

UNIVERSITAS BINA NUSANTARA

*Program Ganda
Teknik Industri – Sistem Informasi
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**ANALISIS DAN PERANCANGAN SISTEM PREVENTIVE MAINTENANCE
UNTUK MENGURANGI KEGAGALAN PRODUK**

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ABSTRAK

PD. Cahaya Fajar merupakan perusahaan yang memproduksi tali rafia dengan pangsa pasar Jabodetabek hingga Pulau Jawa. Dalam penelitian ini masalah yang ada ditinjau dari segi mesin, material, metode, manpower, dan environment. Namun dari hasil wawancara dan observasi yang dilakukan ditemukan bahwa faktor paling dominan adalah mengenai kerusakan mesin. Oleh karena itu, diperlukan suatu penjadwalan preventive maintenance usulan yang tepat untuk meningkatkan kinerja dari perusahaan, terutama kinerja mesin-mesin produksi.

Dari segi mesin, tindakan preventive maintenance usulan dapat terlihat adanya peningkatan realibility komponen Ass meningkat sebesar 8.22%, komponen Bearing 205 meningkat 42.49% dan komponen Bearing 207 meningkat sebesar 43.89%. Berdasarkan perhitungan biaya didapatkan penghematan sebesar 58.291% untuk komponen Ass, 38.380% untuk komponen Bearing 205 dan 26.213% untuk komponen Bearing 207. Usulan dari segi material yaitu dengan melakukan pengecekan terstandar secara kontinu dan kepastian prioritas supplier. Usulan dari segi manpower menggunakan teknik analisis masalah dengan 5W+1H (What, Why, How, When, Who, Where). Usulan dari segi metode dengan dibuatnya Flow Diagram yang menggambarkan aliran proses dengan layout agar operator diingatkan kembali tentang cara kerja yang benar. Usulan dari segi environment ditinjau dari temperatur, kelembaban, sirkulasi udara, pencahayaan, kebisingan, bau-bauan, getaran mekanis, dan warna.

Untuk mendukung sistem ini, diperlukannya sebuah sistem informasi untuk membantu proses pengambilan keputusan dalam menentukan jadwal preventive maintenance usulan. Dalam perancangannya, sistem tersebut akan dikembangkan menggunakan bahasa pemodelan Unified Modeling Language dengan berbasiskan Object Oriented Analysis and Design.

Kata Kunci: preventive maintenance, reliability, flow diagram, 5W+1H, Object Oriented Analysis and Design, Unified Modeling Language.

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***ANALYSIS AND DESIGN PREVENTIVE MAINTENANCE SYSTEM TO
MINIMIZE PRODUCT DEFECT***

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ABSTRACT

PD. Cahaya Fajar is manufacturing in the making of raffia rope with target market Jabodetabek until Java. This research the problems that exist is inspected from machine, material, method, manpower, and environment. However, when doing the interview and observation had found that the dominant factor of the problem is about breakdown machine. So this problem was needed preventive maintenance scheduling to increase performance especially in production machines.

The aspect of the machine, with preventive maintenance scheduling could be seen by the existence of the increase reliability 8.22% for Ass component, 42.29% for Bearing 205, 43.89% for Bearing 207. Was based on the calculation of the cost was obtained by saving of 58.291% for the Ass component, 38.380% for the Bearing 205, 26.213% for the Bearing 207. The aspect of the material that is by carrying out the standard checking continuously and the assurance of the priority supplier. The aspect of the manpower used the analysis technique of the problem with 5W+1H (What, Why, How, When, Who, Where). The aspect of the method by being made Flow Diagram that depicted the process current with layout so that the operator is reminded about the correct procedure. The aspect of the environment was inspected from the temperature, humidity, the circulation of air, the illumination, noise, the scents, the mechanical vibration, and the colour.

To support this system, was needed an information system to help the process of decision making in determining the preventive maintenance scheduling. When designing, this system will be developed used the Unified Modeling Language based on Object Oriented Analysis and Design.

Kata Kunci: preventive maintenance, reliability, flow diagram, 5W+1H, Object Oriented Analysis and Design, Unified Modeling Language.