INTISARI

Excavator adalah salah satu jenis alat berat yang digunakan untuk mempercepat pekerjaan proyek. Bagian yang bersentuhan langsung dengan permukaan medan disebut *undercarriage*, yang berfungsi sebagai penopang beban *excavator*. Penelitian ini bertujuan untuk menganalisis tingkat keausan dan sisa umur pemakaian komponen *undercarriage*. Penelitian ini menggunakan metode *FMEA* (Failure Mode and Effect Analysis) untuk menganalisis faktor keausan pada komponen seperti *track shoe*, *carrier roller*, dan *track roller*. Nilai *RPN* (Risk Priority Number) diperoleh dari hasil perkalian antara *severity*, *occurrence*, dan *detection*.

Hasil penelitian menunjukkan persentase keausan pada umur pakai 4.500 hingga 4.668 jam. Komponen *track shoe* mengalami keausan sebesar 2,37% dengan sisa umur 2.401 jam, *track roller* sebesar 3,06% dengan sisa umur 1.534 jam, dan *carrier roller* sebesar 6% dengan sisa umur 771 jam. Kenaikan keausan tertinggi pada semua komponen terjadi pada rentang waktu 4.500 hingga 4.612 jam pemakaian. Berdasarkan analisis FMEA, diperoleh nilai RPN untuk *track shoe* sebesar 125, *track roller* 150, dan *carrier roller* 175.

Kata kunci : *Excavatoer, Komatsu PC 100-6, Undercarriage, Track Shoe, Track Roller, Carrier Roller, FMEA, RPN.*

ABSTRAK

An excavator is a type of heavy equipment used to expedite project work. The part that comes into direct contact with the ground is referred to as the undercarriage, which serves as the support for the excavator's weight. This study aims to analyze the wear rate and remaining useful life of the undercarriage components. The research employs the FMEA (Failure Mode and Effect Analysis) method to analyze wear factors on components such as the track shoe, carrier roller, and track roller. The Risk Priority Number (RPN) is calculated by multiplying severity, occurrence, and detection.

The results indicate a wear percentage for a service life of 4,500 to 4,668 hours. The track shoe experienced a wear rate of 2.37% with a remaining life of 2,401 hours, the track roller 3.06% with a remaining life of 1,534 hours, and the carrier roller 6% with a remaining life of 771 hours. The highest wear increase for all components occurred during the period of 4,500 to 4,612 hours of usage. Based on the FMEA analysis, the RPN values obtained are 125 for the track shoe, 150 for the track roller, and 175 for the carrier roller.

Keywords: Excavator, Komatsu PC 100-6, Undercarriage, Track Shoe, Track Roller, Carrier Roller, FMEA, RPN.