



International Civil Aviation Organization

**Third Meeting of the Asia Pacific Accident Investigation Group
(APAC-AIG/3)**

(Colombo, Sri Lanka, 23-24 June 2015)

Agenda Item 5: Investigator training

FLIGHT DATA RECORDER TRAINING AT AAIB SINGAPORE

(Presented by Sri Lanka)

SUMMARY

This paper shares the experience of CAA Sri Lanka on collaboration with other States for investigator training. The paper highlights arrangement of such training with AAIB Singapore and benefit from partnerships.

1. INTRODUCTION

1.1. Access to a facility for Flight Data Recorder Readouts, Flight Data Analysis and Animation for aircraft accident and incident investigation is a fundamental necessity for aircraft accident and incident investigation.

1.2. Since the purpose of investigation is to determine the facts, conditions and circumstances relating to the accident or incident, retrieval and analysis of flight data recorded in the Digital Flight Data Recorder (DFDR) and the Cockpit Voice Communication recorded in the Cockpit Voice Recorder (CVR) is vital to determine the probable cause/causes in order to prevent recurrence of similar events in the future.

1.3. As per the International Standards and Recommended Practices stipulated in Annex 13 to the Chicago Convention on Aircraft Accident and Incident Investigation, the State conducting the investigation shall make effective use of the flight recorders and arrange for the read out of flight recorders without delay.

1.4. In the event if the State conducting the investigation does not have adequate facilities to read out the flight recorders, it should use the facilities made available to it by other States. Such arrangement must be made by considering the capabilities of the read out facility, timeliness of the read-out and the location of the read out facility.

1.5. Usually all major accident investigation authorities and State of Manufacture in particular carryout reading out of most of the flight recorders. The read-out work is usually offered free of charge by the country who possess the capability to deliver the service expected.

1.6. Even though the service is provided free of charges, laboratory facilities of the providing State and it's data recorder specialists and their time should be readily available on an urgent basis for expeditious conduct of the investigation. This is a factor beyond the control of the recipient State.

1.7. Requirement to obtain Flight Data Recorder readouts, analysis and animation is essential not only for the aircraft accident and incident investigation purposes but also would be useful to study other complex flight operations occurrences.

1.8. CAA Sri Lanka embarked on a project to evaluate the benefits of acquiring flight data recorder readout capability of its own by setting up a laboratory. Therefore it has been decided to purchase software and hardware to cater to this requirement and to have a setup within the CAASL. The software provides data readouts, analysis of recorded data and creation of animation to have the real picture of aircraft movement. Data analysis provides the ability to edit and configure aircraft parameter databases. And it also provides the capability to perform mathematical and performance functions on the data.

2. DISCUSSION

2.1 During the cost benefit analysis of acquiring flight data readout capability, benefits to be accrued from such an investment was evaluated together with alternate options available to perform such tasks, if such facility is not acquired.

2.2 The following points were taken in to consideration in the evaluation.

- The laboratory will cater only to undamaged recorders (DFDR and CVR) only.
- Types of aircraft operated by Sri Lankan registered aircraft and the types of recorders installed in them.
- Types of aircraft operated by Foreign Air Operators to Sri Lanka.
- Installation cost of the software and hardware.
- Air traffic volume operated in to the country.
- Measures in place and planned for safety assurance.
- Possibility to obtain the services from another country, either from the Region or else from another country (especially the State of Manufacturer of the aircraft)
- Training opportunities for CAA Sri Lanka investigators on Flight Data Readout, Analysis and Animation at a foreign aircraft investigation facility.

2.3 After careful consideration of the facts, it was decided to take the assistance from a foreign aircraft investigation facility for flight data recorder readout, analysis and animation.

2.4 Training of Investigators in flight data recorder readout, analysis and animation also to be outsourced.

2.5 CAA Sri Lanka has an 'Arrangement on Co-operation Relating to Aircraft Accident and Incident Investigation' signed between AAIB Singapore in December 2011. This arrangement provides for technical assistance for aircraft accident investigation and also investigator training.

2.6 Accordingly, at the request of CAA Sri Lanka, AAIB Singapore has drawn up a training programme for the investigators of Sri Lanka on flight data recorders, which will be scheduled to take place later this year. The training programme consists of the 3 day basic course and a 2 day advanced course.

2.7 The Basic Course will comprise training on FDR and CVR systems and equipment, requirements for fitment of FDR and CVR systems, downloading and basic analysis of FDR and CVR recorded flight data, limitations of the FDR and CVR recording systems and equipment required for the downloading and analysis of FDR and CVR recorded flight data.

2.8 The Advanced Course will comprise training on production of decoding software required for conversion of recorded FDR data to engineering units, enhancing a basic animation with terrain information and satellite imagery and advanced audio analysis techniques.

2.9 Assistance extended by AAIB Singapore to CAA Sri Lanka for technical assistance and investigator training is thankfully acknowledged.

3. Action by the Meeting

3.1 The Meeting is informed of the benefits of co-operation with aircraft accident investigation authorities for technical assistance and investigator training.

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