ABSTRACT

PT. primajasa is a company that runs in the transportation business. Primajasa serves mid distance travelling, which is travelling between cities or provinces. Primajasa owns couple of branches, including caringgin branch. Primajasa Caringgin branch have five routes of departures.. Because the bus have to be in the good condition so there is a need to calculate engine age optimation and optimal number of repair channel using life cycle cost (LCC) method to take decision.

Based on TTF datas, TTR on 2011-2013 it can be done plotting and deciding distribution that represents them. After that processing Acquisition Cost data and sustaining cost to get the smallest life cycle cost. Annual sustaining cost is consist of operational cost, maintenance cost and shortage cost. Acquisition cost is consist of purchasing cost and population cost.

In planning maintenance interval and component replacement Primajasa still doing corrective maintenance activity so there are many travelling problem that is surely dangerous and can affect degree of trust within customer to Primajasa service quality, so it is a need to decide optimum interval time of preventive maintenance based on reliability to upgrade component ability in operating its function over the operational years. This interval decision is also using minimum maintenance cost method.

In planning spare part required this company is still using history data, which is based on previous purchasing period. In this research sparepart planning is done by poisson process approach. Spare part is divided to repairable and non repairable. Then calculation of spare part required within next period based on assurance level of 95%.

Based on life cycle cost calculation, smallest LCC is Rp 51.498.443.264,90, creating 3 optimation in repair channel and 7 years of engine age in 103 unit engines. With age calculation, it can be predicted after 7 years engines will have a downgrade of performance. Based on minimum maintenance cost method, primajasa has new interval time maintenance activity for it's component with minimum reliability is 0,703433. Based on calculations by poisson's method obtained the needs of spare part for next period is 356 spare for repairable spare part and 3.430 unit spare for non-repairable spare part.

***Key word** : Life Cycle Cost, preventive maintenance, corrective maintenance , reliability, Spare part, Poisson process, Assurance Level.*