

The ‘Perfect Storm’ is Bearing Down on U.S. Food Manufacturing

October 30, 1991: *An enormous extra tropical low created havoc along the entire Eastern Atlantic Seaboard at 0700 EST. Labeled the “perfect storm” by the National Weather Service, the storm sank the sword fishing boat Andrea Gail, whose story became the basis for the best-selling novel The Perfect Storm by Sebastian Junger (and a major motion picture). A little-known and bizarre ending came to this monster when the storm became subtropical thirty hours later, just before the inner core of the storm developed into a tropical storm and later an unnamed hurricane, which came to be known as the Halloween Storm.⁽¹⁾ In other words a storm... within a storm... within a storm... within a storm.*

The U.S. food manufacturing industry, along with many other U.S. manufacturers, utilities, and equipment-intensive businesses are in the eye of another “perfect storm,” and many are unaware of either its magnitude or its devastating impact. In 2006, the Baby Boom generation (born 1945 through 1964) will become eligible for and begin retirement. They are being replaced in the workplace by the Baby Bust generation, a significantly smaller generation with different skill sets and expectations than their retiring parents. They are already in the workplace poised to take over. That’s just the start. Next, comes the wave of departing skilled maintenance workers; along with their fellow Baby Boomers, they too will make up the single largest human resource catastrophe to hit American industry.

What about our maintenance workforce? U.S. manufacturers have been experiencing a gross shortage of skilled and qualified maintenance workers for the past ten years or more. The U.S. Department of Labor is predicting that there will be a need for 776,000 new installation, maintenance, and repair workers between 2002 and 2012. They also forecast the need for 1 million replacement workers in the same occupations. Auto service technicians, mechanics, general maintenance, and repair workers will account for more than 40-percent of these jobs.⁽²⁾

This “storm surge” will then devastate many U.S. manufacturers because the U.S. vocational-technical training infrastructure is a hollow shell of what it was through the late 1970s. Since the Baby Boomers graduated from high school and technical school in the mid-1960s through the early-1980s, most of the industrial arts programs, vocational classes, and one- and two-year technical college programs that provided the vocational training, education, and hands-on learning have disappeared. The following generations were unable to benefit from this type of skills education and training, due primarily to their parents’, society’s, and high school counselors’ emphasis on a college education.

Today, about 80 percent of the maintenance workers employed in small- to mid-sized U.S. manufacturers have not been formally trained to perform the equipment- and task-specific work we ask them to do each and every day. Many of these manufacturers have not provided formal task-specific training to the newer maintenance employees. So when the retirement and turnover floods begin, they will be left with an “unskilled” maintenance workforce, precisely at the time when they need highly skilled maintenance workers the most. So without specific maintenance procedures, without fundamental core skills and knowledge training, the maintenance workforce will do the best they can do based on what they happened to pick up along the way in their **informal** on-job training. The net results:

1. equipment that breaks down more often
2. faltering equipment efficiencies
3. increasing defects and waste in production and packaging

4. increasing maintenance employee turnover due to frustration
5. higher and higher operating costs (Many plants are already experiencing these productivity sapping results.)

But let's focus on the food manufacturing industry—the single largest manufacturing sector in the U.S. producing three percent (\$627 billion) of the U.S. GDP with 1.33 percent of the total national employment (1.65 million) receiving over \$62 billion in wages and salaries.⁽³⁾ Given the size and importance of this industry, we cannot allow the “perfect storm” to capsized this manufacturing “ship.”

Equipment performance and reliability have a direct impact on competitiveness and the bottom line (profits) in all equipment-intensive operations. One important fact to remember: Maintenance cannot do this reliability work alone. More than 90 percent of the reasons that equipment does not do what it is supposed to do are outside the direct control of the typical maintenance group. People throughout the organization make decisions and/or take actions every day that have an affect on equipment performance and reliability—design, procurement, installation, maintenance and repair methods, operating methods, cleaning and sanitizing methods, spare parts fit for service, scheduled time to do the required PMs, equipment design loads and speeds, operating conditions/environment, and total teamwork focused on common business goals.

What must be done? Here are ten steps to create **fast and sustainable** equipment reliability improvements:

First, prepare to move fast. Focus on the short term to increase throughput and revenue efficiencies and lower costs. Identify the most critical, problem-prone equipment that interrupts the highest revenue/volume production flows. **Second**, identify and quantify the reasons for planned and unplanned production downtime. Look at both mechanical (maintenance) related and operational downtime. **Third**, form Focused Improvement Teams to identify the root causes and lead the corrective actions for the top five most problematic equipment items. **Fourth**, make sure that there are detailed procedures in place to define proper training and qualification, maintenance, operations, cleaning, and sanitizing methods for the top-five problems of the most critical equipment. If not, develop them. **Fifth**, develop these new procedures with sufficient details to set the stage for driving out human error and variation and form the basis for employee training to “do it right the first time.” Write them to address the lowest skill level of those who perform the work. **Sixth**, train and qualify everyone who touches the targeted equipment or makes decisions that affect it. **Seventh**, managers and leaders, hold everyone accountable for following these “best practice” procedures until newer, better ones are developed and proven. **Eighth**, quantify and communicate the activities and results. **Ninth**, make corrective actions when the data suggests a mid-course correction is due. **Tenth**, go back to the First step and start over. Be careful to continue to monitor all progress and reinforce the new behaviors: *Focus on results and change the culture along the way.*

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While I may have over simplified the proven solutions here, the threats of and the reasons for skill shortages are well researched, imminent, and real. In almost every one of the plants where I consult and teach, in every seminar I conduct, I see and hear a common theme: Under-trained and untrained maintenance people are getting the blame for equipment breakdowns, having less and less time for preventive and predictive maintenance, with no time or resources for training and skills upgrade. Contrary to popular belief, equipment can be reliable. It does not have to break down or wear out. Older equipment can run better than new equipment. There are many proven methods for eliminating equipment problems. The good news is that these methods pay for themselves immediately. The choice is yours—to deploy them or not. We are presently in the eye of the “perfect storm” and it is time to chart a new course.

(1) National Climatic Data Center, <http://www.ncdc.noaa.gov/oa/satellite/satelliteseye/cyclones/pfctstorm91/pfctstorm.html>

(2) Bureau of Labor Statistics, Occupational Outlook Handbook 2004-2005

(3) U.S. Department of Commerce, Bureau of Economic Analysis 1998-2004

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