Why Pursue Continuous Improvement?

"If you always do
what you've always done,
You'll always get,
what you've always got."

Continuous Improvement

It's a Journey…

Not a Destination

Continually Improve CI

Secret to an Effective Continuous Improvement Program

CULTURE

"Values Used To Make Decisions"

Culture:

What you do when nobody is looking …

Keys To Culture

- Management Must Lead - Model Behavior
- Employees Must Have Ownership - Gain Sharing
- Tools – Simple & Standardized / Always Improving
- Training - Problem Solving & Leadership
- Theme - Gives culture a “face”

Three Stages of Culture

Continuous Improvement

Stage 1: "The company is responsible"

Stage 2: "I am responsible"

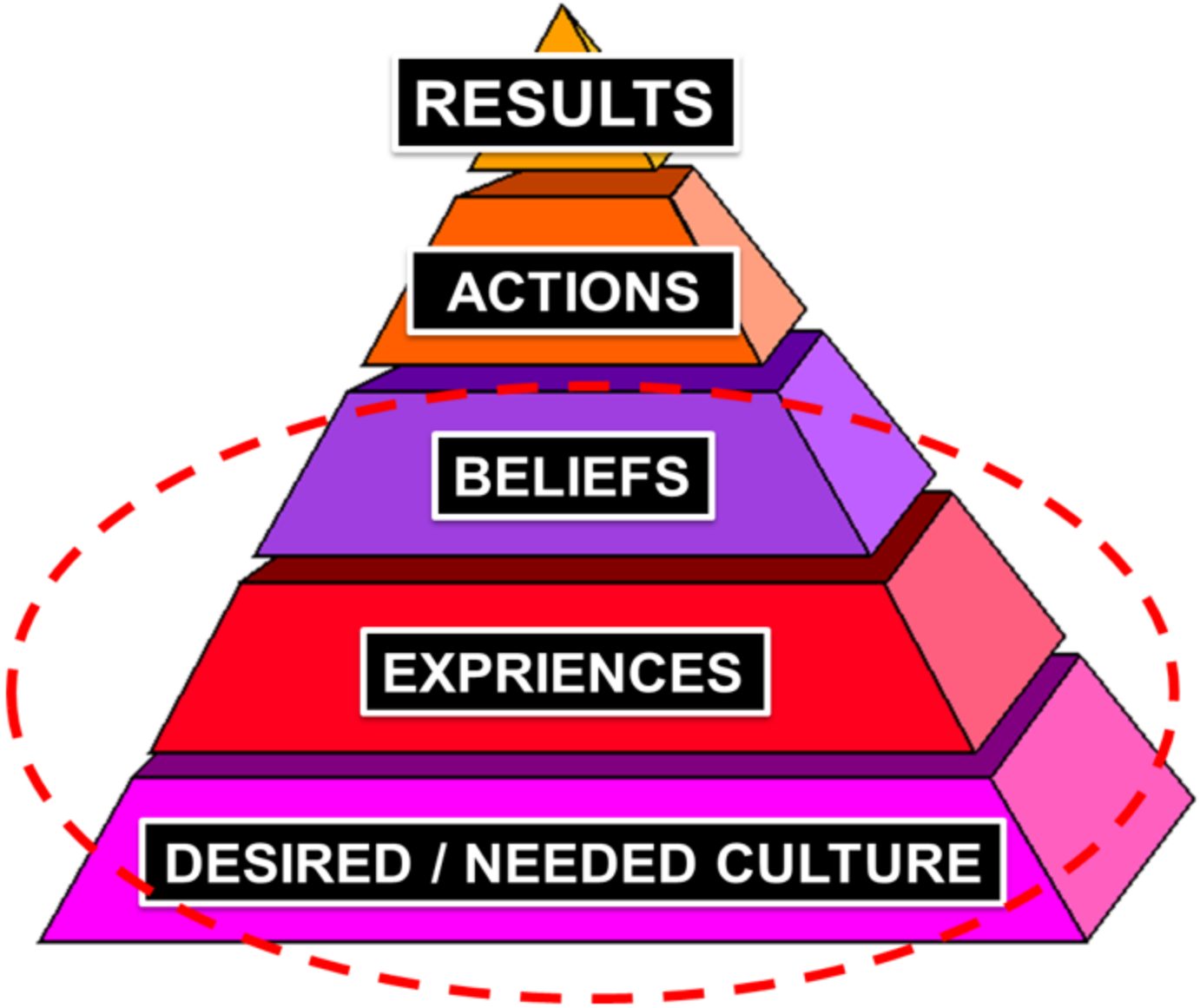
Stage 3: "I am responsible for my fellow team member"

THE ACCOUNTABILITY LADDER... *LEAN BEGINS WITH YOU*

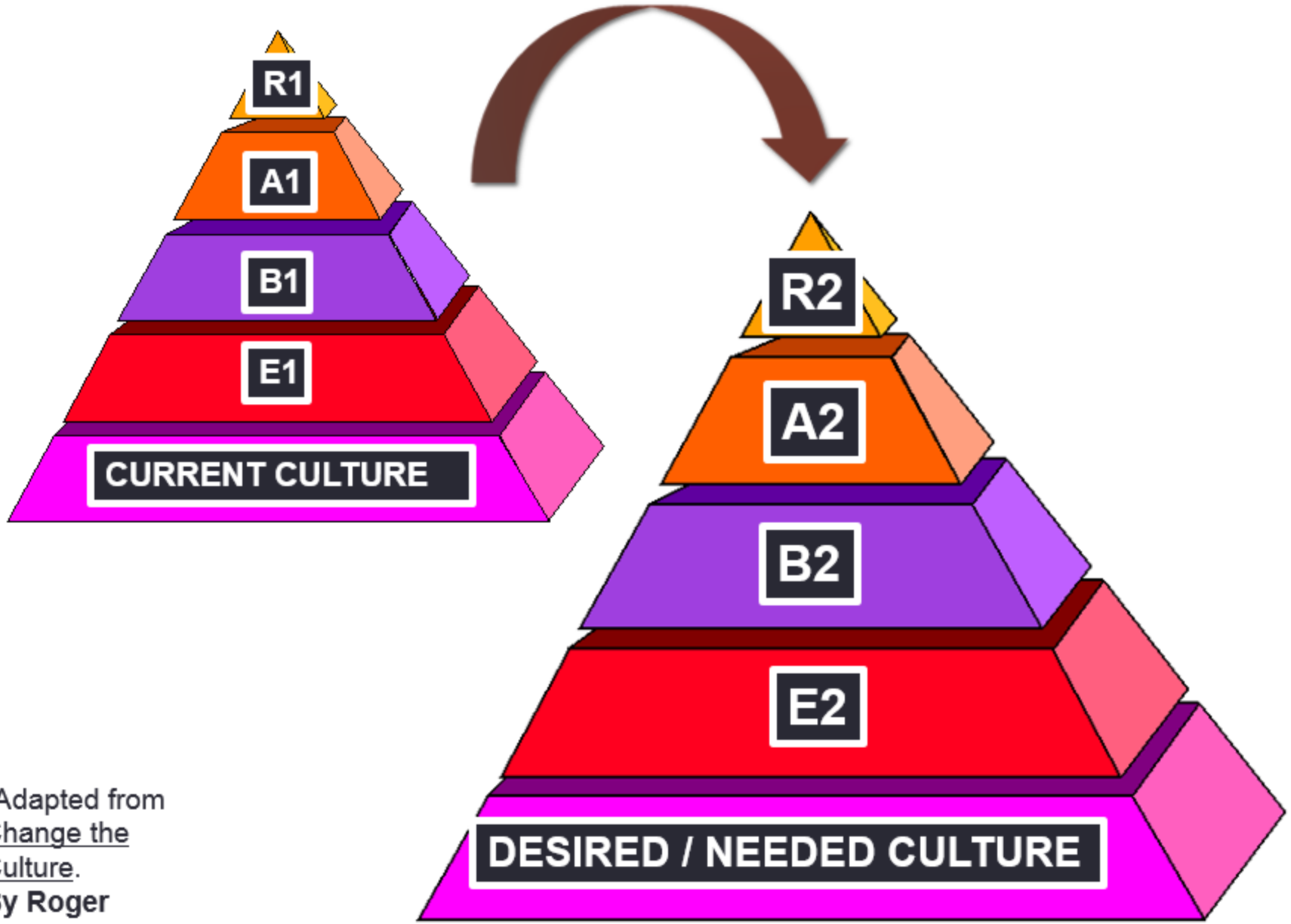
"We are what we repeatedly do. Excellence then, is not an act, but a habit."

– **Aristotle**

Bulding blocks of culture



*Adapted from Change the Culture. **By Roger Connors & Tom Smith**



*Adapted from Change the Culture.
By Roger Connors & Tom Smith

Continuous Improvement Culture

Theme

Gives Culture a Face

Oz Principle

Courage

See It

Heart

Own It

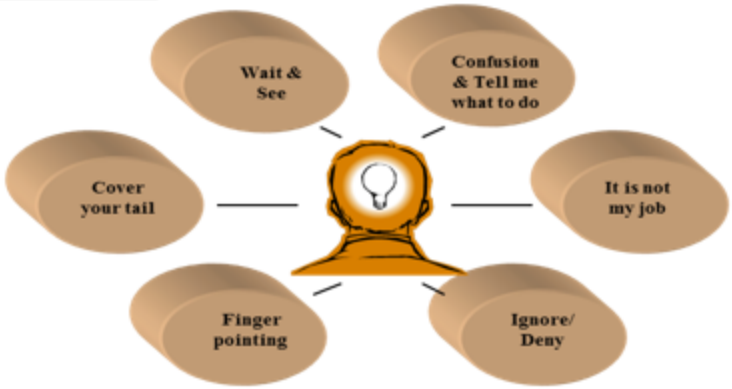
Brain

Solve It

Action

Execute

THE LINE



*Adapted from *The Oz Principle*, by Roger Connors

Continuous Improvement Rules

1. Everyone participates
2. Prominent – 2nd only to safety and quality
3. Training:
   - Most Important Thing We Do & Worst Thing We Do
4. Must continuously improve CI:
   - Sustain the Journey
5. Manufacturers do two things:
   - Launch New Products & CI

CI System

Four Elements

1. Continuous Improvement Teams
2. Kaizen Events
3. Performance Focused Training
4. Lean Strategies

Launching the system

Teams

- CI Teams (Both Manufacturing and Office)
- Audited Quarterly by Staff
- Continuous Improvement based on metrics that impact EBIT (Root Cause-Corrective Action)

Continuous Improvement Teams

3 Type of Teams

1. Production
2. Support
3. Office

Meet twice per month.

Rewards granted quarterly

*Best Team

*Best Project Award

Key Elements

- Team Mission (one sentence)
- Process Map (road map to identify problems)
- Metrics (measurable, impact profit)
- Root Cause-Corrective Action (problem solving)
- Projects (CI versus 5S)
- Meeting Minutes (guide team actions)
- Benchmarking (1 per quarter)
- Audit Report (measure effectiveness – feedback)

All teams have a CI Board that displays:

TEAM MISSION

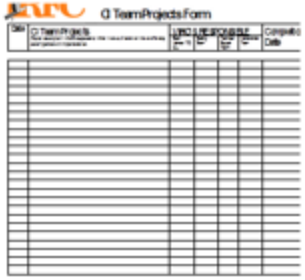
Your Mission Posted Here

PROCESS MAP

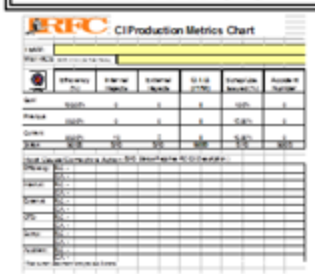
Your Process Map Posted Here

REPORT CARDS

CI/ 5S PROJECTS



TEAM METRICS



TEAM MINUTES

Your Meeting Minutes Posted Here

TEAM BENCHMARK

Your Benchmarking Project Posted Here

TEAM RC/CA

Your RC/CA Posted Here

All teams have a CI Board that displays:

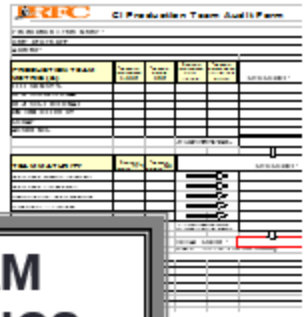
TEAM MISSION

Your Mission Posted Here.

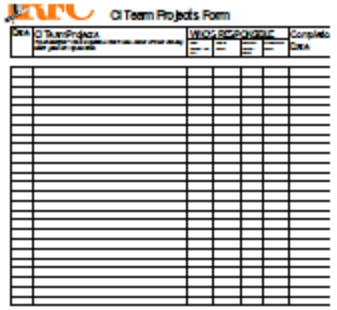
PROCESS MAP

Your Process Map Posted Here.

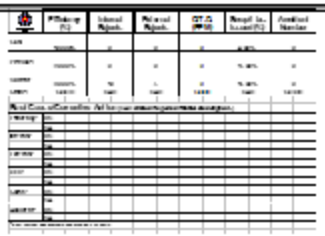
REPORT CARDS



CI/ 5S PROJECTS



TEAM METRICS



ROOT CAUSE/CORRECTIVE ACTION EVIDENCE

EFFICIENCY	INTERNAL PPM	EXTERNAL PPM	SCRAP	ACCIDENTS

CI Production Metrics Chart

TEAM: Roll Mill Team

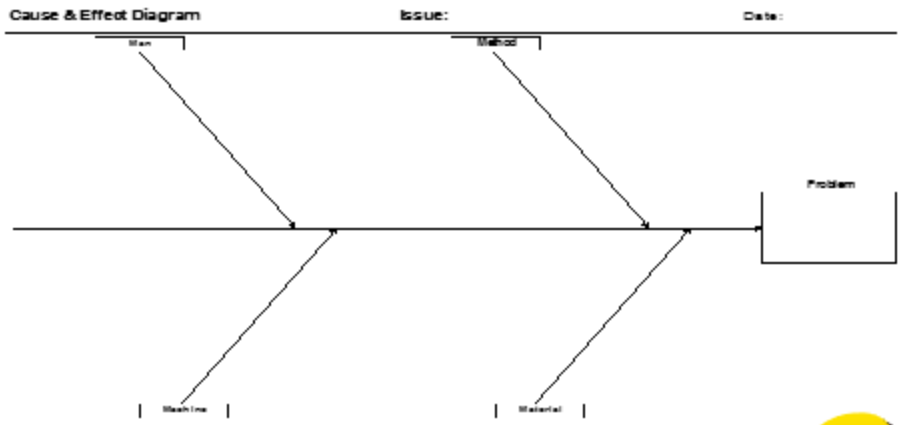
METRICS: Months or Quarter — July, August, September

	Efficiency (%)	Internal Rejects	External Rejects	O.T.D. (PPM)	Scrap/Lbs. Issued (%)	Accident Number	
Average or Total Previous Qtr	84.69%					0	
Month 1	78%					0	
Month 2	85%					0	
Month 3	94%					1	
Average or Total Current Qtr	85.66%					1	
Status: based on Qtr totals	GOOD					BAD	

CI Team Meeting Minutes

	1st Meeting Date:		2nd Meeting Date:
	Time Began: _____ Time Ended: _____ Attendees: Absent:		Time Began: _____ Time Ended: _____ Attendees: Absent:
REVIEW LAST MTG MINUTES			
REVIEW METRICS	**Report Current Results** **Month: _____**	**OK/ Not OK (Attach form/s for RC/CA)**	**Follow-up RC/CA**
Efficiency (%)		☐OK ☐Not OK	
Internal Rejects (PPM)		☐OK ☐Not OK Internal Reject Ticket	
External Rejects (PPM)		☐OK ☐Not OK Customer Complaint & 8 Step	
Scrap/Lbs. Issued (%)		☐OK ☐Not OK	
Accidents		☐OK ☐Not OK	
Other:		☐OK ☐Not OK	

PROBLEM SOLVING ACTION LIST			
ACTION	RESPONSIBLE	DUE DATE	DATE COMPLETE



RFC voestalpine ONE STEP AHEAD.

ROLLFORMING 8 STEP CONTINUOUS IMPROVEMENT

ROOT CAUSE/CORRECTIVE ACTION FORM

1. **Describe or sketch the problem**

   What are the symptoms of the problem? Specify the problems by identifying in quantifiable terms of what, when, where, why, how, how many, and trends.

2. **Risk on similar products or processes**

   Identify any potential problem that may be introduced to additional products or processes as a result of the original problem (example: broken gage, equipment failure.)

3. **Containment actions**

   Define and implement containment actions to isolate the problem from any internal/external customer until permanent correction action is implemented. (example: quarantine product, audits)

4. **Root Cause of Non-conformance.**

   a. What are the most likely causes? Identify the top two potential causes to determine the root cause of the problem using the cause and effect tools provided with 8D PSD. (fish bone, 5 why's,)

   b. If applicable, repeat process above to determine why the defect was not detected before being introduced to an internal or external customer. There will be root causes for not detecting the problem independent of the actual problem causes.

5. **Ideas for Corrective Action**

   Have the team brainstorm and determine the best corrective actions that will resolve the problem without causing undesirable side effects. Corrective actions need to be specific to the actual problem being investigated. Lessons learned will address company wide changes to prevent similar problems in other areas.

6. **Corrective action plan**

   Once ideas are in place define and implement the best permanent corrective actions. Monitor and evaluate long-term effects and assign individual tasks with targeted completion dates.

7. **Effectiveness of action plan**

   Validate that the corrective action has been effective with charts, periods of time or repeatable test results. Provide documented test results showing how you have eliminated the potential for the reoccurrence.

8. **Lessons Learned**

   Take a moment to look back at the problem. What lessons can be le[illegible] to be made to ensure that this and similar prob[illegible] maintenance, people and t[illegible]

RC/CA Form

TEAM NAME:	TEAM LEADER: TEAM MEMBERS:	DATE INTIATED: TARGET CLOSE DATE: ACTUAL CLOSE DATE: DATE VERIFIED:

1. Describe or sketch the problem in detail

What is the defect?

Where did it happen?

When was it discovered?

How big is the problem? (Quantify in pieces, dollars, etc)

Is this a recurrence?

2. Risk on similar products and processes

3. Contain

4. Investigate and diagnose root cause (use fishbone on backside if appropriate)

4a. Top 2 most likely causes of non-conformance

1._____ 2._____

Why?	Why?
Why?	Why?
Why?	Why?
Why?	Why?
Why?	Why?

4b. Top 2 most likely causes of non-detection (if applicable)

1._____ 2._____

Why?	Why?
Why?	Why?
Why?	Why?
Why?	Why?
Why?	Why?

5. List / Select Corrective Action

5a. (Relates to 4a.)

1.

3.

6. Implement permanent corrective action plan - complete problem solving action list on backside

6a.

6b.

7 Prevention/Verification: Demonstrate effectives of action plan-tracking chart, time study, process flow chart, control plan, print, gage, supplier follow up:

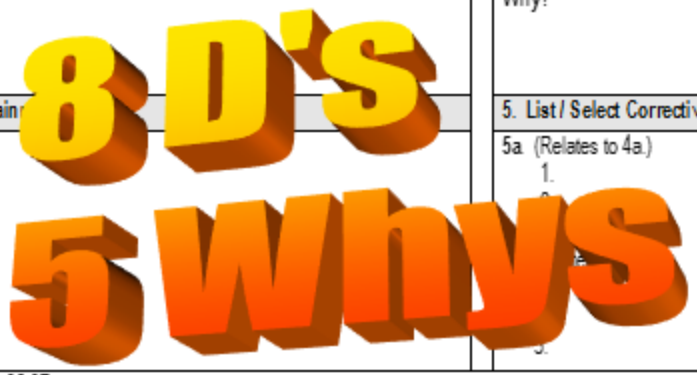
Ask the following question for verification:
If we *(chosen corrective action from step 5)*, we will not have *(problem from step 1)*, because of *(root cause from step 4)*

8 Team Recognition/ Lessons learned

A. Date/ Method of Team Recognition:

B. Lessons learned and how shared:

1.
2.
3.



RFC/0721-02/07

CI Team Projects Form

CI Project Date Began:	**CI Team Projects** *Project description - Who is responsible, When it is due, $ dollar or time or efficiency benefit gained with implementation.*	**WHO'S RESPONSIBLE**				**Team Name:**	
		Team Member / T.C.G.L.	Tooling Team	Technical Support Team	Maint. Team	Date Complete	Cost Savings Generated

*Segregate 5S

Kaizen Events

Kaizen

- 1- 3 Day Continuous Improvement Activity
- Include customers and suppliers

Goals

- Find and correct safety issues
- Analyze processes and waste sources
- Generate current and future improvement ideas
- Decrease scrap, increase efficiency

Results

- Efficient Work Cell
- Dramatic productivity and cost improvements

Performance Focused Training

- CI Orientation (STEPS)
- Technical
- Leadership Academy
- Team Building Academy
- Lean Model Line Instruction
- Standard Work

CI Orientation Training

24 hours in 6 courses on Lean Manufacturing, Teaming, Manufacturing Tactics, and Introduction to Six Sigma

Problem solving training for participation in CI program

Technical Training Programs Pay for Skill Positions:

1. Roll Operator Training
   - Trainee
   - Apprentice
   - Qualified
   - Certified
   - Master
2. Tool & Die Makers – Levels 1-4
3. Quality Technicians – Levels 1-3

Leadership Academy

- 1 Year Program
- 12 Basic Leadership Principles
- New Team Coordinators / Group Leaders
- Theme – "*The Line*"
- Mentorship

Teambuilding Academy

- 5 Month Program
- Focused on communication & teambuilding skills
- People responsible for RFC Project implementation

- *Sales, Customer Service, Project Engineer, Support*

- 5 Basic Teamwork Principles
- Theme – ***"Working Through Conflict"***

Lean Journey Transition

1. Learned from industry leading customers the VALUE of Standardized Work and Model Line concepts.
2. Engaged TSSC (Toyota) to guide the development and implementation of the RFC Lean System
3. The RFC Lean System provides transformation to:

- Nerve Center
  - Floor Focus
  - Timely ID of Issues
  - Accountability
  - Integration of Traditional CI
- Model Line(s)
  - Leverage Best Ideas – Test Strategies
  - Gold Standard – Display Lean Strategies

Nerve Center Meetings
Management and Resource Providers meet Mon – Thurs. In 30 minutes attendees work through the AGENDA and document the data on KPI Charts.

Nerve Center Agenda

TOPIC	FACILITATOR
30 Minutes	*Plant Mgr. if GL is absent.*
1. Attendance - *Accountability Board*	Group Leader
2. Safety 'Find & Fix' – Open Concerns	Group Leader
3. Quality – Open Concerns	Group Leader
4. HR by HR Chart(s) – Open Concerns	Team Coordinator(s) *- Review Charts*
• **KPI's - Daily** • **KPI's - Quarterly**	Group Leader *- Chart Data from HR by HR Charts*
5. Accountability Board	Group Leader *- Discuss & Post Assignments*
6. Review Project Timelines: **a. 'Active' Projects** **b. 'Active' Kaizen** **c. 'Active' CI – (Efficiency/$ Saving)**	Group Leader
7. Adjourn	All

RFC Hour-by-Hour

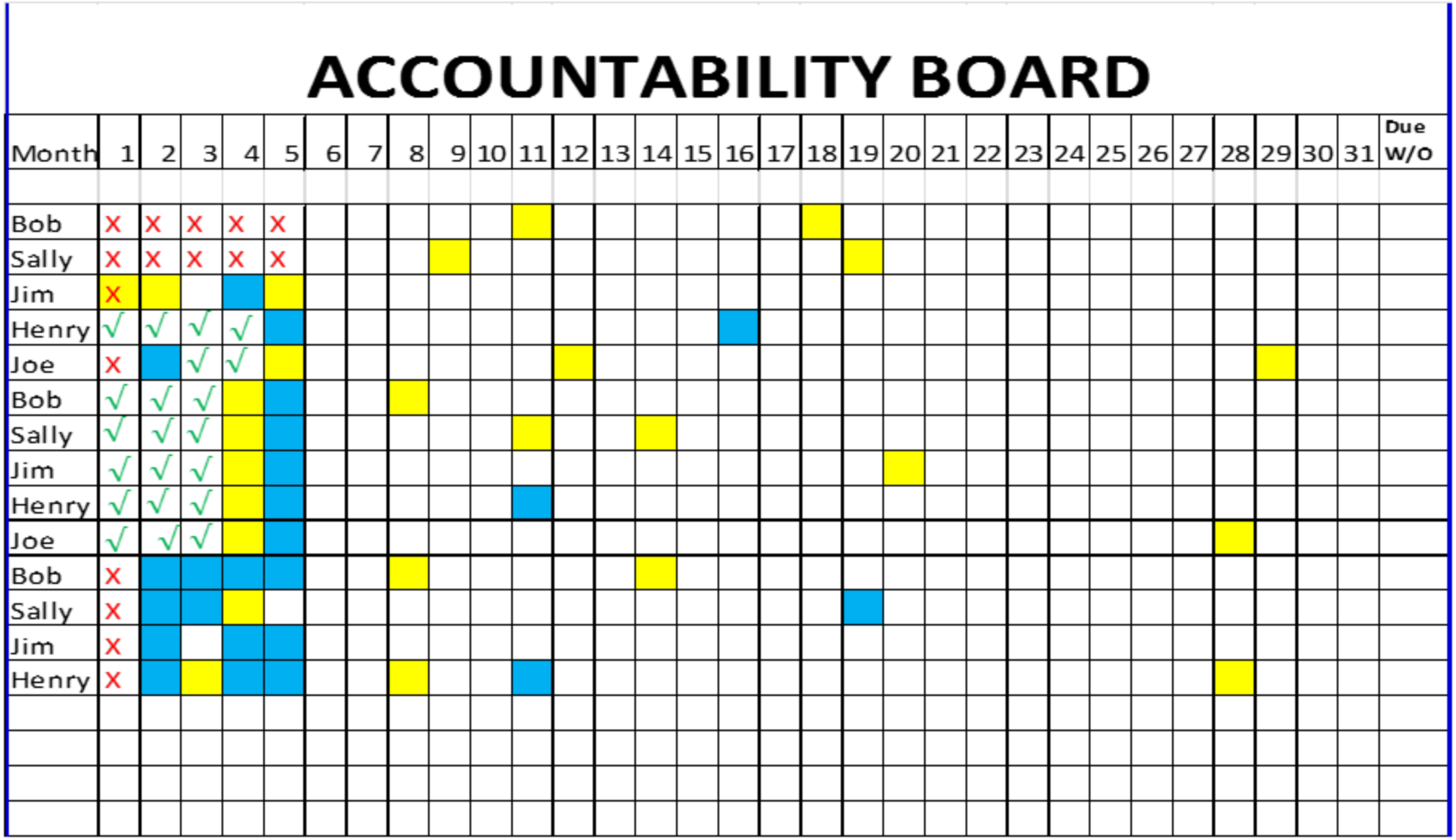
Work Station _____ **Operator 1st shift** _____

Date: **Operator 2nd shift**

Time	Job Number	Std. Pcs./Hr.	Act. Pcs./Hr.	Eff. %	MIP SPC	L.C.	C.C.	Mtg	Comments / Concerns / Issues
05:00 AM - 06:00 AM									
06:00 AM - 07:00 AM									
07:00 AM - 08:00 AM									
08:00 AM - 09:00 AM									
09:00 AM - 10:00 AM									10 Minute Break
10:00 AM - 11:00 AM									
11:00 AM - 11:30 AM									Lunch
11:30 AM - 12:30 PM									
12:30 PM - 1:30 PM									
1:30 PM - 2:30 PM									10 Minute Break
2:30 PM - 3:30 PM									
First Shift Total									
3:30 PM - 4:30 PM									
4:30 PM - 5:30 PM									
5:30 PM -									

HOUR – BY – HOUR CHARTS

Data Drives TASKS / RESOURCES



TASKS are defined as value adding activities that one resource can quickly complete or guide/manage to completion.

What does a NERVE CENTER look like?

Team Identity
Team Name
Roster & Photo Form

DATA

KPI BOARD

PROJECT BOARD

ACCOUNTABILITY BOARD

Sustain Improvements

1. **Nerve Centers**: Metrics and Accountability
2. **ANDON:** Signal Problems "Immediately"
3. **Hour-by-Hour Charts**: Engage the Producer
4. **Standard Work for All Positions**:
   - Operator
   - Team Coordinator
   - Group Leader
   - Plant Manager
   - COO

Sample

RFC

GROUP LEADER - PRODUCTION

✓	**Name:**	
	Daily 2X	Audit Hr by Hr Boards
	Daily	Audit Report's STWK Work
	Daily	Schedule Manpower
	Daily	Audit Kronos
	Daily	Audit Visual
	Daily	Accountability Meeting
	Wkly. 1X	Safety Inspection Check List
	Wkly. 1X	Gemba - Facility
	Wkly. 1X	Gemba - Model Line(s)
	As Req.	Morning Production Meeting
	As Req.	Submit Resource Request(s)
	As Req.	Kaizen Action Item(s) - Closure

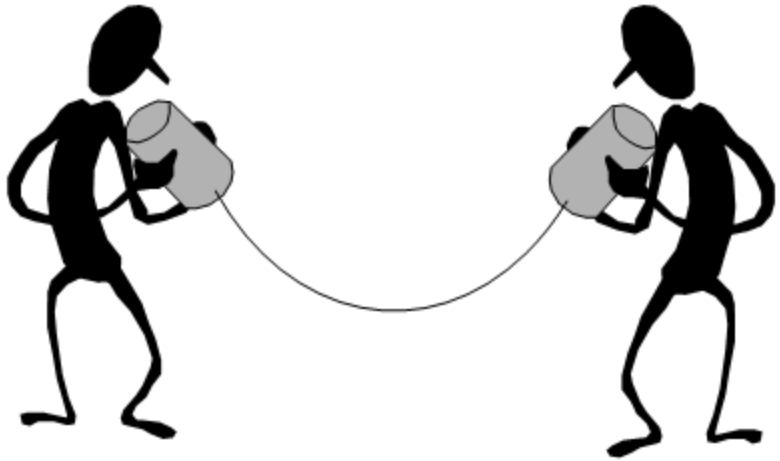
Circle Today: M T W TH F

CI Lean Policy and Procedures on the OPERATIONS Side

CI Team Meetings:

CI Production Teams meet two (2) times a Month for a total of six (6) times per Quarter.

FIRST MEETING: Project Meeting – 30 Minutes
SECOND MEETING: Metrics Meeting – 30 Minutes



Lean Production Team Meetings
Management and Team Members meet 2X's per month (6X's per quarter). In 30 minutes attendees work through the AGENDA focusing their problem solving on Projects and or Metrics Data to effectively identify value adding project work.

LEAN PRODUCTION TEAM
MEETING AGENDA

TOPIC	FACILITATOR
30 Minute Meeting – 2X Per Month	*Plant Mgr. if GL or TC is absent.*

VERIFY Team ROSTER - *Correct if necessary.*

1st Project Meeting

1. Use **Project Meeting Form#** – Describe the Project, Who is Accountable, Due Date(s) and Value **Annual $ Savings**.
2. Study, discuss and brainstorm the KPI Charts in the Nerve Center to **"SEE"** where project work will add value.
3. Use **Project Description Form#,** post on the Lean Team Project Board located in the Nerve Ctr.
4. **6S PROJECT** – Each QTR the team is required to complete a **6S Project** – Post Before and After Photo evidence on the **PROJECT BOARD** located in the Nerve Center.

2nd Metrics Meeting

1. Use **Metrics Meeting Form#** - Discuss the updated current month metrics – Improved or Not Improved over the Previous Qtr. Avg.?
2. **METRICS NOT IMPROVED** – Team discussion of RC/CA – Provide evidence of RC/CA, attach 8D or other evidence of action to the Metrics Meeting Form. **IMPROVED** – Share ideas and best practices with group.
3. **BENCHMARKING LESSONS LEARNED** – Each QTR the team is required to evaluate, discuss and implement one (1) lean lesson 'benchmarked' from a source outside the team. Document lesson at the bottom of the **Metrics Meeting Form#**.

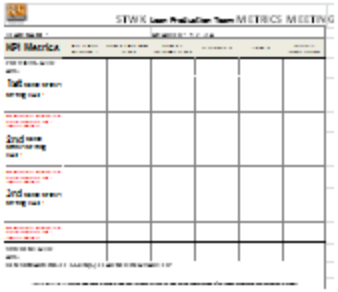
Adjourn

CI Production Team STWK

1 Team Roster/Photo

1 Project Meeting Form

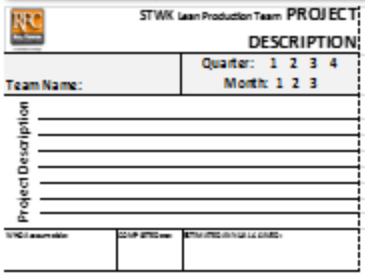
1 Metrics Meeting Form



8D (As required)

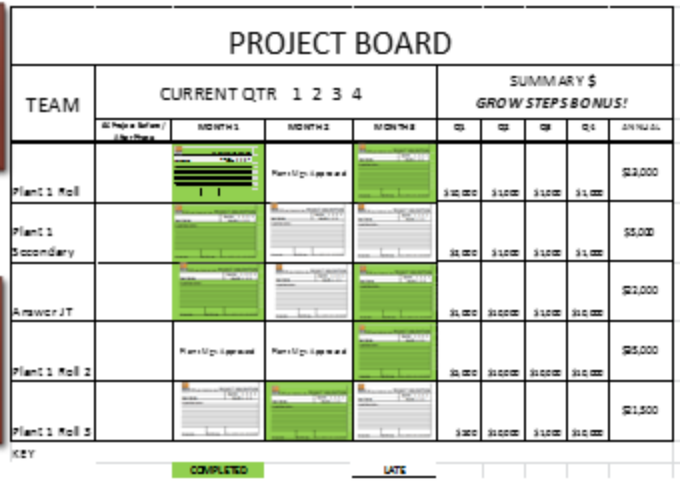
1 Previous Audit – By Staff

Project Description Form



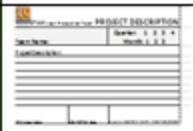
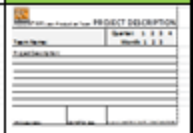
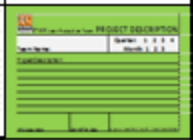
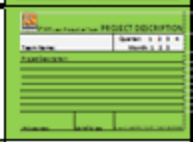
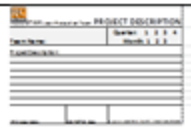
1 Project 6S Per Quarter - Before/After Photo

3 Projects Per Quarter - Est. Annual $



PROJECT BOARD Replaces Project List

PROJECT BOARD

TEAM	CURRENT QTR 1 2 3 4				SUMMARY $ *GROW STEPS BONUS!*				
	65 Project Before / After Photo	MONTH 1	MONTH 2	MONTH 3	Q1	Q2	Q3	Q4	ANNUAL
Plant 1 Roll			Plant Mgr. Approved		$10,000	$1,000	$1,000	$1,000	$13,000
Plant 1 Secondary					$2,000	$1,000	$1,000	$1,000	$5,000
Answer JT					$1,000	$10,000	$1,000	$10,000	$22,000
Plant 1 Roll 2		Plant Mgr. Approved	Plant Mgr. Approved		$5,000	$10,000	$10,000	$10,000	$35,000
Plant 1 Roll 3					$500	$10,000	$1,000	$10,000	$21,500

KEY

COMPLETED

LATE

STWK Lean Production Team Forms TEMPLATE

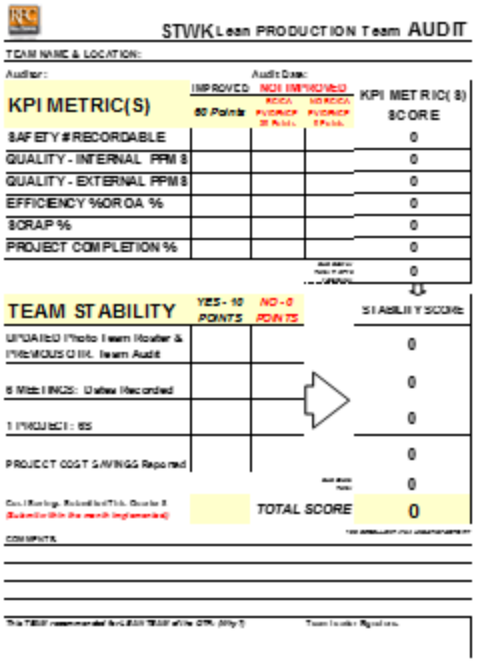
Lean PRODUCTION TEAM PACKET

CONTENTS

STWK Lean Production Team ROSTER

Aerospace Check/Straighten Position Wednesday - 2nd & 4th

Marilyn Greenwell	Team Feasibility: 1:00PM - 3:10PM
Ken Lewis	Operator
BJ Cornell	Operator
Jon-Dy Rebello	Shipping/Receiving
Eric Ward	Engineer
Bill Regan	Operator
Sharon Stanton	Quality
Melissa Mills	Customer Service
Gary Hopkins	Quality



STWK Lean PRODUCTION Team AUDIT

TEAM NAME & LOCATION:

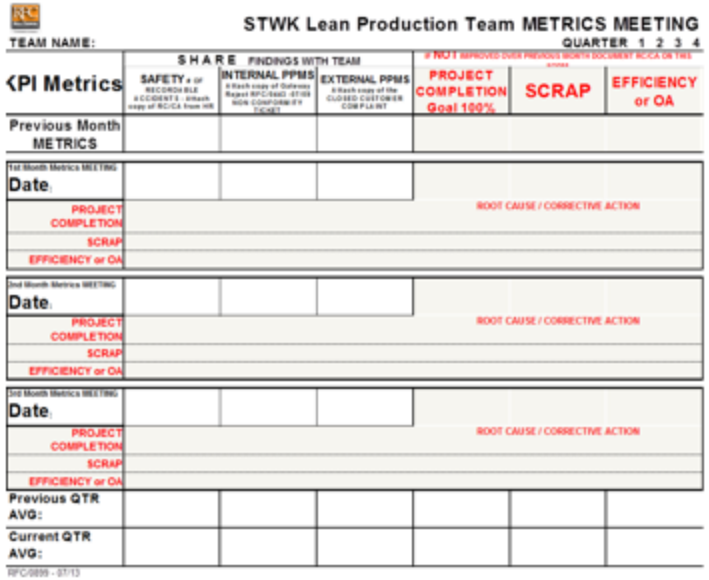
Auditor: Audit Date:

KPI METRIC(S)	IMPROVED 50 Points	NOT IMPROVED NO RCCA PUSHUP 25 Pnts.	NO RCCA PUSHUP 5 Pnts.	KPI METRIC(S) SCORE
SAFETY # RECORDABLE				0
QUALITY - INTERNAL PPM S				0
QUALITY - EXTERNAL PPM S				0
EFFICIENCY %OR OA %				0
SCRAP %				0
PROJECT COMPLETION %				0
				0

TEAM STABILITY	YES - 10 POINTS	NO - 0 POINTS	STABILITY SCORE
UPDATED Photo Team Roster & PREVIOUS QIR Team Audit			0
6 Mtg LINKS: Dates Recorded			0
1 PROJECT: 6S			0
PROJECT COST SAVINGS Reported			0
			0
Cost Savings Related To This Quarter $ (Submit QIR the month implemented)		TOTAL SCORE	0

COMMENTS:

This TEAM recommended for/AGAIN TEAM of the QTR. (Why?) Team Leader Signature:



STWK Lean Production Team METRICS MEETING

TEAM NAME: QUARTER 1 2 3 4

KPI Metrics	SHARE FINDINGS WITH TEAM: SAFETY # OF RECORDABLE ACCIDENTS - Attach copy of RCCA from HR	INTERNAL PPMS Attach copy of Defense Report RFC-SMO -07-08 NON-CONFORMITY TICKET	EXTERNAL PPMS Attach copy of the CLOSED CUSTOMER COMPLAINT	PROJECT COMPLETION Goal 100%	SCRAP	EFFICIENCY or OA
Previous Month METRICS						
1st Month Metrics MEETING Date:				ROOT CAUSE / CORRECTIVE ACTION		
PROJECT COMPLETION						
SCRAP						
EFFICIENCY or OA						
2nd Month Metrics MEETING Date:				ROOT CAUSE / CORRECTIVE ACTION		
PROJECT COMPLETION						
SCRAP						
EFFICIENCY or OA						
3rd Month Metrics MEETING Date:				ROOT CAUSE / CORRECTIVE ACTION		
PROJECT COMPLETION						
SCRAP						
EFFICIENCY or OA						
Previous QTR AVG:						
Current QTR AVG:						

RFC-0009 - 07/13

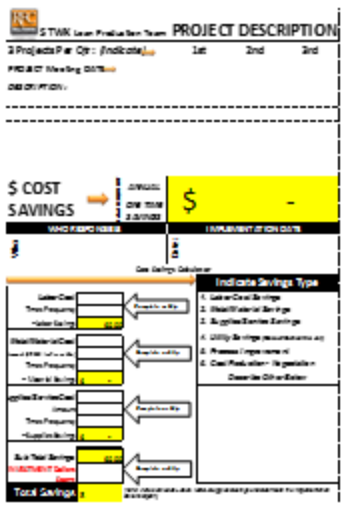
1 2 3

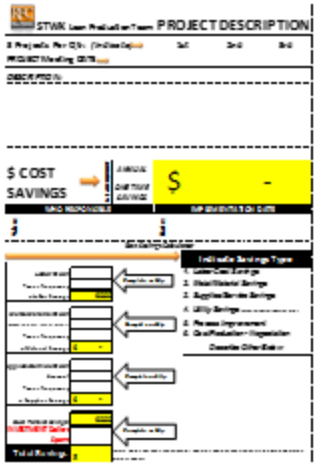
STWK Lean Production Team Forms TEMPLATE

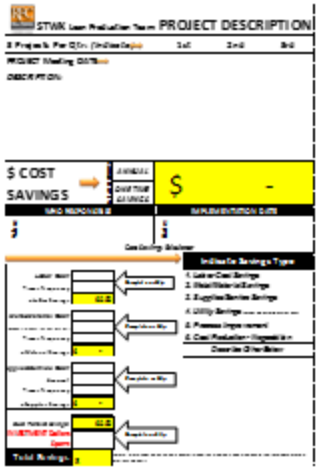
Lean PRODUCTION TEAM PROJECT BOARD

POSTING

4

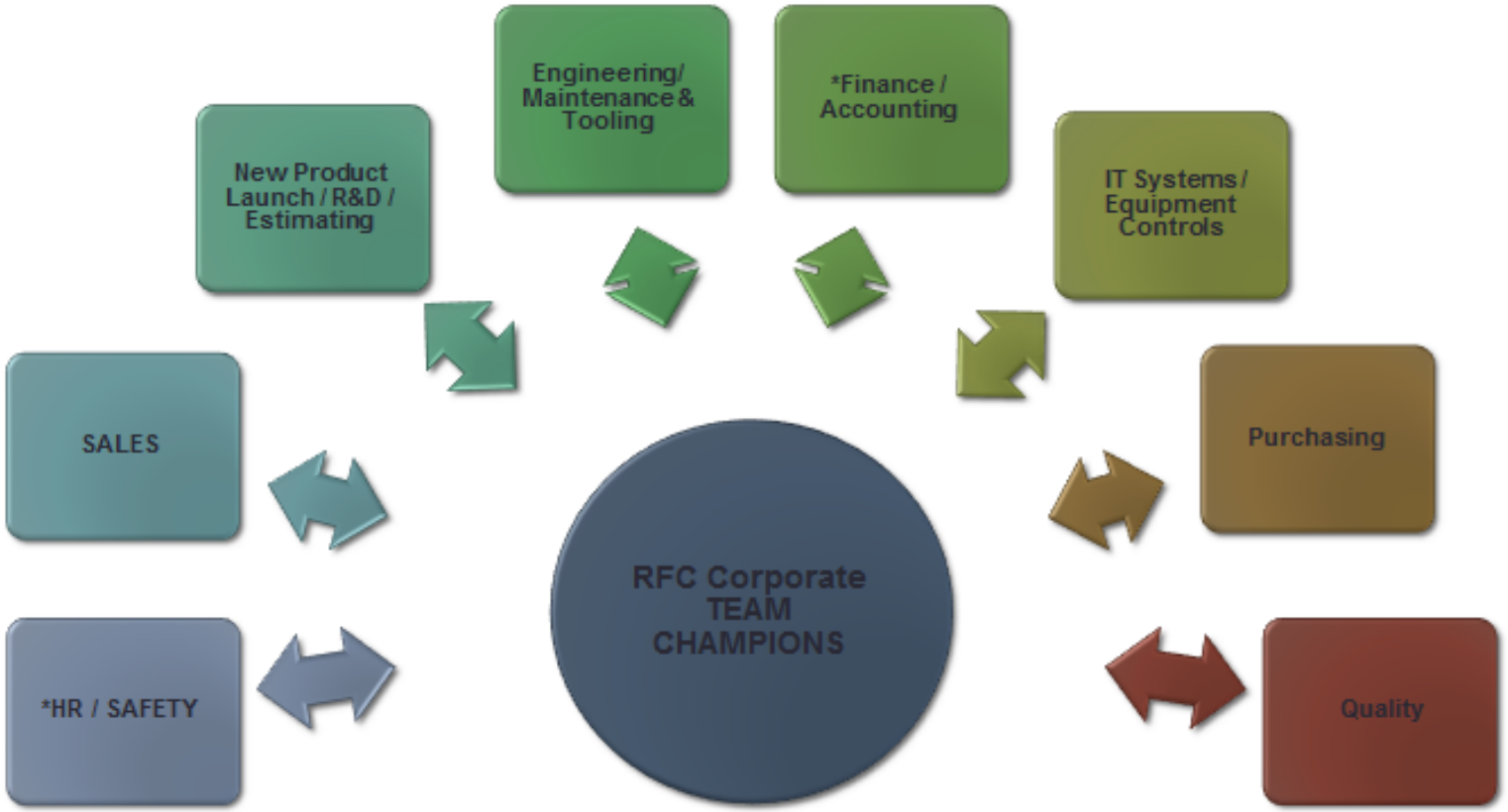






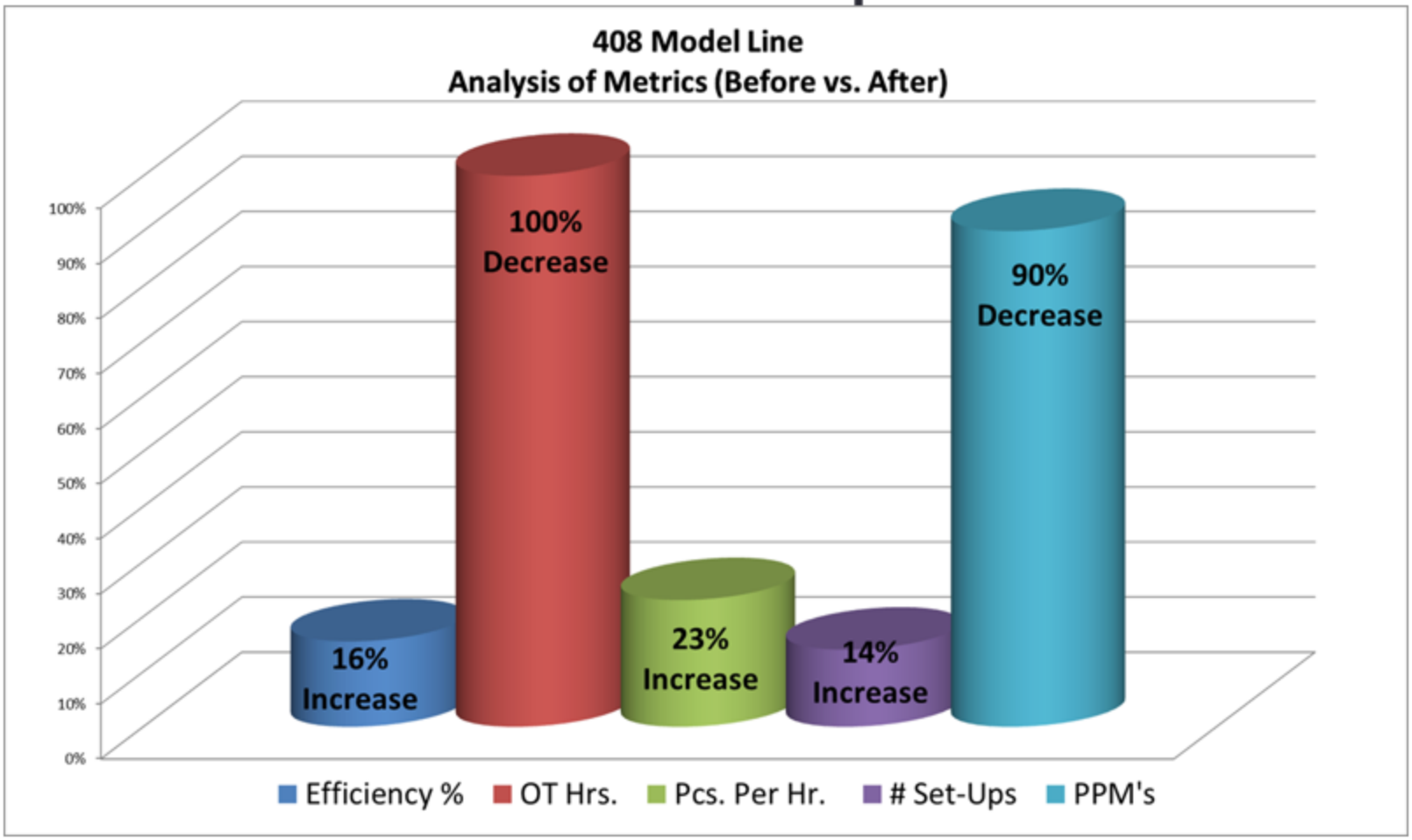
5

CI Lean Policy and Procedures on the CORPORATE Side

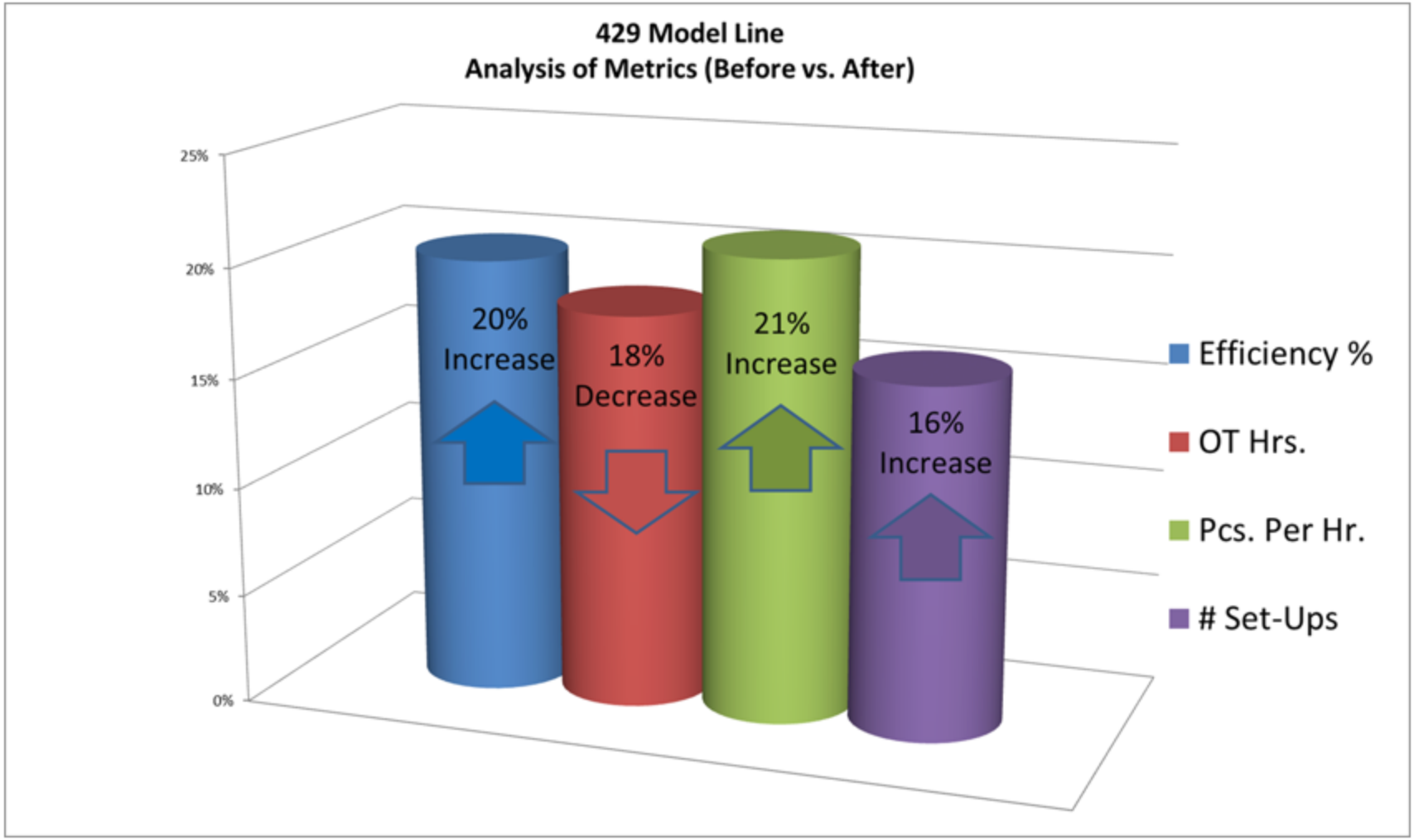


Significant continuous improvement occurs at the point of discovering a standard practice should be improved. If there is no standard, there is no improvement.

Before/After Lean Improvements



Before/After Lean Improvements



Examples of Leveraging Culture

Brainstorming Activity

- With the current economic downturn, all teams were challenged to spend their meeting time brainstorming immediate cost saving ideas.

- Ideas submitted were then prioritized using savings and implementation times as criteria.

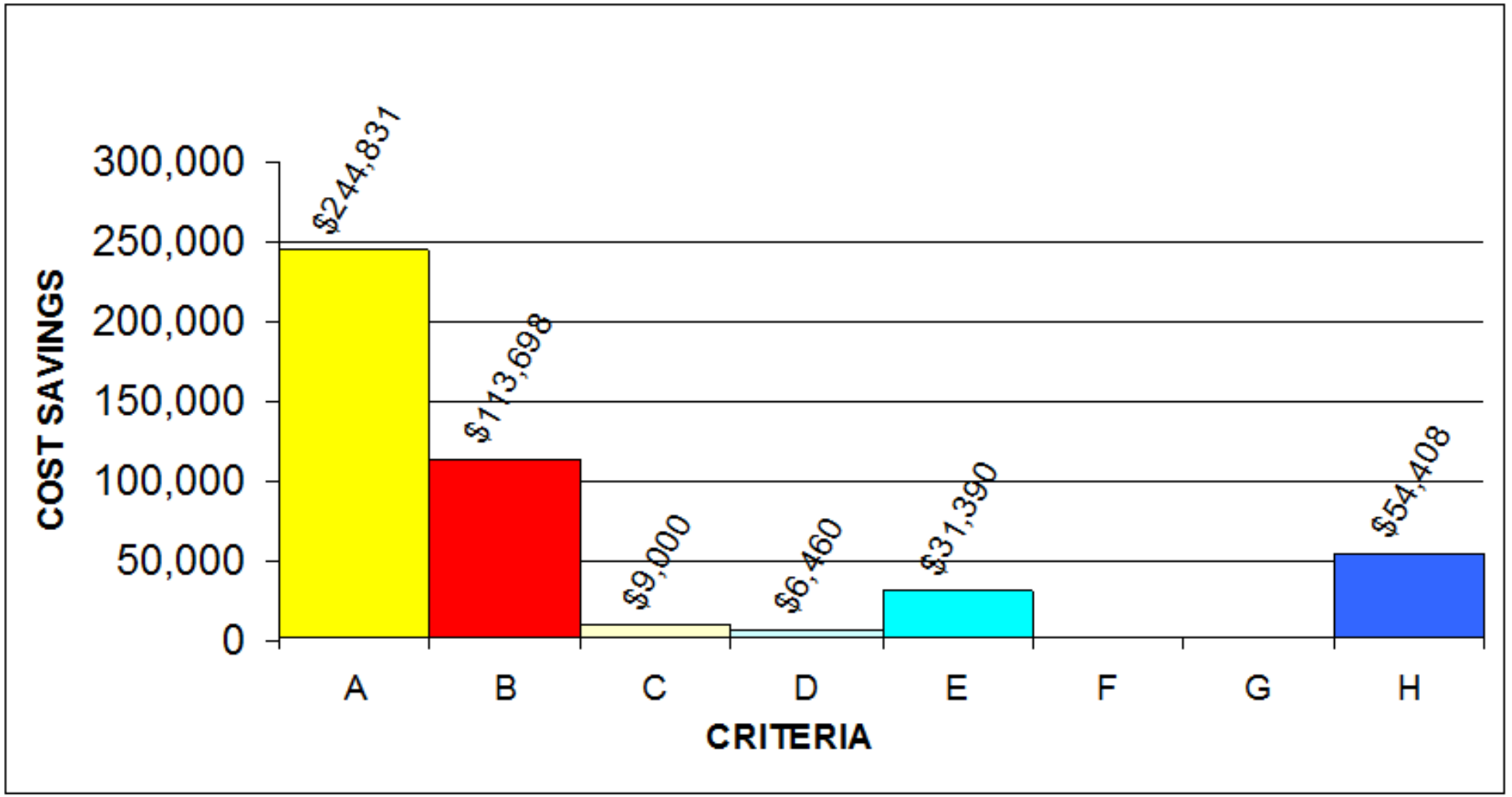
Priority Criteria

	A	B	C	D	E	F	G
Cost to Implement	$0	$0	$0	>$1000	$1000-$9999	<$10,000	>$10,000
Time to Implement	Immediate	<1 month	<3 months	Immediate	>3 months	>1 month	>3 months
Savings $$$	Any amount	Any amount	Any amount	=>$1000	>Cost to implement	>Cost to implement	>Cost to implement

H

If the items did not meet criteria for this brainstorming project timeline, will be put on CI Team Project Lists.

Brainstorming Chart



Improving Our CI Program

- Traditional CI
- Teambuilding
- Leadership Academy
- Benchmarking
- MFG Process Audits
- Metrics/CI Team Audits
- Pay for Skills
- STEPS Program
- Project Implement Gates
- Process Control Drawings
- Pit Crew Die Changes
- Cross Functional Teams
- CI Express
- Brainstorming Activity
- Kaizen
- Lean

Lessons Learned
(Keys To Culture)

1. **Doubled value added (increased profit)**
2. **Builds customer and supplier partnerships (increased volumes)**
3. **Maximizes team member ownership (improved relationships)**
    - Management Must Lead – Focus/Consistency
    - Employees Must Have Ownership - Accountability
    - Tools – Simple, Standardized / Always Improving
    - Training - Problem Solving & Leadership
    - Theme – Defines Culture
4. **CI employee participation must be a condition of employment**
5. **ZERO tolerance for "Non-Performers"**

Lessons Learned (Keys To Culture)

- What is your culture?
- What do you want it to be?
- What will you do about it?

- Q&A
- Thank you!

Recommended Books for Building CI Culture

Ray Leathers, CEO, Roll Forming Corp
(502) 633-4437, x251

Go Giver
Bob Burg

It's Your Ship
Michael Abrashoff

QBQ (Question Behind the Question)
John Miller

Creating a Lean Culture
David Mann

Toyota Production System
Taiichi Ohno

Mary Kay Way
Mary Kay Ash

SPIRITUAL MOTIVATION
The Shack
Wm. Paul Young

Five Dysfunctions of a Team
Patrick Lencioni

Any "**Leadership**" book
By John Maxwell

Speed of Trust
Stephen Covey

It Isn't Just Business, It's Personal
Arunas Chesonis

Mojo, How to Get it……
Marshall Goldsmith

How to Become a Great Boss
Jeffrey J. Fox