

## ABSTRAK

*Fuel system* merupakan suatu sistem penting pada pesawat terbang yang digunakan untuk mengalirkan bahan bakar dari tanki menuju *engine*. Kegagalan pada *fuel system* dapat menyebabkan pesawat jatuh sehingga dimungkinkan pesawat mengalami kecelakaan dan korban jiwa. Penelitian ini membahas keandalan *fuel system* pada pesawat Boeing 737-500 yang mencakup tentang proses kegagalan pada *Boost pump* yang terdapat di *fuel system*.

Dalam penelitian ini, metode observasi langsung digunakan untuk mengamati dan menganalisis penanganan perawatan pesawat Boeing 737-500 di PT. Merpati *Maintenance Facility*. Subjek pada penelitian ini adalah sistem bahan bakar Boeing 737-500. Selain itu pada penelitian ini digunakan metode *fault tree analysis* untuk mencari kemungkinan penyebab yang akan ada pada permasalahan sistem bahan bakar Boeing 737-500. Proses *troubleshooting* dan *remove/install* mengacu pada ATA 28, AMM (PAGEBLOCK 28-22-41/417), (PAGEBLOCK 28-22-41/423).

*Functional test* dilakukan untuk mengetahui kondisi sistem pengereman telah berhasil diperbaiki dengan menggunakan metode *fault tree analysis*, yang terkait dengan masalah sistem bahan bakar pesawat, diperoleh *basic event* tersebut adalah Analisa FTA didapatkan basic event yaitu Kabel putus, Konektor rusak, Kebocoran, Tersumbat Korosi, *Impeller* rusak, Kebocoran pada *seal*, Korosi, *Stuck Open*.

**KATA KUNCI:** *Fault tree analysis, Fuel system, Functional test.*

## ***ABSTRACT***

The fuel system is an important system on aircraft that is used to flow fuel from the tank to the engine. Failure of the fuel system can cause the plane to crash, so it is possible for the plane to have an accident and cause casualties. This study discusses the reliability of the fuel system on the Boeing 737-500 aircraft which includes the failure process of the Boost pump in the fuel system.

In this study, direct observation method was used to observe and analyze the handling of Boeing 737-500 aircraft maintenance at PT. Merpati Maintenance Facility. The subject of this research is the Boeing 737-500 fuel system. In addition, in this study the fault tree analysis method was used to find possible causes that would exist in the Boeing 737-500 fuel system problem. The troubleshooting and remove/install process refers to ATA 28, AMM (PAGEBLOCK 28-22-41/417), (PAGEBLOCK 28-22-41/423).

Functional tests were carried out to determine the condition of the braking system has been successfully repaired using the fault tree analysis method related to aircraft fuel system problems, the basic events obtained were FTA analysis obtained basic events, namely broken cables, broken connectors, leaks, clogged corrosion, damaged impellers, leaks in seals, corrosion, stuck open.

***Keyword:*** *Fault tree analysis. Fuel system, Functional test*