



8TH Annual Tri-Association Manufacturing Conference

Your Journey, Who's On It?, Who is Leading It?

Engaging Your Workforce while
Teaching Best Practice Lessons

Bob Forder

5S / Lean Coordinator

Kennametal Stellite





- Getting the Brain Started
- Team Engagement – Quality Lesson
- 5S Numbers Game
- Team Building – Problem Solving – Helium Stick Exercise
- Team Building – Standard Work – Snowflake Exercise
- Go Lean – Ball Game





Questions

Puzzle

Colours



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Team Engagement – Quality Lesson

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Team Engagement – Quality Lesson



- Quality is one of the greatest battles that we fight in all of our Manufacturing facilities
- Poor Quality and the cost of it is one of the greatest impacts on our Productivity and Profitability
- Some will say “Why Not Just Perform 100% ??”
- You are going to get a sheet with some instructions on it.
- Follow the instructions and write your result on the face of the paper and then turn it over. You have 3 minutes to do this.
- **DO NOT TELL ANYONE** your result. – GO! -





Solution: Better Inspection???



- Why not just inspect out defects?
- No inspection is 100 percent effective in finding defects within a product.
- If you doubt this, then try this experiment:
 - Count the number of times the letter “e” appears on this page.
 - Once you have counted the number of times that “e” has been used write your answer on the sheet of paper provided to you by the instructor.
 - These will be collected and the instructor will tally the number for the class and will show you the results.

100% Inspection Does NOT Equal 100% Quality



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Team Engagement – Quality Lesson



- How Many Did You get on your own?
- Now using the people at your table as your “team” turn over your sheets and share your number with your team members.
- Does everyone have the same number?
- If not as a “team” redo the exercise and develop a new number.
- You have 3 minutes to do this.





Team Engagement – Quality Lesson



- Now what is your number? - did it change?
- Why?
- Now we will go around each table and get the individual and team numbers...
- What Happened? Why did we not get the same even when so many did this and we did it as a team?



Solution: B¹ett²er Insp³ection???

- Why not just insp⁸ect out d⁹ef¹⁰ects?
- No insp¹¹ection is 100 p¹²erc¹³ent¹⁴ eff¹⁵ectiv¹⁶e in finding d¹⁷ef¹⁸ects within a product.
- If you doubt this, th¹⁹en try this²⁰ exp²¹erim²²ent:
 - Count th²³e numb²⁴er of tim²⁵es th²⁶e l²⁷ett²⁸er “²⁹e” app³⁰ears on this pag³¹e.
 - Onc³²e you hav³³e count³⁴ed th³⁵e numb³⁶er of tim³⁷es that “³⁸e” has b³⁹e⁴⁰en us⁴¹ed, writ⁴²e your ans⁴³wer on th⁴⁴e sh⁴⁵e⁴⁶t of pap⁴⁷er provid⁴⁸ed to you by th⁴⁹e instructor.
 - Th⁵⁰es⁵¹e will b⁵²e coll⁵³ect⁵⁴ed and th⁵⁵e instructor will tally th⁵⁶e numb⁵⁷er for th⁵⁸e class and will show you th⁵⁹e r⁶⁰esults.

100% Insp⁶¹ection Do⁶²es NOT⁶³ Equal 100% Quality





The 5S Numbers Game.

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- This sheet represents our current work place.
- Our job during a 20 second shift, is to strike out the numbers 1 to 49 in correct sequence. Example: ~~1~~ ~~2~~ ~~3~~
- The team score will be represented by the lowest individual score achieved.
- Give the sheets out face down and have someone keep time.
- Ask each person to call out their individual scores and mark them on a flipchart. Circle the lowest and therefore team score.
- Ask if they are happy with the score

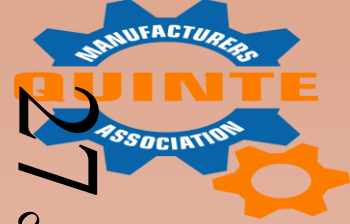
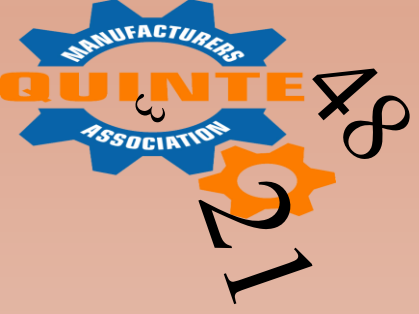






- For our first action, we are going to implement 5S in this area.
- The first step of this is “Sort” and so we have removed from the area all the numbers from 50 to 90 which are not needed.
- Same rule apply. Strike out numbers 1 to 49 in sequence during a 20 second shift.





39
29

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38 47

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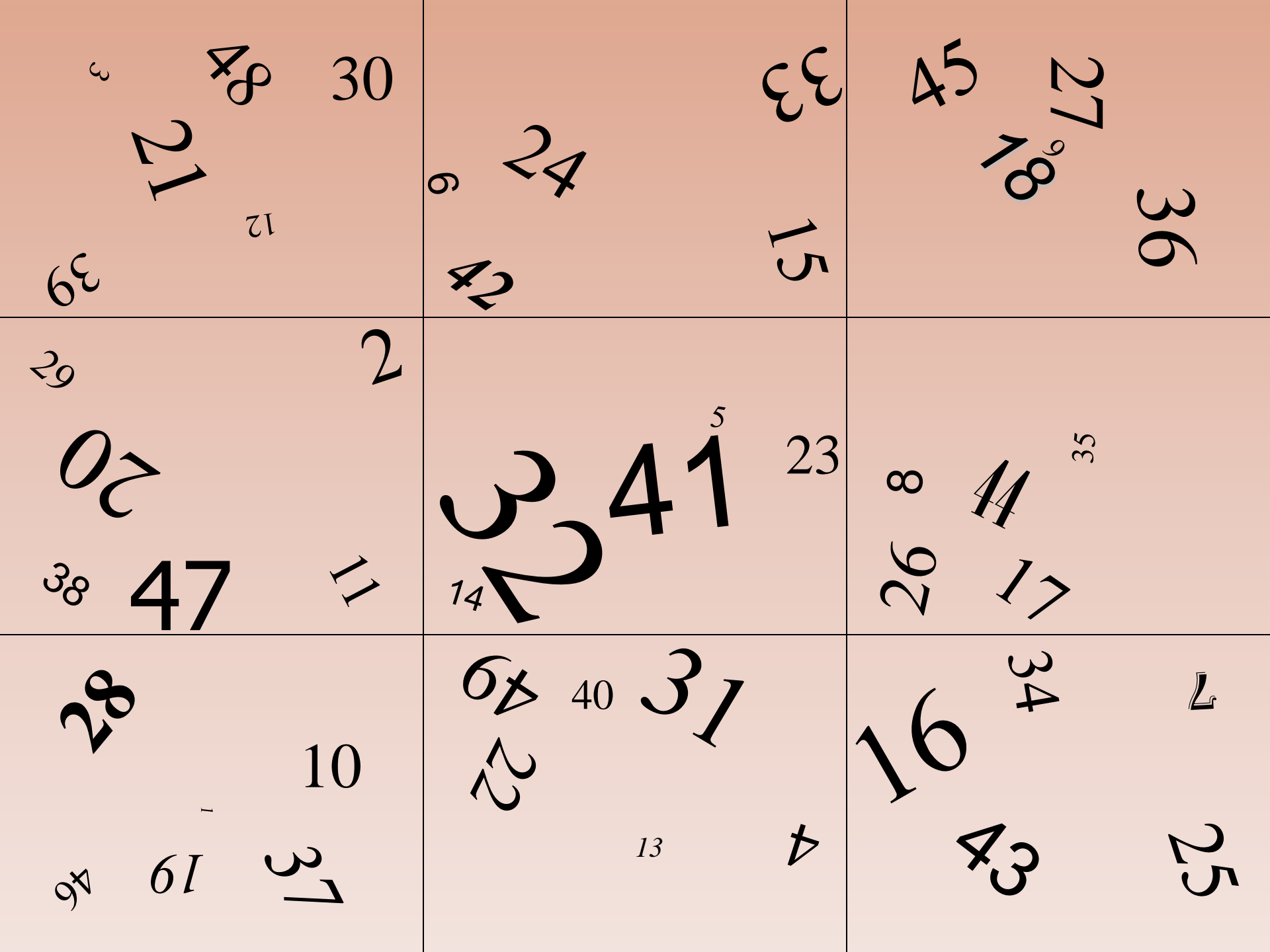
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- Having achieved some improvement, we now need to move onto the next step "Set In Order".
- We have installed some racking, and we have organized the items so that with Number 1 in the bottom left hand corner, the numbers are located from left to right and bottom to top - examples 1 in the bottom left, 2 in the middle, and 3 in the top left.
- Same rules apply 20 second shift, lowest individual score equals team score etc...





- Having now made a significant step forward, We must “Shine” and “Standardize”.
- Since we are dealing with numbers 1 to 49 in sequence, it seems logical to re-organize them in a standard way that makes the completion of the work task as easy as possible.
- We **MUST** create a clean and Visual Workplace to make it (Easier to See), (Easier to Get) and (Easier to return), the **3E’s**.
- To accomplish both for this exercise, we have changed the type and size of the Font to the same for all numbers and have aligned them so they are in line and easy to see.
- This should ensure that everyone is able to complete the task (and therefore produce a team score of 49.)



Numbers from 1 to 49

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | |

- To show respect for Standards and for QUALITY it is necessary to make the “MANAGEMENT” of the area visual so that mistakes or errors are easily caught.
- Returning to our original work area, we have for this assignment two numbers missing. We cannot complete the task without these numbers - so first we have to find them.
- I will start a clock running and every 20 seconds, I will tell you how many “shifts” they have been down looking for the appropriate numbers.







- Now given our Visually Laid Out Workspace, how much easier is it to find the quality problems?



| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | | 43 | 44 | 45 | 46 | 47 | 48 | 49 | |



Exercise: Helium Stick



Problem Solving & Team Building



- We need 8 to 10 People
- Make two lines and turn to face each other
- Put your arms straight out from your shoulders and point your index finger at the other person with your palm facing down
- Line up your fingers so that they are all in a row.
- I will now place this Helium Stick on top of your fingers
- Your task is to lower this stick as gently as possible to the floor without dropping it!
- You may in NO WAY trap the stick in any fashion. It must be free at all times.
- **Time is Money and the more time you take the more it costs to produce a part. Hurry – Hurry – Hurry!**
- GO



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Problem Solving & Team Building



- What is happening???
- Instructions are simple enough are they not?
- We are all intelligent people that performs well in our workplaces are we not
- Then why can we not lower this stick to the ground?
- I will give the “team” a few minutes to figure this out and we will try again!





Problem Solving & Team Building



- Did we do better this time? Why?
- Could you do better the next time?
- Why could you do better the next time and what would you do different?
- Do you want to try it??





Team Exercise – Standard Work – Snow Flake



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5S / Lean Coordinator
Kennametal Stellite



Standardized Work Instructions and Communications Snow Flake Exercise



- We need 8 people, four teams of two.
- Each Team is to get one piece of blank 8 ½ x 11 paper
- One person on the team is to wear a blindfold the other will be giving instructions.
- Each Team will have the same instructions.
- The object is to produce an identical snowflake





Standardized Work Instructions and Communications – Snow Flake



Team Instructor gets the instructions and they hand the paper to the person blindfolded placing a corner of the paper in each hand.

- **Instructions:**

1. Hold the paper out in front of you.
2. Fold the paper in half.
3. Fold the paper in half again
4. Fold the paper in half again
5. Turn the paper 90 degrees
6. Tear off the right hand corner
7. Turn the paper 90 degrees
8. Tear off the right hand corner
9. Turn the paper 90 degrees
10. Tear off the right hand corner
11. Turn the paper 90 degrees
12. Tear off the right hand corner
13. Take off the blindfold
14. Both Members come to the front
15. Unfold your paper
16. Hold the paper up side by side



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Standardized Work Instructions and Communications – Snow Flake



- Are they all Identical
- Why NOT?
 - Did we not all use the same set of “Standardized” Instructions?
- What went wrong, what went right?
- How would you change this in the future?



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Go Lean – Intro to Lean / Team Building Exercise The BALL GAME!

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Go Lean Ball Game

- **A New Twist on a Tried and True Activity**
- **Opportunity**
- You are getting ready to begin the "Introduction to Lean" training for the new employees at your facility. You like starting off your training events with something active, both to get their attention early and to start building from the beginning the understanding that teamwork is highly valued at your workplace. You prefer to use activities which directly reinforce the concepts being taught and learned.
- **What**
- A high energy, low prop initiative (team problem-solving exercises) tweaked to introduce and/or reinforce basic concepts of Lean Manufacturing (or Lean Office or other Lean work system).
- **Overview**
- Go-Lean engages the learners in attempting to improve a system. In successive attempts, your group practices Lean thinking to improve the speed at which one ball travels through the entire system.
- "Lean" is a continuous improvement approach that seeks to maximize customer value by eliminating waste throughout the system.





Go Lean Ball Game



- **Group Size:** 8-20
- **Time:** 30-60 Minutes
- **Props:** one foam or fleece ball (a 9" round nerf ball works well and is readily available at most major retailers).





Go Lean Ball Game



Instructions

Form a circle.

"I'm going to give this ball to a person in your group who should end up with the ball it the end.

If you receive it, toss it to someone else in the circle not immediately on either side of you.

That person will toss it to another person who has not yet received it and again not immediately on either side of him or her.

Throwing continues until the last person tosses the ball back to the original person.

Remember who you tossed to because you will try to recreate the pattern in the next round. – Should you document the Process?

Any questions?"



Go Lean Ball Game



- The ball starts and continues until the ball comes back to the originator. Repeat one more time so that everyone is clear who they toss the ball to and from whom they receive it. The ball must follow the same pattern both times.
- Explain: "We are now going to see how quickly we can send this one ball from start to finish through the system. The only stipulation is that the ball must pass through the system in the same order that we have already established.
- Any questions? I will start time as soon as the ball leaves the first person, and I will stop time when it returns to him/her. You may begin when ready."



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Go Lean Ball Game



- Time their first attempt. Applaud their attempt, whatever it is (one second per participant or longer is quite normal).
- Prompt them to identify, and then eliminate, waste in the system.
- Allow for Props / Fixtures
- Allow for planning
- Allow additional attempts and more planning.
- 3 Rounds?? Or whatever it takes



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Wrap Up



- Was this type of Workshop Helpful?
- Can you use these exercises at your workplace
- Can you think of ways to change or tailor them to suit your needs / situation / environment?
- Thank You for your Participation.

