

ABSTRAK

Pneumatic engine bleed air system merupakan salah satu sistem utama yang berfungsi untuk mengontrol aliran udara yang didistribusikan dari *Pneumatic manifold*. Suplai utama *bleed air* ke *manifold* didapatkan langsung dari *engine stage 5th compressor*. Kerusakan pada komponen *bleed air regulator* ini mengakibatkan pendistribusian *bleed air* tidak mengalir, yang ditunjukkan *indikator pneumatic panel* menyala, dan berpotensi membahayakan keselamatan penerbangan.

Analisis kegagalan yang muncul pada berkurangnya *bleed air* dari *indikator pressure* pada *pneumatic*. Selain menggunakan metode observasi, penelitian ini juga menggunakan metode *fault tree analysis* untuk mendapatkan penyebab kegagalan pada komponen *bleed air regulator* yang berfungsi untuk mengontrol jumlah *bleed air* masuk.

Kegagalan *zero duct pressure* disebabkan oleh komponen *bleed air regulator*, dan melakukan *troubleshooting bleed air regulator*. Proses *troubleshooting bleed air regulator* dilakukan mengacu pada buku *manual Boeing 737-300 chapter 36*. Penggantian komponen dilakukan dengan menggunakan AMM TASK 36-12-35, setelah selesai mengganti komponen *bleed air regulator* maka dihasilkan *bleed air indikator system* yang menunjukkan *pressure* sudah kembali normal. Dengan menggunakan metode *fault tree analysis*, terkait permasalahan pada *Zero Duct pressure* ditemukan 21 *basic event* yaitu (1) *trouble high stage valve*, (2) *trouble high stage regulator*, (3) *trouble bleed air regulator*, (4) *sensor pressure problem*, (5) *sensor temperature problem*, (6) *connector problem*, (7) *pressure pipe problem*, (8) *high stage regulator problem*, (9) *valve stage 9th supply problem*, (10) *extension ring problem*, (11) *pipe side inner problem*, (12) *supply daya problem*, (13) *connector problem*, (14) *conecctor problem*, (15) *line problem*, (16) *conector valve problem*, (17) *control valve suplly line problem*, (18) *fan broken*, (19) *fan* mengalami bengkok, (20) *TEE broken*, dan (21) tersumbat FOD.

Kata Kunci : *Zero Duct Pressure, Faault Tree Analysis, Troublesshoting Bleed Air Regulator*

ABSTRACT

Pneumatic engine bleed air system is one of the main systems that functions to control the flow of air distributed from the Pneumatic manifold. The main supply of bleed air to the manifold is obtained directly from the engine stage 5th compressor. Damage to the bleed air regulator component results in the distribution of bleed air not flowing, which is indicated by the pneumatic indicator on, and has the potential to endanger flight safety.

Analysis of failures that arise in the reduction of bleed air from the pressure indicator on the pneumatic. In addition to using the observation method, this study also uses the fault tree analysis method to find the cause of failure in the bleed air regulator component which functions to control the amount of bleed water entering.

Zero duct pressure failure was caused by the bleed air regulator component, and troubleshooting the bleed air regulator. The troubleshooting process for the bleed air regulator is carried out referring to the Boeing 737-300 manual chapter 36. Replacement components are carried out using AMM TASK 36-12-35, after replacing the bleed air regulator components, a bleed air indicator system is produced which shows the pressure has returned to normal. By using the fault tree analysis method, related to problems with Zero Duct pressure found 21 basic events, namely (1) trouble high stage valve, (2) trouble high stage regulator, (3) trouble bleed air regulator, (4) sensor pressure problem, (5) sensor temperature problem, (6) connector problem, (7) pressure pipe problem, (8) high stage regulator problem, (9) valve stage 9th supply problem, (10) extension ring problem, (11) pipe side inner problem, (12) power supply problem, (13) connector problem, (14) connector problem, (15) line problem, (16) connector valve problem, (17) control valve supply line problem, (18) fan broken, (19) fan is bent, (20) TEE is broken, and (21) is clogged with FOD.

Keywords : *Zero Duct Pressure, Fault Tree Analysis, Troubleshooting Bleed Air Regulator*