

Dutch researchers demonstrate new control techniques for preventing aircraft crashes

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On Wednesday 21 November, Delft University of Technology (TU Delft) will demonstrate how improved control techniques can reduce the risk of aircraft crashes. The demonstration involves reconstructing troubled flights – such as the El Al flight which crashed in the Bijlmer area of Amsterdam in 1992 – in a flight simulator and adding the newly developed technology.

The presentation in Delft forms the final phase of a research project involving the GARTEUR international research partnership (participants include TU Delft and the National Aerospace Laboratory NLR) into Fault Tolerant Control.

This involves techniques for keeping damaged aircraft in the air for longer and enabling continuing flight control. The key to this is to improve control techniques which enable the aircraft to continue to be controlled. The implemented improvements are based on the analysis of flight data from aviation accidents by the NLR. This has led to improved interpretation of the (defective) condition of the aircraft.

On Wednesday 21 November, these improved techniques will be demonstrated to the general public at TU Delft. A number of realistic accident scenarios will be taken as examples, including the Bijlmer crash. These will be reconstructed using TU Delft's Simona flight simulator, but this time also using the newly-developed control techniques. Simulator experiments have shown that the new techniques make it easier for the pilot to land seriously-damaged aircraft safely.

Incidentally, the new techniques are only expected to be introduced in practice in the long term. The new improvements can largely be attributed to the greater calculation capacity of computers and further progress in the underlying mathematical theory of the past few years. According to TU Delft, both military and civil aviation parties are displaying great interest in these developments.

Source: Delft University of Technology

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