

## **ABSTRACT**

*Transportation has an important role in import export activities. Towing winch used to move the load from the dock to vessel. Towing winch is composed of several parts, including frame assy. PT XYZ is a company that produces APKL (Tools & Equipment of Ships). The machine to produce APKL, especially frame assy is Waldrich Siegen machine which has six subsystems. By using the risk matrix obtained three critical subsystems, they are table, arm, and hydraulic. Waldrich Siegen engine often suffered damage so it needs to be analyzed Reliability, Availability, and Maintainability (RAM). Based on the results of RAM data processing, at  $t = 570$  reliability value of hydraulic (25%), arm (19%), and table (17%) and overall critical system is 0.79%. The time required to restore the normal condition for table are about 4 hours (82%), hydraulic 2 hours (85%), and arm 4 hours (80%). Inherent Availability of system is 99.16% and Operational Availability of system is 92.18%. Based on the evaluation using world class maintenance key performance indicators, leading indicators of availability value have reached the target, while the lagging has not reached the target. Therefore it is necessary to do better maintenance policy. Maintenance policy can be determined by Reliability Centered Maintenance (RCM) method. Based on the RCM method, the right preventive maintenance policy 8 scheduled on condition tasks, 3 scheduled restoration tasks, and 5 scheduled discard tasks were performed. By using RCM method, PT XYZ can save maintenance cost Rp 504.835.261,05.*

*Key words : Reliability, Availability, Maintainability, Key Performance Indicator, Reliability Centered Maintenance, Maintenance Task.*