

DC Maximo User Group

Welcome

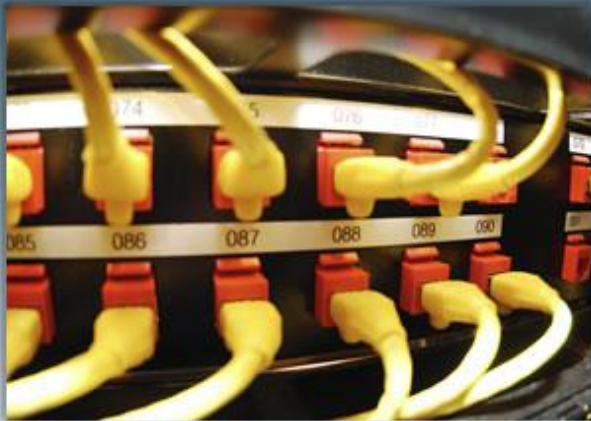


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Maximo Mobile

Prepared by:
Roger Harris
Senior Business Consultant
TRM



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Introductions

- TRM background
- Instructor Intro - Bio
- Class Intro

TRM Introductions

- Founded in 1994- over 15 years of experience in deploying Maximo and Maximo based solutions (Tivoli ITSM portfolio)
- Focused on Enterprise Asset and IT Service Management
- **Strategic Asset Management Services**
- **Asset Management Consulting Services**
- IBM Premier Business Partner
- IBM Software Reseller and Support Provider
- IBM Certifications and Accreditations
 - ✓ 90 Deployment Professionals Certifications
 - ✓ Accredited in 7 Products
- IBM Software Complimentary Solution Partner
- IBM Authorized Independent Training Provider

Trainer BIO

Instructor Bio: Roger Harris

- Senior Business Consultant with Total Resource Management (TRM)
- Practice emphasizes on all aspects of MRO management and IBM MAXIMO software support
- Conducts regular seminars and workshops on numerous configuration management and business processes to design best solutions for MRO management
- Member of Association for Facilities Engineering (AFE) and the Society of Maintenance & Reliability Professionals (SMRP)
- More than 20 years of EAM & MRO Inventory & Purchasing Management in Tier 2 automotive manufacturing
- Email: roger.harris@trmnet.com

Overview

This conference will explore the strategies and tactics utilized by the U.S. Mint for:

- Assessing Work Order & Inventory requirements
- Developing mobile solutions to support business processes and remove waste
- Deploying mobile equipment within a multiple site organization

US Mint History

The United States government started its coining production with the opening of the Philadelphia Mint in 1792 and faces the following business challenges:

- Multisite operations
- Manufacturing complexities
- More than 200 years of legacy systems & processes
- Governmental management policies & requirements
- Age diverse work force

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Mobile Opportunities for US Mint

The US Mint was able to address the following areas of opportunity while implementing and benefiting from their mobile technology:

- **Data entry consistency and accuracy (user access & error proofing)**
- **Data quality and trending abilities (stabilization of Maximo OOB reporting)**
- **Lower their consumption of resources (paper & labor hours)**

Review of U.S. Mint Case Study

Mobile deployment for:

- Failure Reporting
- Labor Reporting
- Inventory Management

US Mint Case Study Failure Hierarchy

Challenge

- Failure data inaccurate and incomplete
- No correlation of Failure data to causes
- Entry process duplicative and time consuming

Solution

- Redesign Failure Hierarchy
- Redesign data entry process and remove wasted steps
- Implement wireless solution to support data entry

Mobile Related Lean Benefits

- Trending data that allows effectiveness evaluation for PM, Training, Reliability, and other supervision driven programs
- Elimination of duplicated time and paper that is required to input failure data

US Mint Case Study Labor Reporting

Challenge

- Labor reporting incomplete
- No cost of labor associated to work orders
- Entry process duplicative and time consuming

Solution

- Redesign data entry process and remove wasted steps
- Implement wireless solution to support data entry

Mobile Related Benefits

- Elimination of non value added duplicated time and paper that is required to input labor reporting
- Empirical data that assigns labor cost to work order activities
- Increased user access and ease of work order completion

US Mint Case Study Inventory

Challenge

- Cycle counts labor intensive
- No cycle counting standard
- No uniform counting process

Solution

- Develop standard counting processes (cycle & spot)
- Implement wireless solution to support data entry

Mobile Related Benefits

- Standard cycle counts downloaded to mobile devices
- Bar-coding increases speed of counting with mobile
- Ability to create spot counts
- Ability to balance individual counting related work loads
- Improved inventory accuracy

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Data Inaccurate & Incomplete

Driving Factors

- Too many choices
- Vague in some cases
- Too specific in some cases
- No reporting functionality
- No reporting value
- No organizational buy in

No Correlation of Failure to Causes

Driving Factors

- Incomplete design
- Not designed with considerations for final reporting
- No consistent understanding of organizational expectations across all sites

Data Entry Time Consuming

Driving Factors

- Entry process designed around manual MRO system
- User training did not address all system capabilities

Value Mapping the Process

- TRM compares actual use to Maximo intended use to seek out wasted and non value added steps.
- These problems occur as incremental creep as the system's original design changes or fails to change with the organizational mission.

Value Mapping the Process

Sources of Non Valued Added Steps:

- Improper design
- Lack of maintenance
- Lack of value auditing
- Failure to act

U.S. Mint Failure Class Correction

How the Mint resolved its Failure Class:

- Acknowledged the problem
- Sought out experienced help
- Worked with their users across all sites
- Designed a new failure class with management processes and final reporting in mind
- Implemented and trained new process across all sites

Acknowledging the Problem

Users across 4 sites seeking correction of the system for various reasons

- Failure Class too cumbersome and detailed
- Did not represent current business process
- Did not capture meaningful data
- Did not organize usable reporting

Acquired Experienced Support

The U.S. Mint partnered with TRM to resolve its failure reporting challenges by:

- Defining as is processes
- Creating strategies for future perfect
- Hosting multi-site user workshops
- Creating educational materials for users
- Developing technology resources
- Multi-site user training and go live support

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User Collaboration

The U.S. Mint and TRM developed a strategy to:

- Gather user input
- Create multi-site consistency that added value to each site
- Determine uses for data that benefit management processes
- Eliminate non value added steps

Design Strategy

The U.S. Mint focused its efforts on designing a failure class that would:

- Capture KPIs
- Simplify user interactions
- Eliminate non value added steps
- Speed up data entry
- Organized hierarchy so the out of the box Maximo reports would function as intended

Implementation

The U.S. Mint approached the failure class implementation by:

- Training users for structural content of failure class
- Training users for use of technology
- Supported users at go live

U.S. Mint Failure Reporting Design

Maximo 6 & 7 has three out of the box failure reports:

- Summary of Asset Failures by Location - Lists Mean Time between Failures (MTBF), and number of failures for each asset in the location. 2 graphs available.
- Details of Asset Failures - Summarizes asset failures by problem code for an asset. Only WO's with Cause and Remedies are included. Graphic view available.
- Drilldown into Asset Failures - For an asset's problem, its resultant causes, remedies and downtime are displayed here.

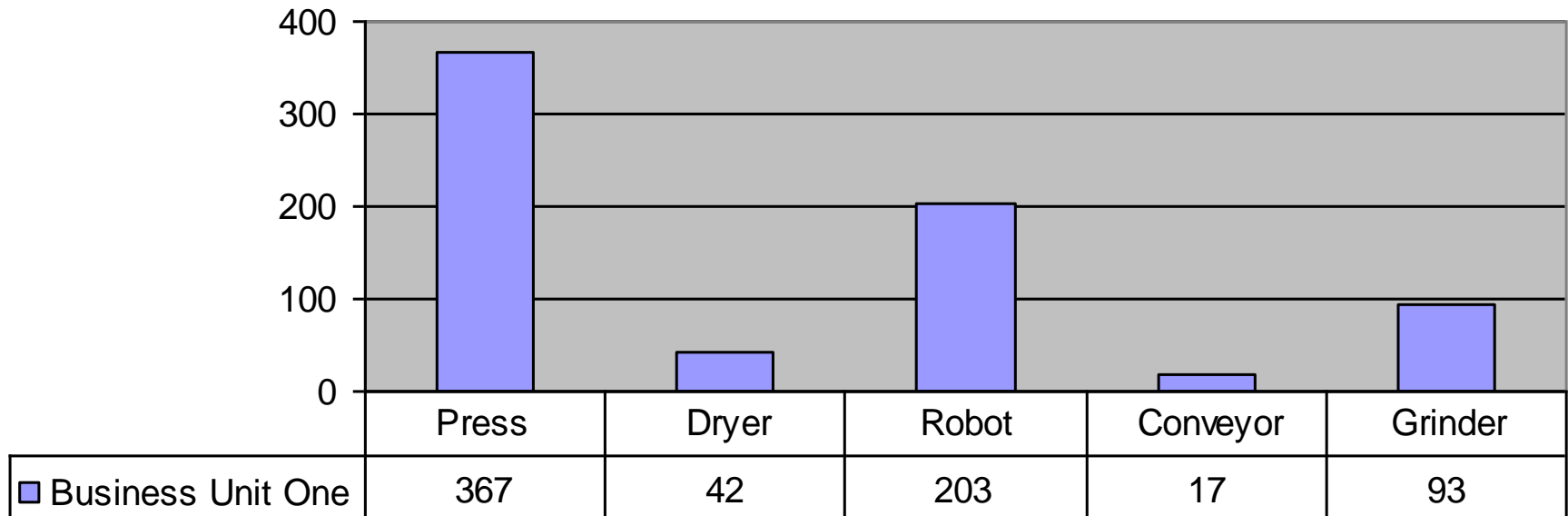
Failure Reporting

Summary of Asset Failures by Location

- Requires location hierarchy design with proper asset assignment
- Requires correlation of business processes to assets & locations. Should consider asset owners, care takers, PM & Reliability programs

Asset Failures by Location

Business Unit One



Failures by Locations

Business Unit One

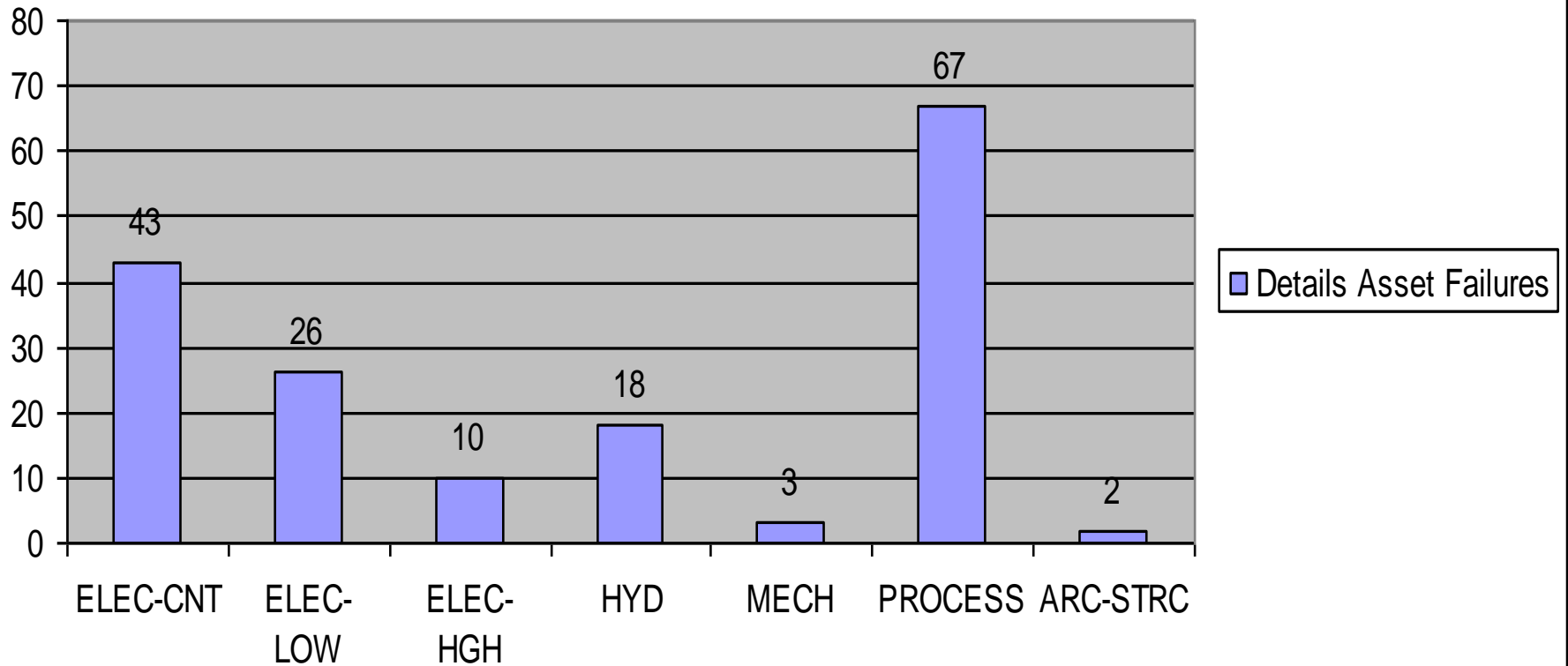
Failure Reporting

Details of Asset Failures - Summarizes asset failures by problem code for an asset. Only WO's with Cause and Remedies are included.

- Requires correct design of problems that the asset can encounter
- Requires cause and remedy

Failure Reporting

Details Asset Failures Press 15



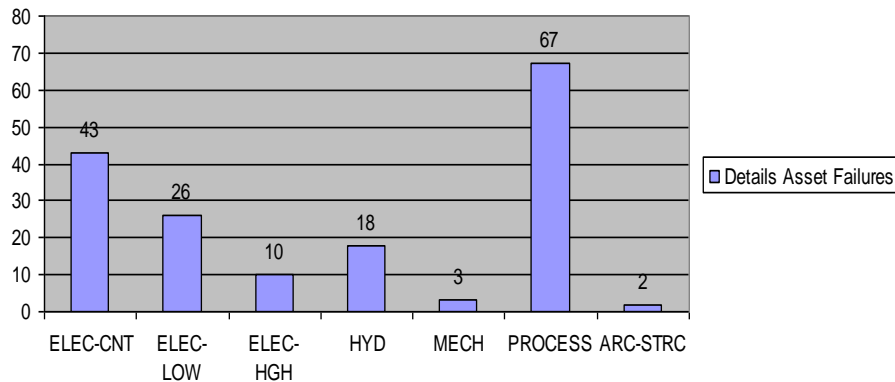
Failure Reporting

Drilldown into Asset Failures

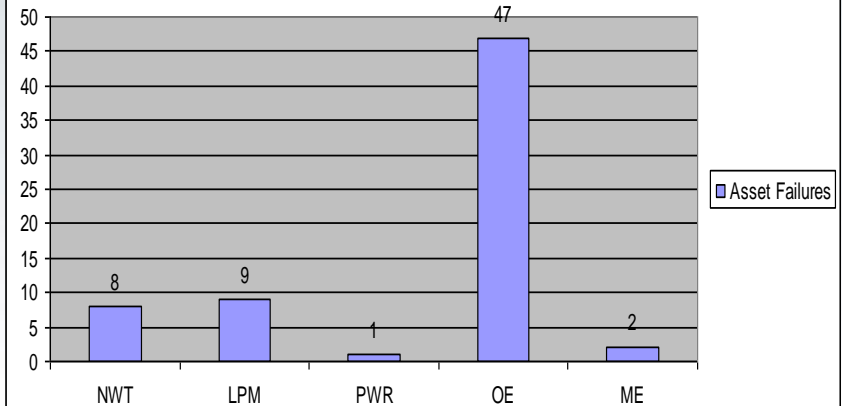
- Requires correct failure class & problem class association
- Requires correct problem & cause class association
- Requires correct cause & remedy class association

Failure Reporting

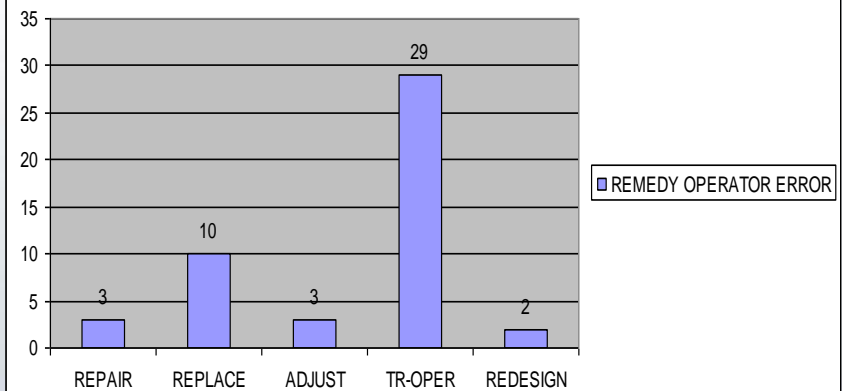
Details Asset Failures Press 15



Asset Failures (Press 15) Process



REMEDY OPERATOR ERROR



Defining Failure Class Requirement

- When working with multiple groups or sites it is critical to define the expectations of the failure class based on the actual outcomes of the final reports
- Trying to meet the detailed expectations of many will result in poor performance for all
- Pick an approach and apply it consistently

Defining the Failure Class

Defining the failure class requires forethought of the final report.

- Simple Failure Class:

Press

- Complex Failure Class:

Press Clamp

Press Inject

Press Eject

Press Process

Defining the Failure Class

A simple design will yield general information concerning an assets failures

- Employee Training
- Types of Asset Problems
- Types of Problem Causes
- Types of Remedies Deployed

Simple Failure Class

Class	Problem	Cause	Remedy
Press	HYD	NWT	REPLACE
	ELEC	LPM	REPAIR
	PROCESS	ABUSE	ADJUST

Complex Failure Class

Class	Problem	Cause	Remedy
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Press Process

Fail Auto Cycle

**Oil Heat Up
Cold Screw Prevent
Safety Prevent
Improper Set Up**

Correct Set Up

Process Clamp

**High Press
Fail Close
Fail Open**

**Mold Close Limit
Robot Set Up
Improper Set Up**

Correct Set Up

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Simple vs. Complex

General Trending

- Supports training
- Identifies reliability among asset types
- Identifies PM and other preventive routines performance
- Identifies supervision effectiveness

Complex Trending

- Supports RCM
- Identifies detailed asset failures
- Identifies detailed failure causes
- Should be supported by Simple Hierarchy
- Requires disciplined data collection process

Exercise

How are your failure classes organized?

Exercise

List Your Failure Classes (Example – Press, Elevator, etc.)

Exercise

List Your Problem Classes (Example – Hydraulic, Electrical, etc.)

Exercise

List Your Cause Classes (Example – Normal Wear & Tear, Design, Lack of PM,

Abuse, Operator Error, Maintenance Error, Power Failure / Surge)

Exercise

List Your Remedy Classes (Example – Repair, Replace, Adjust, PM, etc.)

Exercise

Briefly describe your current failure reporting

Exercise

What KPIs are trended through your failure reporting?
