

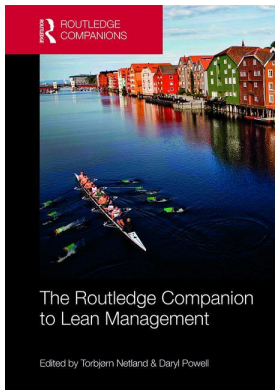
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9

LEAN SAFETY

Robert B. Hafey

Introduction

Lean safety is an approach that utilizes both the lean philosophy and the lean tools to intentionally create a continuous improvement safety culture that engages the workforce and moves lean forward.

The management philosophy entitled lean has been in practice for more than 20 years and yet many or most companies that have attempted to make it a core principle in their business operations have struggled or failed in their attempts. Before we explore why that is the case, we must first understand the foundation, or building blocks, of lean. By knowing the definition and intent of lean we will be able to quickly see which parts have been neglected, misunderstood, or ignored by business leaders.

A very simple and broadly accepted definition of lean is reducing the cycle time of delivering products and services to customers by eliminating waste. If this definition is accepted, then it is obvious that the primary benefactors of a business's lean efforts are the customers of the business. It is the responsibility of business leaders to clearly state the definition and the purpose of the lean effort to ensure it is understood by everyone in their business. It is also their responsibility to define a lean implementation path that gives focus to all three pillars of lean as defined by the Toyota Production System. It is these three pillars, or focal points, that are the underlying foundation of lean. They are:

- 1 *Delivery or just-in-time*: Reducing the cycle times of every business process.
- 2 *Quality or jidoka*: Ensuring the delivery of quality products and services.
- 3 *Respect for people*: Trust building.

So why is such a seemingly simple concept so difficult to successfully implement? I believe it is because leaders deliver a very confusing message concerning the intent, focus, and purpose of their lean efforts. To state it another way, their purpose motive is not, either intentionally or unintentionally, clearly stated. They have too often focused their reports on one of the outcomes of lean—cost savings—rather than on the true north target of reducing cycle times to customers. Leaders understand that by reducing business process cycle times, labor hours can be dramatically reduced, which will, in turn, reduce their operating costs. There is no denying that lean can

accomplish this, but that is an outcome rather than the goal of lean. When it becomes the stated goal of lean, both the communications and actions of management destroy trust in the workplace. This is problematic as lean is a trust-building, cultural change journey. These same leaders think lean is a set of tools rather than a philosophy and fail to see the need or lack the inner desire to spend the time on earning the trust of their workforce. They fail to recognize or care about the critical importance of the third pillar of lean—respect for people. This alone is responsible for most lean implementation failures.

The focus of leadership in this scenario is clearly on financial results rather than on their people who, if empowered and engaged, could have a dramatic impact on the financial results. They are dollar-centric rather than people-centric leaders. The cost savings purpose motive, when delivered by management, makes little or no sense to the workforce, for they envision the expected reduction in operating costs to result in layoffs or redundancies. Nobody will give their heart and mind to an effort that will result in the loss of their employment. Without trust, lean is a bust. Eventually management tires of pushing lean on an unreceptive, fearful workforce and their program dies. But it is not lean that fails, it is management: they have failed to impact their workplace culture by earning the trust of their employees.

These same management teams see the lean tools (5S, single-minute exchange of dies (SMED), kaizen blitz, process mapping, etc.) as a means to an end. Utilizing lean tools, for them, is an opportunity to expose waste in the business and reduce costs. During their relentless drive to reduce cycle times, stopwatches are used to record current state and future state cycle times to measure the gains. Eventually labor is freed up and management has to decide what to do next. They can redeploy the labor while growing the business or they can lay people off. If they choose the second option, they hide behind the belief that it is “management’s responsibility” to lay off people to reduce costs. In this scenario the employee base remains unengaged and fearful of the outcomes related to continuous improvement activities. How can business leaders bridge this trust gap that exists between themselves and their workforce? How can they unify and redirect their work culture? By focusing on the one activity that everyone in the business will support without fail—safety.

What is Lean Safety?

Lean safety is a lean methodology that makes sense to all parties involved in the effort by providing an ethical, people-centric approach to lean implementation. It is the safe, trust-building path to lean. Lean safety differs from compliance safety in the fact that it is continuous improvement safety. The common focus of almost every safety program is compliance to regulatory agencies. Therefore, safety is most often a top-down “telling people what to do” activity. In lean terminology, safety is “pushed.” As a result, safety professionals are often viewed as safety police—the enforcers of safety policies, rules, and regulations. A troublesome practice that is a direct result of top-down directive compliance safety programs is the use of discipline for safety infractions. This outdated practice, which relies on the use of fear and intimidation to drive safety compliance, is a trust killer. Current state safety programs therefore inhibit lean progress. Deming (1982), in his 14 key principles for management, clearly states the importance of driving fear from the workplace. Fear in the workplace is the opposite of trust and the importance of trust building while on a lean journey cannot be overstated for lean success is predicated upon it. The ability of leadership to redirect their work culture (how people think, act, and interact) is therefore the key to lean success.

The question that is begging is how or where to begin the trust-building journey required for lean success? When senior leaders are asked “what is the top priority in your operations?” they respond with “safety.” When they state this priority they are close to understanding the easiest entry

point to begin or recharge the lean efforts in any business. When change efforts such as lean are introduced into a work culture the question people ask themselves is “what’s in it for me?” A cultural stalemate naturally occurs until the leaders of the business define an approach they can use to extend trust and engage the workforce in meaningful real continuous improvement activities that result in empowerment and ownership. Lean safety provides that approach and yields those results.

Unrelated to top-down, directive-compliance safety programs, lean safety utilizes both the lean philosophy and lean tools to intentionally create a continuous improvement culture that engages the workforce and moves a business’s lean efforts forward. Leaders who embrace lean safety quickly recognize the many benefits that result. They include an improved safety culture, process cycle time gains, and a growth in trust that leads to an engaged workforce. Also noteworthy is the fact that lean safety will dissipate resistance to lean and will garner the support of management, unions, supervisors, and the workforce because it answers the critical all-important question of “what’s in it for me?” for all stakeholders. Since the sole focus of lean safety is to *make work safer and easier*, it provides an ethical approach to lean implementation.

To address the issue of making work safer and easier, leaders are required to go to the *gemba*, where the work is performed, and engage their workforce. It is often stated in the lean community that the skills required to lead lean are 30 percent technical and 70 percent social. Therefore, these engagement opportunities require a change in management style. Those managers who historically have been skilled at telling people what to do, and were expected to do so, must change to a coaching style of leadership. They must now ask the right questions rather than have the right answers. It should be understood that when supervisors and managers tell people what to do it both perpetuates parent-child relationships and removes the responsibility of the employees to solve the customer service problems that exist in the business. A *lean safety gemba walk* provides leaders with the perfect opportunity to begin two-way, adult-to-adult conversations about continuous improvement with the initial questions all being safety related. Before beginning the gemba walk leaders should understand what to look for that will then allow them to ask the safety engagement questions. They are:

- 1 *Product flow*: Poor product and material flow increases the amount of material handling required. Material handling is a safety risk.
- 2 *Material handling methods*: Manual lifting (e.g. physical labor), forklifts, hoists, and cranes are just a few of the material handling methods used in industry and each comes with its own risks.
- 3 *Material storage containers*: Raw material and WIP (work in process) are received and stored in a variety of containers that provide opportunities for discussions about improvements.
- 4 *Work area layouts*: Ineffective layouts drive excess material handling and cause poor product flow.

With a good understanding of these and how each of them can physically impact an individual, a leader is ready to engage a worker in a safety discussion. After an initial introduction and an explanation of the intent of the observation, a leader should ask permission to observe the work being performed. Noteworthy is the fact that although the leader is observing an individual, it is being done to understand the impact of the work processes on the individual. Then by asking questions and actively listening, the leader can hold a dialogue based on any of the following observations:

- *Body parts that are out of neutral*. Any work steps that require a worker to bend his or her back, twist his or her torso, or raise his or her arms, or which takes their shoulder out of neutral, is an opportunity for dialogue about work process change.

- *Straining to perform a task.* Strenuous pushing or pulling on anything is another chance to talk about change.
- *Lifting something that appears heavy.* Trying to decide if something is too heavy to lift is a fruitless exercise. Focus instead on eliminating lifting from work processes.
- *Performing repetitive tasks.* Many production operations have tasks that are repetitive. Engineering, human resources, and other opportunities exist to control or at least minimize exposure when performing these work tasks.

When leaders show they are greatly interested in someone's safety, and then follow up on their commitments to improve it, their actions are an honest and ethical trust-building approach to work culture change. Repeated lean safety gemba walks and the resulting improvements will begin to shift the culture and build trust.

Another lean tool easily adapted to use safety as the focus while engaging the workforce and building trust is the *safety kaizen blitz*. It differs from the lean safety gemba walk in that the targeted work area, department, or production process is larger in scope. A traditional kaizen blitz is a multi-day, cross-functional, team-based rapid continuous improvement event. A team of 6 to 10 members is chartered and challenged to improve the cycle time of a business process. A skilled facilitator guides the team members on their three- to four-day journey. The event concludes with the members presenting the results of their efforts to the senior leaders in a report out session. Since these events are hands-on and fun to participate in, the greatest value that results from a kaizen blitz is not the process that was improved—it is that mindsets have been changed. People think differently about continuous improvement after participating in just one event. The team almost always attains its cycle time improvement goals, using a stopwatch to measure those gains. The use of a stopwatch ensures everyone knows the team's goal is cycle time improvement. It also results in the fear, mentioned above, of full participation by the workforce. A safety kaizen blitz eliminates the stopwatch along with the fear, for the team is chartered to improve safety rather than cycle times. For instance, during a traditional kaizen blitz the goal might be to reduce a machine changeover time by 50 percent and a common safety kaizen blitz goal is to reduce the risk of soft tissue injuries. It is easy to understand why everyone will rally around the safety goal while the cycle time goal may cause angst for the hourly workforce.

In addition to the mentioned safety gemba walks and safety kaizen blitz events, there are other commonly used lean tools that help move a business forward. A few of them are 5S, process mapping, value stream mapping, SMED, kanban, and team building. In and of itself, tool usage does not qualify a company to call itself lean. Lean success is not gauged by the number of lean tools used but by the level of trust leadership has built. All lean tools allow leaders to extend trust with the hope of earning it in return. As trust grows engagement follows. The Gallup Organization, which recognizes workplaces with the Great Workplace Award, notes that employee engagement is a force that drives real business outcomes (Gallup, 2015).

So, if trust is the true path to engagement then trust paves the path to lean business success. By removing the stopwatches, and the ever-present focus on cycle times, and instead focusing on safety during their lean journey, leaders illuminate the ethical path toward meaningful business outcomes.

Challenges and Opportunities

The greatest challenge to a broader acceptance of lean safety is a lack of people-centric leaders. They are leaders who truly believe in the value of their workforce and are willing to invest their time and energy in the multi-year culture change journey that true lean requires. Another

challenge is the inability of people to see and recognize the value of continuous improvement of safety. When they see book titles about lean safety or lean safety gemba walks, they assume the topic is related to compliance safety. Compliance-based safety programs are so ingrained in industry it is hard for those involved in managing those efforts to see beyond them. Leaders and many safety professionals are so focused on compliance, they fall into the trap of using top-down directive management methods in an attempt to maintain compliance. These actions create fear in the workplace and trust building stalls or retreats.

Another compliance safety program that adds a level of confusion to a clear understanding of lean safety is a long-standing safety methodology entitled *behavior-based safety* (BBS) (e.g. Geller, 2004). A frequently asked question is, “is lean safety like BBS?” Based only on the word “behavior,” the answer is no. That word implies that BBS is about observing the behaviors of individuals and then providing feedback on whether or not the behavior exhibited was acceptable (safe) or unacceptable (unsafe). BBS programs focus on people as opposed to process and are saddled with a long history of finding fault with people. As the individuals who perform the work are the ones who are most frequently injured, BBS proponents define their behaviors as the root cause of the safety problems in a facility. Behavior-based safety is directly tied to top-down, directive-compliance safety and therefore is a policing methodology that does not build trust. High injury rates, rather than a focus on continuous improvement, drive the use of BBS and therefore reducing injuries is the target of BBS activity. So how does this approach differ from lean safety?

Lean safety is a process-focused methodology. All lean thinkers understand and accept the oft-cited statement that “the process is the problem, not the person.” Therefore, rather than critiquing a singular individual performing a work task (the BBS approach), lean safety observes an individual performing a work task in order to understand and improve the underlying work process problems. The types of problems identified have to do with layouts, material handling equipment, and other things that are under the ownership of the management team. The root cause of people getting injured while rushing to get work done or bypassing a safety guard by applying tape over an interlocked door switch is identified as a worker behavior problem by BBS. A lean safety proponent would drill deeper by asking “why?” five times to get to the real root cause. The root cause is most often a management problem brought on by an incessant push for more productivity. In the eyes of the workers, management has set a safety culture where productivity trumps everything else, including safety. Since BBS programs are sold to management teams struggling with injury issues it is very difficult for the BBS consultants to point out that management is the real root cause problem. BBS fails to get to the real cultural root cause of a poor safety culture. BBS will reduce injuries in the short term, based solely on the amount of time and energy committed to the effort, but it can have no long-term positive cultural impact because no trust building occurs. There is much debate and discussion concerning the pros and cons of BBS. The individuals who should select either the BBS or lean safety approach should be those who do the work. Simply ask them if they want someone to observe them to assess if their behaviors are safe or if they would instead like someone to observe them working so the work tasks can be made safer and easier for them and anyone else who performs the same work tasks. Both BBS and lean safety can add some value to a workplace, but it should be very clear that lean safety is unrelated to BBS. Lean safety builds trust, which leads to engagement and long-term culture change.

Opportunities linked to the understanding and uses of the lean safety approach to work culture changes are numerous. First, lean safety is an educational opportunity for safety professionals. The numerous formal training and education programs that they have mastered prepare them well for the compliance safety world. When they begin their work careers, they are slotted into a career path that is a compliance management role. In addition to safety, they are often given

responsibility for health and environmental compliance management. When company-wide initiatives such as lean are introduced to a work culture, those responsible for compliance safety are usually left on the sidelines wondering what is going on and worrying that those efforts may somehow impact compliance. Management mistakenly views compliance safety as something separate and unrelated to operational improvement efforts. Lean safety can open their eyes to continuous improvement safety and provide opportunities for safety professionals to move out of their compliance-policing role. By nature, they really care about people and can be trained to effectively lead safety gemba walks and safety kaizen events. In this way they can add value to the business beyond their compliance expertise.

Another opportunity is the ability of lean safety to dramatically change the safety culture within a business. An effective lean safety effort is intended to engage as many company employees as possible in managing different pieces of the company safety program. It can start with hourly employee safety committees quickly followed by sub-teams that manage personal protective equipment training and compliance, Lockout-Tagout (LOTO) training and compliance, and many other parts of a comprehensive safety program. Until management extends trust and invites hourly employees to take ownership of the company safety program, safety will always be “management’s program.”

Lean safety also provides the opportunity to move lean forward in a business. It has this ability because it is an honest trust-building effort. It allows managers to be seen in a different light. If they choose the lean safety path they can be viewed as people-centric leaders rather than people who are only concerned about the financials. Lean safety helps those leaders understand you can have both improved safety and reduced cycle times just by using safety as the entry point for your business continuous improvement efforts.

And finally, the greatest opportunity provided by the lean safety philosophy is making work safer and easier for people all over the world, while at the same time making the world a more productive place.

The Future of Lean Safety

Lean safety should be part of the curriculum for undergraduate safety professionals, operations management professionals and MBA program students. All of these programs give focus to financial management but fail to educate future leaders on the value of an engaged workforce. This is because those current programs see labor as a cost that can be increased or decreased by hiring or laying off staff. Lean will never be broadly successful and become ingrained in business life unless leaders understand the requirement to extend trust and develop different relationships with their workforce. Lean safety provides a proven path to begin the dialogue so that leaders start to see their staff as more than an expense.

The idea of recognizing safety risks as opportunities for lean improvement is unique. By making a work activity safer we also make the work more productive. I think most lean practitioners do the reverse—they look for waste in the production cycle, fix that, and then trust that the process improvement also makes the work safer. But having a worker-centric point of view makes the whole lean improvement idea more personal and grounded in ethics, which makes sense to me.

Mike Abuls, COO, CGSchmidt (Hafey, 2014)

Lean safety will continue to impact the compliance safety community, which for too long has been viewed as the enforcer of the rules and regulations. This is a role compliance safety

professionals do not like or seek and from which they now have an exit strategy. Lean safety gives them a set of tools and techniques that will allow them to change how they are viewed by others. Some of these same safety professionals will be switched on by lean safety, expanding and adding to the body of knowledge of this relatively new topic. Lean safety will live on, not just because it is good for business, but because is good for people.

Case Study: Lean Safety at KSO Metalfab—Streamwood, Illinois, USA

The intent of using safety as the entry point to begin or restart discussions about continuous improvement is to engage the workforce while at the same time providing an answer to their question, “what’s in it for me?” When the leaders at KSO asked me to provide lean basic training for their lead people, I understood I would use this approach but the business owners did not. They expected the lean training to take place in a classroom and focus on just cycle time gains. That is not how I like to spend my time—I like to take trainees to the gemba and allow them to learn by doing. People, like them, who work in manufacturing plants, do not like to sit in meetings or training classes. They are mechanically inclined hands-on learners. I wanted to provide them the opportunity to quickly make a tangible difference in their business. Over nine days the six trainees were exposed to the hands-on experience of implementing 5S, set-up reduction, plant/cell layout changes, process mapping, workflow improvements, a kaizen blitz event, and, of course, the opportunity to make work safer and easier for themselves and their co-workers. During our time together each trainee was immersed in their own personal lean discovery journey that challenged not just their work processes but each of them as individuals.

Out of all the training and experiential learning that occurred the most meaningful, to the people who performed the work, was the redesign of an electrical cabinet assembly process. One of the trainees was the lead person in the assembly area. During my initial visit to KSO I had been given a plant tour by the business owner. At that time, I remember seeing her and the other assemblers in a variety of unnatural and uncomfortable positions, including sitting or kneeling on the concrete floor, while they installed components into electrical cabinets (see Figure 9.1).

The trainee’s final project was to tackle this final assembly work-center and improve the flow to customer of a large electrical cabinet. This required them to clearly define the steps of the assembly process and then design a new layout that would support that defined flow. All of their design work was driven by the requirement to keep the assemblers standing and in neutral positions to reduce the risk of soft tissue injuries. The results were amazing. They designed and built an assembly bench, with a hinged sloping end, on to which the assemblers could lay down, build, and then easily remove a cabinet. Components that were previously individually assembled inside the cabinet were now sub-assembled on a workbench and then inserted into the horizontal cabinet as one complete unit. Components and tools required during assembly were located on a rolling tool board/cart and positioned at point of use. This final project required them to apply all the lessons learned in their earlier training—process mapping, layout design, 5S, reducing cycle times, one-piece flow—while focusing on the safety of their associates during the new assembly cell design and build. When the new assembly cell was completed the first cabinet was built and they beamed with pride at their collective success.

Around two years later, because I was in the area, I called the owner and asked if I could stop in for a short visit. I was greeted warmly and given a verbal update on their lean progress before we headed to the gemba. As we walked into the shop, the assembly area lead saw me and said, “Just this morning



Figure 9.1 An obvious lean safety opportunity

as I was performing a new work task I asked myself, what would Bob think about this?” This meant she was looking for a safer and easier way to perform the work task. Her comment summed up the value and power of lean safety. She was exploring her options to reduce the cycle times of a new assembly process by making the work safer and easier to perform. She was engaged, empowered, and motivated because lean safety had provided the answer to the “what’s in it for me” question. She was a lean thinker who has journeyed down the safe path to lean understanding and acceptance.

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