World Academy of Science, Engineering and Technology
International Journal of Aerospace and Mechanical Engineering
Vol:12, No:02, 2018

Risk and Uncertainty in Aviation: A Thorough Analysis of System Vulnerabilities

Authors : C. V. Pietreanu, S. E. Zaharia, C. Dinu

Abstract : Hazard assessment and risks quantification are key components for estimating the impact of existing regulations. But since regulatory compliance cannot cover all risks in aviation, the authors point out that by studying causal factors and eliminating uncertainty, an accurate analysis can be outlined. The research debuts by making delimitations on notions, as confusion on the terms over time has reflected in less rigorous analysis. Throughout this paper, it will be emphasized the fact that the variation in human performance and organizational factors represent the biggest threat from an operational perspective. Therefore, advanced risk assessment methods analyzed by the authors aim to understand vulnerabilities of the system given by a nonlinear behavior. Ultimately, the mathematical modeling of existing hazards and risks by eliminating uncertainty implies establishing an optimal solution (i.e. risk minimization).

Keywords : control, human factor, optimization, risk management, uncertainty
Conference Title : ICASOM 2018 : International Conference on Aviation Systems, Operations and Management
Conference Location : Amsterdam, Netherlands
Conference Dates : February 12-13, 2018