EFFECTIVENESS OF SUSTAINED-G SIMULATION IN LOSS OF CONTROL AND UPRT

Summary
This study is part of a larger body of research aimed at understanding man-machine interaction in aviation, and its influence on aviation safety. In part one of this study a group of pilots experienced flight upset profiles in the GYROLAB GL-2000 centrifuge-based simulator and evaluated the simulator to determine if sustained motion simulation is of sufficient fidelity to improve pilot-reaction to unplanned, simulated, aircraft upsets. In part two of this study pilots were monitored with a variety of physiological sensors to determine if there are identifiable psychological and physiological responses that occur in pilots when their exposure to an unplanned upset results in a mishap.

Objectives
- To observe trends between the success of recovery attempts and the physiological and psychological response of the pilots
- To validate the GYROLAB GL-2000, as a research and training tool for replication of pilot-in-the-loop control system performance and aircraft response in upset and off-nominal flight conditions
- To identify trends in the physiological and psychological responses of pilots recovering from upset conditions in large transport aircraft

Customer/Partner
NASA (Grant NNL06AA21G)

Status
Complete (2009)

Publications
Final report complete and available online
http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20110008036_2011007963.pdf