

Computerised Maintenance Management Systems

Is a CMMS an OH&S tool?



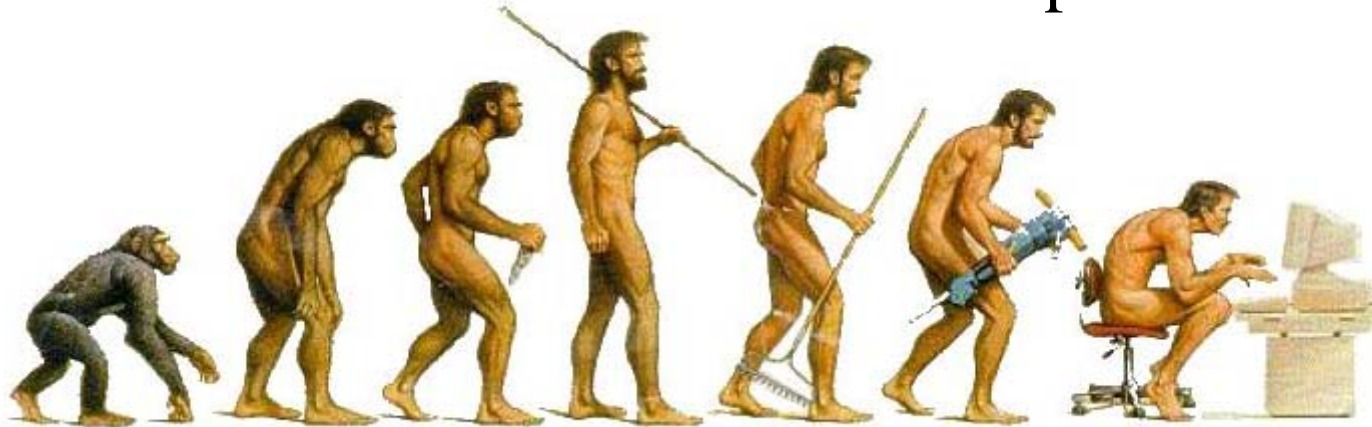
Overview

- Reactive Maintenance
- Preventative Maintenance
- OH&S
- Risk
- Planning



Basics of Maintenance – Reactive to Pro-Active.

Evolution of maintenance practice.



Fix it when it
breaks

Fix it on a regular basis –
before it breaks.

Fix it based on condition
– just before it break.



How does an CMMS aid Maintenance Practice.



How risk changes from reactive to preventative.

REACTIVE MAINTENANCE

- Unplanned.
- Lots of time pressure (get the plant going!)
- Unpredictable equipment operation
- Rushed paperwork.
- Shortcuts
- Costs More.
- Increased Injuries

PREVENTATIVE MAINTENANCE

- Planned.
- Time to get the job done.
- Permits and risks assessed ahead of time.
- No need for shortcuts
- Reduced costs
- Less injuries



How a CMMS is implemented.

List of every piece of equipment & maintenance regimes

Meters are set up on equipment

Quality – Condition Based maintenance

Training and culture change

Inventory

Purchasing

Reporting



Boral's Journey with CMMS.

The screenshot displays a software window titled "FINPRD01 - R12 Production environment". The interface includes a menu bar (File, Edit, View, Folder, Tools, Window, Help) and a toolbar with various icons. On the left, a tree view shows a hierarchy: Forecast Work > All Assets > EMU PLAINS > Assets With Wor > Routes > Personal Shortcuts > Public Shortcuts.

The main area is titled "Forecast Work Orders (ECL)". It contains several input fields:

- Start Date: 15-JUL-2009 16:32:37
- Cutoff Date: 27-JUL-2010 16:32:37
- Horizon: 377
- Set Name: (empty)

 There are also checkboxes for "Include Run To Failure" (unchecked), "Combine with Default" (checked), and "Include Children" (unchecked). "Simulate" and "Run" buttons are present.

A table lists forecasted work orders with the following columns: Select, Action, Type, Asset Number, Activity, and Suggested Start Date.

Select	Action	Type	Asset Number	Activity	Suggested Start Date
<input type="checkbox"/>	Create	Forecasted	EMU PLAINS QUAR	2W-MO-TRUCK PARK AREA CLEAN	27-JUL-2009 00:00:00
<input type="checkbox"/>	Create	Forecasted	EMU PLAINS QUAR	1W-MS-GENERAL/OVERLOAD/RES	03-AUG-2009 00:00:00
<input type="checkbox"/>	Create	Forecasted	EMU PLAINS QUAR	1W-MS-GENERAL MAINTENANCE /	03-AUG-2009 00:00:00
<input type="checkbox"/>	Create	Forecasted	EMU PLAINS QUAR	1W-MO-WORKSHOP BOUNDARY S	03-AUG-2009 00:00:00
<input type="checkbox"/>	Create	Forecasted	EMU PLAINS QUAR	6M-EMERGENCY DRILL LOW	05-AUG-2009 00:00:00
<input type="checkbox"/>	Create	Forecasted	EMU PLAINS QUAR	1W-MS-GENERAL/OVERLOAD/RES	10-AUG-2009 00:00:00
<input type="checkbox"/>	Create	Forecasted	EMU PLAINS QUAR	1W-MS-GENERAL MAINTENANCE /	10-AUG-2009 00:00:00

Below the table are fields for "Select All" (unchecked), "Project", "Task", and "Parent Work Order". An "Implement" button is located at the bottom right.

The status bar at the bottom shows "Record: 8/?" and navigation controls. The Windows taskbar at the very bottom includes the Start button, Internet Explorer, and several open applications.

Examples of CMMS in action.

- Crusher -Periodic Maintenance.
- JSA's and Authority to Work Permits printed and attached to Work Orders
- Check sheets Printed and attached
- Instructions attached to PM's
- Review of Planned Maintenance Frequency



PMO - Thermography

Maintenance Work Order Detail Report - Boral

Report Date: 20-JUL-09
Page: 1 of 2

Work Orders From 951334 To 951334

Work Order: 951334

Asset Number: FIXED PLANT-ECL

Work Order Description: 0M-ES-THERMAL IMAGING ELEC COMPONENTS - APT

Asset Activity: 0M-ES-THERMAL IMAGING ELEC COMPONENTS -

Asset Description: FIXED PLANT

Asset Group: VIRTUAL ASSET-ECL

Area: EMU PLAINS QUARRY

Priority: Medium
Status: Complete

Owning Department: MAINT-EMU

Parent Work Order:

Rebuildable Serial No:

Work Order Type:

Activity Type:

Shutdown Type:

Scheduled Start Date: 14-MAY-09 12:00 AM

Scheduled Completion Date: 14-MAY-09 12:00 AM



QUARRIES NSW EMU
PLAINS MAINTENANCE
WORK ORDER

*** ** PLEASE ENSURE YOU HAVE THE REQUIRED PAPERWORK - JSA, PERMITS,
ATW ETC *** **

Operation Sequence: 10
Department: MAINT-EMU
Description: Default Operation for Work Order
Long Description:

Scheduled Start Date: 14-MAY-09 12:00 AM
Scheduled Completion Date: 14-MAY-09 12:00 AM

Resources

Res Seq	Resource	Usage Rate	UOM
10	CELEC	0	h

Employees

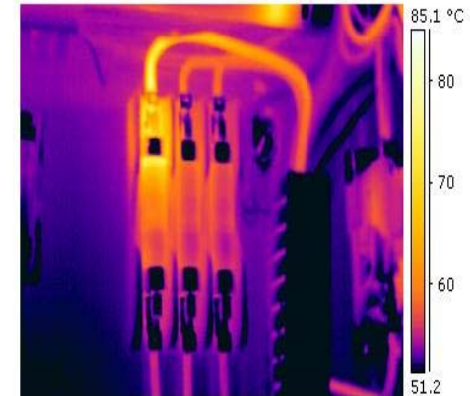
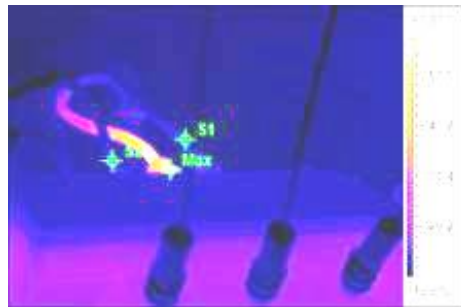
Number	Name	Department	Resource	Res Seq	Work Date	Work Start	Work End	Work Duration	Component Code
5807	HETHERINGTON, BEN	MAINT-EMU	CELEC	10					



Thermographic Results



Transformer out
feed cabling
overheating



Hot joints on
terminal
block



Maintenance Learning



Summary Details of incident:				
Primary cause of incident :				
Underlying causes of incident:				
Corrective/ preventive actions				
Picture/Diagram of corrective /preventive actions				
Re rank of risk:	Probability	Consequence	Risk Score	Risk Rating





Extending CMMS into legislative requirements.

- Inspections
- Evacuation Drills
- Environmental Inspections.
- Committee meetings

- Etc. etc. etc.




BORAL

Example – PMO Emergency Evacuations.

Report Date: 25-MAY-09
Page: 1 of 2

Maintenance Work Order Detail Report - Boral

Work Orders From 972298 To 972298

<p>Work Order: 972298 Asset Number: EMU PLAINS QUARRY Work Order Description: 1W-MO-WORKSHOP BOUNDARY SEDIMENT PIT CHANGE SOCK & CLEAN OUT Asset Activity: 1W-MO-WORKSHOP BOUNDARY SEDIMENT PIT CHA Asset Description: EMU PLAINS QUARRY Asset Group: VIRTUAL ASSET-ECL Area: EMU PLAINS QUARRY</p>	<p>Priority: Medium Status: Released Creating Department: MAINT-EMU Parent Work Order: Rebuildsite Serial No: Work Order Type: Activity Type: Shutdown Type: Scheduled Start Date: 15-JUN-09 12:00 AM Scheduled Completion Date: 15-JUN-09 12:00 AM</p>	 QUARRIES NSW EMU PLAINS MAINTENANCE WORK ORDER
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*** ** PLEASE ENSURE YOU HAVE THE REQUIRED PAPERWORK - JSA, PERMITS, ATW ETC *** **

<p>Operation Sequence: 10 Department: MAINT-EMU Description: Default Operation for Work Order Long Description:</p>	<p>Scheduled Start Date: 15-JUN-09 12:00 AM Scheduled Completion Date: 15-JUN-09 12:00 AM</p>
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Employees

Number	Name	Department	Resource	Res Sec	Work Date	Work Start	Work End	Work Duration	Component Code

Work Order Signatures

Time/Materials allocated:
 Work Completed:
 Meter Reading:
 Quality Reading:
 Follow Up:
 Comments:

Extra Materials Used:

Item Code	Description	Qty	Locator

Signature	Name	Date





CMMS

Delivers a safer way of maintaining and operating plant through:-

Time to plan.

Time to assess options

Time to consider alternatives

Time to Plan to succeed.

BORAL



CMMS

The tool to deliver safe maintenance.

A genuine safety product.

