‘Airworthiness- Best Practice’ Seminar – Technical Report (January 2018)

This seminar is structured more as a course, with continuity and streamlined flow of topics covered across five days. Key topics covered includes - Defining Airworthiness, Initial Airworthiness, Entry into Service, Continuing Airworthiness, Managing Safety, Incident Investigation and Retirement & Disposal.

The objective of the course was to provide an appreciation of the broader implications of airworthiness and set out the case for airworthiness performance management leading to meaningful business benefits.

I have generally understood that Airworthiness is the fitness to fly an aircraft. But it has always intrigued me as to what is ‘fitness to fly’? Now I have learnt that it covers the aircraft’s approved design and production data as well as maintenance by Part-145 (Approved Maintenance Organisation) and CAMO (Continuing Airworthiness Management Organisation). In addition, pilots also play a considerable part in airworthiness, by operating the aircraft within its allowable designed operational limits.

The Airworthiness system is a cycle where first a product is designed and produced. Once the product has entered service, it is maintained at regular intervals. Any defects or faults are recorded and reported back to the design organisation for a new design solution to the problem.

Airworthiness can be split into 2 segments - Initial Airworthiness and Continuing Airworthiness;

- The Type Certificate certifies the initial airworthiness of the aircraft
- Current Airworthiness Review Certificate certifies that the aircraft has continued airworthiness.

Without either of these, the Certificate of Airworthiness for the aircraft becomes invalid.

The EASA states that ”The Certificate of Airworthiness is issued pursuant to the Convention on International Civil Aviation dated 7 December 1944 and Regulation (EC) No 216/2008, Article 5(2)(c) in respect of above mentioned aircraft which is considered to be airworthy if maintained and operated within allowable limits.” Hence, after an aircraft has entered service it is important to manage its airworthiness and systems should be in place to ensure pilots do not operate an unairworthy aircraft.

It is the responsibility of the owners and operators to maintain the continued airworthiness of their aircraft. As part of this system, Airworthiness Directives (mandatory directives from the National Aviation Authorities) and Service Bulletins (advisories from the manufacturers) are issued to the operators to improve the aircraft safety or performance of a system or component.

As part of the continued airworthiness system, a maintenance programme for the type of aircraft must be in place. The MRBR (Maintenance Review Board Report) and the MSG-3 (Maintenance Steering Group) forms the basis of an aircraft's maintenance programme by outlining the initial minimum required maintenance tasks and intervals.

Furthermore, I got to know about what safety is and that effective safety management in an organisation would have safety and commercial benefits. A useful phrase I learnt is that, aircraft records are the 'Blood of Aviation' ! This highlights the fact that records are used everywhere in aviation, from the design and production stages of the aircraft, till it is withdrawn from service and after. Without the records, the aircraft loses its value.

Finally, the highlight of the seminar was the overview we had on Air Accident Investigation which I found quite interesting. We went through different case studies and their respective findings which included the Alaskan-261 and Qantas-32. The Alaskan airline case engaged discussions with everyone in the room and understanding the importance of airworthiness in avoiding airline crashes. Though air transport is proven to be the safest mode of commutation, we were able to understand that sometimes incidents or accidents do happen and are caused by a series of fatal errors – similar to aligning all the holes through a Swiss cheese once in a while !

As a result of attending this course I was able to learn what airworthiness was, how it has evolved over the years, factors contributing to an aircraft's airworthiness and the relationship between Initial Airworthiness and Continuing Airworthiness. In addition to understanding the responsibilities in obtaining and validating the airworthiness of aircraft, the course covered a wide range of topics including Design Organisations, Part 145 and Production Organisations. Furthermore, I was able to identify the key elements of airworthiness and understand how these must work together to deliver performance in the management of airworthiness.

From this seminar I have gained great insight into the Airworthiness world of Aviation, which I could relate to my academic learnings in the EASA Part-66 modules. I would also be able to apply this newly gained knowledge and prefer to take up a final year research project in the matter of airworthiness.

- **Kiran Varman Srinivasan**