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THIRTEENTH AIR NAVIGATION CONFERENCE

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COMMITTEE B

Agenda Item 7: Operational safety risks
7.1: Facilitation of data-driven decision-making in support of safety intelligence to support safety risk management

FACILITATING INTERNATIONAL SAFETY DATA SHARING FOR EFFECTIVE RISK MANAGEMENT

(Presented by the United States)

EXECUTIVE SUMMARY

This paper presents the need for further development of safety data sharing guidance among users of the aviation system. Specifically, the sharing of safety data with organizations responsible for the type design and manufacture of aircraft, to facilitate effective risk management.

Action: The Conference is invited to agree to the recommendation in paragraph 3.1.

1. INTRODUCTION

1.1 Annex 19 – *Safety Management*, identifies accountability for risk management by organizations responsible for the type design or manufacture of aircraft. Risk-based decision-making is the foundation of safety management systems (SMS). As the aviation system becomes more complex and interconnected in a global environment, the management of risk must account for these system characteristics. Timely and complete reporting of safety data to the organizations responsible for the type design and manufacture of aircraft is essential to effective risk management in the aviation system of today and the future.

1.2 At the September 2015 meeting of the multi-authority Certification Management Team (CMT), the Federal Aviation Administration (FAA) proposed a collaborative project to compare and contrast the continued airworthiness decision making processes used by Brazil's Agência Nacional de Aviação Civil (ANAC), European Aviation Safety Agency (EASA), FAA, and Transport Canada Civil Aviation (TCCA). This project complemented a paper presented by the United States at the 2015 ICAO High-Level Safety Conference, which proposed development of steps to move toward alignment of continued airworthiness risk based decision-making processes and methods as a means to promote greater reliance on the decisions made by the State of Design.

1.3 The CMT developed a project task definition document for "Continued Operational Data Sharing." The task definition outlines the membership, goals, deliverables, and milestones of a team of authority representatives identified as the "Continued Operational Safety Evaluation Team (COSET)." The CMT, through the work of the COSET, is considering the benefits and actions necessary for the following:

a) enhancement of worldwide safety data reporting to type design holders;

b) improvement of communication between States on continued airworthiness issues;

c) development of a framework for communicating the outcome of aviation safety risk-assessment decisions, and for the sharing of associated safety data; and

d) enablement of mutual acceptance of airworthiness directives.

2. DISCUSSION

2.1 The above concepts are relevant to all States, as organizations responsible for the type design or manufacture of aircraft, as well as those operating multiple aircraft types from different States of Design, are accountable for risk management of these aircraft. Realizing these safety improvements requires the type design holder and manufacture of aircraft to have sufficient safety data to support effective risk based decision making.

2.2 Many type design holders have robust risk management processes used in their continued airworthiness systems. Their resources, capabilities, and understanding of their products should enable a State's reliance on the identification and analysis of safety issues provided sufficient safety data is available. Reporting of safety events and vulnerabilities from all operations in a global aviation system improves the robustness of risk analysis, enables proactive risk management, and increases confidence in airworthiness decisions.

2.3 Airworthiness directives are often written based on the reporting of a single event. These events can, and often do, occur in a State of Registry that is different from the State of Design of the type design holder. Further, as the aviation system becomes more global it is likely that a majority of a certain type of fleet are operated outside of the State of Design. This may lead to a significant amount of operational data that is not made available to the type design holder and manufacture of aircraft.

2.4 Lacking this critical safety data, the type design holder will not be able to access a full view of the safety issues that may affect the product and may result in;

a) late discovery of safety issues;

b) negative effect on the statistical analysis of probabilities in risk based decision-making; and

c) inability to identify safety issues that span multiple fleets or products.

2.5 Chapter 5 of Annex 19 addresses sharing safety data among users of the aviation system, and references ICAO the *Safety Management Manual* (SMM, Doc 9859), however these documents lack sufficient detail to achieve adequate data exchange in an increasingly global aviation environment.

3. CONCLUSION

3.1 The ICAO *Global Aviation Safety Plan* (GASP, Doc 10004) has identified the importance of timely and accurate reporting of safety information at the regional, national, and international levels. The Annexes promote reporting of safety data, usually with the emphasis on reporting to the States of Registry and subsequent coordination with the State of Design.

3.2 The Conference is invited to agree to the following recommendation:

That the Conference:

a) urge ICAO to encourage activities that facilitate global reporting of safety events and vulnerabilities to assure that the necessary safety data is available; and

b) urge ICAO to review and develop guidance to further facilitate the sharing of safety data between operators and those responsible for the type design and manufacture of aircraft.

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