

A SYSTEMS DESIGN GAME

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A major problem for a manager who used computer services is the problem of systems acquisition and design. He must decide which system to buy and how the system should be structured. This paper presents a computer game written in PL/I that enables a user to choose from among three basic computer systems with a wide variety of CPU, channel and peripheral equipment options the one that best fits the computing needs of a hypothetical organization. A simulated set of jobs is run on the configuration chosen, and throughput and equipment utilization statistics are reported.

A Deterministic Simulation Model For Scheduled Airline Fleet Maintenance

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The system described by the simulation is the operation and scheduled maintenance of a fleet of fifty Boeing 727 aircraft. Sixty airports are serviced with a total of 286 flights a day. The model concentrates on scheduled (periodic) maintenance set by FAA specifications.

This encompasses fifty percent of all maintenance work. The major focus of the results, at the tactical level, is on the utilization of flying hours between the various maintenance checks. At the strategic level, the model can answer many questions, such as the impact of moving and closing maintenance bases and the effect of changing the number of spare aircraft.

**ASSET, A Digital Computer Language for the Simulation of
Communication Systems**

by

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ASSET has been written to simulate time-continuous communication, control, and radar systems on the XDS Sigma 7. Both the detailed responses of such systems to specific inputs, and system performance characteristics such as signal to noise ratio, probability of error, probability of detection, mean squared error, etc. can be measured with ASSET. In general, the simulation technique is to convert the continuous-time system to a sampled-data system, and then to represent the sampled-data system blocks by ASSET statements. ASSET was designed with three goals in mind: ease of programming, measurement accuracy, and efficient Monte Carlo simulation; careful choice of measurement technique and compiler design resulted in what the authors believe to be an optimum compromise between these sometimes conflicting requirements.