

ABSTRACT

PT. Kereta Api Indonesia (Persero) is a State Owned Enterprise (SOE) which provides railway transport services in Indonesia both people transportation and transportation of goods. As one of the providers of transportation services, safety and security aspects would be a major success indicator for PT Kereta Api Indonesia (Persero). The condition of railway infrastructure such as railroad, bridges, tunnels, signals, etc. play an important role to maintain the condition of the railroad in order to support optimal condition of rail operations. PT KAI has arrange railroad maintenance program c to keep the quality of railroad and also maintain its reliability.

As a State-Owned Enterprises in which part of its budget on subsidies by the government, budget constraint problem is unavoidable. In a policy paper on Policy Change and Implementation of IMO-TAC-PSO to improve the quality of Railways Ministry prepared by Bappenas (2011), Unplanned maintenance activities which is not budgeted in budget planning wil not subsidied by governmet. The more rail road maintenance activities conducted outside of the planned program, PT KAI will bear the cost of track maintenance greater. Estimated how much maintenance costs for the remaining life of the rail road is needed.

Life Cycle Cost approach to RAM parameter can be used to calculate the total cost of the rail road for the rest of its life. Parameter RAM can be used to predict the failure occurred by plotting the normal distribution, weibull, and 3 parameter weibull. After that we will get failure rate parameters that will be used to predict failure. After the predictable failure to do calculations for constituent costs such Cconstruction Cost, Periodic Maintenance Cost, Unplanned Maintenance Cost, and Delay Cost

After calculating, the total maintenance cost is obtained needs to be budgeted for the remaining life expectancy for 30-year for unplanned maintenance costs is Rp. 108.955.156.621 and for periodic maintenance is Rp 6.029.407.499. Total Delay Cost needed to be bugeted for the next 30 years if the downtime effect on the delay as much as 3% to R54 rail is Rp. 11,856,362,682 and for total of Remaining Life Cycle Cost is Rp.274.752.128.491., if downtime affects the delay as much as 4% to R54 rail is Rp. 15,808,483,576 and total remaining life cycle cost is equal to Rp 278.704.249.385., and if the downtime effect on the delay as much as 5% to R54 rail amounted to Rp 19,760,604,470 and total remaining life cycle cost is Rp 282.656.370.279.

Keywords: Maintenance, Rail, Railway, Railroad, Sleeper, Fastener,LCC