HUMAN FACTORS, ANALYSIS TOOLS AND METHODS FOR DEVELOPMENT OF RELIABLE AIRCRAFT DESIGN

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Abstract

This paper provides an overview of different tools and methods that are capable of addressing human factors issues during an aircraft design programme. The huge amount of literature available is classified into a comprehensive birds eye view of the field. This is described in the form of taxonomy. Methods to determine the root cause of an airline incident/accident are discussed with application of Human Factors Analysis Classification System framework to few commercial airline accidents. Tools for identifying probability of human error in a task scenario are examined and a promising method for human error prediction is illustrated for a typical landing scenario. Also, different workload assessment methodologies are described in brief along with their strengths and limitations. Finally, a novel aircraft/component design methodology is proposed with human performance modelling tools that shall reduce the design life cycle and the inherent cost involved. In a nutshell, this paper basically discusses on how to design an aircraft that can reduce the incidents attributable to human factors.

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