INTISARI

Undercarriage merupakan bagian bawah dari unit alat berat dengan fungsi untuk menahan beban, mengarahkan dan sebagai pendukung unit. Dalam menjaga performa *undercarriage* agar selalu dalam keadaan optimal, maka perlu diadakan perawatan. Penelitian ini bertujuan untuk menganalisis dan memprediksi sisa umur komponen *undercarriage* pada *track roller, carrier roller, sprocket type segment* dan *bushing.*

Penelitian ini menggunakan metode FMEA (*Failure Mode and Effect Analysis*) untuk mengidentifikasi potensi kegagalan, tingkat keparahan, efek kegagalan dan tingkat deteksi kegagalan pada komponen *track roller, carrier roller, sprocket type segment* dan *bushing*. Nilai RPN (*Risk Priority Number)* diperoleh dari hasil perkalian nilai *severity*, *occurrence* dan *detection.*

Dari penelitian yang sudah dilakukan pada umur 2688 jam diperoleh hasil yaitu tingkat keausan komponen *track roller* 26,54%, *carrier roller* mencapai 24,58%, *sprocket type segment* 32,00% dan *bushing* 63,72%. Sisa umur pemakaian komponen *track roller* 3821 jam, *carrier roller* 5223 jam, *sprocket type segment* 5712 jam dan *bushing* 679 jam. Hasil dari analisa menggunakan FMEA diperleh nilai RPN *track roller* 225, *carrier roller* 216, *sprocket type segment* 180 dan *bushing* 280.

Kata Kunci : *Bulldozer, undercarriage, track roller, carrier roller, sprocket type segment, bushing,* FMEA

ABSTRACT

The undercarriage is the lower part of the heavy equipment unit with functions to hold the load, direct and support the unit. In maintaining undercarriage performance so that it is always in optimal condition, maintenance needs to be carried out. This study aims to analyze and predict the remaining life of undercarriage components on track rollers, carrier rollers, sprockets type segment and bushings.

This study utilized the FMEA (Failure Mode and Effect Analysis) method to analyze the impact or effect of wearing rates to predict the remaining life of track roller components, carrier rollers, segment type sprockets and bushings. The RPN (Risk Priority Number) value was obtained from the results of multiplication of severity, occurrence and detection values.

From the investigation that has been conducted at the operating hours of 2688 hours, the results were obtained namely the wear rate of track roller components 26.54%, carrier roller reached 24.58%, sprocket type segment 32.00% and bushing 63.72%. The remaining service life of track roller components is 3821 hours, carrier roller is 5223 hours, sprocket type segment is 5712 hours and bushings are 679 hours. The results of the analysis using FMEA melted the RPN value of track roller 225, carrier roller 216, sprocket type segment 180 and bushing 280.

Keywords : Bulldozer, undercarriage, track roller, carrier roller, sprocket type segment, bushing, FMEA