

Situation Awareness for Pilots, Non Pilots, and Commercial Flight Passengers: A Review of 2 Studies

presented by

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Abstract:

The Cognitive Engineering Research in Transportation Systems (CERTS) Lab is located at Embry-Riddle Aeronautical University in Daytona Beach, FL. Both faculty and students utilize the CERTS Lab for funded and non-funded research. This presentation will discuss 2 recent studies. The first study explored predictors of situation awareness (SA) and performance for pilots ($n = 43$) flying a flight simulator and non-pilots ($n = 49$) operating a driving simulator. Both groups also were tested for SA in a novel task. Predictors included short-term memory, working memory (WM), spatial working memory, inattention blindness (IB), personality factors, fluid intelligence, etc. Common predictors of SA for pilots and non-pilots included fluid intelligence, short-term memory, and IB. Agreeableness predicted SA for pilots and WM predicted SA for drivers. Spatial working memory predicted SA for the novel task. In addition, a new measure for testing IB was found to be encouraging for future classification of IB.

The second study explored compliance and retention for in-flight announcements and emergency announcements for airplane passengers. Passengers were randomly assigned to three groups during a simulated Part 121 commercial flight: talking on cell phone during flight ($n=18$), talking to adjacent passengers (face-to-face) during flight ($n=18$), and a control group ($n=18$). The control group complied with requests (lowering/raising tray tables, checking seat belts) to a greater extent than either the cell phone group or the face-to-face group. In fact, the face-to-face group was not better than the cell phone group for any of the tests. A main effect was found retention of announcements with greater information recalled for emergency announcements than in-flight announcements. The results of this study suggest that cell-phone conversations may not distract passengers from safety briefings any more than passengers talking to someone in an adjacent seat.