



WORKING PAPER

ASSEMBLY — 39TH SESSION

TECHNICAL COMMISSION

Agenda Item 34: Aviation safety and air navigation policy

ENABLERS FOR RISK-BASED SAFETY OVERSIGHT

(Presented by Slovakia on behalf of the European Union and its Member States¹, the other Member States of the European Civil Aviation Conference²; and by EUROCONTROL)

EXECUTIVE SUMMARY

Whilst recognising the positive effect of compliance-based oversight, this paper illustrates how risk-based oversight (RBO) as introduced in Annex 19 — *Safety Management* can support a more effective management of aviation safety risks, proposes to prioritise the need to undertake a competency review and identify additional competencies required to implement RBO and emphasises the need to swiftly continue the evolution towards a better balance between performance-based and prescriptive Standards and Recommended Practices (SARPs) .

Action: The Assembly is invited to:

- a) recognise the need for and prioritise the development of the competencies, training and guidance material associated with the collection, analysis and exchange of safety data and safety information as enablers for the development, promotion and effective implementation of risk-based oversight as provided for in Annex 19 and the GASP, and described in this paper;
- b) request ICAO to expedite the development of the guidance material relative to the desired inspectorate competencies framework, and to recognise the need to determine additional inspector competencies, to ensure the effectiveness of related risk-based oversight;
- c) recognise and incorporate performance-based consideration in its SARPs review, development and compliance monitoring activities; and
- d) instruct ICAO to review SARPs, with a view to replace, where appropriate, prescriptive SARPs and guidance material with outcome-focused SARPs and material; and delete those that are no longer necessary.

<i>Strategic Objectives:</i>	This working paper relates to two Strategic Objectives of Safety; and Economic Development of Air Transport.
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¹ Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

² Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Iceland, Republic of Moldova, Monaco, Montenegro, Norway, San Marino, Serbia, Switzerland, The former Yugoslav Republic of Macedonia, Turkey and Ukraine.

<i>Financial implications:</i>	The activities referred to in the attached Assembly paper will be undertaken subject to the resources available in the 2017 – 2019 Regular Programme Budget and/or from extra budgetary contributions.
<i>References:</i>	A39-WP/125-TE/46, Global Management of Aviation Safety and Enablers for Risk-Based Safety Oversight Annex 19 – <i>Safety Management</i> Doc 8335, <i>Manual of Procedures for Operations Inspection, Certification and Continued Surveillance</i> Doc 9734, <i>Safety Oversight Manual</i> Doc 10004, <i>2014–2016 Global Aviation Safety Plan</i> Doc 10022, <i>Assembly Resolutions in Force (as of 4 October 2013)</i>

1. INTRODUCTION

1.1 The Standards and Recommended Practices (SARPs) contained in ICAO Annex 19 – *Safety Management* are intended to assist States in managing aviation safety risks, in order to keep Air Transport safe while the regulated industry is expanding and changing. The foundation of this proactive safety strategy is based on the implementation of a State Safety Programme (SSP) at State level and a Safety Management System (SMS) at industry level. This will enable safety oversight to be performed in a risk based fashion. Implementation timelines are indicated in ICAO’s Global Aviation Safety Plan (GASP).

1.2 Amendment 1 to Annex 19 will become applicable in 2019, expanding, consolidating and clarifying the original contents of Annex 19. It will also give impulse to a more risk-based oriented safety oversight system, striving for continuous safety improvements through more targeted and effective oversight. In order to achieve this, decisions to evaluate safety risks and address identified hazards must be supported by safety data and information, and a focus on the effectiveness of risk mitigation processes is required.

1.3 Appropriate competencies will be needed within aviation authorities to successfully implement the risk-based approach resulting from the implementation of Annex 19. The paper elaborates on some of the steps needed to enable more risk-based oriented safety oversight, highlights the challenges and associated enablers and proposes a practical way forward.

2. RISK-BASED OVERSIGHT OF A SERVICE PROVIDER

2.1 Effective safety management, as described in Annex 19, requires that safety data and information are systematically collected, analysed and processed to evaluate safety risks and measure progress against expected outcomes. In this context, safety oversight becomes a function of the State authority driving effective safety management by service providers. When conducted in a risk-based fashion, oversight results in targeted interventions, proportionate resource allocation and a focus on outcomes.

2.2 A key component of risk-based oversight is the establishment of a robust evidence base that consists of reliable quantitative data and qualitative information, which provides knowledge on the organisation’s risk profile and safety performance. This is achieved by consistently capturing and analysing safety data and information relevant to regulated organisations. They may include occurrence analysis, accident and serious incident reports, audit/inspection findings and SMS effectiveness assessments as well as information about the organisation’s complexity, activity profile, size, nature and

scale of operations. Qualitative information and quantitative data are combined and their resulting outcome is validated through expert judgement.

2.3 A complete and comprehensive picture of the organisation's safety risk profile and safety performance allows aviation authorities to: a) determine the appropriate oversight in terms of frequency and focus; b) evaluate how the regulated organisation manages its safety risks, including those identified by the authority in its State Safety Plan, and c) agree on mitigation actions defined by the service provider with associated timescales.

2.4 In addition, grouping safety information about organisations into industry sectors with similar types of operation (for example, small aerodromes, off-shore helicopters, large airlines) creates a common safety risk profile across the sector and facilitates the promotion of good practices to manage identified risks, including where new business models are being applied. The possible interfaces with other service providers, the management of which has been frequently identified as a weak point, have also to be taken into account. Similarly, compiling and consolidating the risks across all sectors results in a granulated snapshot of the key safety risks in the aviation industry of a State. Together with the identified risks of the State activity, it provides a State's total risk profile.

2.5 An informed and structured approach to combining risk profiles is a key enabler for risk-based oversight, hence the importance of ensuring that the relevant collection, analysis and exchange of safety data and safety information are provided.

3. INSPECTORS' COMPETENCIES

3.1 In recognising the benefits of a risk-based oversight environment and the need for fast and managed implementation, the competencies of the aviation inspectors need to evolve. Depending on the organisational model of the aviation authority, inspectors can be made available as an individual inspector or within a team of the same inspectorate. In the latter case, the competencies described in this section should be understood as 'team competencies'.

3.2 Aviation authority inspectors are a key enabler for risk-based oversight. In order to fulfil this role, they will need competencies enabling them to assess the safety performance of the different service providers and to engage in a dialogue on key risks, in addition to checking compliance.

3.3 New skills beyond the traditional aviation technical skills are required to understand the wider safety risk profile and to increasingly direct the focus of oversight resources towards the service providers risks management capability. Inspectors will need to understand how safety risks are mitigated, how the business is structured, how the interfaces with other service providers are managed, how to challenge the robustness of the service providers' safety risk management and safety assurance processes; and to be able to decide on the service providers' ability to effectively comply with regulatory requirements.

3.4 These competencies will enable inspectors to act as an essential catalyst for the implementation of safety management and risk-based oversight in the aviation system. Without these competencies the ability to provide improved aviation safety will be at risk of failing, with safety oversight becoming a "check box" exercise rather than a tool for improving safety.

3.5 While it is the States responsibility to decide on the necessary inspector competence, there is a need for a harmonised approach under the leadership of ICAO. ICAO should assist States in identifying the necessary inspectors' competencies by providing a suitable competency framework and

associated training programs and guidance. The ongoing work to produce such guidance material³ must be flexible enough to fit with different oversight models and help States to maintain a competent and effective inspector workforce. Likewise, the need for inspectors to have aviation specific qualifications should be limited to the oversight tasks where such qualifications are considered necessary to effectively perform oversight. In order to determine the attributes for the recruitment and retention of future inspectors and their ability to perform the necessary tasks at the desired standard, a model combining knowledge, skills and attitude (KSA model) can be of help.

4. SARPS AS ENABLERS FOR A PERFORMANCE-BASED ENVIRONMENT

4.1 The implementation of a performance-based environment and a more efficient management of aviation safety in all States and regions should be supported by appropriate ICAO provisions. Particularly, a balanced approach using prescriptive and performance-based SARPs is welcome. Greater transparency on the ICAO work programme has been achieved with the introduction of the ANC Panels website which allows States to identify future priorities, to participate in their development, and plan for their eventual adoption in ICAO provisions. This will assist the effective implementation of ICAO standards, yet more needs to be done.

4.2 SARPs need to be fit for purpose. For example, some existing SARPs are no longer relevant or implementable and should be removed. Currently there is no process to systematically review existing SARPs and remove those that are no longer required. Some legacy SARPs are not clear and there can be difficulties in determining whether the national or regional rules comply with them. This may affect negatively on the effective implementation of ICAO provisions in Contracting States. It is believed that such a review should become part of the normal SARPs amendment cycle.

4.3 The ever-increasing number of SARPs raises issues of long term sustainability and manageability by States, regional organisations and industry. An approach focused on the desired outcome, which clearly sets the objective of each SARP, rather than solely describing in detail the means to achieve the safety objectives, should be, where appropriate, the guiding principle for SARPs. This approach would contribute to identifying outdated SARPs and deleting them, hence reducing their overall number.

4.4 A better balance is needed between prescriptive and performance-based elements, depending on the context and domain. In some cases, prescriptive SARPs may remain desirable. However performance based regulation provides the greatest flexibility and should gradually complement prescriptive elements or replace it where appropriate. In these cases technical details, including the means of compliance with high-level objectives set by the SARPs, should, as far as practicable, be moved to the level of guidance material. Additionally industry standards should be used where possible.

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³ ICAO Civil Aviation Safety Inspectors (CASI) Task Force