

ABSTRAK

Operasional alat angkut forklift pada industri karoseri memiliki kompleksitas tinggi yang berbanding lurus dengan risiko kecelakaan kerja, terutama terkait kerusakan material dan produk. Penelitian ini bertujuan untuk memitigasi potensi tabrakan forklift di CV. Garuda Jaya melalui perancangan sistem peringatan visual menggunakan *safety cone*. Metode penelitian yang diterapkan adalah deskriptif kualitatif dan kuantitatif dengan integrasi instrumen *Job Safety Analysis* (JSA) serta *Hazard Identification and Risk Assessment* (HIRA). Berdasarkan hasil identifikasi awal, ditemukan titik kritis pada proses mobilisasi produk mentah dengan nilai risiko tertinggi sebesar 12 (*High*) dan proses pemasangan bodi ke *chassis* dengan skor 10 (*High*) akibat keterbatasan pandangan operator saat membawa beban masif. Sebagai langkah pengendalian, dirancang sistem peringatan visual yang menempatkan *cone* reflektif sebagai *stopper* visual pada jarak presisi 50 cm dari sisi *chassis* serta zonasi sterilisasi di area *buffer*. Implementasi sistem ini secara teknis mampu memberikan referensi spasial yang lebih akurat bagi operator dibandingkan marka lantai konvensional. Hasil penelitian menyimpulkan bahwa penggunaan sistem peringatan visual yang fleksibel dan terukur dapat menurunkan probabilitas insiden secara signifikan serta mendukung pencapaian target *zero accident* di lingkungan perusahaan.

Kata Kunci: Forklift, Karoseri, JSA, HIRA, Peringatan Visual, *Safety Cone*.

ABSTRACT

The operation of forklifts in the bodybuilding industry (karoseri) involves high complexity that is directly proportional to the risk of workplace accidents, particularly concerning damage to materials and products. This study aims to mitigate the potential for forklift collisions at CV. Garuda Jaya through the design of a visual warning system using safety cones. The research method applied is descriptive qualitative and quantitative, integrating Job Safety Analysis (JSA) and Hazard Identification and Risk Assessment (HIRA) instruments. Based on the initial identification, critical points were found in the mobilization of raw products with the highest risk value of 12 (High) and the process of mounting the body to the chassis with a score of 10 (High) due to the operator's limited visibility when carrying massive loads. As a control measure, a visual warning system was designed, positioning reflective cones as visual stoppers at a precise distance of 50 cm from the side of the chassis, alongside sterilization zones in the buffer area. The implementation of this system is technically capable of providing more accurate spatial references for operators compared to conventional floor markings. The study concludes that the use of a flexible and measurable visual warning system can significantly reduce the probability of incidents and support the achievement of the company's zero-accident target.

Keywords: Forklift, Bodybuilding Industry, JSA, HIRA, Visual Warning, Safety Cone.