

Becoming Lean and *Staying* Lean

The Real Challenge

Dr. Paul Nugent
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Rotoplas, Chicago, Illinois

Question – Before

Do *Your* Habits Set a Good Example for Your Co-Workers?

The Dance of Life

- Orla Wanted to Learn Latin American Dance
- I Used to Think I Could Dance
- Instructor Gave Structure to Dancing
 - Feet, Hands, Head, Moving Together, Leading
- Pretty Darned Complicated!
- “I Can’t Do This!” “Stop – Run Away!”
- All New – My Brain was Sore
- But I’ve had to Go Back – Ten Times!!!
- ...and After a While it Started to Click
- Relaxed, the Patterns became Familiar



Habit

- And So it is with Lean
- With Any Change, In Fact
- Usually Uncomfortable
- We Revert Back to Old, Easy, Comfortable Ways
- Requires Repetition and Constant Reference to Our Objective to Make it become Second Nature
- Short-Term Results are Less Important than the *Process of Learning*
- A Key to Lean is Teaching People '*How to See*'

Rotomolding – Essentially Lean

- Already Lean as a Process
- McNeil Combined Operations to Maximize Output



- The Pace Maker – Use it to Define ‘Takt’ When Possible
- Proprietary Molding = Concentrated Work in Unload Area
- Custom Molding = Flexibility to Mix Molds on Arms

RotoLean – Common Tools

- Many Lean Tools Available
- Not All Suitable or Necessary
- Choose those that Work in Your Operation
- Some Help More Visually
- All Help with Quality
- 5S (Organizational Tool)
- Value Stream Mapping
- Batch Reduction
- Visual Systems
- Standardized Work
- Setup Reduction
- Team Based Problem Solving
- Plant Layout
- Pull / Kanban
- Cellular Work / Flow
- Total Productive Maintenance
- Point-of-Use Storage

RotoLean – Common Objections

- Order Quantities are Too Small to Justify Lean Effort
- We Make Too Many Mold Changes
- Our Setup Time is Fixed – Cannot be Changed
- Finishing at Machine Too Complex With Many Parts
- Finishing is Only Carried Out on One Shift
- Our Parts Need to Shrink Before Finishing
- Parts Need Conditioning Before Foaming
- Long Production Runs are Good – Fewer Setups Better

RotoLean – Early Success

- Most Companies Make Quick Progress Initially
 - 5S Programs Make Things Look Good
 - Smaller Batches Reduce Inventory
 - Improving Flow Saves Space, Increases Throughput
 - Better Coordination of Components Improves Delivery Times and Quality
- But Even the Masters Slip Sometimes
 - Toyota – Major Recalls
 - Shingo Prize Participants Slip After A Few Years
 - Only 2% of Companies Maintain Goals *(ref: Like & Rother)*

5S – A Building Block

- 5S is an Important First Step – Only A Part of Lean
- Often the Most Visible Change

Before



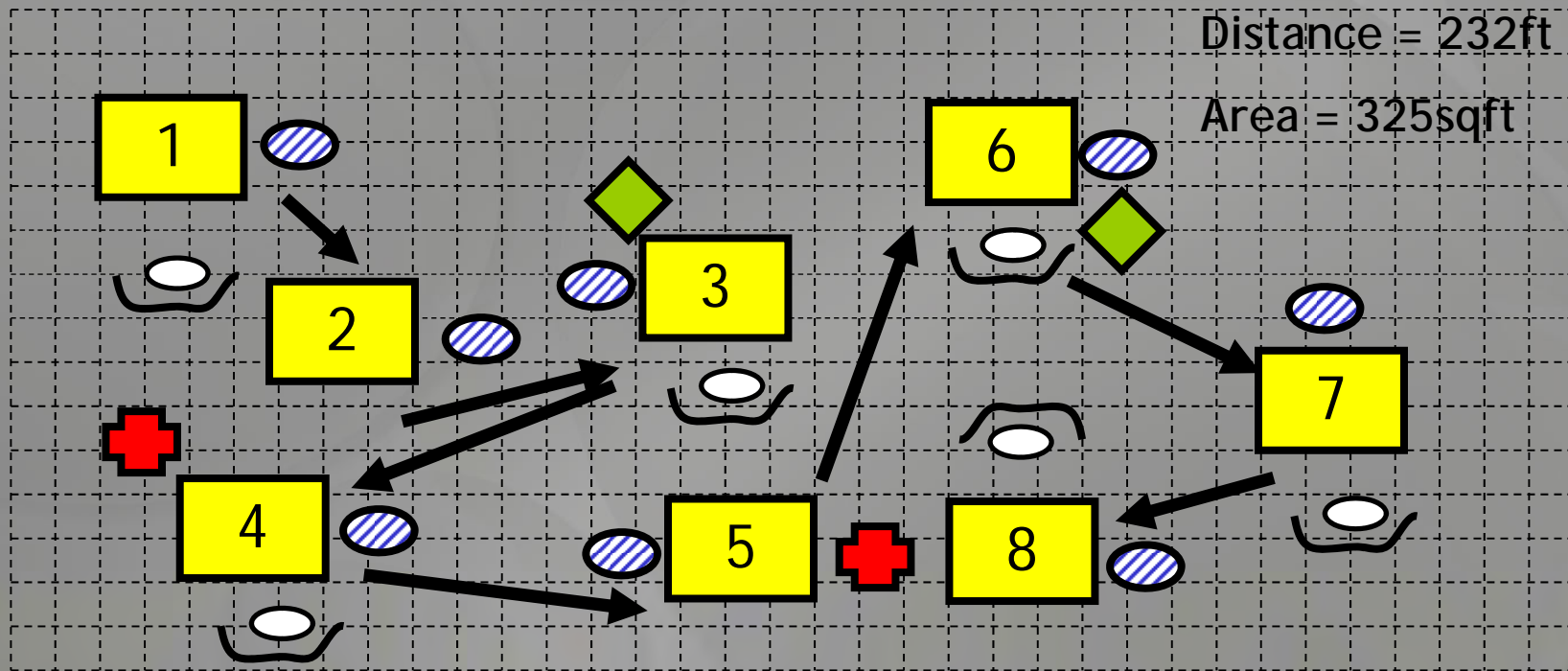
After
After






- Slow Slide Away from 4S and 5S can be an Indication of the Overall State of a Lean Program

Cell Design & Flow - Before

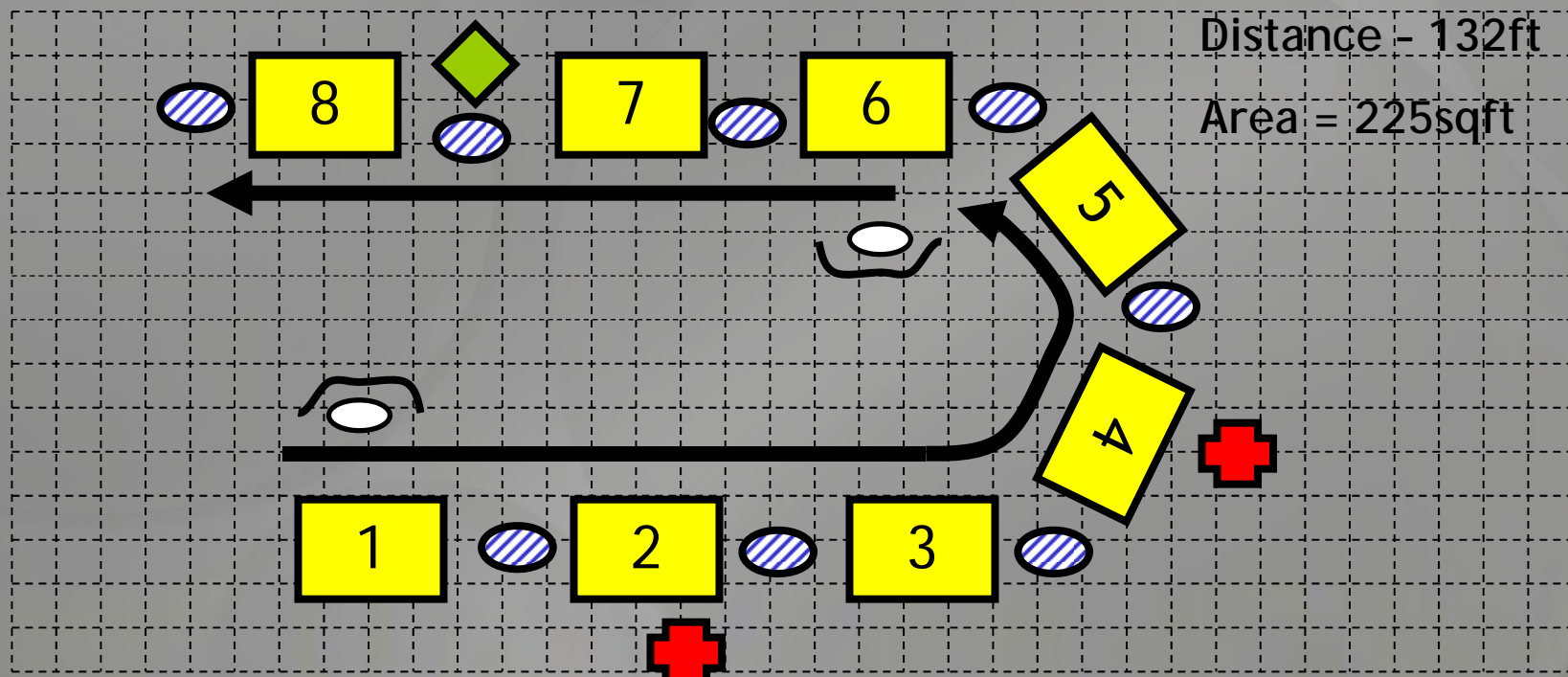
Operation Sequence	From: Molding Machine #4	Date: 1-1-10
	To: Shipping	Part Name/#: XYZ



Quality Check	Safety Prec.	Standard WIP	# Pieces WIP	Takt Time	Cycle Time
			15	33min	45min

Cell Design & Flow - After

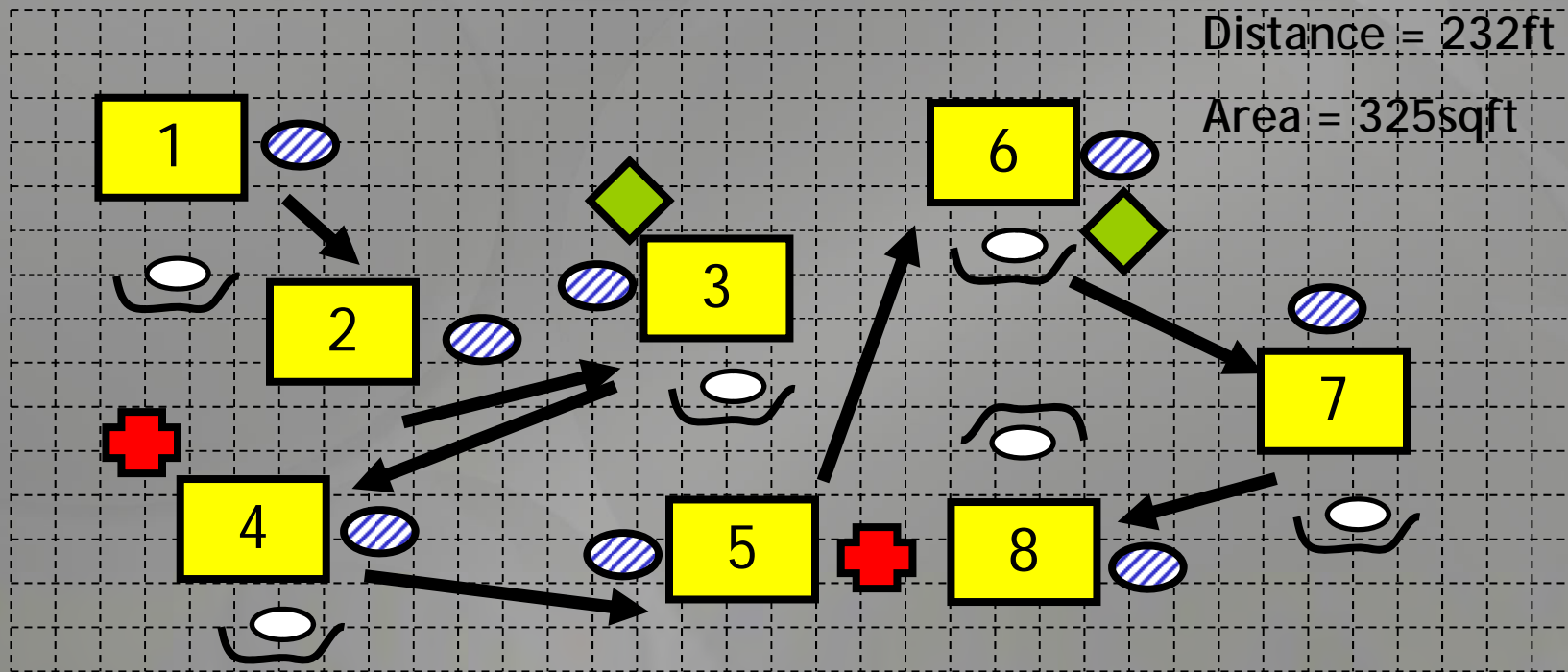
Operation Sequence	From: Molding Machine #4	Date: 1-1-10
	To: Shipping	Part Name/#: XYZ






Quality Check	Safety Prec.	Standard WIP	# Pieces WIP	Takt Time	Cycle Time
			8	33min	25min

Cell Design & Flow – After After

Operation Sequence	From: Molding Machine #4	Date: 1-1-10
	To: Shipping	Part Name/#: XYZ



Quality Check	Safety Prec.	Standard WIP	# Pieces WIP	Takt Time	Cycle Time
			15	33min	45min

Sometimes Failure is Helpful

- We Don't Always Reach Targets
...or Maintain Them
- But We Always Learn Something New
- Review the *Learning Process* as Closely as the Results
- Don't Allow *Lean Work* to be Viewed as Separate from *Real Work*
- Integrating Both is a Challenge



Keeping it Real

Lean Molder - Formed Plastics, Inc.

- Early Progress with 5S – Employees Responded to Brighter / Cleaner Factory
- Busier Times – Focus Drifted and Became Less Organized – '*Less Time for Lean*'
- Refocusing on Tool-Boards, Quick Change Set-Ups on CNC, Repainting Areas, Team Reviews of Critical Areas

Lean Molder - Formed Plastics, Inc.

1st Round Tool Boards



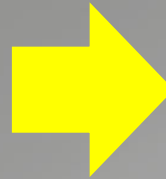
Revamped

Lean Molder - Flexahopper, Ltd.

- Initial Lean Improvements Dramatic



34 Parts/Day in Batches



88 Parts/Day Single Piece Flow

- Seasonal Product
 - ...Slipped Back to Batches the Following Year
- Need Lean Advocates Who are Hands-On

Lean Molder - Centro, Inc.

- Work Flow, Mapping, Poka-Yoke, Kanban, etc.
Incorporated as Normal Part of Centro Processes
- Commitment to 5S can be Challenging
- Easy to See Initial Benefits but Sustaining it is Difficult
- Sometimes Effort Better Applied to Other Aspects of Lean
- Difficult to see How to Maintain it or Re-Energize it
- Requires Constant Attention to Prevent People from Becoming Complacent

Lean Molder - Trilogy Plastics, Inc.

- Ability to Maintain Flow and Order in Plant is Affected by Changes in the Volume of Work
- As Things Become Busy or Slow Down, Efficiency vs. Output & Performance Can Become an Issue
- Issues Caused by Ramping Up to Meet Demand & Balancing Overtime vs. Hiring
- Golden Pig Award for Worst Area & Cash Incentive for Best (& Most Improved)



Lean Molder - Akro Plastics, Inc.

- Lean Customer has Helped to Drive Lean Process
- Revamped Order Process – Customer Orders vs. Capacity Constraints & Limits – Smoothed Out Late Order Changes
- Massive Reduction in Inventory and Space Use
- Reduced Scrap Rates for Some Lines from 7-8% to 1.5-2% by Catching Problems Sooner Without Batching
- Inserted PU Foaming In-line with Molding Operation
- Biggest Challenge is With Top Management
- Replacing Words Such as '*No, Can't, Doesn't Work, Impossible, Always Done it That Way*' - Positive Alternatives

Lean Molder - Oy Motoral

- Dedicated Production Lines Kept in Excellent Order
- Employees Develop Own Solutions to Streamline Workflow



- Easier to Sustain With Standardized Work , Fixtures, Components, etc.

Lean Molder - Oy Motoral



- Short Periods of Use Makes it Difficult to Motivate Employees to Maintain the Areas
- Needs Constant Review

- Low Volumes, Constant Changes Most Challenging
- Low Incentive for Management to Address



Lean Molder - Dutchland Plastics, Inc.

- Consultant Helpful at Start to Show Tools and Possibilities
- Difficult for Old-Timers – Set in Their Ways and Not Comfortable Changing
- Increased System of 5S to **6S** to Always Include Safety in Programs – Audit Sheets Include Safety Observations and Recommendations



Lean Molder - Dutchland Plastics, Inc.

- Grant from Wisconsin to Continually Send People for Lean Training
- Spreading Activities from 1st Shift to 2nd Shift



- One Day per Month Planned Across 12 Areas in Plant
- Commitment Required from Top of Company

A Common Thread?

Constant Review
Constant Attention

Good Habits
Everyone

Making 5S Work

- 5S is Not a Stand Alone Effort – Incorporate it Into Team Meetings and Regular Reviews
- Require Management to Set a Strong 5S Example – Enforce 5S Practices Every Day
- Clearly, Visually Define What Each 5S Workplace Should Look Like
- Build 5S Expectations into Monthly Walk-Throughs to Review Work Practices
- Create a 5S Punch List and Show Regular Progress Towards Completion
- Celebrate Success!

Success = Managing Change

- Organizations Don't Change – People Do
- Managing People's Expectations is Critical
- The Process is Emotional not Just an Event
- Definition and Understanding Required
 - Goals Must be Laid Out Clearly
 - Understanding of What is Changing and Why
 - Important to Know What is **NOT** Changing
- Senior Managers Must Walk-the-Talk

Focus on the Process As Well As Results

- Remember '*A Bad System will Beat a Good Person Every Time*' (ref: Edwards Deming)
- Teach People How to Build Good Systems
- Improvements in Layout, Productivity & Quality are Important
- Not as Important as Showing People *How* to Achieve Them
- Teaching & Applying the *Process of Improvement* is the Real Goal – You are Teaching People How to Develop New Habits!

Thanks to All Who Helped

- Ron Joannou, Formed Plastics, Inc.
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- Bill Spenceley, Flexahopper, Ltd.
- Reijo Ström, Oy Motoral
- Daven Claerbout & Dave Herberg,
Dutchland Plastics, Inc.

Question – After After

You are a Leader

Do *Your* Habits Inspire &
Motivate Your Co-Workers?

Thank-You
&
Good Luck!



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