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WORKING PAPER

ASSEMBLY — 38TH SESSION

TECHNICAL COMMISSION

Agenda Item 28: Safety — Standardization

A PROACTIVE APPROACH TO SAFETY ASSURANCE

(Presented by the Russian Federation)

EXECUTIVE SUMMARY

Annex 13, *Aircraft Accidents and Incident Investigation*, Recommendations 6.11 and 6.12 stipulate that it is necessary to account for and track the implementation of safety recommendations. With the Council's adoption of Annex 19, *Safety Management*, an effective system for monitoring the implementation of flight safety assurance measures must become one guarantee of the adequacy of the acceptable safety level assumed. This document addresses some questions of determining approaches to methods of monitoring the implementation of safety assurance measures.

Action: The Assembly is invited to recommend that the Council expedite the development and adoption of unified method of formalizing safety recommendations and measures and initiate within ICAO a discussion of the matter of assigning the status of Standards to Recommendations 6.11 and 6.12 of Annex 13, *Aircraft Accidents and Incident Investigation*.

Strategic Objectives:	This working paper relates to the Safety Strategic Objective.
Financial implications:	Not applicable.
References:	Annex 13, *Aircraft Accidents and Incident Investigation* Doc 9859, *Safety Management Manual (SMM)* Doc 9914, *Report of the Accident Investigation Divisional Meeting (2008)* Annex 19, *Safety Management*

[1] Russian version provided by the Russian Federation
(4 pages)

1. INTRODUCTION

1.1. The standards in Annex 19, *Safety Management*, govern the way a State assumes the acceptable level of safety assurance effectiveness to be achieved.

1.2. In order to regulate safety management activities, Annex 19 contains standards on collecting and analyzing data which previously resided in Annex 13, *Aircraft Accidents and Incident Investigation.* Thus, the results of analyzing safety data that have accumulated over the recent time under the implementation of standards and recommended practices of Annex 13 should become initial data to determine the acceptable level of safety assurance effectiveness.

1.3. The *Safety Management Manual (SMM)* (Doc 9859) emphasizes the importance of using data from other systems, in addition to the aircraft accidents and incidents database, in which incidents are recorded that have less serious consequences. In terms of obtaining safety data, these systems are seen as proactive.

1.4. The provisions of Doc 9859 do not limit the right of a State when selecting methods and tools for obtaining additional data needed for the implementation and functioning of safety assurance systems, but also do not define the minimum requirements for providing guarantees that the thus-defined acceptable level of safety assurance will be adequate.

1.5. In any event, past events become data in safety data collection and analysis systems. The events differ only in the degree of how hazardous their consequences were.

1.6. At the same time, in addition to information from safety databases about events described by the logical connective "type of event" ("what happened?") and "factor" ("why did it happen?"), we can obtain information about the focus ("what to do?") and results ("how effective?") of safety management.

2. CREATING AND USING DATABASES ON SAFETY ASSURANCE RECOMMENDATIONS AND MEASURES

2.1. The goal of an investigation conducted in accordance with Annex 13 is to prevent aircraft accidents and incidents in the future. This goal is achieved, in part, by drafting safety recommendations. Annex 13 recommends States adopt procedures of recording actions to implement safety assurance recommendations and monitoring them for tracking.

2.2. An analogous approach can be applied to other results of events with less serious consequences not requiring investigations, but the information on their causes is used within the safety assurance management system.

2.3. Recommendations 6.11 and 6.12 of Annex 13 propose that States carry out procedures to record measures taken to implement safety assurance recommendations and carry out monitoring procedures to track the actions taken in implementing these safety recommendations.

2.4. Safety recommendations are recorded, as a rule, in the same safety databases as the events that represent a safety threat or could be a safety threat. In the future, these recommendations transform into measures to prevent aircraft accidents that, in a significant number of cases, may determine directions differing from the ones offered in safety recommendations.

2.5. The measure developed on the basis of a safety recommendation is the result of a study of different conditions, circumstances and their consequences that should guarantee an acceptable level of safety is reached. When developing the measure, specialists take into account not only the circumstances and causes of the event that initiated this work, but also the experience of previous studies in this or similar areas.

2.6. So, the safety measure should be viewed as the result of ambitious safety studies. Meanwhile, objective data obtained based on the results of summarizing and analyzing safety measures (their documentation), are subject to accounting to justify the acceptable safety level corresponding to goals and objectives established in the framework of the adopted aircraft safety system.

2.7. Today, there are many sources of information about safety recommendations and measures. At the same time, it can be difficult to find in that large volume of information the requested logical connectives for specific conditions, among "type of event" ("what happened?"), the needed action ("what to do?") and expected safety management result ("how effective?).

2.8. Summarizing the safety recommendations and measures, along with accounting for their connection to the known or potential safety threats they are designed to prevent, helps obtain an objective assessment of whether an acceptable level of safety is being provided and how effective safety management systems are.

2.9. At the current time, the standardized methods of accounting and subsequent analysis have been proposed only for events that are a safety threat. These methods are used within Aviation Accident and Incident Reporting (ADREP) and other systems, in which similarly-structured classifiers are used. While ADREP allows for the capability to formalize safety recommendations, the approaches offered for this purpose are not distinguished by the same profound level of detail, as, for instance, is present for the event type and factors of the aircraft accident (incident). The problem of accounting for measures developed and implemented is not solved by ADREP.

2.10. The question of a database for safety recommendations was first discussed at the Accident Investigation and Prevention (AIG) Divisional Meeting AIG-1999. Per the results of AIG-1999, Recommendation 1.4/2 was adopted, proposing that ICAO set up a database so that States could use it to prevent aircraft accidents.

2.11. In the future, the AIG-2008 adopted Recommendation 1.6/5 which has instructions on how to identify, compile and track the course of implementing safety recommendations and Recommendation 1.6/6, about the common tool and common taxonomy for safety recommendations.

2.12. There is no information on the progress of implementing Recommendations 1.6/5 and 1.6/5 proposed by AIG-2008. Taking into account the new Safety Management Annex and objectives of the proactive approach, there is a need to force a solution for the challenge of developing and adopting methods of formalizing not only safety recommendations but measures developed in that connection.

3. CONCLUSIONS

3.1. Annex 19 provisions govern the way a State assumes the acceptable level of safety assurance effectiveness to be achieved. Annex 19 has a reference to the *Safety Management Manual (SMM)* (Doc 9859), which doesn't contain minimum requirements to provide guarantees that the established acceptable level of safety assurance will be adequate.

3.2. The focus of the safety assurance measures and the effectiveness of their implementation characterize how correctly the acceptable safety assurance level assumed was defined.

3.3. The problem of ensuring an ability to identify and track the course of implementing safety recommendations, with the adoption of a common taxonomy, analogous to tracking safety threats, has not yet been solved, which could create significant problems in the implementation of requirements of the new Annex on safety management.

4. ACTIONS

4.1. The Assembly is invited to:

a) take proper measures to implement Recommendations 1.6/5 regarding instruction materials for how to identify, compile, and track the course of implementing recommendations on safety assurance and Recommendations 1.6/6, regarding a common tool and common taxonomy for safety recommendations adopted by the divisional meeting for accident investigation and prevention AIG-2008;

b) expedite the development and adoption of a unified method to formalize safety recommendations and measures; and

c) address the issue of granting the status of standard to Recommendation 6.11 in Annex 13 Aircraft Accidents and Incident Investigation, about the procedure for recording measures taken to implement safety recommendations, and Recommendation 6.12, about the monitoring procedure to track actions to implement these safety recommendations, taking into account provisions of Annex 19 related to States assuming an acceptable level of safety assurance.

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