

## ABSTRACT

PT. PINDAD (Persero) is Indonesia's Manufacturing Industry Company that is engaged in military products and commercial products. PT PINDAD (Persero) activities includes design, development, engineering, assembly, manufacturing and maintenance. PT. PINDAD (Persero), as the industries that produce weapons and capital goods require high quality and precision product. Commercial product produced by PT Pindad with the highest number of requests is Deck Machinery. This product consists of 107 components and the most important component is the frame assembly. The only engine owned by PT. Pindad which can produce frame assembly is Toshiba Machine MPE-2160 (BO), so this machine is very important for the company. In order to guarantee product quality and precision, it requires effective maintenance activities on the Toshiba machine MPE-2160 (BO) so that minimize costs and optimize maintenance schedules. The policy of treatment that is used is Reliability Centered Maintenance (RCM). The policy of engine maintenance perform qualitative and quantitative analysis, in the form of proper care in the level of engine components and the optimal treatment time interval. Engine maintenance performed by the maintenance worker. Provision of more maintenance worker will turn to be cost, because the number of maintenance worker will increase the operation cost, but the lack of maintenance worker will cause a high cost because it will cause downtime that would reduce company's profits. Briefly, the method of Life Cycle Cost (LCC) is used to determine the optimal amount of maintenance worker.

Results obtained from qualitative analysis using the RCM method consist of ten scheduled on condition activities and six scheduled restoration activities. The Results of quantitative calculation is different for each engine component. Engine component maintenance intervals, determined before the Mean Time Between Failure (MTBF) of each component. Results that is obtained from calculations using the LCC method show that the optimal number of maintenance worker is  $M = 1$  person with the retirement age  $n = 5$  years with cost USD 4,966,906,464.19

Keywords: machine maintenance, RCM, LCC.