

GL4000 SUSTAINED-G FLIGHT SIMULATOR UPSET PREVENTION AND RECOVERY TRAINING INVESTIGATION

Summary

This study seeks to determine the effectiveness of simulator based UPRT using sustained-G and non-motion based flight simulation platforms. Twenty (20) Air Transport Pilot's (ATPs) were trained at the NASTAR Center in Southampton PA for UPRT in the GYROLAB-4000 (GL4K) Sustained-G Flight Simulator. Ten pilots trained using the GL4K's full motion and sustained-G capabilities while the remaining pilots operated the GL4K as a traditional fixed-based flight simulator with all motion disabled. Both groups received identical classroom training. Pilots were evaluated before and after training on their proficiency to recover from a series of randomly presented preprogrammed upset scenarios. Pilot's additionally provided feedback indicating their personal self-assessment of UPRT skill level, comfort, and overall ability before and after training. For the motion group, physiological and motion sickness symptoms were evaluated using the Simulator Sickness Questionnaire to determine potential training limitations associated with sustained-G training.

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
- Optimize training methods for sustained-G based UPRT

Customer/Partner

ETC Internal Research

Status

Complete (Sumer 2011). Final report was presented at AIAA Modeling and Simulation Conference Summer 2012.

Future Publications

American Institute of Aeronautics and Astronautics (AIAA)