

Penerapan *Fault Tree Analysis Oil System Engine PT6A-62* Pada Pesawat KT 1B Woong Bee

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ABSTRAK

Pesawat KT-1B *WOONG BEE* dengan *engine Pratt&Whitney 6A – 62 Oil tank* terletak pada *airframe* yang ditempatkan satu rangkaian dengan *engine* dibagian belakang. Sistem ini mempunyai *special inverted flight oil system* agar pelumasan pesawat tetap bekerja secara normal saat pesawat terbang dengan posisi *inverted*.

Dalam kurun waktu 2017 sampai 2021, ditemukan kegagalan pada *oil system* sebanyak 19 kali. Analisis ini menggunakan metode *fault tree analysis*. Metode ini digunakan untuk mengidentifikasi resiko yang berperan terhadap terjadinya kegagalan. Metode ini melakukan 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 oil system failure* diperoleh 10 *intermediate event* dengan menggunakan gerbang logika “OR” serta 10 *basic event*, serta komponen yang paling sering mengakibatkan terjadinya *oil system failure* adalah *Oil Pressure Transducer*.

Kata kunci: *Fault Tree Analysis, Oil System, Kegagalan, KT-1B WOONG BEE*

Application of Fault Tree Analysis Oil System Engine PT6A-62 on Aircraft KT-1B Woong Bee

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ABSTRACT

KT-1B aircraft with engine Pratt & Whitney 6A-62 the oil tank is located on airframe which is placed in a series with the engine at the rear. The system has special inverted flight oil system so that the aircraft lubrication keeps working normally when the aircraft is in an inverted position.

In its operation during the period from 2017 until 2020, 19 failures were found on the oil system. The analysis employed fault tree analysis method. It was used for indentifying risks that contribute to the occurrence of the failure. This method takes a top down approach, starting with the assumption of failure or loss from the top event, then detailing the causes of a top event to a root cause, then evaluating it with minimal cut set (MCS). The results of the analysis with the top event failure of the oil system obtained 10 intermediate events using "OR" logic gates and 10 basic events and the component that most frequently caused the oil system failure was Oil Pressure Transducer.

Key words: Fault Tree Analysis, Oil System, failure, KT-1B WOONG BEE