

Simulation and Analysis of the T700 Repair Process at the Corpus Christi Army Depot

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Abstract: The Corpus Christi Army Depot (CCAD) has a critical mission of repairing all rotary-winged helicopters for the US Military. This research project aimed to improve the CCAD T700 Engine repair process. Two discrete-event simulation models were created in both ProModel™ and ProcessSimulator™ in order to identify and analyze process inefficiencies within the system. These models incorporate an Excel-based user interface that allows the user to conduct a “what if” analysis by manipulating different production variables to examine implications and results. A Multiple-Criteria Decision Analysis model was developed to evaluate and compare the cost versus value of competing production alternatives. Analysis of model outputs identified the plating shop and power turbine shaft as the key bottlenecks, and the most constrained resource as workers. The baseline process has a capacity of 890 engines per year. The developed models will assist in analyzing the efficiency of the T700 engine repair process.

Keywords: Multiple-Criteria Decision Analysis, Cost-Value Analysis, Discrete-Event Simulation, Depot-level Maintenance