Creating a Visual Management System

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Project Manager
Lean Process Improvement
Three Keys to Lean

1. Create an environment in which the abnormal can be distinguished from the normal.

2. Develop a workforce that knows the right thing to do when they encounter the abnormal.

3. Empower the workforce to do the right thing.

John Shook
Chairman and CEO
Lean Enterprise Institute
What is Visual Management?

In this context, it means the use of visual aids to manage the operation, including schedules, performance tracking, and project status.

Displays Standard versus Actual

It’s a way of communicating to a broad audience in a clear, concise way.

It quickly puts information in the hands of those who can take action.
Standards and Problems

“Without standards there are no problems, only opinions.”

Nate Furuta
Chairman and CEO
Toyota Boshoku
What is a Visual Control?

Any device or symbol that effectively places information at the point of use with few words or none at all.
Why is This Important?

Our brains simply respond better and faster to colors, shapes, patterns, and pictures.
What Do These Mean? (Quick!)

- "قف" (Qaf)
- "ALTO"
- "STOP"
- "ARRÊT"
- "PARE"
- "STOP"
Major Types of Visual Controls

- Information
  *What is this? Where am I? Who works in this area?*

- Instruction
  *What should I do? How do I do it?*

- Status – of a process, a machine, a department, etc.
  *What is happening? What should be happening?*
The Information Gap

- What?
- Where?
- When?
- Who?
- How?
- How Many?

Are these answers obvious as we walk through the facility?
Where Visuals Systems Work

What Is Happening?

- Production
- Safety
- Inventory
- Offices
- Maintenance
- Scheduling

What Should Be Happening?
Visual Management Boards

• Should indicate the status of the process
• Should direct the leadership to areas that need support
• Should indicate the actions or countermeasures that are in process
• Should show normal versus the abnormal, or what is right and what is wrong
The Gemba Walk

A Gemba Walk is designed to allow leaders to:

- Identify existing safety hazards
- Observe machinery and equipment conditions
- Ask about the practiced standards
- Gain knowledge about the work status
- **Build relationships with employees**

The objective of Gemba Walk is to understand the value stream *and its problems*
Visual Schedule

<table>
<thead>
<tr>
<th>Job</th>
<th>Description</th>
<th>Start Date</th>
<th>Due/Time</th>
<th>Pay</th>
<th>Time</th>
<th>Due/Time</th>
<th>1% Complete</th>
<th>2% Complete</th>
<th>4% Complete</th>
<th>Pay</th>
<th>Time</th>
<th>Due/Time</th>
<th>1% Complete</th>
<th>2% Complete</th>
<th>4% Complete</th>
<th>Pay</th>
<th>Time</th>
<th>Due/Time</th>
<th>1% Complete</th>
<th>2% Complete</th>
<th>4% Complete</th>
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<tr>
<td>JCN</td>
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<td>20 Sept</td>
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<td>23 Sept</td>
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</tbody>
</table>
Visual Management

**Scrap**
- Date: 08/22
- Goal: 5.9%
- Actual: 5.5%

**Downtime**
- Date: 08/22
- Goal: 82.9%
- Actual: 85.9%

**MTD Cost**
- Process: $35.6
- Write Off: 0
- Total: $35.6

**MTD Cost**
- Process: 8.0
- Duration: 2.9
- Total: 10.9
## Facilities Maintenance

### Facilities Maintenance Work Center

<table>
<thead>
<tr>
<th>Tommy Fountain</th>
<th>Billy Fountain</th>
<th>Nelson Hall</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Requested Work Orders</strong></td>
<td><strong>Requested Work Orders</strong></td>
<td><strong>Requested Work Orders</strong></td>
</tr>
<tr>
<td>Level 4 PM Work Orders</td>
<td>Level 4 PM Work Orders</td>
<td>Level 4 PM Work Orders</td>
</tr>
<tr>
<td>Level 3, 5 Routine/Project Work Orders</td>
<td>Level 3, 5 Routine/Project Work Orders</td>
<td>Level 3, 5 Routine/Project Work Orders</td>
</tr>
<tr>
<td>Completed Work Orders</td>
<td>Completed Work Orders</td>
<td>Completed Work Orders</td>
</tr>
<tr>
<td><strong>Capital Projects / Audit Findings</strong></td>
<td><strong>Overhauls &amp; Fabrication Equipment</strong></td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td>Status</td>
<td>ECD</td>
</tr>
<tr>
<td>REBUILD SPARE FUEL PUMP</td>
<td>PARTS ORDERED</td>
<td>1/15/10</td>
</tr>
<tr>
<td>REPLACE WELL PUMP</td>
<td>HOLD</td>
<td>Q3 FY10</td>
</tr>
<tr>
<td>INSTALL 4560 BUSH W/ EHSV</td>
<td>PARTS ORDERED</td>
<td>1/23/10</td>
</tr>
<tr>
<td>REVIEW ACCESS TO CHIMNEY STORAGE BLDG W/SK</td>
<td>GATHERING DATA FOR CURRENT SAV</td>
<td>2/15/10</td>
</tr>
<tr>
<td>CONNECT FILTER SEED TO RED OIL</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>REPLACE PUMP ROOM QUOTES</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>AEROSPACE RTR</td>
<td>UPDATE HAP SPREADSHEET</td>
<td>Q3 FY10</td>
</tr>
</tbody>
</table>
Inventory Control
Hour by Hour Chart
1. Space Shuttle is used to monitor individual performance (one for each bench).
2. Fuel Cell is brought to the bench when retrieving the shop order from the scheduling board.
3. Fuel Cell is posted on the back side of the Space Shuttle board while working on electrical box (work in process).
4. Once the electrical box is complete the operator removes and posts the Fuel Cell onto the Space Shuttle.
Visual Production Displays

Each workstation displays current cycle time and overall production status.

Current unit is within cycle time and production is ahead of where it should be at this time of day.

- Current unit OK
- Production behind

Current unit behind
- Production on schedule
Scrap by Team

This board indicates daily scrap generation by team as a percent of total production.

It is color coded red or green against the standard goal percentage.

It is updated daily and serves as a gentle reminder for teams “in the red”.

These numbers also provide a source of positive recognition for team performance.

The lower portion tracks monthly data and scrap savings.
Visual Management - Events
Visual Management – IT Projects
Drive-by Visual Management

REPORTABLE INJURIES
0

SAFETY THEME of the MONTH

BROSNAN YARD

MECHANICAL DEPARTMENT

DAYS WITHOUT REPORTABLE INJURY

RECOGNIZE YARD HAZARDS

NORFOLK SOUTHERN

LOST TIME INJURIES

SAFETY FOCUS of the WEEK

STAY FOCUSED DURING PRE & POST VACATION
Implementation Questions

• What should you be tracking?
  SQDC / Project Status / Kaizen Activity

• What is happening? What should be happening? How do we close the gap?
  Standard vs. Actual

• What is the benefit of making it visual?

• How should you display the information?
  Manual or Electronic

• What will you do with this information?

• How will the information be shared?
  Team Huddles / Gemba Walks
Visual Management at Home

Silverware Chart

Garrett
Greyson

Garrett
Greyson

Garrett
Greyson

Garrett
Greyson
Are You Hydrated?
Take the Urine Color Test

Purpose:
- With normal kidney function, your level of hydration is indicated by the color of your urine. Some vitamins and supplements may cause a darkening of the urine unrelated to dehydration.
- Since heat-related illness often follows dehydration, this simple tool will help protect your health.
- Dehydration also increases your risk for kidney stones.

How does it work?
- Match your urine color to closest color in the chart and read the hydration level on the chart.

Water Consumption Table

Prevent Dehydration:
- No amount of training or acclimatization can reduce the body’s requirement for water.
- Follow the water consumption guidelines in the water consumption table.

WATER CONSUMPTION TABLE

<table>
<thead>
<tr>
<th>Activity</th>
<th>Water Intake (oz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>50-64</td>
</tr>
<tr>
<td>Medium</td>
<td>64-70</td>
</tr>
<tr>
<td>Heavy</td>
<td>70-80</td>
</tr>
<tr>
<td>Extreme</td>
<td>80-90</td>
</tr>
</tbody>
</table>

Urine Color Chart
- Optimal
- Well Hydrated
- Hydrated
- Dehydrated

DEHYDRATED: You need to drink more water.

WATER CONSUMPTION GUIDELINES
- Light Activity: 50-64 oz
- Medium Activity: 64-70 oz
- Heavy Activity: 70-80 oz
- Extreme Activity: 80-90 oz

This chart is for general use.
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