ABSTRAK

Tujuan penelitian ini menganalisis *preventive maintenance material handling forklift* dan *reach truck* di PT. DSV Solutions Indonesia selama periode satu tahun (Januari-Desember 2023). Analisis dilakukan menggunakan metode *Mean Time Between Failure* (MTBF), *Mean Time To Repair* (MTTR), dan *Availability*. Hasil menunjukkan bahwa *forklift* memiliki MTBF 35.926 menit, MTTR 85 menit/*breakdown*, dan *availability* 77,83%, sementara *reach truck* memiliki MTBF 26.865 menit, MTTR 95 menit/*breakdown*, dan *availability* 90,14%. Dari analisis ini, disusun jadwal *preventive maintenance* yang direkomendasikan setiap 25 hari kerja untuk *forklift* dan 19 hari kerja untuk *reach truck*. Evaluasi *Improvement* pada *preventive maintenance* menunjukkan perawatan *forklift* sebanyak 12 kali dan *reach truck* sebanyak 16 kali dalam satu tahun, menghasilkan pengurangan waktu *downtime* dan biaya perbaikan yang signifikan, serta meningkatkan efisiensi operasional secara keseluruhan. Kesimpulannya, perbaikan jadwal *preventive maintenance* dapat meningkatkan waktu kerja *forklift* dan *reach truck* dalam lingkungan operasional selama satu tahun.

Kata Kunci: *Availability, Mean Time Between Failure, Mean Time To Repair, Preventive Maintenance*

ABSTRACT

The aim of this research is to analyze preventive maintenance for material handling equipment, specifically forklifts and reach trucks, at PT. DSV Solutions Indonesia over a one-year period (January-December 2023). The analysis employs the Mean Time Between Failure (MTBF), Mean Time To Repair (MTTR), and Availability methods. The findings reveal that the forklift has an MTBF of 35,926 minutes, MTTR of 85 minutes/breakdown, and an availability of 77.83%, while the reach truck has an MTBF of 26,865 minutes, MTTR of 95 minutes/breakdown, and an availability of 90.14%. Based on this analysis, a recommended preventive maintenance schedule is devised, suggesting maintenance every 25 working days for forklifts and 19 working days for reach trucks. The evaluation of the improvement in preventive maintenance indicates that forklifts require maintenance 12 times and reach trucks 16 times in a year, resulting in a significant reduction in downtime and repair costs, ultimately enhancing overall operational efficiency. In conclusion, the enhancement of preventive maintenance schedules proves beneficial in increasing the operational uptime of forklifts and reach trucks within the operational environment over the course of one year.

Keywords*: Availability, Mean Time Between Failure, Mean Time To Repair, Preventive Maintenance*