

AN EXPERIMENT TO EVALUATE TRANSFER OF UPSET RECOVERY TRAINING CONDUCTED USING TWO DIFFERENT FLIGHT SIMULATION DEVICES

Summary

Air transport training programs provide simulator-based upset-recovery instruction for company pilots. However, no prior research demonstrates that such training transfers to an airplane in flight. This FAA-funded research experiment was designed to evaluate upset-recovery training transfer. Two groups of participants were given simulator-based training in upset-recovery, one in a high-end centrifuge-based device, the other using Microsoft Flight Simulator running on desktop computers. A third control group received no upset-recovery training at all. All three groups were then subjected to serious in-flight upsets in an aerobatic airplane. Pilots from both trained groups significantly outperformed control group pilots in upset-recovery maneuvering. However, performance differences between pilots from the two trained groups were less distinct. Moreover, pilot performance in both trained groups fell well short of the performance exhibited by pilots experienced in all attitude flight. Although we conducted flight testing in a general aviation airplane, our research has important implications for heavy aircraft upset-recovery trainers.

Objectives

- Compare pilot's proficiency in ability to recover from upset recovery scenarios following motion and non-motion flight simulator based UPRT
- Develop metrics to grade UPRT recovery ability
- Quantify transfer of desktop and simulator based UPRT to aircraft

Customer/Partner

Embry-Riddle Aeronautical University, FAA

Status

Complete (2009)

Publication

Final report for FAA available online

<http://www.faa.gov/library/reports/medical/oamtechreports/2000s/media/200917.pdf>