The dispatching rules of Dual Resource Constraints under DBR environment

吳鴻輝,李明峰
Business Administration
Management
hhwu@chu.edu.tw

Abstract

The Drum-Buffer-Rope (DBR) method is the production application of Theory of Constraints (TOC), a global managerial methodology that helps the manager to concentrate on the most critical issues. The DBR methodology is now being implemented by a growing number of manufacturing organizations. By enabling better scheduling and decision making on the shop floor, its results are remarkable such as higher throughput, lower WIP, and shorter cycle time. Although, the DBR methods and its applications in some industries has been studied in some literatures recently, little research on the problem of Dual Resource Constraints (DRC) on DBR. In this paper, operators dispatching rules are provided to study the impact of DRC on DBR management system. These rules are discussed first and a case of job shop with two operators and four machines is then utilized to evaluate the effective of these rules. The final results of experiment show that the best dispatching sequence is that bottleneck is first, machines in shipping buffer are second, rope operation is third and machines in CCR buffer are final. A case of a DRC system is finally utilized to evaluate the application and effective of the LABF method.

Keyword：Drum-Buffer-Rope (DBR), Dual Resource Constrained (DRC) system, Bottleneck, Labor Assignment Method