

Editorial

Special Issue: Civil and Military Airworthiness: Recent Developments and Challenges

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Received: 27 March 2020; Accepted: 31 March 2020; Published: 1 April 2020



Airworthiness, as a field, encompasses all those technical and non-technical activities required to design, certify, produce, maintain and operate safely an aircraft throughout its lifespan. The evolving technology, scientific and engineering methods and, most importantly, aviation regulation, offers new opportunities and creates new challenges for the aviation industry.

This Special Issue assembles a diverse selection of research and review papers on topics of interest to the modern industry practitioners and researchers. These topics span across the initial and continuing airworthiness spectrum, discussing problems in the broader thematic areas of aircraft maintenance [1–7], safety management [6,8], human factors [1,4,5], cost analysis [3,7,9], structures [7,10,11], risk assessment [2,4], unmanned aerial vehicles [8,12] and regulations [6,12].

Reflecting on the list of targeted themes, communicated through the call for papers [13], I was pleased to see that most have been covered in the Special Issue, as indicated with the italic format in Table 1. I trust the readers will enjoy this variety of high-quality research and review papers.

Table 1. Coverage of Special Issue’s targeted theme areas, as indicated with the italic format.

Initial Airworthiness	Continuing Airworthiness
Aircraft and aeronautical components testing and certification	<i>Safety and risk assessment in aircraft flight and technical operations</i>
<i>Qualification and certification of new technologies, i.e., supersonic transport aircraft, electric and hybrid propulsion aircraft, etc.</i>	Reliability analysis of aircraft systems and components
<i>Certification of systems specific to military aircraft</i>	<i>Continuing airworthiness management practice in civil and military aviation</i>
<i>Qualification and certification of additively manufactured metallic and non-metallic safe/non-safety-critical aircraft parts</i>	<i>Development and optimization of aircraft maintenance programmes</i>
<i>Advanced testing and computational techniques for composite aircraft testing and certification</i>	Development and optimization of military aircraft structural integrity (ASI) management programmes
Reliability engineering methodologies and practice in aircraft design and engineering changes	<i>Effective and efficient inspection and sustainment techniques for composite aircraft</i>
<i>Safety and risk assessment methodologies and practice in aircraft development</i>	<i>Human factors in aircraft maintenance and operations</i>
Human factor considerations in aircraft design	<i>Safety management effectiveness in flight and technical operations</i>
	Quality management and optimization in aircraft maintenance organisations
	<i>Aircraft technical and non-technical cost analysis and estimation techniques</i>

Funding: I have not received external funding.

Acknowledgments: I wish to thank all authors for their contributions.

Conflicts of Interest: I declare no conflict of interest.

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