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## **Discrete Event Simulation and Analysis of the Plating Facility at the Corpus Christi Army Depot**

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**Author Note:** CDTs Almeida, Bergstein, Pogue and Reyes are First-Class Cadets at the United States Military Academy at West Point, completing a senior capstone project in the Department of Systems Engineering under the direction of Mr. Eugene Lesinski. Any requests pertaining to the project may be sent to [billingsley.pogue@usma.edu](mailto:billingsley.pogue@usma.edu).

**Abstract:** The Corpus Christi Army Depot (CCAD) is one of the largest rotary wing repair facilities in the world, performing essential maintenance for the U.S. military. The objective of this project is to model the capacity of CCAD's plating shop to maximize productivity and efficiency. The plating shop is a vital entity in CCAD's repair process, with multiple implications for successful aircraft maintenance. Accordingly a discrete event simulation was developed in ProModel™ that allows a user unfamiliar with the software to generate and analyze production scenarios that measure the plating shop's throughput and utilization rates. These scenarios and their metrics allow CCAD to understand the capacity of the plating shop, identify bottlenecks, and make informed decisions to increase quality and decrease cost. Ultimately, the model enables a crucial component in the U.S. defense industry to increase speed and efficiency in its continuing efforts to keep the U.S. military's rotorcraft flying.

*Keywords:* Corpus Christi Army Depot, Discrete Event Simulation, ProModel™