

ABSTRAK

Engine gantry system merupakan salah satu fasilitas yang dimiliki dinas engine maintenance services yang berfungsi sebagai alat bantu penyangga mesin turbin dalam melakukan proses perawatan, dengan *pin trunnion* sebagai penyambung antara *engine gantry system* dan mesin turbin. Dikarenakan pemakaian *pin trunnion* yang secara terus menerus, maka dibuat *form preventive maintenance inspection* yang didalamnya berisi inspeksi secara berkala menggunakan *non-destructive test* dengan metode *Liquid Penetrant Testing* untuk mencegah terjadinya kerusakan dan menganalisis *crack* yang terjadi dipermukaan *pin trunnion*. Terdapat dua jenis cairan *penetrant* dalam melakukan inspeksi menggunakan *liquid penetrant testing* yaitu *Fluorescent Penetrant Testing* (FPT) dan *Visible Dye Penetrant Testing* (VDPT). Berdasarkan hasil uji diperoleh hasil bahwa *Liquid Penetrant Testing* menggunakan jenis *penetrant Fluorescent* memiliki tingkat ketelitian yang sangat tinggi dibandingkan dengan *visible dye penetrant* dengan nilai rata-rata ketelitian pembacaan indikasi 98.93% sedangkan *Visible dye penetrant* memiliki nilai rata-rata ketelitian pembacaan indikasi 60.76% dengan selisih 38.17%. *Visible dye penetrant* memiliki waktu rata-rata waktu pembacaan indikasi di 0.0051 mm/s sedangkan *fluorescent penetrant* memiliki rata-rata kecepatan pembacaan di 0.0053 mm/s selisih 0.0002 mm/s.

Kata Kunci: *Engine Gantry systems, Pin Trunnion, Non-Destructive Testing, Fluorescent Penetrant, Visible Dye Penetrant, Analisis Crack*



ANALYSIS OF SPEED AND ACCURACY IN FLUORESCENT PENETRANT TESTING AND VISIBLE DYE PENETRANT TESTING ON THE TRUNNION PIN OF THE ENGINE GANTRY SYSTEM AT PT.GMF AEROASIA

ABSTRACT

The engine gantry system is one of the facilities owned by the engine maintenance services department which functions as a supporting tool for the turbine engine in carrying out the maintenance process, with a trunnion pin as a connection between the engine gantry system and the turbine engine. Due to the continuous use of trunnion pins, a preventive maintenance inspection form was created which contains periodic inspections using a non-destructive test using the liquid penetrant testing method to prevent damage and analyze cracks that occur on the surface of the trunnion pins. There are two types of liquid penetrant in carrying out inspections using liquid penetration testing, namely Fluorescent Penetrant Testing (FPT) and Visible Dye Penetrant Testing (VDPT). Based on the results of testing, it is found that Liquid Penetrant Testing using Fluorescent penetrant type has a very high level of accuracy compared to Visible Dye penetrant with an average value of 98.93% indication reading accuracy while Visible dye penetrant has an average value of 60.76% indication reading accuracy with a difference of 38.17%. Visible dye penetrant has an average time of indication reading time at 0.0051 mm/s while fluorescent penetrant has an average reading speed at 0.0053 mm/s difference of 0.0002 mm/s.

Keywords: *Engine Gantry systems, Trunnion Pin, Non-Destructive Testing, Fluorescent Penetrant, Visible Dye Penetrant, Analyze Cracks*

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