ABSTRACT

PT. XYZ Port is located in Jakarta, Indonesia. This study, a case study on Stowage Planning, examines a ship docked at PT. XYZ Port bound for Singapore and Japan, experiencing the number of rehandles during the Stowage Plan. This was conducted using historical data from August 2024, in the form of EDIFACT data obtained from the ship's operational activities. This could lead to a decrease in the KPI in the Ship Planner and excessive rehandles at the Quay Crane at the next port. This study identified the specifications of the vessels used to deliver all containers. Furthermore, the study also identified the types of containers. The data analyzed included container type, weight, dimensions, order of destination ports, and the number of rehandles obtained from the results of previous historical data summaries.

The results are ship data that has 4520 TEUs and has 11 destinations from Indonesia, the conclusion that can be obtained is the results of Stowage Plan planning using the Integer Linear Programming model with the Insert-and Fix Algorithm approach can minimize rehandles by 59-100% for each destination port. This can reduce the number of rehandles for destination ports on the ship's shipping route, so that Quay Crane does not do excessive rehandles.

Keywords — Port, Stowage Plan, Rehandle, Integer Linear Programming, Insert-and-Fix Algorithm.