ABSTRAK

Fuel system adalah sistem penting yang terdapat pada pesawat terbang yang berfungsi sebagai sistem utama dalam pendistribusian bahan bakar menuju engine. Sehingga jika komponen *fuel system* terjadi kegagalan akan berdampak buruk pada kinerja *engine,* yang memungkinkan pesawat mengalami kecelakan dan bisa menelan korban jiwa.

Dalam penelitian ini, metode observasi langsung digunakan untuk mengamati dan menganalisis penanganan perawatan pesawat Boeing 737-800 NG di FL Technic Indonesia. Subjek pada penelitian ini adalah *fuel system* pesawat Boeing 737-800 NG. Selain itu pada penelitian ini digunakan metode *fault tree analysis* untuk mencari kemungkinan penyebab yang akan ada pada permasalahan sistem pendistribusian bahan bakar pesawat Boeing 737-800 NG. Proses *troubleshooting* dan *remove/install* mengacu pada AMM Boeing 737-800 *chapter* 73 (PAGEBLOCK 73-11-01/401), (PAGEBLOCK 73-11-01/421).

Hasil penelitian menunjukan kebocoran pada *fuel pump* disebabkan oleh *seal* / *O-ring* yang keras karena sudah melampaui batas pemakaian dan terkena panas secara terus menerus sehingga seal / O-ring menjadi retak. Hasil penyebab kegagalan dari *fault tree analysis* berupa 13 *basic event* yaitu pompa *pressure* berkurang, *fuel filter block* total karena FOD, *fuel filter block* sebagian karena FOD, *corrotion*, tidak ada suplai *electrical*, *pressure* berkurang, *Seal O-ring broken*, *gear pump broken*, *leakage*, tersumbat karena korosi, *voltase* kurang dari 28 V, *packing seal broken*, dan *corrotion* yang mempengaruhi *fuel system* mengalami kegagalan.

Kata kunci: *fuel system*, *fault tree analysis*, distribusi *fuel*

ABSTRACT

Fuel system is an important system found in aircraft that functions as the main system in distributing fuel to the engine. So that if the fuel system components fail, it will have a bad impact on engine performance, which allows the aircraft to experience accidents and can cost lives.

In this study, the direct observation method was used to observe and analyze the maintenance handling of boeing 737-800 NG aircraft at FL Technic Indonesia. The subject of this study was the fuel system of the Boeing 737-800 NG aircraft. In addition, in this study, the fault tree analysis method was used to find possible causes that would exist in the problem of the Boeing 737-800 NG aircraft fuel distribution system. The troubleshooting and remove/install process refers to the Boeing 737-800 chapter 73 AMM (PAGEBLOCK 73-11-01/401), (PAGEBLOCK 73-11-01/421).

The results showed that the leak in the fuel pump was caused by a hard seal / O-ring because it had exceeded the usage limit and was exposed to continuous heat so that the seal / O-ring cracked. The results of the causes of failure from the fault tree analysis in the form of 13 basic events, namely reduced pump pressure, total fuel filter block due to FOD, fuel filter block partially due to FOD, corrosion, no electrical supply, reduced pressure, broken O-ring seal, broken gear pump, leakage, clogged due to corrosion, voltage less than 28 V, broken packing seal, and corrosion that affects the fuel system failure.

Keywords: *fuel system, fault tree analysis, distribution fuel*