

ABSTRACT

PT. Dirgantara Indonesia is a company engaged in the aerospace industry, especially in the manufacture of aircraft components and other air transport equipment. To maintain the trust of its customers, PT. Dirgantara Indonesia should be able to complete all orders on time, because company production process based on order (job order). One of the strategies is completing all orders on time, therefore PT. Dirgantara Indonesia should be able to increase production volume and to save production cost, such as by optimizing the materials movement distance between the production processes, which is directly related to the layout of the factory. In research conducted in PT. Dirgantara Indonesia, particularly in the Panel Right production process at the Bonding and Composite Departement there is an inefficient layout. This is indicated by irregular material flows, backtracking on the production process, bottleneck in Dry Lamination area and Lay up Bonding area and a lot of material movement between operations. Type of layout used is process layout design, with the objective to minimize the total material movement moment.

The algorithm is used in the research the SA-CRAFT algorithm that requires data of material movement moment (multiplication of the distance with the frequency of movement). Simulated Annealing algorithm is universal algorithm use for solve the problem of combinatorial optimization and in asimtonic can be viewed as optimization algorithm yet in reality has behavior as heuristic algorithm.

Based on research that has been done, the proposed layout can reduce total material movement moment until 16,5%. By reducing the material movement moment, it also directly cause production costs reduction which is incurred. Thus the proposed layout which is produced can make more efficient material movement moment. And Based on analyse of facility needs there is the addition of the 6 facilities for Dry Lamination facility and the addition of the 5 facilities for Lay up Bonding facility to reduce the bottleneck at Dry Lamination workstation and Lay up Bonding workstation.

Keywords : *Layout, SA-CRAFT algorithm, Movement moment.*