Operational Improvement of Warehouse Operations

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Abstract

The study provides modeling, simulation and improvement of wheel repacking area. A time study was conducted of the repacking line and the data were collected to gain better understanding of the operations and the processes involved. Based on the data and analysis, a flow diagram was developed with operational time distribution as part of the work standard. The major bottleneck is in the line management of the repacking area. The TAKT times for existing production line and future production line are compared. As a result, line production improvement can be achieved to 30% without a major investment. This can be achieved by better repacking line management. Some additional workers would be required for cleaning and line management. The fork lift truck drivers were not shown as a significant bottleneck. Minor issues could be resolved with better managing and scheduling for the drivers. The automation option requires further detailed analysis. The wheel inspection system and technology could be improved without full line automation. There are some cheaper solutions for inspection systems. The banding technology should be improved so that it can cope with line synchronization of other operations. Line integration / coordination are a challenge. Visible work instruction for line workers as well as inspectors could improve the line efficiency as well.

Keywords
Wheel repacking, warehouse, simulation, optimization and continuous improvement.

Biographies

Gomanth Duvvuru is a student in the Master of Science in Industrial Engineering at the Lawrence Technological University, Michigan, USA. He holds a Bachelor in Mechanical Engineering from Jawaharlal Nehru Technological University, Anantapur from India. During his Bachelors he actively participated in organizing many events are TEDx Tirupathi and UAV's Modelling. His research Interest Includes, simulation (Arena), Apple Inc. Technology Management, Minitab, and 3D Modeling (Pro/E, AutoCAD). He is an Active member of IEOM.

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