

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

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لِلنَّاسِ وَلِيَعْلَمَ اللَّهُ مَن يَنْصُرُهُ وَرُسُلَهُ بِالْغَيْبِ إِنَّ
اللَّهَ قَوِيٌّ عَزِيزٌ)

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Dedication

I dedicate this work and effort to the souls of all those who sacrificed with their blood and soul to let us live in peace.

Acknowledgment

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Abstract

In Heavy Machinery Companies the cost of the heavy machinery and the spare parts is very high and most of the spare parts are not available in the local market. And any breakdown will cause large loss in profit and assets.

This research studies the management of maintenance activities including the spare parts needed in semi –trail towing vehicles used in Al Shigara Heavy Machinery Company as a case study and designing a computerized maintenance management system (CMMS) for programming maintenance operations, and forecasting the spare parts demand.

The information for the preventive maintenance tasks, the time intervals, the mileage intervals and the spare parts needed for the semi –trail towing vehicles used in the company are collected from catalogues. Other Information is taken from the records about the breakdowns and the corrective maintenance tasks that occurred in the past years and the spare parts used.

Using all the information and data collected in forecasting the total annual need for spare parts making it easier to purchase economic amounts of the spare parts. Applying a PM program to reduce the breakdowns; leading to better employment of invested capital.

التجريد

في شركات الاليات الثقيلة تعتبر الاليات بالاضافة الي قطع الغيار المستهلكة ذات تكلفة عالية ، ومعظم قطع الغيار غير متوفرة من السوق المحلي. كل توقف او عطل للآليات يتسبب في تعطيل لرأسمال كبير ويسبب خسائر مادية كبيرة.

هذا البحث يدرس ادارة أنشطة الصيانة متضمناً الحاجة من قطع الغيار للجرارات المستخدمة في شركة الشجرة للآليات الثقيلة وتصميم نظام ادارة صيانة بالحاسوب لبرمجة عمليات الصيانة والتنبؤ بقطع الغيار المطلوبة.

تم تجميع المعلومات الخاصة بعمليات الصيانة الوقائية والفترات الزمنية بينها وعدد الكيلومترات المقطوعة بين الصيانات المختلفة وقطع الغيار المطلوبة من التكنولوجيات الخاصة بالجرارات المستخدمة في الشركة. كما تم جمع بيانات من السجلات عن الاعطال التي حدثت والصيانة العلاجية التي تمت خلال السنوات الماضية وقطع الغيار التي استخدمت.

استخدمت كل المعلومات والبيانات المجمعة في عملية التنبؤ بالاحتياج السنوي من قطع الغيار يجعل من السهل عمل طلبيات اقتصادية لهذه القطع. تطبيق برنامج صيانة لتقليل الاعطال والتوقفات يؤدي الي توظيف افضل لرأس المال المستثمر.

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Abbreviations

MTTR.....	Mean time to repair
PM.....	Preventive maintenance
CM.....	Corrective maintenance
CMMS.....	Computerized Maintenance Management System
TT.....	Total time
MT.....	Maintenance time
OT.....	Operation time
PU.....	Productive utilization
UU.....	Unproductive utilization
IT.....	Idle time
BR.....	Breakdowns
UM.....	Unscheduled Maintenance
SM.....	Scheduled Maintenance
EAM.....	Enterprise Asset Management
FCI.....	Facility Condition Index
FME.....	Foreign material exclusion
CA.....	Corrective Actions
PD.....	Predictive Maintenance
ST.....	Standing Work Order
MO.....	Modifications
WR.....	Workshop repairs
GN.....	General Maintenance
CP.....	Capital
SY.....	Statutory
SA.....	Safety
EN.....	Environmental
CBM.....	Condition-based maintenance
SEI.....	Software engineering institute