has established and implemented an SSP.

4.3 Highlights of Issues Identified in the PEL Area

4.3.1 Organization, staffing and training – PEL

- 43.86% of States have not established a formal training programme that details the type of training that should be provided to licensing inspectorate staff and other technical personnel
- 47.62% of States have not established a periodic training plan detailing and prioritizing the type of training that will be provided to personnel licensing inspectorate staff and other technical personnel during the established period
- 52.38% of States have not implemented appropriately the training programme for personnel licensing inspectorate staff and other technical personnel

4.3.2 Issuance of licences and ratings

- No State has implemented a process to approve training programmes related to the first issuance of licences and ratings
- No State has established procedures for the issuance of Air Traffic Controller (ATCOs) licences and ratings and/or to ensure that knowledge, experience and skill requirements are met by air traffic controllers

4.3.3 Examinations

- 43.86% of States have not established appropriate minimum qualification requirements for examiners who prepare questions or assess examinations

4.3.4 Medical assessment

- 57.14% of States have not implemented a system for the supervision and control of designated medical examiners (DME)

4.3.5 Language proficiency

- 44.44% of States have not implemented a system for formally re-evaluating the ability of aeroplane and helicopter pilots, flight navigators required to use the radiotelephone, air traffic controllers and aeronautical station operators, who demonstrate proficiency below the Expert Level (Level 6), at intervals in accordance with an individual's demonstrated proficiency level

4.4 Highlights of Issues Identified in the OPS Area

4.4.1 Legislation and Regulations Analysis

- 57.38% of States have not implemented procedures for amending its enabling aircraft operations regulations
- 47.62% of States lack provisions in their legislation or regulations making it mandatory for any civil aircraft under its registry or operated by its air operators to comply with interception orders from other States
- No State has implemented procedures for identifying and notifying to ICAO differences between ICAO Standards and national regulations in the area of dangerous goods

4.4.2 Organization, Staffing and Training Analysis

- 52.38% of States have not established, in the flight operations inspection organization, a formal training programme for operations inspectors and dangerous goods inspectors which describes the type of training to be provided
- 61.9% of States have not established, in the flight operations inspection organization, a periodic training plan detailing and prioritizing the type of training to be provided during a specified timeframe

4.4.3 Air Operator Document Review Analysis

- No State has implemented a process for the acceptance or approval of aircraft leasing arrangements, including coordination on airworthiness-related aspects.
- No State has carried out an operations evaluation for the conduct of CAT II and III instrument approaches

4.4.4 Air Operator SMS Analysis

- 36.84% of States have not established appropriate procedures to ensure that the air operator has established and maintained a flight data analysis programme as part of its SMS

4.4.5 Dangerous Goods Analysis

- No State has established and implemented procedures to ensure that passengers are warned as to the types of dangerous goods that they are prohibited or restricted from transporting aboard an aircraft
- No State has developed procedures related to the oversight of entities, other than air operators, established in the State and involved in the transport of dangerous goods by air to confirm compliance with dangerous goods regulations
- No State has established or implemented procedures to review the air operators processes to manage the dangerous goods transportation, as part the flight safety documents system of the air operator
- No State has implemented a process to issue approvals for the transport of dangerous goods by air

4.4.6 Aircraft Operations Surveillance Analysis

- 50% of States have not implemented a procedure to carry out regular and random inspections of all entities, except air operators, involved in the transport of dangerous goods by air to confirm compliance with Annex 18 and the Technical Instructions (TI or Doc 9284)
- 42.86% of States have not implemented a formal surveillance programme to verify that all AOC holders in the State comply, on a continuing basis, with national regulations, international standards, AOCs and corresponding operations specifications
- 42.86% of States have not implemented a formal surveillance programme to verify that foreign air operators comply, on a continuing basis, with international standards, AOCs and corresponding operations specifications
- No State has implemented a surveillance programme that includes ramp inspections of aircraft operated by AOC holders and foreign air operators, based on risk

4.4.7 Resolution of Safety Concerns Analysis

- No State has established and implemented a process for reporting dangerous goods incidents and accidents, with procedures for investigating and compiling information concerning accidents or incidents involving dangerous goods, which occur in its territory and which involve the transport of dangerous goods originating in or destined for another State

4.5 Highlights of Issues Identified in the AIR Area

4.5.1 AIR Analysis

Organization, Staffing and Training of the Airworthiness Inspection Division (AID) Analysis

- 48.37% of States have not developed a formal training programme detailing the type of training to be provided to airworthiness inspectors
- 48.91% of States have not developed a periodic training plan detailing and prioritizing the type of training to be provided during the established period
- 64.67% of States have not implemented the training programme appropriately

4.5.2 Facilities, Equipment and Documentation of the Airworthiness Inspection Division (AID)
Analysis:

- 44.26% of States have not provided the airworthiness inspectors with comprehensive procedures and checklists to assist them in carrying out their functions in a standardized and efficient manner

4.5.3 Airworthiness Certification of Air Operators Analysis

- 43.75% of States have not established a procedure to review and approve/accept Extended Diversion Time Operations (EDTO) as part of operating specifications issued in conjunction with an AOC

4.5.4 AMOs Analysis

- 40.11% of States have not issued AMO certificates in accordance with the promulgated regulations and established procedures

4.5.5 Airworthiness Surveillance (AID) Analysis

- 42.13% of States have not developed procedures to ensure at regular intervals that their air operators maintain up-to-date and sufficient documentation concerning FDR parameter allocation, conversion equations, periodic calibration and other serviceability/maintenance information
- 54.14% of States have not implemented a formal surveillance programme to verify that all AMOs comply on a continuing basis with national regulations, international standards and AMO certificates
- 54.89% of States have not implemented a formal surveillance programme to verify that all AOC holders comply on a continuing basis with airworthiness-related national regulations, international standards, AOCs and corresponding operations specifications
- 42.50% of States have not implemented a procedure to conduct ongoing surveillance of reliability programmes

4.6 Highlights of Issues Identified in the AIG Area

4.6.1 Organization, staffing and training – AIG

- 48% of States have not established an investigation authority with a clear and documented structure and in a manner that ensures independence from State aviation authorities and other entities that could interfere with the conduct or objectivity of an investigation

- 60% of States, that do not have its own appropriately qualified personnel, or not in sufficient number, have not established arrangements (i.e. Memoranda of Understanding (MoUs)) with other States or with regional organizations to obtain the necessary personnel in an expeditious manner in the event of an accident or serious incident
- 57% of States' investigation authorities have not developed a formal training programme detailing the type of training to be provided to its investigators

4.6.2 Safety recommendations

- 33% of States, as the State conducting the investigation, have not established and implemented guidelines regarding the development and issuance of safety recommendations to the appropriate authorities, including those in other States, at any stage of an accident or incident investigation

4.6.3 Forwarding of ADREP reports

- 81% of States, as the State conducting the investigation, have not developed and implemented procedures to ensure sending preliminary ADREP reports, when the aircraft involved in an accident is of a maximum mass of over 2 250 kg, to all involved States and ICAO
- 62% of States, as the State conducting the investigation, have not developed and implemented procedures to ensure sending ADREP accident data reports involving aircraft of a maximum mass of over 2 250 kg to ICAO, as soon as practicable after the investigation
- 81% of States, when it has investigated an incident to an aircraft of a maximum mass of over 5 700 kg, have not established and implemented procedures to ensure sending ADREP incident data reports to ICAO

4.6.4 Reporting, storage and analysis of accident/incident data

- 48% of States have not established and implemented (through the necessary legislation, procedures and guidance to the industry) a mandatory and voluntary incident reporting systems to facilitate the collection of information on actual or potential safety deficiencies
- 57% of States have not established an accident and incident database to facilitate the effective analysis of information on actual or potential safety deficiencies and to determine any preventive actions required

4.7 Highlights of Issues Identified in the ANS Area

4.7.1 ANS Inspectorate:

- 47% of States have not established and implemented a formal surveillance programme for the continuing supervision of the service provider responsible for air traffic service (ATS)
- 62% of States does not effectively conduct surveillance over its procedures specialists or service providers
- 48% of States does not effectively conduct surveillance over the entity providing the AIS
- 52% of States does not effectively conduct surveillance over the entity providing the cartographic service
- 57% of States does not effectively conduct surveillance over the entity responsible for the maintenance and operation of CNS systems and its facilities
- 57% of States does not effectively conduct surveillance over the entity providing the MET service
- 62 % of States does not effectively conduct surveillance over the rescue coordination centre (RCC) and, as appropriate, Rescue Sub-Centre (RSC)

4.7.2 ANS Inspectorate Training:

- Most States have not established a formal training programme detailing the type of training to be provided to its ANS inspectors
- Most States does not appropriately implement the training programme for the ANS inspectors

4.7.3 ANS Inspectorate Staffing:

- A significant number of States does not employ a sufficient number of qualified technical staff to carry out its safety oversight tasks and regulatory functions

4.7.4 SSP/SMS:

- Only 1 State ensures that the air traffic service (ATS) provider has established and implemented an SMS acceptable to the State
- Only 2 States, as part of their surveillance programme, periodically assess ATS providers' SMS, including its hazard identification and safety risk management processes and its safety performance indicators (SPIs) and their relevant alert and target levels

- 4.7.5 AIS:
- 76% of States does not ensure that a properly organized quality management system in the AIS has been established

- 4.7.6 SAR:
- 48% of States have not established an entity which provides, on a 24-hour basis, SAR services within its territory and the areas where the State has accepted responsibility to provide SAR to ensure that assistance is rendered to persons in distress
 - 62% of States does not coordinate its SAR organization with those of neighbouring States
 - 48% of States does not ensured that each RCC and RSC employ sufficient workforce skilled in coordination and operational functions

4.8 Highlights of Issues Identified In the AGA Area

- 4.8.1 Organization, staffing and training – AGA
- 77% of States aerodrome regulatory authorities lack sufficient human resources (including an appropriate mix of technical disciplines given the size and scope of all the aerodrome operations in the State) to carry out its functions and mandate
 - 57% of States aerodrome regulatory authorities have not developed a formal training programme detailing the type of training to be provided to aerodrome regulatory and inspectorate staff
 - The majority of the States aerodrome regulatory authorities have not developed and implemented periodic training plans to be provided during the established period

4.8.2 Aerodrome certification – General

- 57% of States have not established a process for the certification of aerodromes

4.8.3 Aerodrome manual

- 61% of States do not ensure that aerodrome manuals are reviewed periodically to check their amendment status and that the information contained in the manual remain correct
- 47% of States do not have a procedure in place for subsequent amendments to the aerodrome manual to be reviewed and approved/accepted by aerodrome regulatory authority technical staff

4.8.4 Aerodrome maintenance

- 47% of States do not ensure that aerodrome operators develop and implement aerodrome maintenance programmes at all aerodromes in the interests of safety, efficiency and regularity of aircraft operations
- 77% of States have not established and implemented a mechanism to ensure that aerodrome operators maintain good friction characteristics and low rolling resistance on runways
- 52% of States do not ensure that aerodrome operators define maintenance performance level objectives for visual aids as part of their preventive maintenance programme

4.8.5 SMS/aeronautical studies/risk assessments

- 57% of States do not ensure that, whenever a change to the aerodrome physical characteristics, facilities or equipment is proposed, the aerodrome operator has a procedure for evaluating the impact of this change on the safety of the existing operation
- Only 1 State has the requirement for certified aerodromes to have SMS implemented for all aerodromes receiving international flights
- 85% of States have not established a process to review the validity of using an aeronautical study or risk assessment to justify an application for an exemption or exception as well as the continuing need
- 81% of States have not established and implemented a mechanism to assess the outcomes of the conduct of risk assessments or aeronautical studies

5. Conclusion

5.1 States face many challenges when implementing their SSO, which can be addressed in a very similar way, taking into account the similarity of the profiles of several States, the configuration of their civil aviation systems, the way in which the civil aviation authorities have been structured and its safety oversight schemes

5.2 This analysis gives us a valuable opportunity to identify common solutions, which could potentially result in a better use of resources and undoubtedly an improvement in safety levels

5.3 Using the NACC No Country Left Behind (NCLB) strategy, as a tool to support the regional implementation of the SSOs, the actions taken by different States to effectively implement the SARPs can be evaluated, saving time and resources to other States

6. Suggested Action

6.1 The Meeting is invited to:

- a) Taking into consideration the analysis presented in section 4 of this working paper, identify common causes for each area of concern and propose regional mitigating actions;
- b) propose improvements to the NACC NCLB strategy to better address common solution and actions; and
- c) suggest support actions through the Multi-Regional Civil Aviation Assistance Programme (MCAAP) or Champion States.

— END —