

**ANALYSIS OF RELIABILITY ENGINE OIL SYSTEM IN GROB G 120TP-A
AIRCRAFT USING WEIBULL DISTRIBUTION METHOD**

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ABSTRACT

Engine oil system on the GROB G 120TP-A aircraft is a system for circulating oil from oil tank to moving components on the engine. The main engine oil system components consist of oil tanks, oil coolers, oil filters, oil sensors, and oil pressure switches. This study aims to determine the availability and reliability of oil systems on Grob G 120TP-A aircraft using the weibull distribution method. The data used to calculate reliability is damage data from the components analyzed.

From the calculation using this method, it can be seen that the availability of the GROB G120-TPA engine oil system has decreased with time. GROB G120-TPA engine oil system aircraft has the highest availability of 0.9968 or 99.68% if preventive repairs are carried out at a distance of 300 hours of flight. The longer the time interval for using the GROB G120-TPA aircraft engine oil, the higher the failure rate of the GROB G120-TPA airplane oil system. The GROB G120-TPA airplane engine oil system may be operated for a maximum of 4,040 flight hours, because if it is operated beyond that time, the damage rate is likely to be more than 10%.

Keywords: *GROB G 120TP-A , engine oli system, weibull method, failure rate.*

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ANALISIS KEANDALAN *ENGINE OIL SYSTEM* PADA PESAWAT GROB G 120TP-A DENGAN MENGGUNAKAN METODE DISTRIBUSI WEIBULL

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ABSTRAK

Engine oli system pesawat GROB G 120TP-A merupakan sistem untuk mensirkulasi oli dari *oil tank* ke komponen-komponen yang bergerak pada *engine* tersebut. Komponen utama *engine oil system* terdiri dari *oil tank, oil cooler, oil filter, oil sensor, dan oil pressure switch*. Penelitian ini bertujuan untuk mengetahui ketersediaan dan keandalan *oil system* pada pesawat Grob G 120TP-A menggunakan metode distribusi weibull. Data yang digunakan untuk menghitung keandalan adalah data kerusakan dari komponen yang dianalisa.

Dari perhitungan menggunakan metode tersebut, dapat diketahui ketersediaan *engine oil system* pesawat GROB G120-TPA menurun terhadap waktu. *Engine oil system* pesawat GROB G120-TPA memiliki *availabilitas* tertinggi yaitu 0.9968 atau 99,68 % jika dilakukan perbaikan preventif dengan jarak 300 jam terbang. Semakin panjang interval waktu pemakaian *engine oil system* pesawat GROB G120-TPA, maka semakin tinggi laju kegagalan *engine oil system* pesawat GROB G120-TPA tersebut. *Engine oil system* pesawat GROB G120-TPA boleh dioperasikan paling lama 4.040 jam terbang, karena jika dioperasikan melebihi waktu tersebut, tingkat kerusakannya kemungkinan lebih dari 10%.

Kata kunci : GROB G 120TP-A , *engine oli system*, metode weibull, laju kegagalan.