



ASSEMBLY — 42ND SESSION

TECHNICAL COMMISSION

Agenda Item 24: Aviation Safety and Air Navigation Priority Initiatives

IMPLEMENTATION OF ICAO SARPS IN THE FIELD OF AIRCRAFT ACCIDENT AND INCIDENT DATA COLLECTION AND ANALYSIS AND AVIATION SAFETY RECOMMENDATIONS

(Presented by the Interstate Aviation Committee (IAC) on behalf of Armenia, Belarus, Kyrgyzstan, Russian Federation, Tajikistan, Uzbekistan)

EXECUTIVE SUMMARY

This working paper addresses the issues of improving the efficiency of aviation safety data collection and analysis systems and the exchange of such data based on ICAO Standards and Recommended Practices (SARPs).

Action: The Assembly is invited to:

- appreciate the progress and commitment of ICAO to addressing the issue of aviation safety data collection and analysis, as well as ICAO's contribution to ensuring civil aviation safety worldwide from this point of view;
- direct the ICAO Council to study the possibility of giving the Accident/Incident Data Reporting (ADREP) taxonomy the status of ICAO SARPs in order to ensure a unified approach to the exchange of information on aviation events;
- direct the ICAO Council to study the possibility of developing a unified format for the exchange of aviation safety data based on the ADREP taxonomy, independent of software providers;
- direct the ICAO Council to continue developing and posting on the ICAO portal an online system for collecting, analyzing and exchanging aviation event data and aviation safety recommendations in order to ensure for the global aviation community access to reliable and comprehensive aviation safety information;
- direct the ICAO Council to carry out a revision of ICAO SARPs in order to exclude references and recommendations on the use of software for the collection and analysis of aviation event data that is not maintained by ICAO; and
- include in the agenda of the next ICAO High-level Aviation Safety Conference the report of the ICAO Council on the results of the studies mentioned above.

<i>Strategic Goals:</i>	This working paper relates to the Strategic Goal <i>Every Flight is Safe and Secure</i> .
<i>Financial implications:</i>	It is assumed that ICAO activities specified in this document will be implemented within the resources of the Annual Budget for 2026-2028 or, if necessary, through voluntary contributions.

¹ English and Russian versions provided by IAC.

<i>References:</i>	Annex 13 — <i>Aircraft Accident and Incident Investigation</i> Annex 19 — <i>Safety Management</i> Doc 9859, <i>Safety Management Manual</i> Doc 9756, <i>Manual of Aircraft Accident and Incident Investigation</i> Doc 9962, <i>Manual on Aircraft Accident and Incident Investigation Policy and Strategies</i>
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1. INTRODUCTION

1.1 There is no doubt that the global aviation community needs a standardized method for collecting and sharing aviation safety information, in particular on aircraft accidents and incidents, and on aviation safety recommendations. Despite the fact that, according to ICAO Standards and Recommended Practices (SARPs), each State should have such national system, the lack of a global standard for aviation safety data collection prevents the unhindered exchange of such data, and therefore does not allow ICAO Member States to conduct a comprehensive analysis of aviation safety risk factors management to determine the need for any measures to maintain airworthiness. Global data exchange can highlight the full range of the accumulated experience, thereby providing a more accurate system analysis of aviation safety risks.

1.2 The exchange of aviation safety information is one of the fundamental principles for creating a secure global air transport system and achieving the goals of the State Safety Programme (SSP). The identification of aviation safety concerns at the global level and the ability to develop effective solutions aimed at improving aviation safety depends on the access to the sources of accurate and relevant information in many areas.

1.3 Taking into account that global aviation includes many interconnected systems, the exchange of information in all areas of aviation activities in order to identify system-wide deficiencies, develop effective corrective actions and optimally allocate limited resources is a necessary component of implementing strategies aimed at the continuous improvement of aviation safety within the global air transport system.

1.4 However, despite the efforts made by ICAO and the successful introduction of national aviation safety information exchange systems in a number of regions and countries, there are still unresolved problems at the global level, including working out a unified approach to the development of standards for data collection and exchange.

1.5 The development of ICAO standards and guidance materials to unify the process of collecting and exchanging aviation safety information will enable Member States to successfully implement the provisions of ICAO SARPs, and the improvement of the ICAO portal for collecting and analyzing such data will assist the States in their risk management activities in the field of aviation safety and ensuring aviation safety at the state level, bearing in mind that both types of activities are the important components of the SSP.

2. DISCUSSION

2.1 In accordance with Standard 8.1 of Annex 13 — *Aircraft Accident and Incident Investigation*: “A State shall establish and maintain 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”.

2.2 Standard 5.1 of Annex 19 — *Safety Management* provides that “*States shall establish safety data collection and processing systems (SDCPS) to capture, store, aggregate and enable the analysis of safety data and safety information*”, and the guidance material on SDCPS is contained in Chapter 5 of the *Safety Management Manual* (Doc 9859).

2.3 Paragraph 5.3.1 of Doc 9859 states that “*Safety data should ideally be categorized using taxonomies and supporting definitions so that the data can be captured and stored using meaningful terms. Common taxonomies and definitions establish a standard language, improving the quality of information and communication*”. The Accident/Incident Data Reporting (ADREP) system is given as an example of such a taxonomy in paragraph 5.3.2: “*ADREP: an occurrence category taxonomy that is part of ICAO’s accident and incident reporting system. It is a compilation of attributes and the related values that allow safety trend analysis on these categories*”.

2.4 At the same time, paragraph 2.1.2 of the *Manual of Aircraft and Incident Investigation* (Doc 9756), Part IV — *Reporting*, suggests the following: “*Alternatively, ADREP reports can be sent by e-mail or in an ADREP-compatible format, such as the European Coordination Center for Accident and Incident Reporting Systems (ECCAIRS)...*”. And the *Manual on Aircraft and Incident Investigation Policy and Strategies* (Doc 9962) contains a section (paragraph. 12.2), on the ECCAIRS system, where, in particular, it is stated that: “*States are encouraged to implement their accident and incident database based on ECCAIRS, which is made available at no charge*”.

2.5 It would seem that things are going well with this issue, and the States have the necessary documents, standards and tools, but this is not the case. First of all, such a tool as ECCAIRS does not actually exist at the moment – its support was discontinued in 2019. Secondly, the statement that “*ADREP is an occurrence category taxonomy that is part of the ICAO’s system...*” is also an exaggeration.

2.6 Indeed, the documentation on the ADREP taxonomy is available on the ICAO website in the “ADREP Taxonomy”² section of the Air Navigation Bureau Accident Investigation Section (AIG). However, the documents there are marked as “ECCAIRS Aviation 1.3.0.12 Data Definition Standard” dated 2013, i.e. they have not been updated for 12 years, and most importantly, they are not part of ICAO SARPS. ADREP has not yet been published as an ICAO document.

2.7 Despite the above-mentioned inconsistencies, during the audits of the States conducted under the ICAO Universal Safety Oversight Audit Programme (USOAP), ICAO auditors are encouraged to verify the compatibility of the State databases with the “ADREP/European Co-ordination Centre for Aviation Incident Reporting Systems (ECCAIRS)”.

2.8 It should also be noted that ICAO currently does not have their own modern aircraft accident and incident database, relying either on the outdated ECCAIRS system, or on superseded it “ECCAIRS-2” of European Union Aviation Safety Agency (EASA), thus to some extent, keeping from its leading role in maintaining the ADREP taxonomy.

2.9 To find aviation safety data, the global aviation community is forced to turn either to the national sources of information or to the independent and public organizations. And the taxonomy is handled by the enthusiast community of the Commercial Aviation Safety Team (CAST)/ICAO Common Taxonomy Team (CICTT)³.

² <https://www.icao.int/safety/airnavigation/AIG/Pages/ADREP-Taxonomies.aspx>

³ <https://www.intlaviationstandards.org/>

2.10 All this creates difficulties in the development and support of aviation safety data collection and analysis systems and in the exchange of data in a compatible format that is understandable to all participants, and does not contribute to the implementation of SSP in the field of aviation safety information exchange.

2.11 In this regard, it seems advisable to return ICAO to its leading role in the field of aviation safety data collection and analysis, for the purpose of which it is necessary to standardize the ADREP taxonomy, to develop a data exchange protocol that is not tied to specific software, to create and post on the ICAO portal a modern online information system for the collection, analysis and exchange of information between the States. This work is already being carried out by ICAO, in particular by the Accident Investigation Panel (AIGP), and these efforts require the support from the States.

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