

Requirement ID: 781

Sponsor Organization: AFS

POC:

Requirement Title: Reducing FOD through Improved Human Performance: Best Practices

Funded Requirement:

- FY02: No
- FY03: No
- FY04: No
- FY05: No

Requirement Statement: In terms of damaged equipment and scheduling delays, Foreign Object Damage (FOD) accounts for a significant amount of industry costs. Boeing estimates yearly FOD costs to exceed \$4 billion. Though some research has been performed that examined human factors precursors to ground damage, relatively little effort has been dedicated to organizational-level (organizational culture) precursors of FOD specifically. This research seeks to establish a baseline for further human factors investigations related to FOD through root cause trending tailored to cultural preconditions. Though FOD prevention programs currently exist, there seems to be little evidence that these programs were developed based on a well-developed need analysis. This project will address that gap by identifying potential contributory root cause factors that lead to FOD and develop a series of recommendations and/or corrective actions based on generalized human factors knowledge and current industry best practices.997

Background: A recent initiative was undertaken by industry to identify and rank potential catastrophic events contributed by human error. The survey ranked Foreign Object Damage (FOD) as the most likely potential ground-based cause that could lead to a catastrophic event. The exploratory nature of this project requires the research team to first establish the parameters of FOD and its human factors contributors. This project will identify potential causal and contributory factors that lead to FOD and develop a series of recommendations and/or corrective actions based on generalized human factors knowledge and current industry best practices. First, establishment shall be made with industry partners in order to sample a valid set of data. Concurrently, data will be gathered and an assessment of will be made of as many FOD-prevention programs as possible to assess the current state of FOD research and prevention. Second, define FOD and differentiate it from other forms of Ground Damage; also examine currently available mishap databases for FOD trends by utilizing accident (or scenario) analysis methodology. Examples of data trend analysis include examining trends based on work setting (hanger vs. line) and look for similarities/differences. Third, the project shall assimilate data related to the cost of FOD each year. Fourth, based on data from multiple industry partners, the project shall look for significant differences in FOD trends and investigate their current FOD strategies. From these data, create a generalized set of industry "best practices" will be created based on these findings as well as other basic human factors research. The primary benefit of this research is its focus on identifying

human factors precursors to FOD and the subsequent creation of generalized best practices or corrective actions through human factors interventions. The primary beneficiaries are industry maintenance organizations (reduced costs) and the traveling public (through improved general safety and alleviation of scheduling delays through reduction of FOD)

Output:

Regulatory Link: