Improving Airport Gate Usage with Critical Path

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Abstract:
The supply of adequate gate space, particularly during peak hours, has become a concern at many airports. The turnaround operation of passenger aircraft was examined with the aim of finding ways to improve gate utilization. A simulation model based on the Critical Path Method (CPM) was constructed. The data for the model were derived from field studies conducted at Toronto International Airport. The model is capable of determining the total turnaround time for DC8L, DC8, DC9, 707, 727L, 727, and 737 aircraft. It also identifies the critical path(s) and gives total and free float. It is anticipated that judicious implementation of the simulation technique will result in improved turnaround times and consequently in improved gate utilization.

Subject Headings: Simulation models | Airports and airfields | Critical path method | Aircraft and spacecraft | Field tests | Passengers | Toronto | Ontario | Canada

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