ABSTRACT

GARSEL is a factory which has business in production of shoes, located in Cibaduyut, Bandung. One of its products is a casual shoes. Shoes demand for the 1st quarter of 2011 has increased so that the head of the production department set a target production of at least 50 pairs of shoes per day to fulfill the order.

There are several causes of the production trajectory is not optimal, such as line balancing. In the existing condition is still visible accumulation of goods and operator who are unemployed due to the workload of each workstation that is not balanced. Line balance improvements is needed to balance workloads so that the trajectory of the production will be more efficient and to increase production.

Research purpose is to design a production line at Garsel factory to minimize idle time each work station that can be easily and quickly applied by the head of the production department. The data used are the processing time of each task, precedence constraints and cycle time targets derived from observations and interviews with the head of the factory production GARSEL. Production line at Garsel factory consist two line, the first line consist workstation 1 until workstation 3 and the second line consist workstation 4 until workstation 7. The data is processed using methods Kilbridge Wester, Moodie Rank Positional Weight and Moodie Young. Part 1 using Kilbridge Wester and Rank Positional Weight method, part 2 using Kilbridge Wester and Moodie Young method. The best method is used as a basis for designing layouts in production.

The results showed Kilbridge Wester method is selected for part 1 and Young Moodie method for part 2 with part 1 line efficiency rate increased from 51.55% to 94.87% and the efficiency of the line part 2 increased from 67.50% to 94.83% . Production target / cycle time expected by the head of production also reached.

Keyword: Kilbridge Wester, Moodie Young, Rank Positional Weight, Precedence Constraint, Design Layout, Line Balancing