

ABSTRACT

PT. Pindad (Persero) is a state-owned company (State-Owned Enterprise) that is engaged in the Alutsista (Main Equipment Armament System) and commercial products, such as production or manufacturing, services, trade. One of the products currently produced is heavy equipment in the form of a PC 200 Excavator. In carrying out its business, PT. Pindad has not been able to fulfill the demand for PC 200 Excavators from consumers from the private sector or the government. This happens because the station time on assembly lines is not evenly distributed so the workload is not balanced. This results in idle time which makes the operator idle so that the smooth flow of the assembly becomes low. Therefore it is necessary to balance workloads so that there is no idle time and increase the efficiency of the flow of assembly lines so that production output can be increased and production targets can be achieved. Balancing the assembly line was carried out on the swing frame assembly line as the upper frame of the PC 200 Excavator product using the Genetic Algorithm method. In this study the results of line efficiency were 98, 65% which increased by 56.65% with actual line efficiency by 42% with the condition of the number of fixed work stations numbering 4. Balance delay value decreased from 58% to 1.35%. In addition, production output also increased from 1 unit to 3 units.

Keywords: Genetic Algorithms, Line balancing, Idle time, Line efficiency