Announcing the Final Examination of Muhanna Alnoaimi for the degree of Doctor of Philosophy

Time & Location: April 24, 2015 at 9:00 AM in Engineering II 312L

Title: Safety Climate and Safety Outcomes in Aircraft Maintenance: A Mediating Effect of Employee Turnover and Safety Motivation

Aircraft maintenance is viewed as a critical safety component in general and military aviation industries, and thus it is crucial to identify the factors that may affect aircraft maintenance. Because the safety climate is a leading indicator of safety performance and safety outcomes, the current research utilized this approach to develop a model which can assist in explaining employee turnover, safety motivation, self-reported unsafe acts, reporting unsafe behaviors, incidents, and injuries in the aviation maintenance environment. This study included a sample of 283 technicians in military aircraft maintenance units who participated in a cross-sectional random survey. Data collected were analyzed using Exploratory Factor Analysis (EFA) and Structural Equation Modeling (SEM) techniques. A structural model that fitted the data was developed which predicted 64% of the variance in employee turnover, 7% of the variance in safety motivation, 19% of the variance in unsafe acts, 41% of the variance in reporting unsafe behavior, and 19% of the variance in workplace injuries. Results indicate employees who report a perception of high turnover exhibit decreased safety motivation and increased unsafe acts which lead to higher levels of workplace injuries. The perception of safety climate was identified as an antecedent to safety performance and safety outcomes. Additionally, the effects of control variables such as age and education were tested. The implications for safety management in aircraft maintenance were also discussed. The study’s results provide directions for future research on the turnover of aircraft maintenance technicians, safety performance, and safety outcomes.

Major: Industrial Engineering

Educational Career:
Bachelor's of Aerospace Engineering, BS, 1999, Embry Riddle Aeronautical University
Master's of Aerospace Engineering, MA, 2001, Embry Riddle Aeronautical University
Master's of Executive Business Administration, MBA, 2006, University of Bahrain

Committee in Charge:
Waldemar Karwowski, Chair, Department of Industrial Engineering and Management Systems
Peter Hancock, Department of Industrial Engineering and Management Systems
Piotr Mikusinski, Department of Mathematics
Petros Xanthopoulos, Department of Industrial Engineering and Management Systems

Approved for distribution by Waldemar Karwowski, Committee Chair, on April 24, 2015.

The public is welcome to attend.