ABSTRACT

The pracitcum activities are part of the teaching that aims to make students gets a chance to test and examine the real state of science that have obtained from the theory. Manufacturing Process Laboratory is one of the laboratories at the Faculty of Industrial Engineering University of Telkom which organizes practicum to support the Manufacturing Process subject. One activity in this lab, using Haas machines Control Simulator that carried out by 3 people each machine. Each shift of practicum will be followed by a 5 lab groups with a duration of practicum for 3 hours at room laboratory that sized 11.89 meters x 4.90 meters.

A new design of Haas Control Simulator holder that has been designed in an earlier study that aims to minimize awkward postures during operation of the machine, also, to be able to keep the machine remain safe from collisions that can cause the machine fall from its table, have not been through the feasibility test. So in this study, the simulation using finite element analysis and feature of motion study in SolidWorks 2013 will be done to know the technical feasibility of the design.

Having researched and conducted a series of simulated observations using SolidWorks 2013 software, result that medium density fibreboard material is a good material and safe to be used for the table top and foot rest components, based on the value of factor of safety. In addition, the design of hollow steel table legs is the most secure design that proved by factor of safety values. From alternative concepts clamping components, rear locking concept is known to be the most secure concept. The concept of a drawer runner is a concept that is more secure than the concept of center drawer. Then, after the Haas Control Simulator is simulated by the load that happen at the machine using finite element method analysis and feature of motion study, this holder design has been declared technically feasible.

Keywords: *Simulation, finite element analysis, motion study, SolidWorks 2013, the holder Haas Control Simulator.*