

ABSTRAK

Penelitian tentang penentuan lama waktu istirahat pendek berdasarkan pengukuran beban kerja fisik operator divisi pengelasan (Studi Kasus *Workshop* PT. ARYANA CAKASANA BALONGBENDO) dilakukan untuk mengurangi beban kerja fisik yang diterima oleh operator divisi las *workshop* PT. Aryana Cakasana Balongbendo. Hasil pengukuran lingkungan kerja fisik operator las di *workshop* PT. Aryana Cakasana Balongbendo menghasilkan rata-rata *temperature* sebesar 31,83°C, kebisingan sebesar 91,96 dB, kelembaban sebesar 52,88%, dan penerangan sebesar 166,67 lux. *Survey form of welding workload evaluation* disebarkan untuk mengetahui bagian tubuh operator yang mengalami kelelahan akibat sikap kerja operator yang berdiri dan membungkuk. Hasil uji chi kuadrat dan *exact fisher* menyatakan bahwa bagian leher, bahu, punggung atas, lengan atas, dan punggung bawah operator mengalami kelelahan. Hasil identifikasi postur tubuh yaitu posisi pengelasan *flat* dan *horizontal* yaitu *protraction*, *depression*, *downward rotation*, dan *elevation*; gerak bahu yaitu *extension* dan *flexion* dengan besar sudut sendi tubuh yaitu $0^{\circ} < \theta < +90^{\circ}$. Pengukuran beban kerja dilakukan dengan menggunakan metode *Cardiovascular Load* (CVL) dan melakukan perancangan waktu istirahat pendek menggunakan faktor *allowance*. Hasil perhitungan CVL ditemukan 8 operator las mengalami kelelahan. Usulan perbaikan yang diberikan dengan menambah waktu istirahat pendek operator. Usulan waktu istirahat pendek yaitu 66 menit, yang diselipkan pada pukul 10.00 WIB dan 15.00 WIB.

Kata Kunci: Beban kerja fisik, lingkungan kerja fisik, postur tubuh, *Cardiovascular Load* (CVL), *allowance*, waktu istirahat.

ABSTRACT

Research on the Design of Short Rest Period Based on Physical Workload Measurement of Welding Division Operators (Case Study Workshop PT. ARYANA CAKASANA BALONGBENDO) was conducted to reduce the physical workload received by the welding division workshop operator PT. Aryana Cakasana Balongbendo. result of measurement of the physical work environment of the welding operator in the workshop of PT. Aryana Cakasana Balongbendo showed an average temperature of 31.83°C, a noise of 91.96 dB, a humidity of 52.88%, and lighting of 166.67. Survey form of welding workload evaluation was distributed to find out which parts of the operator's body experienced fatigue due to the operator's standing and bending work attitude. The test results stated that the operator's neck, shoulders, upper back, upper arms, and lower back experienced fatigue. The results of the identification of body posture are flat and horizontal welding positions, namely protraction, depression, downward rotation, and elevation; shoulder motion, namely extension, and flexion with a large body joint angle of $0^\circ < \theta < +90^\circ$. Workload measurement is carried out using the Cardiovascular Load (CVL) method and designing a short rest time using the allowance factor. The results of the CVL calculation found that 8 welding operators experienced fatigue. The proposed improvement is to increase the operator's short rest time . The proposed additional rest time is 55 minutes, wich is insertedat 10.00 WIB and 15.00 WIB.

Keywords: Physical workload, work environment, posture, Cardiovascular Load (CVL), allowance, rest time..