

ONLINE EXCLUSIVE:

Kaizen Blitz: Ready, Fire, Aim

By Patricia E. Moody

When AME's intrepid Kaizen Blitzers invaded a handful of Connecticut companies almost 20 years ago, they were swept into the unleashed energy and enthusiasm of some hardcore production "experts" — the people on the shop floor. With spaghetti diagrams that tracked the mysterious movement of WIP, stopwatches to time changeover and production cycles, and red tags to highlight scrap and questionable materials, what we really were tackling head-on was the legacy of uncontrolled production control systems.



Sur-seal kaizen teams assemble their shop floor in Legos, and proceeded to redesign their production process.

Former AME President Tony Laraia dubbed these campaigns "Kaizen Blitz" — kaizen from the Japanese "to make better," and blitz from the German Blitzkrieg, or "lightning war." As first constituted by the American blitzers, these events lasted about three days. For many, this was a great opportunity to work in teams with strangers, to muck about in strange production areas and to uncover strange root-cause problems that may have been lingering just below our line of sight for years, if not decades.

Although the first kaizen targets usually revolved around throughput time, inventories, setups and scrap, armed with our new tools and wide open production areas, it soon became clear that these simple tools were powerful enough to turn entire companies upside down.

But for now, it was impossible to dampen the excitement of the blitz's first big achievements. At Jackson Corrugated Container, for instance, team members helped Plant Manager Barney Moore realize a 30-percent decrease in cycle time. At Plastic Design Inc., blitzers cut changeover time on the 110-ton Van Dorn injection-molding press from 135 to 15.59 minutes, well above their 70-percent goal. At Connecticut Spring and Stamping in Farmington, teams tackled two monster press projects and reduced changeover time by 50 percent. A long string of companies joined the campaigns, and as blitzers marched deeper into the guts of frequently dark and dirty, and always-messy production flows, they were joined by converts who were also attracted to this "ready-fire-aim" approach.

Soon enough, new recruits volunteered for duty beyond traditional production areas. For instance, at Lantech, a Louisville, KY, material handling and packaging system provider, Pat Lancaster and Ron Hicks stunned campaign survivors with their innovative approach to new product design and development. Was this a mysterious and arcane process controlled by "the others" — engineers and marketing folks outside of production? Yes, but were they also susceptible to the power of energized blitzers? Yes, and to prove the effectiveness of these production techniques as applied to a white collar process, Lantech telescoped the new product development cycle, including:

- Design cycle cut from four years to nine months;
- Batch production on highest volume line converted to one-piece flow;
- Build time cut from five weeks to days.

These blitzers were hands-on discovering the speed and financial benefit to fast product design. In fact, they would now readily admit that during the design stage more than 90 percent of the final product cost is set.

With production and new product development well-enlisted and trained with the basic kaizen tools, it's not surprising that the kaizen movement spread to other

white collar areas, including health care, financial institutions and customer service. As powerful as these empowering initiatives were, however, they were not without a downside.

A number of companies exercised the early concepts. Some of these pioneers included Maasaki Imai and the Shingijutsu consultants, Art Byrne of Wiremold and George Koenigsaecker of Jacobs Mfg., along with AME blitzers in other plants. Their results, coming up against hardcore assembly line setups loaded with out-of-control inventories, were stunning and, it turns out, historic. CEO Art Byrne of Wiremold, a Connecticut company that began its kaizen programs in 1991, cited productivity improvement at 20 percent per year, throughput time cut from four to six weeks to two days or less; defect rate reduced by 42 percent in year 1 and 50 percent in year 2, and inventories slashed by 80 percent. Equipment changeovers were cut from a maximum of 10 hours to less than 10 minutes. New product development time was slashed from “almost three years,” Byrne said, “to under six months.”

As teams became more skilled at working together with the basic tools of 5S, visual systems, the 5 whys, pull, kanban, poke-yoke, takt time, spaghetti diagrams, one-piece flow, cells, quick changeover and others, we started to see a change in tactics and response over the years. We don't know if management strayed from mapping out overall strategic objectives, or if shop people got tired of doing their own production jobs, plus intensive team participation, or all of the above, but we can now say that multiple kaizen events just aren't enough to guarantee a company's future health. Because as global outsourcing took hold and factories shipped out to Asia and Eastern Europe, the challenges of managing global supply chains required more than simple kaizen tools — IT for instance, and sophisticated supply chain management.

Kaizen as practiced in Japan had to be modified to fit the American landscape. Rumors of Japanese consultants slapping American workers into obedience highlighted the extreme contrast between the two cultures, a “gift” that

accelerated North American industry's adopting and making kaizen its own. And now we are looking for clear line of sight to the next generation of Kaizen Blitzers who will lead and inhabit what I call "The Third Industrial Revolution."

Which kaizen tools are still the most useful and powerful for industry today? We will continue to measure quality, although we have advanced enough to rely on software for ongoing operations, beyond histograms and other manual observation tools we use for initial tests. Our teams still focus on waste reduction — inventory, movement and scrap. Too many supply networks have fallen into "corporate anorexia." This term, which my book partner Dick Morley dubbed, refers to an extreme dedication to inventory reduction that places producers' profit margins at risk when faced with the type of supply disruption Toyota experienced during recent floods and tsunami.

Here, risk management and network mapping software take over where simple pull systems and kaizen manual tools cannot go. Our culture still demands teams, but the tools that the teams use have expanded to include Legos, videos and iPads. Three days to conduct a Kaizen Blitz event changed as team members developed new and more focused continuous improvement projects. Automotive supplier engineers for Honda and other majors, for example, plan on spending weeks working with suppliers to kaizen their production operations. In critical problem areas, they may stretch their visit to months of hands-on work followed up by weekly check-ins.

Tools that became basic starting points still include A3 problem-solving, which I first studied at Honda of America Manufacturing, visual systems, an approach to structuring the workplace that I believe will still be essential even after most of our factories have become Advanced Manufacturing Centers; 5S, the Three A's (the actual place, the actual part, the actual situation, in gemba); Deming's Plan/Do/Check/Act, and Dorian Shainin's famous "Let the data lead you." The challenge for manufacturers wanting to take kaizen to the next level will be how

they manage and integrate a global supply network with IT tools that rest on a clarified lean foundation.

Will the tools that kaizen pioneers introduced work for the generation now tasked with building the future of manufacturing? Can these basics remain the undisputed means to getting production ready and moving? Kaizen has no shelf life and producers eager to see fast results have carried kaizen's tools and methodology into new previously untouched areas such as new product development, supplier management, even marketing and legal functions. With each iteration, kaizen teams become more skilled at observation, at diagnosis and problem-solving. In fact, as an observation and learning tool, kaizen revolutionized the way workers are included in manufacturing processes.

When factories reduce their workforces to 10 percent of the current population, and when jobs are upskilled to engineering and automation positions, the systems and methods that we now must rebuild to bring manufacturing back to the Americas deserve our full blitzkrieg focus. It's time to rebuild our rusted out infrastructure, our neglected Bills of Material, part master and routing structures and replace or fix our disparate legacy systems to build the future of manufacturing.

Kaizen

In the United States, kaizen is frequently understood as a multiday study of a significant portion of a work process. It might be in production. It might be in any other operational activity. Among Toyota-like companies, kaizen is more likely to be a regular improvement or correction of processes without holding a special event.

Kaizen in this sense gave American companies a way to structure initiatives to improve processes, something beyond "think of an idea and try to implement it." Of course, it had a substantial, and sometimes dramatic, impact on flow of work. The approach is now becoming mature.

Its weakness, as generally used, is to co-opt a few workers into a kaizen event for a few days; then do no more until staff schedules another kaizen event. Progress is sporadic, and unless a discipline of standard work is developed, an improved process degrades over time — work changes, people change, etc. Despite increasing awareness of this, and some attention to it, "remedial kaizen" remains a problem. A kaizen event is also a training exercise. Once people have trained through a few cycles, it's time to take the training wheels off, but too few companies get to this stage.

—Robert W. “Doc” Hall, AME co-founder and author of *Zero Inventories*

Named a “Pioneering Woman in Manufacturing” by *Fortune* magazine, Patricia E. Moody is a business visionary and author of 14 business books and hundreds of features. She has been a manufacturing and supply management consultant for more than 30 years. Her client list includes Fortune 100 companies as well as startups. Moody is the publisher of *Blue Heron Journal*. She created the *Made In The Americas* and the *Education for Innovation Series*. Her next book about the future of manufacturing is called *The Third Industrial Revolution*.