

ABSTRACT

PT. Pindad (Persero) is a manufacturing industry company engaged in the manufacture of military products and non-military or commercial products located in Bandung City, Indonesia. One of the commercial products produced by PT. Pindad (Persero) is E-Clips. E-Clips is an iron hook that is used massively on railroads, so the production of this product is carried out on a massive scale. Therefore, the reliability of all machines in the E-Clips production line is of paramount importance. PT. Pindad (Persero) has carried out preventive and corrective maintenance for each machine used, but the maintenance activity is not optimal because the machines are still experiencing a lot of downtimes. Of all the machines in this production line, there is a Shot Blast MACH MWJ 9/10 machine which is a machine that functions for shot blasting, namely a machine that works by shooting small iron balls at the workpiece with the aim of cleaning the remnants of the previous process.

Therefore, this study applies the Reliability and Risk Centered Maintenance (RRCM) method on the machine with the aim of knowing the proposed maintenance design, maintenance interval time, and maintenance costs from the proposed maintenance. In determining the critical components using the Risk Priority Number method and described using the Pareto diagram, three critical components are obtained, namely rubber, blades, and filters. By using the RRCM method, the proposed maintenance policy for each critical component is obtained. Maintenance interval time is obtained from quantitative calculations based on historical damage data for each critical component. Furthermore, the total maintenance costs are obtained by quantitative calculations from data related to costs such as employee wages, loss of revenue, material costs, and component prices.

Based on the results of the research that has been done, it is found that there are 3 proposed maintenance tasks with 1 scheduled on-condition task and 2 scheduled restoration tasks with maintenance time intervals for the blade components for 130 days and filters for 45 days. The total proposed maintenance cost is Rp.713,592,800 which is Rp.89,199,100 lower than the existing maintenance cost.

The results of this study are expected to be able to provide a proposed maintenance task that can provide optimization of machine maintenance on the Shot Blast MACH MWJ 9/10 machine owned by PT. Pindad (Persero). From this study, it is expected that the downtimes to the Shot Blast MACH MWJ 9/10 machine and the total maintenance costs incurred by PT. Pindad (Persero) for this machine is reduced.

Keywords: Maintenance, Reliability and Risk Centered Maintenance, Proposed Maintenance Task, Maintenance Cost