

Review on Crew Scheduling of Bus Transit: A Case Study in Kolkata

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Abstract : In urban mass transit, crew scheduling always plays a significant role. It deals with the formulation of work timetables for its staff so that an organization can meet the demand for its products or services. The efficient schedules of a specified timetable have an enormous impact on staff demand. It implies that an urban mass transit company's financial outcomes are strongly associated with planning operations in the region. The research aims to demonstrate the state of the crew scheduling studies and its practical implementation in mass transit businesses in metropolitan areas. First, there is a short overview of past studies in the field. Subsequently, the restrictions and problems with crew scheduling and some models, which have been developed to solve the related issues with their mathematical formulation, are defined. The comments are completed by a description of the solution opportunities provided by computer-aided scheduling program systems for operational use and exposures from urban mass transit organizations. Furthermore, Bus scheduling is performed using the Hungarian technique of problem-solving tasks and mathematical modeling. Afterward, the crew scheduling problem, which consists of developing duties using predefined tasks with set start and end times and places, is resolved. Each duty has to comply with a set line of work. The objective is to minimize a mixture of fixed expenses (number of duties) and varying costs. After the optimization of cost, the outcome of the research is that the same frequency can be provided with fewer buses and less workforce.

Keywords : crew scheduling, duty, optimization of cost, urban mass transit

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