SIMULATION MODEL TO EVALUATE PERFORMANCE OF OPERATIONAL SYSTEMS AND THEIR IMPACT ON REPAIR SHOP ACTIVITY AT A NAVY FIELD SITE

BY

JAMES T. NEWELL
B.S.E., University of Central Florida, 1975

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ABSTRACT

This paper presents the background and procedures leading to development of a simulation model to analyze the impact of certain decision variables on operational system performance and workloads at the repair facility of a typical Navy field site.

The research examines the impact of maintenance support concepts, as implemented by changes in the decision variables, associated with the broader application of Automatic Test Equipment. The initial effort consisted of data collection and field site surveys which culminated in defining a work flow model illustrating typical repair facility operations.

The work flow model is translated into a computer simulation model. The baseline model contains all the values for failure rates, delay times, and probability decision parameters derived from the available data.

The simulation model is then exercised and the output data recorded for comparison with historical data to validate the model and provide a baseline for comparison as the decision parameters are varied. Of the variables exercised, it appears that the Built-in-Test (BIT), or Self-test capability, is one of the more important design considerations in the original operating systems.

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