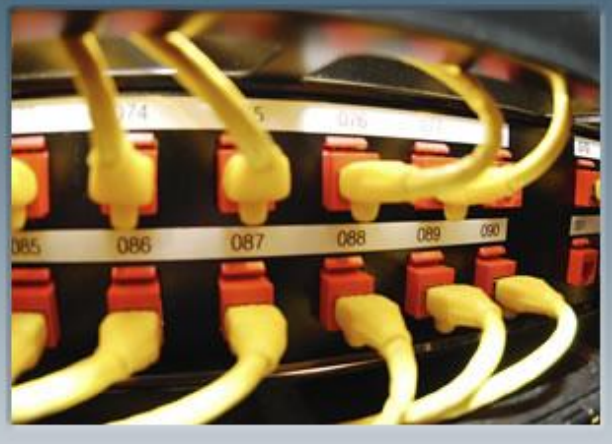


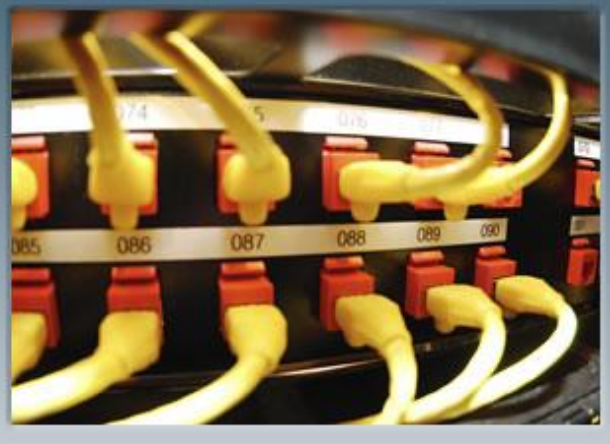
DC Maximo User Group

Welcome

IBM Premier Business Partner

Authorized IBM Training

TRM total resource management
A Consulting and Technology Company




Maximo Mobile

Prepared by:
Roger Harris
Senior Business Consultant
TRM

IBM Premier Business Partner

Authorized IBM Training

TRM total resource management
A Consulting and Technology Company

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

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

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

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:

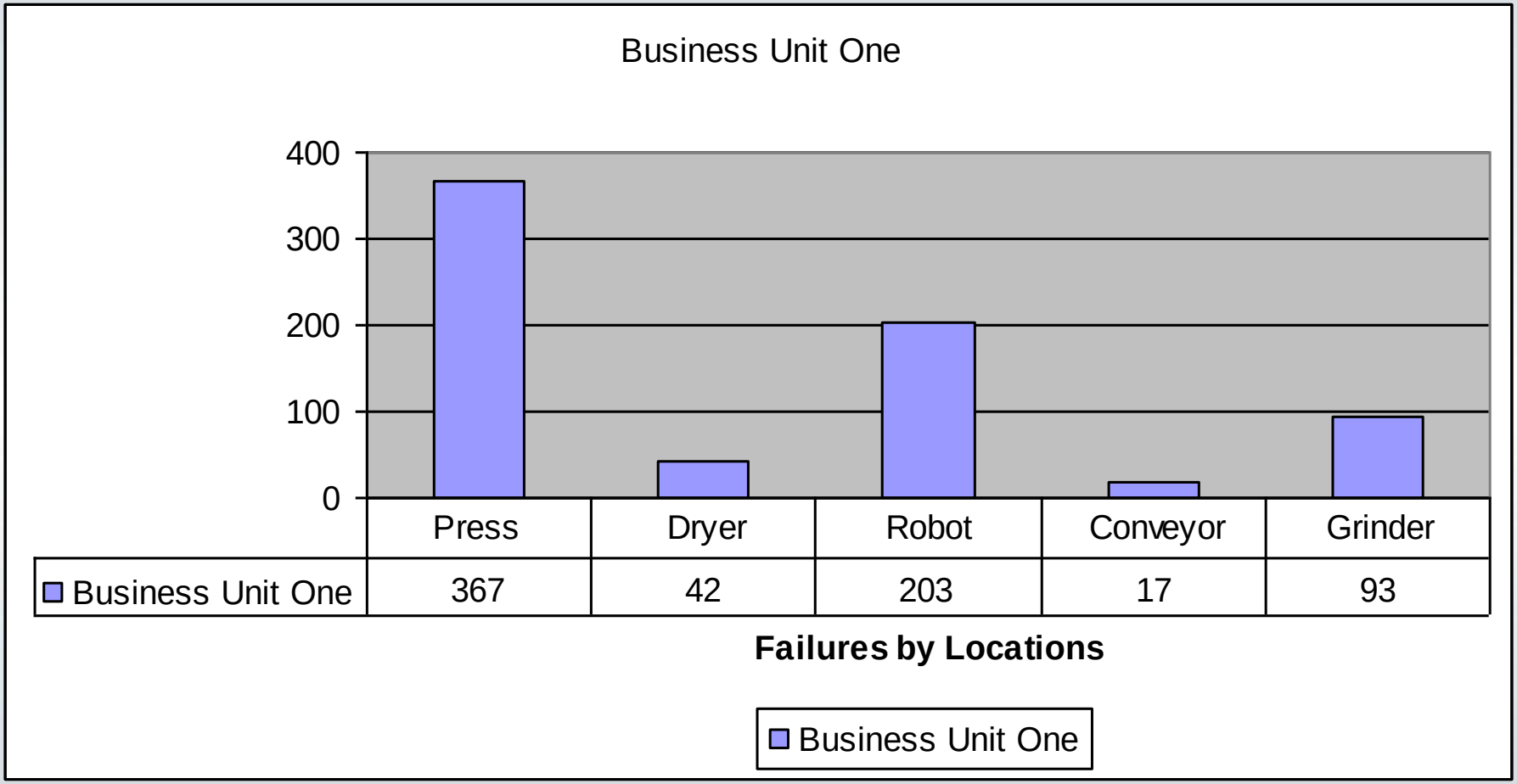
- Summary of Asset Failures by Location - Lists Mean Time between Failures (MTBF), and number of failures for each asset in the location. 2 graphs available.
- Details of Asset Failures - Summarizes asset failures by problem code for an asset. Only WO's with Cause and Remedies are included. Graphic view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



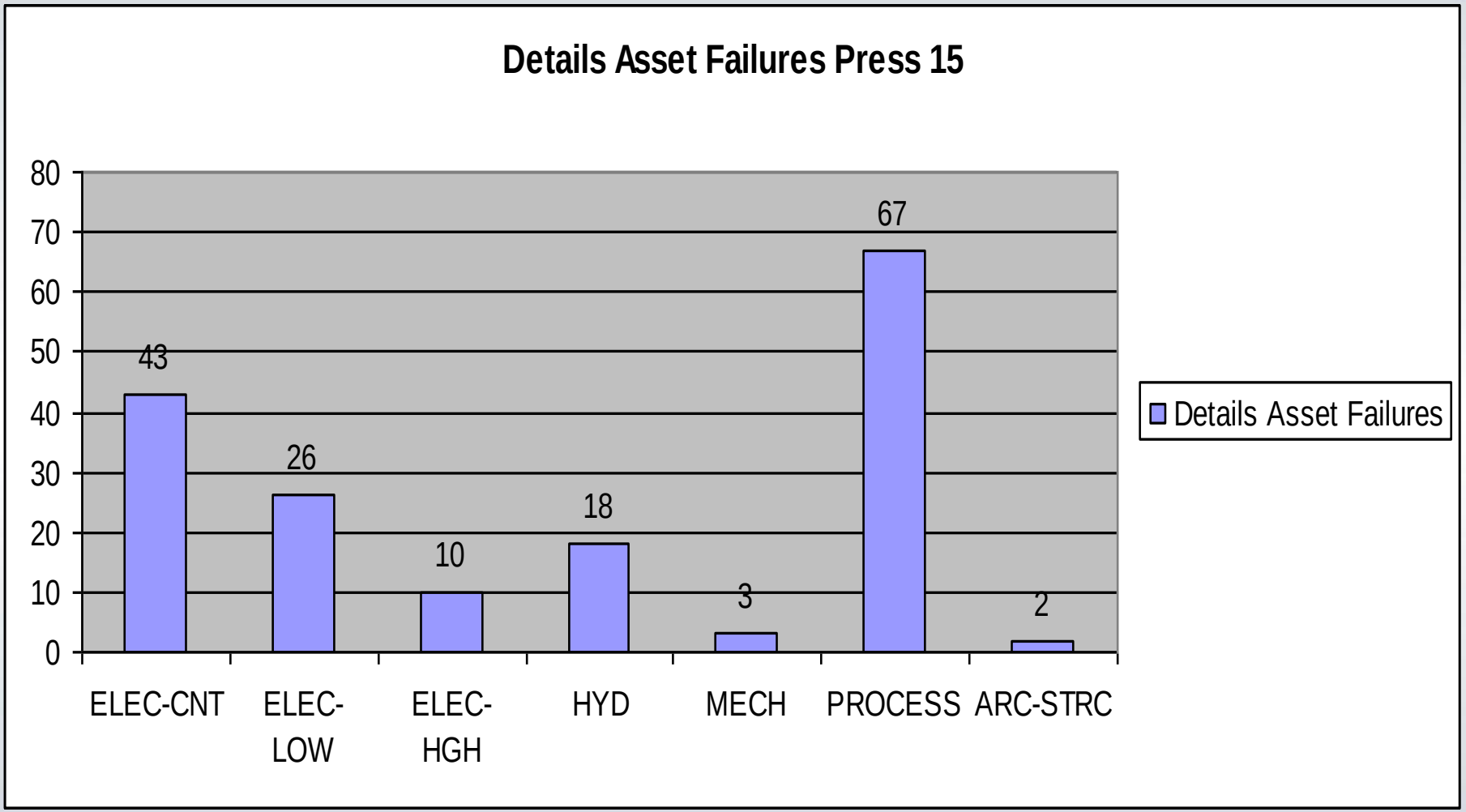
Failure Reporting

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

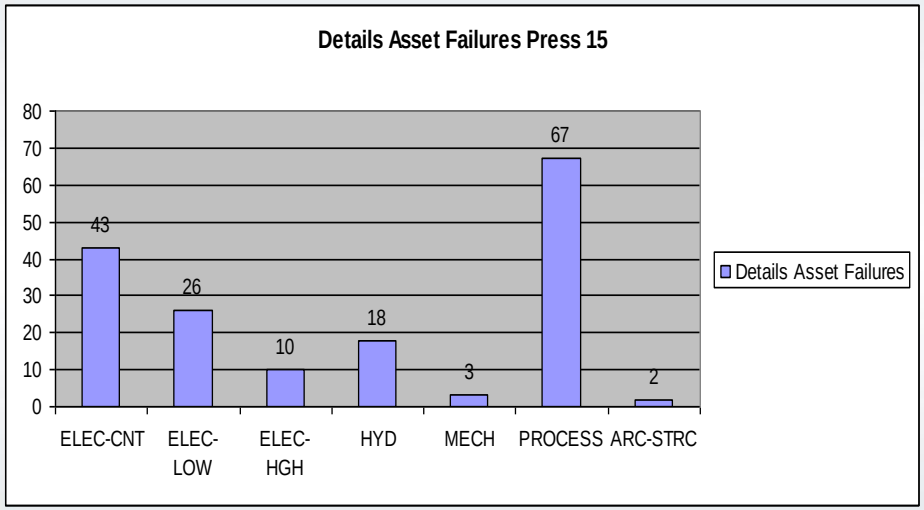


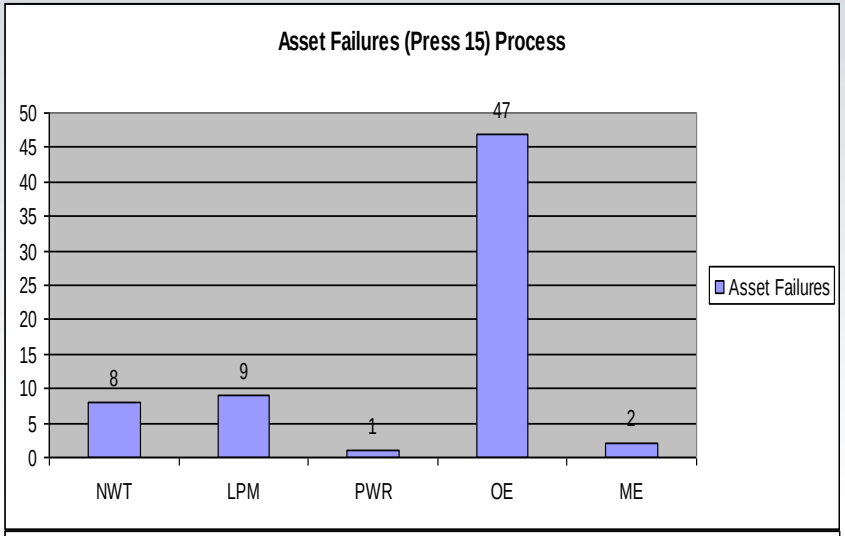
Failure Reporting

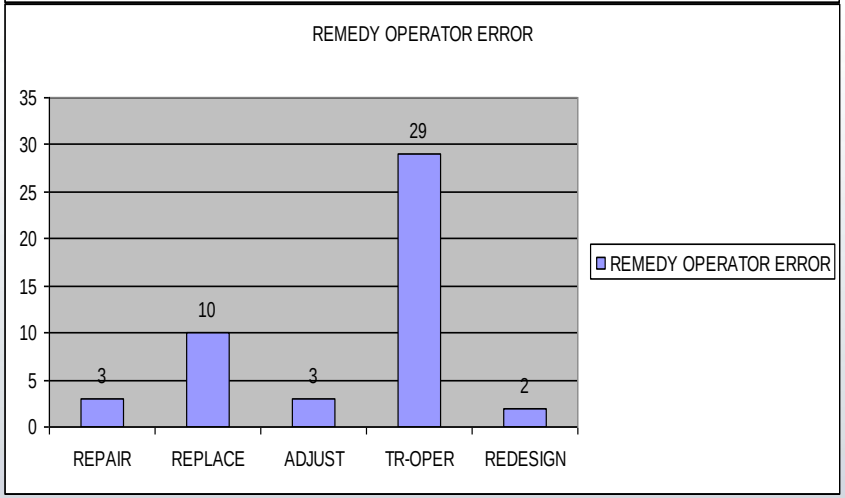
Drilldown into Asset Failures

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

Failure Reporting







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
Press Process			
	Fail Auto Cycle	**Oil Heat Up**	**Correct Set Up**
		Cold Screw Prevent	
		Safety Prevent	
		Improper Set Up	
Process Clamp			
	High Press	**Mold Close Limit**	**Correct Set Up**
	Fail Close	**Robot Set Up**	
	Fail Open	**Improper Set Up**	

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?