

Computer Maintenance Management Systems



CMMS

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What is a CMMS?



- ❖ **A CMMS is a software package that maintains a computer database of information about an organization's maintenance operations**

Why use a CMMS?



- ❖ **A Computer maintenance management system is expected to provide:**
 - Improved productivity, giving reduced direct labor costs
 - Increased equipment availability, due to better planning
 - Increased equipment reliability through the identification of repetitive faults
 - Improved stock control, giving reduced inventory levels and fewer stockouts
 - Improved long-term reduction in maintenance costs
 - Improved safety by providing detailed Standard job procedures

Planning Maintenance



- ❖ **To successfully plan a maintenance procedure the user requires:**
 - Accurate information on equipment to be maintained, its components, and ongoing production or workload requirements
 - Match the maintenance skills and time available against the workload, equipment items, and availability
 - Parts and supplies must be procured in advance, in a well-planned fashion, to complete maintenance tasks on schedule

CMMS package capabilities



❖ In general, CMMS packages deal with:

- Work orders: Scheduling jobs, assigning personnel, reserving materials, recording costs, tracking relevant information (problem causes, downtime, recommendations for future action(...
- Preventive maintenance (PM): Keeping track of PM inspections and jobs (step-by-step instructions or check-lists, required material lists(...

CMMS package capabilities



- Asset management: Data records of equipment and property (specifications, warranty information, service contracts, spare parts, purchase date, expected lifetime)
- Inventory control: Management of spare parts, tools, and other materials (Reserving job materials, recording where materials are stored, determining when more materials should be purchased, tracking shipment receipts, taking inventory)

CMMS package capabilities



❖ A good CMMS should provide:

- Comprehensive maintenance management functionality: work management, physical assets management and resource management
- Management reporting capabilities: detailed and summary reports, graphical reports, report writing tools (MTBF, failure/repair and lifecycle analysis...)
- PM procedure library: pre-loaded with mechanical and other preventive maintenance (PM) procedure libraries

CMMS package capabilities



- **Maintenance regulation compliance:**
support the work flow process to document the work and the measures taken to correct and/or prevent maintenance related problems, provide quick access to equipment histories
- **Multiple system interfaces:**
can interface with PdM systems, automatically create work orders and update equipment histories based upon alarms and test results

CMMS package capabilities



- **Reliability centered maintenance integration:**
RCM provides a library of possible problems, problem diagnosis techniques, repair recommendations
- **Good package supplier support:**
engineering consulting, data collection, data entry, training, implementation and post implementation support

Implementing a CMMS



- ❖ On its own, introducing a CMMS to maintenance operations is not enough to achieve the desired benefits
- ❖ Re-engineering business processes and work practices in a coordinated and planned manner is needed
- ❖ Organizational changes need to consider strategic, people, and enabling aspects
- ❖ Coordinating and managing these aspects proactively ensures the people affected are committed to the change

Implementing a CMMS



Implementing a CMMS



- ❖ Restructure the maintenance department so that it reports to production or operations at a lower level in the organizational hierarchy (Example; equipment operators perform some maintenance tasks)
- ❖ Distinguish between maintenance activities that you wish to track through the CMMS, and those that you do not
- ❖ Link the CMMS to other present systems (process control, barcode readers, inventory...)

Outline



- ❖ What Is Cworks ?
- ❖ How Is It Used ?
- ❖ What To Do Before Starting ?
- ❖ How Does Cworks Work ?
- ❖ CWorks Reports

Cworks CMMS

NEXT SERVICE DUE
DATE OR MILEAGE
17-12-2011 24773
GRADE
10-30

CWORKS

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What Is Cworks ?



❖ **CWorks is a computerized maintenance management system (CMMS), which delivers various benefits to organizations by delivering information to maintenance engineers and managers. These benefits include:**

- Work order status for easy analysis.
- Management decisions are simplified by the availability of equipment maintenance history.
- Contractor management is simplified and documented.
- Equipment preventive maintenance schedules available on-line and preventive work orders can be automatically generated.
- Time-saving features due to centralized database and communication regarding maintenance works.

How Is It Used ?



- ❖ **Cworks is used to keep track of all aspects of maintenance performed on equipment, locations and etc. that make up the facility. It is flexible and easily customizable to meet the users needs and users decide how they want CWorks to track maintenance;**
 - First, use it to store information about the things maintained (e.g., equipment or locations) and the resources used to maintain them (e.g., labor and parts)
 - Second, use it to assign and schedule maintenance on the facility using the stored information.
 - Most importantly, use it to track the history and cost of the maintenance performed on the facility.

What To Do Before Starting ?



1. Gather information about the maintenance facility based on the masters required by the system. For examples assets, locations and etc.
2. Organize the assets according to the hierarchical structure if required.
3. Enter the basic data into CWorks. It does not have to be set up at once, but certain information must be entered before a work order can be issued.
4. Other information can be added on as CWorks is used. Now CWorks is ready to manage maintenance.
5. Maintenance management involves significant amounts of data. Don't try to do all the implementation at once.

Step by Step Example PM Building



CWORKS CMMS

File Help


cwmain


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CWORKS

Support

Computerized Maintenance Management System


 **Work Orders**

 **Assets**

 **Locations**

 **Preventive**

 **Employee**

 **Masters**

 **Reports**

 **EXIT**

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WHAT Does Cworks provides ?



❖ Work Order Module

- The work order module provides the user with the ability to view and manage all maintenance activities. It provides an accurate basis for work order costing, analysis and management of site activities. The work order module is integrated with the Planned Maintenance module in order to integrate scheduled preventive maintenance work with breakdown work. Work orders can also be raised for non-asset activities, such as changing a light bulb, repairing a leaking roof or plumbing problems. The module enables the capture of all material and labor costs, and labour utilization.

Followed WHAT Does Cworks provides ?



❖ Assets

- The Asset module provides the user with the facility to record and manage an organization's assets. It stores data on every asset which the user wants a record of maintenance activities. The following screens are available in the Asset Register;
 - Asset List Summary
 - Current Asset Register
 - New Asset Registration
 - Additional Info. – Information about the registered asset can be listed in this section.
 - Relationship – Enables an asset tree to be built using the parent-child relationship.
 - Work Order History – List of all work orders opened on this asset.

Followed How Does Cworks Work



❖ Location

- The Location module provides the user with the facility to record and manage the facility's physical locations. It stores data on every location which the user wants a record of maintenance activities. The following screens are available in the Location Register;
- Location List Summary
- Current Location Register
- New Location Registration

Followed How Does Cworks Work



❖ Preventive

- This module describes how to schedule and generate preventive maintenance work orders within CWorks. A preventive maintenance (PM) master and schedule specifies work to be performed based on an elapsed time interval. PM schedules can be set-up for either an asset or a physical location.

Followed How Does Cworks Work



❖ Employee

- The employee module provides the user with the facility to record and manage the employee data. It stores data for every personnel employed in the company which the users want a corresponding record of maintenance activities. It also records assets to which an employee is authorized/trained to operate and maintain.

Followed How Does Cworks Work



❖ Masters

- This module captures all basic maintenance data which is required to start CWorks. Below are the masters :-

- 1) Department
- 2) Failure Code
- 3) Asset Category
- 4) Contractor
- 5) Suppliers
- 6) Assets

❖ Reports

- This module provides a wide range of management reports. Reports produced by CWorks is a combination of related data contained in the system. Reports are used for management information purpose, documentation and accounting of the productivity and performance of the maintenance departments.

CWorks Reports



❖ **This module provides a wide range of management reports. Reports produced by CWorks is a combination of related data contained in the system. Some reports will ask user to key-in parameters. The reports are:**

- Asset List
- Asset Details
- Employee-Requester Details
- Employee-Requester List
- Supplier Details
- Supplier List
- Work Order List
- Work Order Details
- Work Order Status Chart
- PM work order status chart
- Department List
- PM Task List
- PM Task Checklist
- Physical Location List

Step by Step Example PM Building



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File Help

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Computerized Maintenance Management System

Work Orders **Assets** **Locations** **Preventive**

Employee **Masters** **Reports** **EXIT**

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CWORKS CMMS



File Help

PM



Preventive Maintenance

- PM Task List
- PM Schedule
- PM Generation
- Close

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CWORKS CMMS [Minimize] [Maximize] [Close]

File Help

PM Schedule List

PM No	PM Name	PM Active	Task No
-------	---------	-----------	---------

[Scroll Bar]

PM No PM Name Asset No PM Task No

Search **A->Z** **New PM Schedule**

View All **Close**

Taskbar: [Taskbar Icon] cwmain [Close] PM

New PM Schedule

PM Schedule

PM No PM Name Work Type
Work Trade

PM by

Asset Location

Asset

Asset No
Location No

Physical Location

Location No

- Mechanical
- Electrical
- Civil
- Instrument
- Biomedical
- Pest Control
- Grounds
- Custodial

Next PM Generation Type

Schedule Actual

Task No
Frequency Unit
Frequency
Days
Work Period Days
Initiate Date
Target Start Date
Target Complete Date
Next Start Date

View PM Schedule

Save

Close

Building work order



CWORKS CMMS

File Help

Work Order List

WorkorderNo	WorkTypeDescriptio	WorkStatus	Problemdescription	DateReceived
-------------	--------------------	------------	--------------------	--------------

Work Order # Work Type Work Status Problem Description

Received Date

A->Z View All New WO

Print WO by batch Search Close

cwmain

New Work Order

Work Order Work Order Closing

Work Order #	0000000000	Received Date/Time	5/8/2007 2:36:22 AM	Employee/Requester Information	
		Work Status	Open	Emp/Req	
Problem Description				Telephone No	
Assign to					Work Type
Required Date		Work Priority		Fax No	
PM No				Mobile No	
PM Task No				E-Mail	

Asset / Location Information					
Location No					
Asset No					
Asset Status		Warranty/Contract			
		Warranty End Date			
Notes to Technician	Asset		Location		
Received By		Work Order Trade			

Save Close