

ANALISIS KEANDALAN KOMPONEN PESAWAT EC 155 B1 MENGUNAKAN METODE WEIBULL

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ABSTRAK

Perawatan pesawat mempunyai nilai yang sangat penting untuk selalu dijaga, agar keandalan, kelaikan dan kesiapan dari pesawat. PT.Indonesia Air Transport & Infrastructure (IAT), merupakan salah satu perusahaan charter, pesawat yang digunakan iat adalah jenis EC 155B1. Penulis menggunakan dua metode penelitian, yang pertama Reliability control program (defect monitoring) yang digunakan untuk menyeleksi dan me-validasi data kerusakan komponen. Perhitungan Weibull digunakan untuk pengolahan data keandalan komponen yang telah di seleksi.

Berdasarkan analisis defect monitoring selama periode 2014-2019 adalah ATA chapter 34 navigation, namun komponen pada ATA chapter 34 navigation tidak memiliki batasan umur komponen yang tercatat pada dokumen airworthiness limitation section sehingga digantikan oleh ATA chapter 62 main rotor. Komponen pada ATA chapter 62 main rotor yang dipilih adalah komponen scissors lower link, pitch change rod-end, dan frequence adapter rod-end.

Hasil analisis weibull terhadap komponen scissors lower link, pitch change rod-eng, dan frequence adapter rod-end, didapatkan data nilai keandalan dilihat dari indikasi nilai $\beta = 2.0967$ (scissors lower link), $\beta = 2.5884$ (Frequence Adapter Rod-en), dan nilai $\beta = 6.3102$ (pitch change rod-end). Ketiga komponen memiliki nilai $\beta > 1$ yang mengindikasikan tipe kerusakan yang sama yaitu implies wear-out dengan nilai mean time to failure ketiga komponen. Ketiga komponen mengindikasikan jenis kegagalan yang sama (wear out failure), maka program perawatan yang tepat terhadap ketiga komponen yaitu dengan melakukan preventive maintenance (daily check, post & pre-flight check, detailed inspection dan lain-lain)

Kata kunci: Keandalan, Defect Monitoring, Weibull, Mean Time To Failure

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ABSTRACT

Aircraft maintenance has a very important value to always be maintained, so that the reliability, feasibility and readiness of the aircraft. Indonesia Air Transport & Infrastructure (IAT), is one of the charter companies, the aircraft used iat is EC 155B1 type. The author uses two research methods, the first is Reliability control program (defect monitoring) which is used to select and validate component damage data. Weibull calculations are used for processing the reliability data of selected components.

The results of the analysis defect monitoring during the 2014-2019 are ATA chapter 34 navigation which has the highest number of defects, but the components in ATA chapter 34 navigation do not have a component age limit recorded in the document airworthiness limitation section (ALS) so that it is replaced by ATA chapter 62 main rotor . The components in the ATA chapter 62 main rotor selected are the scissors lower link component, the pitch change rod-end, and the frequency of the rod-end adapter.

The results of the Weibull analysis of the components of the scissors lower link, pitch change rod-eng, and the frequency of the rod-end adapters performed, obtained reliability value data seen from the indication value $\beta = 2.0967$ (scissors lower link), $\beta = 2.5884$ (Frequency Adapter Rod-en), and the value $\beta = 6.3102$ (pitch change rod-end). All three components have a value of $\beta > 1$ which indicates the same type of damage, namely implies wear-out. All three components indicate the same type of failure (wear out failure), then the proper maintenance program for the three components is to do scheduled maintenance. by doing preventive maintenance such as daily check, post & pre-flight check, detailed inspection and others, depending on the maintenance program adjustments that will be made from the results of this analysis.

Key Word: *Reliability, Defect Monitoring, Weibull, Mean Time To Failure*