ABSTRACT

PTPN VIII Malabar is a company engaged in agriculture industry, This company has an extensive farm of 1200 hectares, with an area of plantation PTPN VIII Malabar get the various issues related to field supervision such as the amount of time and labor needed for land monitoring activities. Besides the range of monitoring and recording the availability of monitoring results is also an problem for PTPN VIII Malabar. Therefore PTPN VIII Malabar requires new innovation to address the problems. One solution is needed PTPN VIII Malabar is the best use of *Unmanned Aerial Vehicle* (UAV).

One type of UAV aircraft that had been developed by Telkom University, especially for APTRG (Aeromodelling Payload And Telemetry Research Group) is Twin Boom. This aircraft has winspan about 1.8 ms. Body length is about 1.2 ms, weight is about 2 kilograms and the flight duration can reach about 20 minutes with explore power reach until 64 hectres for one flight. In a research was make re-design on the APTRG's Twin Boom body, where the initial body that can't be separated because it used glue for make a fix junction on the body. It was re-designed, so it was able to dismantle. it is done so that aircraft through a dike in PTPN VIII Malabar.

Researcher make 3 design alternatives for aircraft product that could be dismantle. After that, researcher would approach DFA analysis using Boothroyd and Dewhrust method. From the calculation result, first alternative design had component number up to 14 components, with the total loading time of 183.98 s and loading efficiency 23 %. Second alternative design had number of components up to 12 components, with the total loading time of 131.66 s and loading efficiency 27%. On the other hand, the third design had number of components up to 10 components with the total loading time of 94.33 s and loading efficiency 32%. From these results, the third alternative design was choosen as the best design.

Keywords : *product, design, Twin Boom, UAV, boothroyd and dewhurst, DFA*