



ASSEMBLY — 39TH SESSION

TECHNICAL COMMISSION

Agenda Item 35: Aviation safety and air navigation standardization

AIRBORNE IMAGE RECORDERS

(Presented by the Interstate Aviation Committee)

EXECUTIVE SUMMARY	
This working paper presents the justification for advanced introduction of amendments to ICAO SARPs related to the installation of airborne image recorders (AIR) on the aircraft.	
<i>Strategic Objectives:</i>	This working paper relates to the Safety Strategic Objective.
<i>Financial implications:</i>	No financial consequences.
<i>References:</i>	Annex 6 — <i>Operation of Aircraft</i> Annex 13 — <i>Aircraft Accident and Incident Investigation</i> Doc 10053, <i>Manual on Protection of Safety Information</i>

1. INTRODUCTION

1.1 During the investigation of heavy air accidents, flight data recorder (FDR) and cockpit voice recorder (CVR) often provide insufficient information for efficient and explicit determination of air accident causes. For example, Egypt Air A320 crash over the Mediterranean Sea, Flydubai B-737 crash, A321 crash of Metrojet over Sinai Peninsula last autumn, German wings A320 crash in 2015 and others.

1.2 In cases of unlawful interference into civil aviation operations, which, unfortunately, nowadays appears to be a sorrowful trend, when aircraft crew face unforeseen circumstances and rapid development of a catastrophic situation, connected with partial or full loss of operability, environmental orientation, caused by different reasons, voice recorded data, sometimes, does not allow to determine explicitly the reasons of the accident, and to elaborate relevant measures for prevention of similar occurrences in future. Insufficient efficiency and accuracy in identification of all factors of such

¹ English and Russian versions provided by IAC.

accidents, as well, as probabilistic nature of the findings of the causes, negatively affect passengers' trust to such investigations and the air transport system in whole.

1.3 In all mentioned cases, and many others, availability of video recordings of the situation in the cockpit possessed to investigators could accelerate efficiently the process of investigation, to determine explicitly causes of the crash and to increase public trust to conclusions of the investigation commission.

2. DISCUSSION

2.1 Appendix 8 to Annex 6, Part 1 in par. 4.1 provides classification of airborne image recorders. Among them Class AIR or AIRS Class A: "A Class A AIR or AIRS captures the general cockpit area in order to provide data supplemental to conventional flight recorders."

2.2 At present, Annex 6 does not contain Standards and Recommended Practices for the installation of airborne image recorders of Class A AIR and AIRS Class A on the aircrafts.

2.3 Proposals on equipping the airplanes with video recording systems have been discussed in ICAO panels since 1995. Repeatedly, the panel on flight recorders formulated proposals for amendments to ICAO SARPs, related to the recorders (FLIRECP/FLIRECSWG). Nevertheless, mentioned proposals have been rejected by flight crews for the reasons of improper use of video recordings in the cockpit.

2.4 Task Group SIPTF and the GEPAIR Panel were established for the protection of flight recording data from inappropriate use. As a result of their work, necessary amendments have been introduced to Annexes 6 and 13. Par. 5.12 of Annex 13 contains, among others, extensive requirements for protection of flight recorders data and airborne image recorders data in the cockpit from publicity. Besides, Part I of instructional material (Doc 10053), *Manual on Protection of Safety Information* has been developed and it was published this year.

2.5 Thereby, to date, there are no prerequisites not to trust elaborated measures for data protection of flight recorders and airborne image recorders. Technical aspects of the equipment of aircraft with airborne image recorders are well elaborated and the recorders themselves are installed on a number of modern airplanes as an initiative procedure.

2.6 In May 2016, 9th meeting of (ICAO FLIRECSWG) the panel on flight recorders has presented to ICAO proposals for amendments to Annex 6, Part I and recommendations for installation of airborne image recorders on the "new generation" of aircraft. Panel proposals will be considered within the framework of the established ICAO procedures.

2.7 However, it should be taken into consideration that introduction of new types of airborne equipment, even that not directly related to flight safety, requires a prolonged period of time, sometimes years-long activities. It is due to the need for design standards (MOPS) for airborne equipment, its development and certification. Besides that, time is required for issuing based on MOPS Technical Orders (TOs) for the installation of this equipment on board aircraft and installation certification by aircraft types. In general, the beginning of this sequence of implementation activities is driven by adoption of ICAO Standards and Recommended Practices for equipment carriage with the application date, which takes into account established time lines for the completion of the above preparatory stages leading to

implementation. Therefore, the early introduction of equipage standards provides for the early introduction of equipment into operation.

3. **CONCLUSIONS**

3.1 It can be recognized that the issue of image recorders' installation has reached a sufficient level of maturity for possible standardization of such equipment carriage in ICAO Standards and Recommended Practices.

3.2 At present, it is deemed appropriate to undertake efforts with the view of advancing relevant amendments to Annex 6 to provide for the launch of activities leading to installation and operation of image recorders on civil aviation aircraft.

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