ABSTRAK

Engine bleed air adalah aliran udara panas dan bertekanan yang dihasilkan oleh kompresor engine. Hasil kompresi udara dari kompresor engine tidak stabil, oleh karena itu diperlukan komponen untuk mengatur panas dan tekanan udara. Pressure Regulator Shut Off Valve (PRSOV) adalah sebuah komponen yang bergerak membuka atau menutup yang berfungsi untuk mengatur tekanan udara bleed air dan mengatur limitasi udara bertekanan yang panas. Komponen ini terpasang pada jalur distribusi engine bleed air system. Penelitian ini membahas penyebab kegagalan pressure regulator shut off valve yang mengalami penurunan udara bertekanan sebesar 20 – 28 Psi dimana seharusnya 42±8 Psi sehingga berakibat pada kerja engine bleed air system. Oleh karena itu dilakukan prosedur penggantian yang sesuai dengan manual. Penelitian ini berisi data-data studi kasus kegagalan engine bleed air system yang hasilnya berupa diagram fishbone untuk mengetahui faktor kegagalan, diagram pareto sebagai persentase kegagalan, dan metode *mean time between unscheduled removal (MTBUR)* untuk menentukan waktu perawatan komponen. Hasil dari penelitian memperlihatkan bahwa penyebab utama berupa kebocoran (*leakage*) tekanan udara sebesar 73,91% akibat kerusakan pada piston actuator ring set dengan presentase sebesar 45,66%. Hal ini perlu dilakukan eksternal dan internal inspection terhadap sistem dan komponen. Berdasarkan hasil penelitian ini, perlu penggantian bahan dan desain piston actuator ring set oleh manufaktur atas analisis penulis terhadap data-data dari workshop PT.GMF Aeroasia.

Kata Kunci: Engine bleed air*, pressure regulator shut off valve (PRSOV)*, regulate udara, *piston actuator ring set, mean time between unscheduled removal (MTBUR)*

FAILURE ANALYSIS OF PRESSURE REGULATOR SHUT OF VALVE COMPONENT ENGINE BLEED AIR SYSTEM CFM56-7B BOEING 737-800 AIRCRAFT

ABSTRACT

Engine bleed air is the flow of hot and pressurized air produced by the engine compressor. The results of this engine compression in the form of heat and pressure. Compression results from the compressor is unstable, therefore it is necessary to install components to regulate heat and pressure. Pressure regulator shut off valve is a component that move open or close as the function to regulate pressurized air (bleed air) and regulate the limitation of hot pressurized air . This component is installed on the bleed air distribution line. This paper increases the repair work failure of pressure regulator shut off valve, causes of failure in this paper is because it has decreased air pressure until 20 – 28 Psi below the supposed 42 ± 8 Psi which the components has a damaged the inside and effect in operation of engine bleed air system. Therefore the replacement procedure is carried out in accordance with the manual. The research carried out of failure data in engine bleed air system that the result are in the form of fishbone diagrms to find a factor of failure, pareto diagrams as presentation of failure and mean time between unscheduled removal (MTBUR) method to determine a maintenance time of component . The results of the study show that the majority cause of engine bleed air system distibution leakage with 73,91% as a result of the damage to the piston actuator ring set with 45,66%. External and internal inspection must be carried out on the system and components. Should be replaced the piston actuator ring set material design by the manufacturer as the writer advice based on data analysis in PT.GMF Aeroasia workshop.

***Keywords**: Engine bleed air, pressure regulator shut off valve, air regulate, the piston actuator ring set, mean time between unscheduled removal (MTBUR)*