

ABSTRACTION

PT Indonesia Asahan Aluminium (INALUM) as the only aluminium processing company in Indonesia always tries to minimize costs which occur before production, in production, and after the production when the products are distributed to the customers. One of the efforts that company could do to minimize these costs is by optimizing the management of their products. This is because the costs which occur during the product keeping process in inventory are the second largest cost after the cost of the production itself. Furthermore, the unavailability of product when the customer needs it will result in loss of opportunity to gain profit for the company as well as reducing customers satisfaction to the company.

At this time PT INALUM has three warehouses which are spread out in three different places in Indonesia, they are Kuala Tanjung (North Sumatra), Jakarta, and Surabaya. The largest demand of PT INALUM's products in Indonesia at this time, comes from the customers in Jakarta area. Thus, it is important for the company to maintain their products availability in Jakarta warehouse and so it needs appropriate policies considering the inventory of Jakarta's warehouse so that the amount of product kept in the warehouse could meet the customers demand as well as fulfilling company's objective to gain maximum profit with minimum inventory cost.

The optimum inventory determination in this research is using model Q, but before it is begun, demand forecasting to the past data will be done beforehand. The forecasting is important in order to predict the future demand of the products. The model Q which will be used in this research is Statistical Order Point to calculate the Safety Stock and Order Point as well as Lot Sizing methods to calculate the quantity to order in each replenishment.

In demand forecasting, the selection criterion for the forecasting methods will be the value of Mean Absolute Deviation (MAD), while for Lot Sizing methods, the selection criterion will be the most minimum cost occurred.

According to the results of data processing, the Order Point are at 2,188 tons for 99.7 % purity rate aluminium and 191 tons for 99.9 % purity rate aluminium, while the quantity to order in each replenishment are 3,602 tons for 99.7 % purity rate aluminium and 1,519 tons for 99.9 % purity rate aluminium. Meanwhile, based on the analysis done to the calculation results, the capacity of PT INALUM's warehouse in Jakarta is no longer sufficient to meet customers demand in Jakarta area so it is recommended to the company to increase the capacity of Jakarta warehouse.

Key Words : Inventory, Model Q, Optimum, Lot Sizing, Order Point, Safety Stock, Forecasting