

## ABSTRAK

*Nose wheel steering* merupakan komponen pada *nose landing gear* yang berfungsi mampu membantu pilot mengarahkan pesawat ketika *taxy* di darat sesuai yang diinginkan. Pilot akan mengalami kesulitan dalam mengarahkan *nose wheel* pesawat apabila terjadi kerusakan pada *nose wheel steering*. Hal ini terjadi karena seringnya pesawat beroperasi sehingga menurunkan performa dari komponen tersebut. Untuk menjaga pesawat agar tetap *safety* dan *airworthy*, maka harus dilakukan *maintenance* secara berkala. Dalam melakukan *maintenance* pada pesawat Fokker F27-500F, ditemukan adanya indikasi kerusakan pada *nose landing gear* yaitu terdapat pada *nose wheel steering system*. Oleh karena itu, dilakukan *troubleshooting* untuk menyelesaikan masalah tersebut.

*Troubleshooting* pada penelitian ini menggunakan metode observasi, metode pengumpulan data dan metode *fault tree analysis* yang digunakan untuk menganalisis penyebab dari kerusakan pada *nose wheel steering*. Dalam penelitian ini juga mengacu pada AMM Section 32-50-00 saat melakukan pekerjaan *troubleshooting* agar tidak terjadi kesalahan teknis. Proses *troubleshooting* dilaksanakan dengan melakukan pemeriksaan pada *nose wheel steering* yaitu *pneumatic line*, *control valve*, dan *centralizer unit*.

Hasil dari *troubleshooting* ini kemudian dianalisis menggunakan metode *fault tree analysis* dan diketahui bahwa kerusakan terjadi pada *tubing control valve* yang mengalami kebocoran yang disebabkan vibrasi pesawat, kerusakan pada *seal screaper* dan *clutch piston* yang mengalami keausan. Kemudian menganalisa dengan metode *fault tree analysis* yang didapatkan 6 *basic event* yaitu *seal crack*, *fatigue*, *tubing leakage*, *connector lead loose*, *clutch piston worn out*, *piston damage* (FOD). Sehingga dilakukan *replacement* sesuai AMM Fokker F27-500F, setelah *replacement* dilakukan kemudian melaksanakan *operational test* dan didapatkan hasil bahwa *nose wheel steering* kembali normal.

**Kata Kunci:** *Nose wheel steering*, *pneumatic line*, *replacement*.

## **ABSTRACT**

*The nose wheel steering is a component of the nose landing gear that serves to enable the pilot to direct the aircraft when it is taxied on the ground as desired. The pilot will have difficulty in directing the nose wheel of the aircraft if there is damage to the nose wheel steering. This happens because the aircraft operates frequently, thereby reducing the performance of these components. To keep the aircraft safe and airworthy, regular maintenance must be carried out. In carrying out maintenance on the Fokker F27-500F aircraft, an indication of damage to the nose landing gear was found, namely the nose wheel steering system. Therefore, troubleshooting was carried out to solve the problem.*

*Solving problems in this study using observation methods, data collection and fault tree analysis methods used to analyze the causes of damage to the nose wheel steering. This research also refers to AMM Section 32-50-00 when doing troubleshooting work to avoid technical errors. The troubleshooting process is carried out by checking the nose wheel steering, namely the pneumatic line, control valve, and centralizer unit.*

*Troubleshooting in this study uses observation methods, data collection methods and fault tree analysis methods used to analyze the causes of damage to the nose wheel steering. This research also refers to AMM Section 32-50-00 when doing troubleshooting work to avoid technical errors. The troubleshooting process is carried out by checking the nose wheel steering, namely the pneumatic line, control valve, and centralizer unit. The results of this troubleshooting were then analyzed using the fault tree analysis method and it was found that the damage occurred to the tubing control valve which had a leak caused by aircraft vibrations, damage to the scrapper seal and clutch piston that was worn out. Then analyzed by fault tree analysis method which obtained 6 basic events, namely seal crack, fatigue, tubing leakage, connector lead loose, clutch piston worn out, piston damage (FOD). So that a replacement was carried out according to the AMM Fokker F27-500F, after the replacement was carried out then an operational test was carried out and the results were that the nose wheel steering returned to normal.*

**Keywords:** *Nose wheel steering, pneumatic line, replacement.*