

**ANALISIS PENYEBAB *OVER TEMPERATURE OIL SYSTEM*
PADA PESAWAT GROB G120TP-A MENGGUNAKAN
METODE FAULT TREE ANALYSIS DI SKATEK 043
YOGYAKARTA**

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ABSTRAK

Pesawat Grob G120TP-A dengan *engine Roll Royce 250-B17F* pada *oil system* menggunakan sistem pelumasan *dry-sump lubrication system*, dimana *oil tank* terletak pada *airframe* yang ditempatkan di *mounting engine*. Pesawat ini mempunyai *special inverted flight oil system* yang didesain agar pelumasan pesawat tetap bekerja secara normal saat pesawat terbang pada posisi *inverted*. Dalam kurun waktu tahun 2016 sampai 2019, ditemukan kegagalan pada *oil system* sebanyak 48 kali.

Analisis ini menggunakan metode *fault tree analysis*. Metode ini digunakan untuk mengidentifikasi resiko yang berperan terhadap terjadinya kegagalan. Metode ini dilakukan dengan pendekatan yang bersifat *top down*, yang diawali dengan asumsi kegagalan atau kerugian dari kejadian puncak (*top event*), kemudian merinci sebab-sebab suatu *top event* sampai pada suatu kegagalan dasar (*root cause*), kemudian dilakukan evaluasi dengan *minimal cut set* (MCS).

Hasil analisis dengan metode *fault tree analysis* dengan *top event over temperature oil system* diperoleh 8 *intermediate event* dan 12 *basic event*, serta komponen yang paling sering mengakibatkan terjadinya *over temperature oil system* adalah *oil filter*.

Kata kunci: *Fault Tree Analysis, Oil System, Kegagalan, G120TP-A.*

***ANALYSIS CAUSES OF OVER TEMPERATURE OIL SYSTEM
AIRCRAFT GROB G120TP-A USING FAULT TREE ANALYSIS
METHOD IN SKATEK 043 YOGYAKARTA***

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ABSTRACK

Grob G120TP-A aircraft with the Roll Royce 250-B17F engine on the oil system uses dry-sump lubrication system, where the oil tank is located on airframe that is placed in the mounting engine. This aircraft has a special inverted flight oil system that is designed so that aircraft lubrication continues to work normally when the aircraft is inverted. Between 2016 and 2019, 48 oil failures were found.

This analysis uses the fault tree analysis method. This method is used to identify risks that contribute to failure. This method was carried out with a top down approach, which began with the assumption of failure or loss from a top event, then details the causes of a top event to a root cause, then an evaluation with a minimal cut set (MCS) was performed.

The results of the analysis using fault tree analysis method with a top event over temperature oil system obtained 8 intermediate events, and 12 basic events, and the component that most often resulted in an over temperature oil system was the oil filter.

Key word: *Fault Tree Analysis, Oil System, Failure, G120TP-A.*