

ABSTRACT

One of the functions of Material Handling Equipment (MHE) is to reduce the risk of workers injury. However, there are still less ergonomic Material Handling Equipment designs that result in the risk of injury to workers. One of Material Handling Equipment which is available at PT. XYZ is a train on the assembly engine division, work station M 08 which serves to transport motorcycle parts (Crank Shaft). The Crank Shaft carrier train has five levels, when the operator takes the Crank Shaft at the lowest level, the operator has to rotate the body about 180° and bend. This enables the operator to be exposed Musculoskeletal Disorders (MSDs), which may result in decreased operator productivity. Therefore, improvements to the MHE design are needed to reduce the risk of injury or Musculoskeletal Disorders (MSDs), and resulting in increased operator productivity by applying the concept of ENASE (Effective, Convenient, Safe, Healthy, and Efficient). The research produced an ergonomic concept of MHE that could reduce the risk of workers to be exposed Musculoskeletal Disorders (MSDs) which has a score of 3 in REBA (moderate risk of injury). The proposed MHE concept also resulting 1.05 seconds faster than existing MHE concept when the operator takes the Crank Shaft based on simulation results using the software.

Keywords— *Ergonomic, Material Handling Equipment, Ergonomic Function Deployment, REBA*