

**Lee, J.; Tangjarukij, M.; Zhu, Z.**

**Load selection of automated guided vehicles in flexible manufacturing systems.** (English)

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**Summary:** This paper examines the operation of multiple-load AGVs in a flexible manufacturing system where AGVs in the system are capable of carrying two or more loads. The load selection problem arises when an AGV stops at a pick-up queue and has to decide which part(s) should be picked up. Five heuristic rules that may be used to select the load to be carried were suggested and evaluated under a hypothetical flexible manufacturing system with the aid of computer simulation. The results revealed that the variable-route-part-priority rule and fixed-route-part-priority rule generated significantly higher throughput than their counterparts, while the 'pick-all-send-nearest' (PN) rule outperformed the other rules in part flow-time and work-in-process level. The results also suggest that when the carrying capacity of the AGV increases, the performance differences among the rules also increase. This finding sustains the need to explore an efficient operation strategy of multiple-load AGVs in flexible manufacturing systems.

**MSC:**

90B30 Production models

Cited in 6 Documents

**Keywords:**

flexible manufacturing system; computer simulation; variable-route-part-priority rule; fixed-route-part-priority rule; performance

**Full Text:** [DOI](#)

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