



**Twenty - Eighth Regional Aviation Safety Group — Pan America Executive Steering Committee Meeting (RASG-PA ESC/28)**

ICAO SAM Regional Office, Lima, Peru, 4 to 5 May 2017

**Agenda Item 9: Items/Briefings of Interest to the RASG-PA ESC**

**FLIGHT DATA ANALYSIS PROGRAM WORKING GROUP**

(Presented by ATR, Supported by Embraer, IATA, ANAC, Flight Safety Foundation)

<b>EXECUTIVE SUMMARY</b>	
The Flight Data Analysis Program working group is in the process of preparing a proposal to expand the number of functional flight data analysis programs. It is anticipated that a greater number of Flight Data Analysis Programs will lead to significantly greater safety levels through analysis of critical event sets and incidents.	
<b>Action:</b>	The FDAP working group is requesting continued support in the development of a business case for this proposal to be approved for presentation at the RASG-PA Plenary.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none"> <li>• Safety</li> </ul>
<i>References:</i>	<ul style="list-style-type: none"> <li>• Annex 6 Part 1 sections as mentioned in this working paper</li> </ul>

**1. Introduction**

1.1 Flight Data Recorders have long been used as one of the most important tools for accident investigations such that the term “black box” and its recovery is well known beyond the aviation industry. The advances in the industry from flight data recorders have been invaluable.

1.2 A quick access recorder (QAR) is an airborne flight data recorder designed to provide quick and easy access to raw flight data, through means such as USB, cellular network connections and/or the use of standard flash memory cards. A greater amount of data is captured on the QARs and usually over a longer period of time than flight data recorders.

1.3 QARs are typically used by airlines to improve flight safety and operational efficiency through the airlines Flight Data Analysis Programs (FDAP). In fact, it is this equipment that really enables the airlines to conduct FDAP programs. Without it, gathering information from the flight data recorder on a routine basis would be cost prohibitive.

1.4 Currently many operators around the world have adopted Flight Data Analysis Programs when aircraft are equipped with QARs. Yet the data capability and fidelity of the information on QARs may be driven by the current Annex 6 requirements for Flight Data Recorders.

## **2. Annex 6 Part I FDAP standard analysis**

2.1 The following paragraphs are extracted from Annex 6 on FDAP programs:

*3.3.1 Recommendation: An operator of an aeroplane of a certified take-off mass in excess of 20,000 Kg should establish and maintain a flight data analysis programme as part of its safety management system.*

*3.3.2 An operator of an aeroplane of a maximum certificated take-off mass in excess of 27000 Kg shall establish and maintain a flight data analysis programme as part of its safety management system.*

2.2 Additional requirements for Flight Data Recorders are defined in another part of Annex 6 inclusive of the year of the Certificate of Airworthiness (CoA) with limitations to the FDR parameters as followed:

*Aircraft with maximum certified take-off weight over 27,000 Kgs and Certificate Of Airworthiness (CoAs) after Jan 1, 1989 must have Type I recorders. Aircraft with mass certified take-off weight over 5,700 Kg up to 27,000 Kgs and COAs after Jan 1, 1989 must have Type II FDRs. Aircraft with maximum certified take-off weight over 5700 Kg and COA after Jan 1, 2005, shall be equipped with a Type IA FDR.*

2.3 Type I and Type IA are really the only recorders that have data capture suitable for monitoring the critical events and incidents in Operators FDAP programs. Type II recorders and any associated QARs installed on these fleets may never be capable of monitoring the critical warnings for the top risk categories.

### **3. Alternative to Annex 6 Part I FDAP standard**

3.1 It is the FDAP working groups desire to expand the implementation of Flight Data Analysis Programs for aircraft with gross weight above 5,700 Kg up to and including 27,000Kg with existing QAR installations on aircrafts to have adequate FDRs.

3.2 In order to accomplish the expansion in implementation and provide a compelling story, a business case is being prepared to describe both the costs and benefits. The costs will give considerations to equipment installation, ongoing maintenance requirements, software systems, staffing resources and training. The benefits will describe the safety and operational benefits that have been typical to FDA programs.

3.3 Ultimately this can result in a specific proposal to the ICAO Air Navigation Commission for adoption as a new ICAO standard. That proposed annex standard may read:

*3.3.2 Recommendation: All aeroplanes of a maximum certificated take-off mass over 5 700 kg should be equipped with a Quick Access Recorder (QAR). This QAR should record at a minimum the parameters recorded by the Flight Data Recorder and the operator should establish and maintain a flight data analysis programme as part of its safety management system.*

*3.3.3 All aeroplanes of a maximum certificated take-off mass over 5 700kg for which the individual certificate of airworthiness has been first issued on or after 1 January 2005 shall be equipped with a Quick Access Recorder (QAR). This QAR shall record at a minimum the parameters recorded by the Flight Data Recorder and the operator shall establish and maintain a flight data analysis programme as part of its safety management system.*

3.4 In the meantime, once the proposal and the associated business case has been completed, the FDAP working group recommends formulating an immediate safety enhancement to be considered by Industry in Pan American RASG-PA States. The proposal would be brought to RASG-PA Plenary using the fast track mechanism, considering that the next RASG-PA Plenary will take place in approximately two years, and to the Pan American RSOOs and RAIOS for coordination and promotion.

3.5 The formal adoption of an ICAO proposal would be considered as this is presented to the ICAO Air Navigation Commission

### **4. Suggested action**

4.1 The FDAP working group asks for consideration of the proposal and continued ESC support as the business case is developed. The FDAP working group also requests the ESC support for presenting this at the RASG Plenary for further State and industry consideration.