

MIS Database Utilization

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Objective

- ◆ Define the Goals and Objectives for PCM that will justify the United Mutual Maintenance & Service costs and derivation of future cost projections.

Problem

- ◆ The Fiduciary Responsibility of the Board is to ensure quality and timely Maintenance & Service at a justifiable cost to the residents, however,
- ◆ The MIS Database was not effectively utilized to respond to the needs, therefore,
- ◆ PCM relied on past methods to manage current and potential problems.

Background

- ◆ Many of PCM's historical unscheduled maintenance trends are generally done on a financial (cost) basis, resulting in,
- ◆ Historical trends for developing future Budgets that can be either misleading or self-fulfilling.

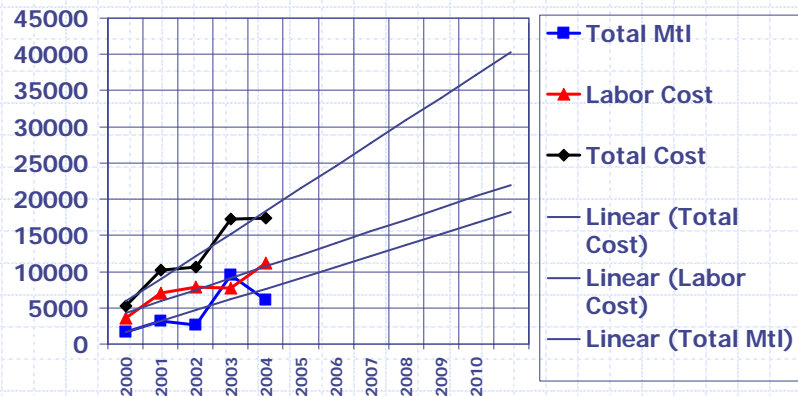
Some Suggestions:

- ◆ Ensure that the MIS Database has the necessary *parameters* for Maintenance & Service controls, then,
- ◆ Have the Board work with PCM to define the basis for *evaluating* the Maintenance & Service provided by PCM, by,
- ◆ Defining and verifying the reports that are needed to *measure* the parameters that affect service.

A Method of Developing Trends

- ◆ The following charts are actual data for a small sample of buildings only and are used only as examples.
- ◆ The data *does not* include “outside vendor” costs since that information is not in the MIS Database at this time.

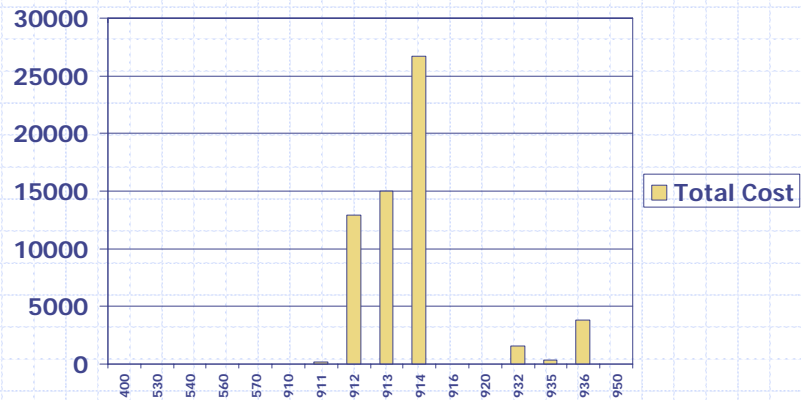
Total Cost by Year



Derivation of Total Cost

- ◆ It is the sum of “total cost” for all Work Centers, including the following:
 - 912 = Carpentry
 - 913 = Electrical
 - 914 = Plumbing
 - 932 = Painting
 - 936 = Mainline Water Leak

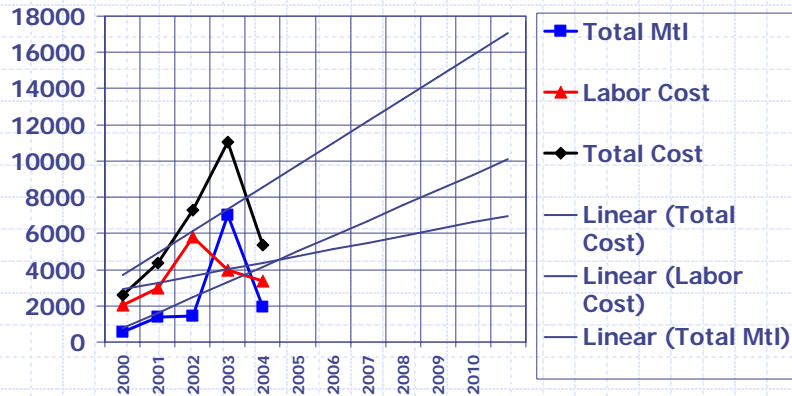
Cost by Work Center



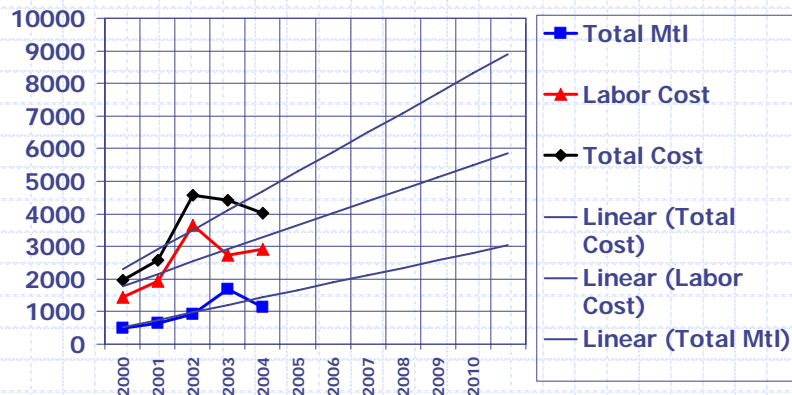
Derivation of Plumbing 914 & 936 Total Cost

- ◆ Total Cost consists of:
 - Labor & Burden
 - Material

914 & 936 Cost by Year



914 & 936 Cost by Year w/o water heater replacements



Derivation of Labor Cost

◆ Parameters In PCM terminology:

- Total Hours.
- Hourly Rate.

◆ Parameters in Industry Terminology:

- (Failure Rate) x (# of units) = # of repairs.
- Duration of Repair = Hours per repair.
- Repair Hours = sum of (# repairs) x (duration of repair).
- Hourly Rate.

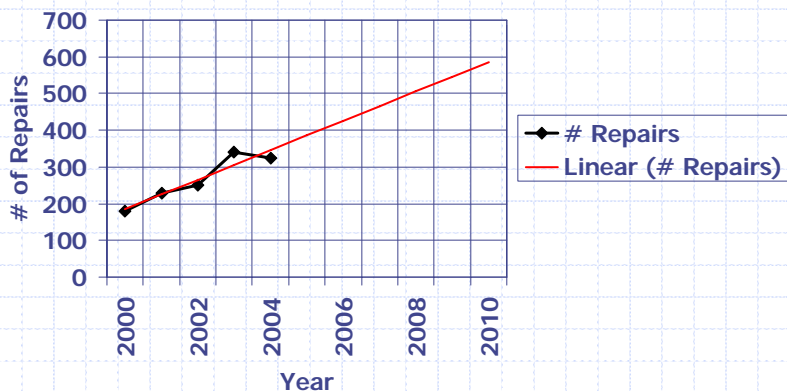
Formula

$$\begin{aligned} (\text{FR} \times \# \text{ units}) \times \text{DRA} &= \text{Hrs} \\ (\# \text{ Failures}) \times (\text{Duration}) &= (\text{Hours}) \end{aligned}$$

NOTICE: "hours" are directly proportional to FR and DRA.

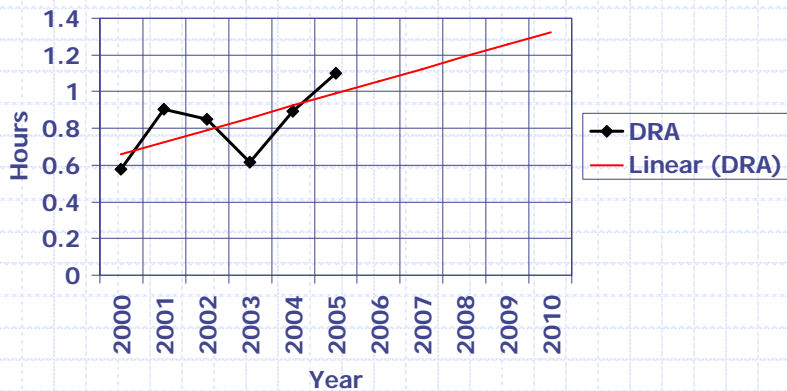
Therefore: Variation in FR and/or DRA can calculate resultant variation in Hrs.

Repairs multiplied by,



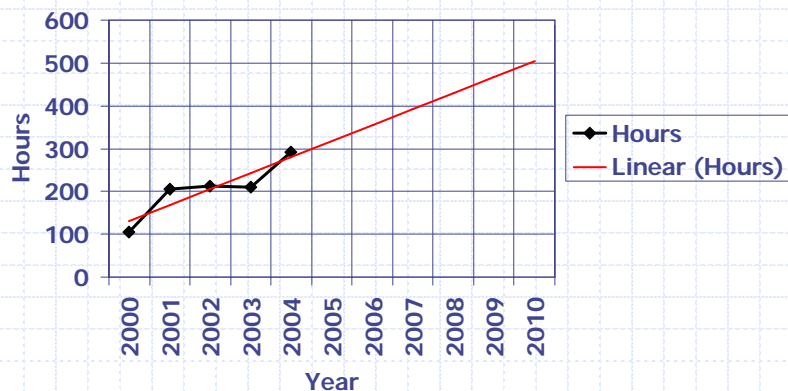
Repairs x Duration = Hours

Duration of Repair



Repairs x Duration = Hours

Equals Resultant Labor Hours

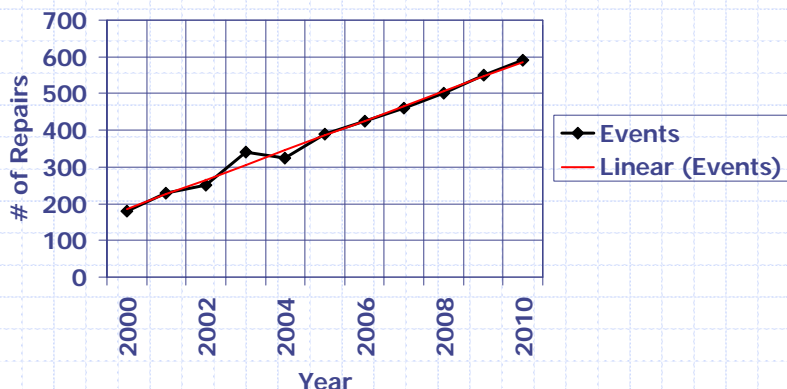


$$\# \text{ Repairs} \times \text{Duration} = \text{Hours}$$

Impact on future parameters

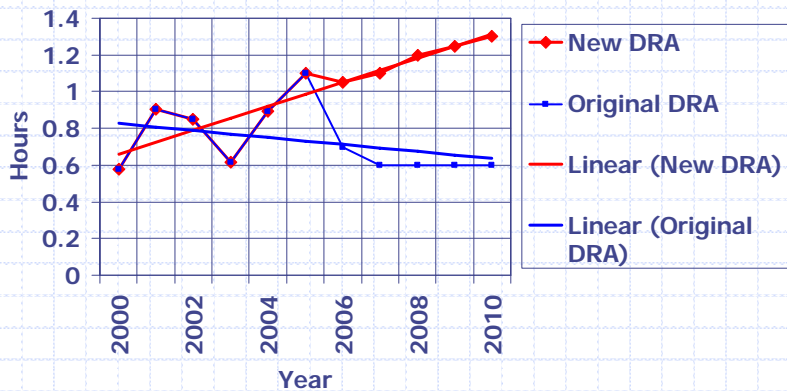
- ◆ With these algorithms you can do "What if's!"
- ◆ For example:
 - "What if" the Duration of Repair could be reduced over the next 2 years, what would the hours look like?

No change in # Repairs



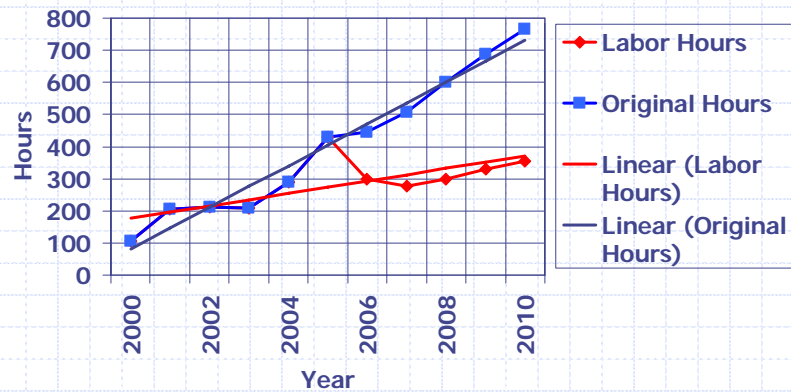
Repairs x Duration = Hours

Reduced DRA



Repairs x Duration = Hours

Resultant Labor Hours



$$\# \text{ Repairs} \times \text{Duration} = \text{Hours}$$

What is the KEY to do this?

- ◆ Accurate MIS Database information.
- ◆ Derivation of Failure Rates.
- ◆ Derivation of DRA.
- ◆ Identification and quantification of variations in FR and DRA (causes).
- ◆ Ability to define effectiveness of repairs.

Samples of answers to be obtained using the MIS Database

- ◆ Lag Time (two measurements):
 - Avg Time from Resident call to PCM arrival.
 - Avg time from PCM arrival till completion of call.
- ◆ Maintenance Exception Report:
 - Early recognition of manors having an excessive (outside of the norm) number of repairs.

Samples (cont.)

- ◆ Identify the failures that make up 80% of the unscheduled Maintenance & Service Costs.
- ◆ Comparisons of Maintenance Costs between areas within the Mutual (building types, location) and other Mutuels. (Paint, Water Leaks, etc.)

Samples (cont.)

◆ Quality of service (some examples):

- Avg time between service and failure; I.e.:
 - ◆ Avg time between re-roof and roof leak.
 - ◆ Avg time between Window Replacement and Window water leak.
 - ◆ Avg time between Water Heater replacement and plumbing problems.
 - ◆ Avg time to complete a repair.
 - ◆ Avg time between similar (repeat) calls.

Samples (cont.)

◆ Effect of Maintenance (for budget):

- Future cost reduction resulting from failure rate reduction for specific causes.
- Future cost reduction as a result of improved service repair time for specific causes.

◆ Effect of Wearout (for budget):

- Future cost impact resulting from failure rate increases due to specific causes.

Samples (cont.)

- ◆ Effectiveness of Prior-to-paint program on dry rot:
 - Avg time after paint program for next dry rot repair call.

- ◆ Distribution of types of calls by type of building to identify and quantify problems unique to specific manors.

Conclusions:

- ◆ The United Board (Committee Chairs) need to be better informed of the reports and service parameter measurements done by PCM.

- ◆ The United Board (Committee Chairs) need to have the details supporting the conclusions of staff.

The End

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