

# **PREVENTION, DETECTION, ELIMINATION**

**presented by**

**Jim “MUDA” Munda**

**Quality Section Manager  
HALLMARK CARDS, INC.**

# OVERVIEW

- **Leavenworth Production Center**
- **Defect Prevention**
- **Defect Detection**
- **Defect Elimination/Disposal**
- **Employee Owned Quality System (EOQS)**

# **Leavenworth Production Center**

- **GIFT WRAP AND PARTY PRODUCTS**
- **PRINT AND CONVERT**
- **WATER BASED INKS & COATINGS**
- **35# - 60# PAPER**
- **METALLIZED, FILMS, POLY COATED BOARD**

# Defect Prevention

- **Specification & Verification**
  - **Substrates**
  - **Inks & Coatings**
  - **Cylinders**
  - **Impression Rollers**
  - **Artwork**
  - **Press Configuration**

# Defect Detection

- **Video Inspection**
  - **Color**
  - **Streaks**
  - **Spots**
  - **Register**
- **Press Sheet Inspection**
  - **EOQS Documentation**

# **Defect Elimination/Disposal**

- **Defective Materials Database**
  - **Raw materials / Vendor returns**
  - **Corporate database**

# DEFECTIVE MATERIAL REPORTING SYSTEM

**1. Operator finds defective material.**

- >>Collect samples of the material and product (if possible) and anything that would be useful (photos, labels, etc.) in the investigation.
- >>Fill out Defective Material Report and turn in to Supervisor.
- >>DO NOT THROW AWAY MATERIAL unless authorized by Quality.

**2. Supervisor reviews Defective Material Report and supporting evidence.**

- >>DO NOT SEND material to warehouse without Manufacturing QE approval
- >>Send Defective Material Report and supporting evidence to Manufacturing Quality to input into the database.

**3. Defective Material Report is input by Manufacturing Quality.**

- >>Input reports in according to the dollar value.
- >>Send report and supporting evidence to Operations Quality Material QE.

Print Blank Defective Material Report



Ops Quality and Graphics Engineer List

Problem Report over \$300

Problem Report under \$300

Enter Data for Specific Tracking Number

Reports and Other Options Menu

**5. Buyer reviews report and supporting evidence.**

- >>Determines if material should be destroyed or sent back to the supplier.
- >>Determines if credit from the supplier will be pursued.
- >>Gives feedback to Material QE

**4. Ops Quality Material QE reviews report and supporting evidence.**

- >>Determine if material was defective and if it is over \$300.
- >>Adds additional comments to the report.
- >>Routes the information to the Buyer.
- >>Gives feedback to Manufacturing

Update Report by Tracking Number

Update Report by Tracking Number

All Problem Reports

All Problem Reports

Contact Heather McCain in Operations Quality Engineering if you encounter any problems! (274-8337)

Close Database



Date Problem Found:

Tracking Number (Do NOT Input):

Machine Number or Name:

Where is the Defective Material currently located?:

Hallmark Plant - Lithographer:

Manufacturer of the Material/Mill/Ink Company:

Shop Order/Job #:  Item Number(SKU, Component):  Purchase Order #:

Material Description (50# Semi-gloss, 18 pt album board, etc.)

Raw Material Item # (XX-XXX-XXXX):  Date Material Manufactured:  Manufacturer or Mill or Lot:

Material Type:  Choose Defect Associated w/Material Type (or type in if not listed):

Describe the Problem: Include productivity impact, run speeds, and other important information:

Amount Unable to Process	Units:	Amount able to Process	Units:	Total Lot Quantity	\$\$ Value of Bad Material:	Total Cost (include labor, other material, etc.):	Have You Entered This Into EQOS?
<input type="text" value="0"/>	<input type="text"/>	<input type="text" value="0"/>	<input type="text"/>	<input type="text" value="0"/>	<input type="text" value="\$0.00"/>	<input type="text" value="\$0.00"/>	<input type="checkbox"/>

Select Appropriate quality or graphics engineer:

Picture of Problem Submitted to quality/ graphics engineer?

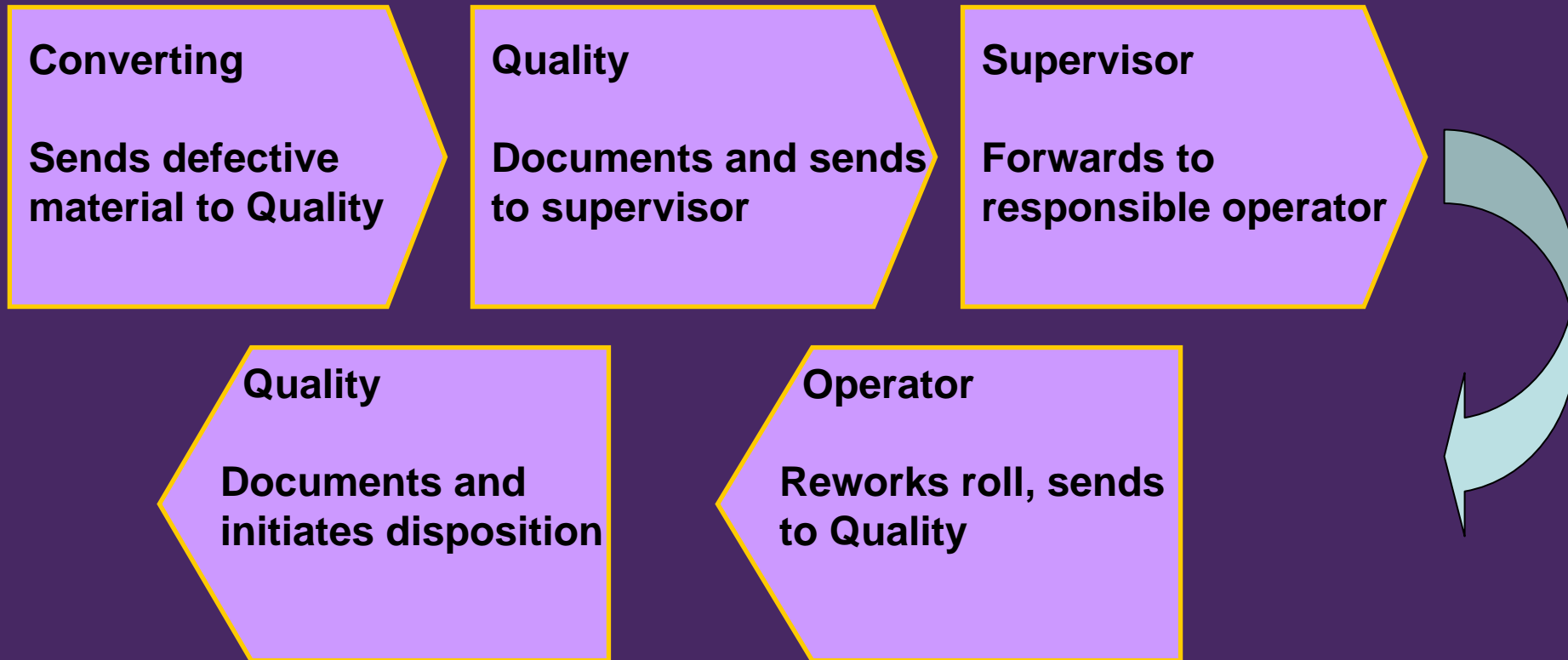
Date Received by Plant Quality:

Sample sent to quality/graphics engineer?  **You must send 1) The Mill/Factory Label, 2) A sample of 10 feet plus the width for ROLL paper stock, 5 sheets for SHEETED paper stock, as needed for other materials,3) a digital or Polaroid picture of the problem, and 4) A copy of this Defective Materials Credit Report form page!! If possible, provide printed/converted defect samples also.**



# Defect Elimination/Disposal

MIR – “Materials Inducing Remorse”



# **Defect Elimination/Disposal**

- **Discards**
  - **Quality controls the process**
  - **Requires several levels of signatures**
  - **Hits Cost of Poor Execution (COPE)**

# **Defect Elimination/Disposal**

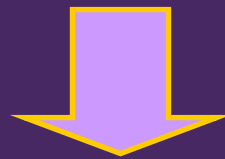
- **Continuous Improvement**
  - **Part of EOQS**

# EOQS

What is it?

“Fundamental shift in ownership of product quality”

From Quality



To Production

# Benefits

- **Reduced COPE**
  - Operators isolate and sort defects
  - Consistent sampling plans
  - Reduced work station loss
  - Detailed data assists with CI & root cause analysis

# Benefits

- **Improved Quality**
  - **Defect monitoring by Production**
  - **More eyes on product**
  - **Higher quality expected from previous process**

# Seven Steps

1. **Preflight**
2. **Sampling** - during production
3. **Reacting** - isolate bad from last good
4. **Recording** - sample size, np, spoilage defect, causal code
5. **Verifying** - manager audits
6. **Feedback** - storyboards, charts, sample defects
7. **Action** - CI teams, performance management

Sample Size:

NP	Spoilage	Defect Type	Causal Code

Employee Owned Quality System  
Defect and Causal Code Lists

Defect Code			Defect Code	
001	Register		211	Wrong Stock
003	Streaks		212	Unbonded Stock
004	Ink Spots		224	Mechanical
006	Color Variation		415	Shipping Document Incorrect
007	Insufficient Coverage		452	Pin holes
009	Offset / Rub off		453	Burn Holes / Scratches
020	Misc. Dirt smudges		457	Hole Placement
022	Wrinkles		481	Shrink
024	Warped/Curled		504	Splices
025	Blocking		509	One Way Design
031	Bleed		520	Bad Core
035	Picking		521	Crushed Roll
036	Improper Width		523	Telescoping
085	Scratches		902	Print Haze
095	Ink Trapping		907	Mill Lines
138	Web Breaks		993	Material Handling Damage
139	Cut Lines		994	Vendor Spoilage / Shortage
Causal Codes				
21	Emboss			
SS	Press Stop/Start			
OS	Non-Hallmark Supplier			
WH	Warehouse			
OP	Operator Error			
YD	Doctor Blade			
YH	Insuff / Excess Heat			
MM	Mechanical			
YF	Ink Formulation			
YA	DGWT			
YC	Cylinder			
YR	Roller			
YV	Ink Viscosity / pH			
Y1	Slitter Malfunction			



# Three Levels

## 1. Basics

- preflight, sampling plan, manual

## 2. Production Dept. Measurement System

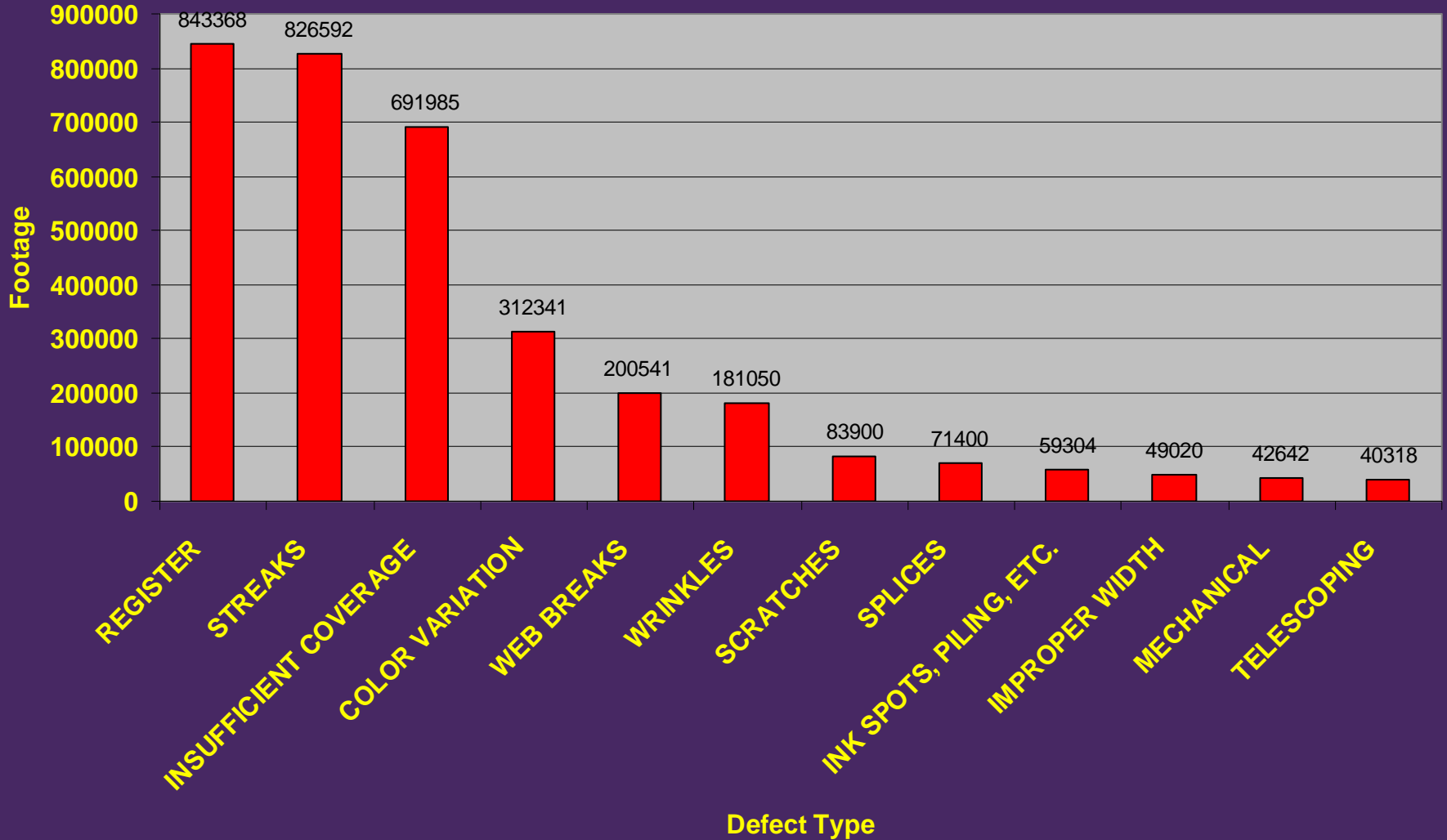
- level 1, pass audits, CI identified, reduced inspector audits on 75% of equipment

## 3. Production Dept. Ownership

- Levels 1 & 2, CI implemented, maintain reduced inspector audits 6 of 12 mo.

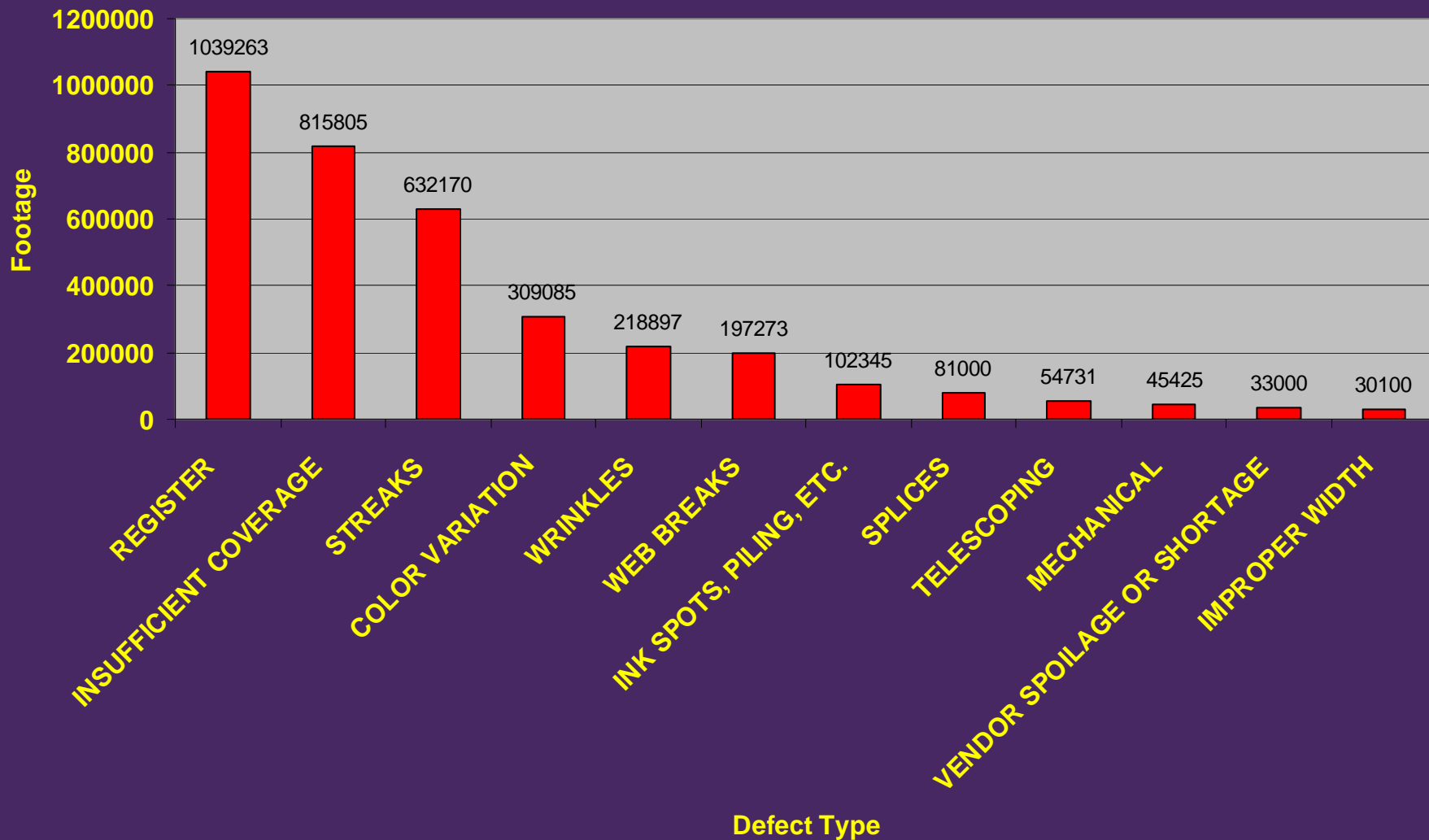
# Historical Performance

## Printing Defects 2003



# Historical Performance

## Printing Defects 2004



# EOQS Results

- **Leavenworth – First plant to achieve level 3 in all departments**
- **Numerous CI projects completed**
- **70% reduction in inspector costs in 5 years**
- **33% reduction in annual ppm defective in 5 years**