

ABSTRACT

PT. PINDAD is a manufacturing company engaged in military products and commercial product. PT. PINDAD activities including the design and development, engineering, assembly and manufacturer, as well as treatment. Air Brake System is one of commercial product produced by PT. PINDAD. This product is a set of sub-products that will be incorporated in a system that will be installed as a brake on the train. Air Brake System manufactured by means of railway department under the division of industrial machines and services.

From the results of observations, there are several issues contained in the air brake system production floor. These problems include:

- a. The storage of finished products and products in progress are out of place because of lack of storage areas.*
- b. The Usage of factory area is too broad, especially in the areas of painting and welding.*
- c. Raw material storage and assembly areas are separated by machinery causing the distance getting further.*

By counting the amount of machine needed for production process, it could be measured how wide the area needed for each machine. CRAFT algorithm is being used to look for smallest material movement moment so that the most efficient layout in distance and material movements could be achieved.

In this research, the width effectiveness is 90% for assembly area and 74% for machinery. The size addition happened in raw material area and finished products area become 1251 cm x 850 cm and 2780 cm x 850 cm. From material movement point of view, the movement moment become more efficient. That is proved with the reduction of movement moment that reached 75%. It has the potential to save the area of production and reduce the distance of displacement of material so as to increase production output.

Keywords: *Layout Planning, CRAFT algorithm, Area effectiveness movement moment*