Achieving Reliable MRO Operations... A Best Practice Case Study

Presentation to: APICS Chicago

Presentation by: George Krauter
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Important?  Needed?

Weak tail?

Dragons would drag!
The Tale of the Tail

No tail? Gators would starve
Unreliable MRO tail?
Companies would collapse

Is your MRO tail ignored?
Tale of the MRO Tail

| $ Spend | Transactions
|---------|----------------|
|         | MRO 80%
|         | Production Capital 20%
|         | MRO 5%
|         | $ MRO 5%
|         | Production Capital 95%
MRO: Where is it?

Manufacturer $ → Your MRO Storeroom $ → MRO Distributor $ → YOUR RECEIVING $ → WORK AREA $ → LOCKER $ → VMI $ → CLOSET $ → DESK $ → VENDING $ → $ YOUR GUESS $
MUDA & MRO:

Lean teaches: Look for waste . . . Corrective action

??

MUDA the Hutt

Hey!!
Look
Here!!

Inventory
• 68% not used
• 9% annual growth
• 25% duplicated
• 24% stock outs
• Maintenance conflict

MRO

Cry For Change!
Catalyst to a Reliable Plant

• Lean = Value with Less Work
• Lean requires:

What is the opposite of Lean?
FAT
The MRO Storeroom Dilemma – The Tail

...You Can’t be LEAN/Reliable

With a Fat MRO Storeroom

Stop Crying...Change!
The ‘Store’ Story

If it looks like a store...
If it operates like a store...

It is a “STORE”!! It is a DRAIN

Do you provide product or are you a storekeeper?
**Reliable (Lean) vs Unreliable (Fat)**

<table>
<thead>
<tr>
<th>Turnover</th>
<th>Reliable (Home Depot)</th>
<th>Unreliable (typical MRO store)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark-up COGs</td>
<td>6 (+)</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Stock outs</td>
<td>Market</td>
<td>Zero</td>
</tr>
<tr>
<td>Personnel</td>
<td>Rare</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>Market Coordinated</td>
<td>Uncoordinated</td>
</tr>
</tbody>
</table>

**Effect**

- **Profit Contribution**
- **Profit Drain**
Stores: Help or Hinder

- MEL (equipment)
- BOM (materials)
- FMEA (failure)

Lean vs. MUDA

Stores Parts Available

Notify Mechanic

Assess

EQ Down

Repair

EQ Online

Does your storeroom shorten time to repair... or add to it?
Managing Positive Change

‘Storm’ Room to Storeroom

- Conduct Root Cause Analysis
- Monitor Results & Adjust
- Write SOP’s
- Train Employees
- Monitor SOP Compliance
- Enrich CMMS Data

Joint Effort
Lean Stores 6S

#1 Sort
#2 Set in Order
#3 Shine
#4 Standardize
#5 Sustain
#6 Safety
Certified Reliability Leader

Assist with identifying Critical Equipment

Assist with developing Master Equipment List (MEL)

Develop Bills of Material for Critical Equipment

Participate in Failure Mode Effects Analysis

5 Components of Maintenance Work

Identification: Phase 1
- Master Equipment List
- Bill of Materials
- Taxonomy

Planning: Phase 2
- Communication
- Min/Max
- FMEA

Scheduling: Phase 3
- Manage backlog
- MTTR

Execution: Phase 4
- Performing
- Kitting/Staging
- Supplier assist

Reporting: Phase 5
- Business Intel
- Measurement
The Case for Change

**Profit 2012**

- **A**: $10MM
- **B**: $+0.5MM
- **C**: $+1.0MM

**Profit 2013**

- **A**: $12MM
- **B**: $+1.0MM
- **C**: $+1.5MM

**Ops Cost**

- **A**: $+3MM
- **B**: $+3MM
- **C**: $+1MM

**Recover MRO Loss: Increase net $1 million; 66%**
Critical Questions – for Lean MRO

• Are Lean principles a goal?
• Is the MRO tail a change opportunity?
• Do you change in house or go 3PMRO?
• If 3PMRO, who will own the project?
• Can you get positive cooperation from all company disciplines for 3PMRO?
• Is there a 3PMRO provider who will attain your Lean goals?
3PMRO KPI Required

Reliable Operations → Scope of Work

Requires → Effective procedures

Requires → Expertise

Requires → Accurate BOM Inventory

Requires → Change Expertise

Requires → Measured Value (KPIs)

Requires → Sustainability

Supplier On Site
  • Core
  • KPI
  • C.I.
3PMRO KPI Required

Planned maintenance is fully integrated with stores management.

Storeroom personnel are trained to participate in maintenance and reliability programs.

Operations are sustained and improved every day by meeting service levels while satisfying plant disciplines (Including Sr. Management).
Corporate Mandate: Eliminate $25 million in Operation Costs (TCO)

MRO assigned 20% burden of spend reduction
(Note: MRO = 5% of overall spend)

Achieve TCO reduction goal while supporting maintenance reliability programs
Option #1 – Do It Ourselves

Tried internal cost reduction . . . FAILED . . . WHY?

- Lack of supplier creative solutions
- Conflict among disciplines
- Existing business mechanics

The Reality – the MRO “Storm” Room

Price – 280 suppliers
Inventory – reduce vs. stock outs
Freight – back orders
Personnel – parts of people
Transactions – 280 suppliers = 75,000 transactions

The Result: Little progress toward goal

Go to Option #2
Option #2 – 3PMRO

Failures of Internal Change Recognized:
Go to 3PMRO

Supplier Selection
• Core business
• Commitment to reliable plant
• Implementation expertise
• KPI performance
• Sustainability & Reporting
### Case Study: Why did we change?

#### Before

<table>
<thead>
<tr>
<th>Operations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Transactions:</td>
<td>75,000</td>
</tr>
<tr>
<td>• Number of suppliers:</td>
<td>266</td>
</tr>
<tr>
<td>• Parts availability:</td>
<td>76%</td>
</tr>
<tr>
<td>• Down time:</td>
<td>289 hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financials</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Spend:</td>
<td>$6.0MM</td>
</tr>
<tr>
<td>• Inventory Value:</td>
<td>$6.6MM</td>
</tr>
<tr>
<td>• Warranty recovery:</td>
<td>none</td>
</tr>
<tr>
<td>• Productivity:</td>
<td>none</td>
</tr>
</tbody>
</table>

#### After

<table>
<thead>
<tr>
<th>Operations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Transactions:</td>
<td>24</td>
</tr>
<tr>
<td>• Number of suppliers:</td>
<td>6</td>
</tr>
<tr>
<td>• Fill rates:</td>
<td>98%</td>
</tr>
<tr>
<td>• Down time:</td>
<td>none</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financials</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Spend:</td>
<td>$4.3MM</td>
</tr>
<tr>
<td>• Inventory Value:</td>
<td>$3.8MM</td>
</tr>
<tr>
<td>• Warranty recovery:</td>
<td>$896,000</td>
</tr>
<tr>
<td>• Productivity:</td>
<td>$178,000</td>
</tr>
</tbody>
</table>

**Financial Benefit:** $1,674,000 (28%)  
plus $2.8MM Inventory Reduction  
plus Value of Reliable Operations
Case Study

The Leaking Milk Plant

We see possible benefits

• “All good and well – not in my plant”
• “Too much to do now – no time to change”
• “No time to bother senior management”

Parts failure!!  Milk leaking!!
Wrong part!!!
Milk flowing!!!!  Shut down!!!! –
Incentive to change – 3PMRO
The Change to Lean

**From this!**

- Low turns
- Poor service levels – 24% stock out
- Disconnected from maintenance
- Questionable locations
- 50% not stocked

**To this!**

- Fully populated
- Critical equipment identified: MEL
- Critical spares / BOMs
- Right part, right place, right time – EVERYTIME
- Part of maintenance value stream

*Case Study*

*Food Company Goes 3PMRO*
The Calm After the Storm

1) You can’t be lean with a fat MRO storeroom

2) Fat MRO diminishes plant reliability

3) Ask yourself:
   a) Is MRO change needed? What is the value?
   b) Is change possible in my company?
   c) Is a Third Party MRO Solution the Answer?

Ref: Decision guide
www.StoreroomSolutions.com