ABSTRACT

The textile industry is one of industries that has an important role in the national economy. PT Buana Intan Gemilang (BIG) *is one of textile industry in Indonesia which uses Weaving machine to produce* motif *and* sajadah *fabrics. The purpose of this research is to analyze the reliability of Weaving M251 machine that has the most damage in 2014. To avoid losses due to machine damage, the reliability, availability and maintainability of the machine need to be improved by using Reliability, Availability & Maintainability (RAM) Analysis method. In addition, the total cost caused by RAM problems can be calculated by using Cost of Unreliability (COUR) method. Based on the evaluation using Reliability Block Diagram (RBD) modeling, it is found that the critical subsystem reliability = 44.36% for 144 working hours and the total repair time that the critical subsystem needs to perform in acceptable operational condition = at least in 1 to 70 hours. There are two different forms of availability that have been calculated, therefore inherent availability = 95,546% which is used as leading indicator and operational availability = 85,572% which used as lagging indicator. If compared, lagging indicator does not meet the performance of leading indicator. The total of unreliability cost when the machine is in active repair time=39,580,689.02 IDR and within downtime = 135,588,452.13 IDR.*

Keywords: *Cost of Unreliability (COUR), Lagging Indicator, Leading Indicator, Reliability, Availability & Maintainability (RAM) Analysis, Reliabillity Block Diagram (RBD)*