Red Dot’s Leap Journey

Randy Gardiner
President
Red Dot Corporation

“We Create and Deliver Innovative Climate Control Solutions”
RED DOT LEAN JOURNEY 2002 To Date

Facilities

$100 Million In Sales World-wide

- Seattle
- Memphis
- Ipswich

Confidential information not to be copied or shared without the express written consent of Red Dot Corporation
Core Customers
Diverse Product Applications
Army & Marine Kits

DESIGNED AND BUILT LIKE SOMEONE'S LIFE DEPENDED ON IT!

BUILT TO SURVIVE
RED DOT CORPORATION
Red Dot’s Lean Journey
Why?

Red Dot’s business landscape has changed......

Red Dot must change to survive and....THRIVE!
NEW LANDSCAPE

- More Products
- Shorter Deliver Schedules
- Smaller Runs....More Set-ups
- More Inventory....More Cash
- More Competition = Lower Prices
- Lower Prices = Cost Pressure
- Employee Ownership
RED DOT LEAN JOURNEY 2002 To Date

Employee Ownership
MYTH

“We’re just in a down cycle........

things will be better when the economy picks up”
"VALUE-ADDED" SALES PER EMPLOYEE

World Class Range

Company Will Die

INVENTORY TURNS

World Class Range

Company Will Die
SALES & PROFITS

SALES
IN THOUSANDS

$120,000
$100,000
$80,000
$60,000
$40,000
$20,000

PROFITS
IN THOUSANDS

$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$(2,000)


SALES & PROFITS

RED DOT LEAN JOURNEY

2002 To Date
Red Dot must change to survive

and....THRIVE!
RED DOT LEAN JOURNEY

2002 To Date

RED DOT “LEAN” PRODUCTION SYSTEM

What did we do?

- Hired A Lean Consultant
- Committed Ourselves Entirely
- Held Monthly “Kaizen Events”
RED DOT “LEAN” PRODUCTION SYSTEM

What is it?

- Elimination of Waste
- Creating Continuous “Flow”
- “Pull vs Push” Toyota Production
- Cellular Manufacturing
- Continuous Improvement System
- “Kaizen Events”
The “Lean” Journey

60 Kaizen Events since December 2001
The “Lean” Journey

Over 1,000 Kaizen Ideas Implemented
The “Lean” Journey
Assembly Lines Revamped
- Continuous Flow – Moving Belts
- Work balancing
- Running Change Over – Zero Set-up
The “Lean” Journey
Coil Production Revamped to a Line
- Continuous Flow vs Batch
- Reduced space from 7,000 sq.ft. to 1,700 sq.ft.
The “Lean” Journey
Sheet Metal Cells Developed
- Reduced Part Travel
- Improved Cycle Times - Responsiveness
The “Lean” Journey
Set-up Time Reductions
The “Lean” Journey
Management Involvement
## Target Progress Report and Results Sheet

<table>
<thead>
<tr>
<th>Measures</th>
<th>Baseline</th>
<th>Target</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Final</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space (Sq. Ft.)</td>
<td>1,161</td>
<td>580</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory</td>
<td>75</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walking Distance</td>
<td>483</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parts Travel Distance</td>
<td>321</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead-time</td>
<td>4.1</td>
<td>1.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality (# Defects)</td>
<td>12</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Productivity Gain (# People)</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental, Health &amp; Safety (5S)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set-Up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cycle Time</td>
<td>1032</td>
<td>174</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Results:

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![Image of Target Progress Report and Results Sheet](image-url)
# Target Progress Report and Results Sheet

**Kaizen Event #:** 60  
**Team Name:** TELFLEY COMPRESSOR CELL  
**Department/Area:** WC/550  
**Product/Process:** WC/550  
**Team Number:** 2  
**Date:** 10-19-06  
**TAKT Time:**  
**Team Leader:** LINDA YANTZER

<table>
<thead>
<tr>
<th>Measures</th>
<th>Baseline</th>
<th>Target</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Final</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space (Sq. Ft.)</td>
<td>1,161</td>
<td>580</td>
<td>1,161</td>
<td>1,161</td>
<td>1441</td>
<td>280</td>
<td>75%</td>
</tr>
<tr>
<td>Inventory</td>
<td>75</td>
<td>19</td>
<td>229</td>
<td>230</td>
<td>75</td>
<td>7</td>
<td>90%</td>
</tr>
<tr>
<td>Walking Distance</td>
<td>483</td>
<td>242</td>
<td>402</td>
<td>-</td>
<td>-</td>
<td>24</td>
<td>95%</td>
</tr>
<tr>
<td>Parts Travel Distance</td>
<td>321</td>
<td>160</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>20ft</td>
<td>94%</td>
</tr>
<tr>
<td>Lead-time</td>
<td>4.1</td>
<td>1.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1 day</td>
<td>77%</td>
</tr>
<tr>
<td>Quality (# Defects)</td>
<td>12</td>
<td>0</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>0%</td>
</tr>
<tr>
<td>Productivity Gain (# People)</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>3 people 50%</td>
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<tr>
<td>Environmental, Health &amp; Safety (5S)</td>
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<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Set-Up</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>10.32&quot;</td>
<td>7.74&quot;</td>
<td>12.89</td>
<td>12.89</td>
<td>7.40</td>
<td>7.40</td>
<td>29%</td>
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</table>

**Results:**

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*[File path: \Jabba\leanpromol\Public\Forms\Target Progress Report and Results Sheet.doc]*
Lean Results Since 2001
20,000 sq. ft. in floor space cleared
Lean Results Since 2001

PRODUCTION LEAD TIME

WAS 12 DAYS

NOW 4 DAYS!!
RED DOT LEAN JOURNEY

Lean Results Since 2001

Value Added Sales Per Employee

Automotive Industry Average

<table>
<thead>
<tr>
<th>Year</th>
<th>Value Added Sales</th>
</tr>
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<tbody>
<tr>
<td>2000</td>
<td>$95,790</td>
</tr>
<tr>
<td>2001</td>
<td>$100,020</td>
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<tr>
<td>2002</td>
<td>$109,082</td>
</tr>
<tr>
<td>2003</td>
<td>$114,886</td>
</tr>
<tr>
<td>2004</td>
<td>$118,457</td>
</tr>
<tr>
<td>2005</td>
<td>$120,362</td>
</tr>
<tr>
<td>2006 YTD</td>
<td>$132,062</td>
</tr>
<tr>
<td>2006 GOAL</td>
<td>$140,000</td>
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</tbody>
</table>
Lean Results Since 2001

Company Inventory Turns

<table>
<thead>
<tr>
<th>Year</th>
<th>1997</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
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</thead>
<tbody>
<tr>
<td>Value</td>
<td>4.00</td>
<td>4.00</td>
<td>3.00</td>
<td>4.00</td>
<td>6.00</td>
<td>8.00</td>
<td>10.00</td>
<td>2006 Goal 6 turns</td>
</tr>
</tbody>
</table>

Automotive Industry Average

2006 Goal 6 turns
Lean Results Since 2001

ASSET UTILIZATION

World Class Range


$0.00 $1.00 $2.00 $3.00 $4.00 $5.00 $6.00

$3.21 $3.26 $2.69
Lean Results Since 2001

- 20,000 sq. ft. in floor space redeployed (Added 4 assembly lines; totaling 7)
- Inventory Turns Increased 46%
- Productivity (VASPE) up 32%
- Asset Utilization up 95%
- Production Lead time reduced from 12 to 4 days
Lean Lessons

- Use a consultant
- Create a sense of urgency
- Commit “Full Time” Resources
- Demand Management Involvement
- Implement “5S” First
- Anticipate Passive Resistance
  Remove “Concrete Heads”
- It’s A “Never Ending Journey”
  Stay The Course!!
Questions
Thank You
Welcome!