

## **ABSTRACT**

*Systems that implement maintenance activities on a regular basis can minimize costs due to engine failure as well as with aircraft. The maintenance process for aircraft requires special action that can not be done by any party. Indonesia has several companies in the field of turbine engine maintenance services of aircraft, one of them is PT Nusantara Turbin and Propulsi. Type CT7 engine is the most frequent engine to repair (maintenance). This study aims to analyze the failure of CT7 Engine and set an appropriate maintenance to minimize the frequency of failure and repair costs. The research is done by using Reliability, Availability, and Maintainability Analysis for machine reliability and Cost of Unreliability method to find out how much cost is generated by Reliability, Availability, and Maintainability with Mean Time To Failure, Mean Time To Repair and Mean Downtime as the input data. From result of data processing using RAM Analysis by using reliability block diagram modeling, at 336 hours system have reliability value 50,3%. The average value of Maintainability of the system can be fixed within 48-672 hours. Inherent Availability value is 53% and Operational Availability value is 38%. The calculation of Cost of Unreliability, cost due to the lack of reliability of \$ \$16,964,109.45 based on active repair time, and \$112,181,184.17 based on downtime.*

**Keywords: Reliability Block Diagram, Reliability Availability Maintainability, Cost of Unreliability (COUR)**