Quantifying the management influences in the accident model

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Onderwerp/vraagstelling

The study reported here was inspired by the need for incorporating managerial influences in the Causal Modeling for Air Transport Safety (CATS) project in the Netherlands. CATS is one of the models which tries to quantify the risks of air traffic and link all system levels from the technical models of risk and their control through human to organizational measures. The objective of this paper is to understand how safety depends on the effects of managerial and organizational influences working through the online operational failure and factor management and organizational influences into risk assessment model of CATS.

Methoden en technieken & Resultaten/discussie

This paper emphasizes the understanding of how safety depends on the effects of managerial and organizational influences working through the online operational failure, i.e. pilot errors, ATC errors, maintenance staff errors, and technological failures. A theoretical model is being constructed to model the potential and actual effects of a safety management system based on dozens of accident/ incident analysis, alongside the technical and procedural risk control factors.

We have developed a strategy to implement a management model within the CATS model and to validate that model for use. We have developed a new method to be able to quantify the size of organizational influences on risk using paired comparison expert judgements to assess the importance of management influences on 2 preconditions which influence pilot errors in the aviation.

The results show there is a consensus between experts on using management policies to reduce human errors. The paired comparison method using the pilot experts in judging the relative importance of management influences has therefore been successful in this exercise.