

**ENHANCING PHYSICAL AVAILABILITY BULLDOZER D155-6R
THROUGH INCREASING SKILL AND COMPETENCY OF MECHANIC
HEAVY EQUIPMENT**

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

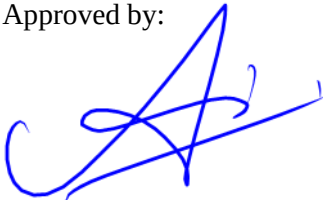


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ABSTRACT

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Maintenance is an alternative for mining contractor companies to manage their heavy equipment. The maintenance contract is expected to help the unit's performance to be achieved according to the agreement. PT EFG is a heavy equipment distributor company trusted by PT MNO to carry out maintenance on 8 D155-6R Bulldozer units. Performance data from January 2023 to December 2023 shows that the physical availability value is at 87.55% while the target is 90% , MTTR was achieved in 4 hours which was tagged at 6 hours and MTBF was also not achieved, the target at 77.9 hours was only achieved in 71 hours, the cause was because mechanical competence was still lacking, so special activities were needed to overcome this. The aim of this project is to improve the performance agreement which includes Physical Availability, MTTR and MTBF. This research uses Six Sigma as a research framework and Root cause diagrams to find the root of the problem as well as the 5W1H Method to help find solutions, so it is hoped that it can determine the right steps to increase availability. By developing mechanics and being able to increase unit availability so that the target of 90% can be achieved and the MTBF is at 77.9 hours

Keywords : *Maintenance Contract, Physical Availability, MTBF, MTTR, Six Sigma, Root cause diagram, 5W1H*

ABSTRAK

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Perawatan merupakan salah satu alternatif bagi perusahaan kontraktor pertambangan untuk mengelola alat beratnya. Kontrak pemeliharaan atau maintenance diharapkan dapat membantu kinerja unit untuk tercapai sesuai kesepakatan. PT EFG merupakan perusahaan distributor peralatan berat yang dipercaya oleh PT MNO untuk melakukan perawatan terhadap 8 unit Bulldozer D155-6R, Data performance bulan Januari 2023 sampai dengan Desember di tahun 2023 menunjukkan bahwa nilai *physical availability* berada di 87,55 % sedangkan targetnya di 90 %, MTTR tercapai di 4 jam yang tagernya di 6 jam dan MTBF juga tidak tercapai target di 77,9 jam hanya tercapai di 71 jam, adapun penyebabnya dikarenakan kompetensi Mekanik masih kurang, sehingga diperlukan aktivitas khusus untuk mengatasinya. tujuan dilakukan projek ini adalah untuk meningkatkan *performance agreement* yang meliputi *Physical Availability*, MTTR dan MTBF. Penelitian ini menggunakan *Six Sigma* sebagai kerangka penelitian dan *Root cause diagram* dalam menemukan akar masalah serta dengan Metode 5W1H untuk membantu mencari solusi, sehingga diharapkan dapat menentukan langkah yang tepat dalam meningkatkan *availability*. Dengan melakukan development terhadap mekanik dan mampu meningkatkan *availability* unit sehingga target 90% bisa tercapai dan MTBF di angka 77,9 jam

Kata Kunci : *Kontrak Perawatan, Physical Availability, MTBF, MTTR, Six Sigma, Root cause diagram, 5W1H*

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LEMBAR PERSEMBAHAN

Penelitian ini saya dedikasikan untuk Orang-orang yang saya cintai, almarhum Bapak (Imron Ibrahim), Ibu (Siti Asiah), Istri (Fitri Suciari) dan putra (Adela Raditya Syarifuddin) putri (Rafeline Isaura Syarifuddin). serta untuk perusahaan tempat saya bernaung PT United Tractors Cabang Banjarmasin dan untuk seluruh rekan dan support system saya yang sudah bersedia membantu saya selama masa Kuliah sampai proses penelitian ini selesai dilaksanakan.

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Selama ini saya mendapatkan pengalaman belajar yang bermanfaat dan bermakna melalui kurikulum dan program berkualitas yang disajikan. Hal ini memberikan bekal untuk terus mengeksplorasi ide-ide dan permasalahan di masa lalu dan masa yang akan datang.

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