

Skills Shortage Stirs Up the Perfect Storm

Lack of Basic Maintenance Skills Threatens Equipment Reliability

Our vocational-technical education infrastructure has been decimated over the past 30 years. The basic skills and knowledge for maintaining our industrial machinery and equipment are in critically short supply. This shortage is having a significant effect on many businesses, large and small. Only those businesses that have nurtured their own skills development infrastructure are safe. The “perfect storm” is on the horizon. Massive retirements are on the way in the next three to seven years as the Baby Boomers begin retiring. Many large companies are now reporting a 30 to 50% retirement forecast from their maintenance technician ranks.

“Installation, maintenance and repair occupations will add 776,000 jobs, growing by 13.6% between 2002 and 2012,” the Bureau of Labor Statistics’ *Occupational Outlook Handbook* (2004-2005 edition) reports. “In addition, replacements will be needed for over 1 million jobs. Auto service technicians, mechanics, general maintenance and repair workers will account for more than 40% of the jobs.”

In the 1980s as the Baby Boomers’ parents retired, we filled the jobs with the most educated workforce of the century. The Baby Boomers were a product of a strong vocational-technical education system where vocational skills were not only in demand but among the highest paying careers. Industrial education programs populated our junior high and high schools, our technical schools and community colleges, and our colleges and universities during the 1960s and 1970s. Many of the Baby Boom generation were college educated to levels well beyond the education levels of our parents.

Then it happened: the Baby Bust generation. The Baby Boom generation in the 1970s had fewer children than our parents had after World War II. This group, known as Generation X, has an outlook on life and careers that is significantly different than their parents and grandparents-- not wrong but different. Much has been written on Generation X’s values and behaviors, too lengthy to explore here. What I will share is that their pursuit of vocational-technical education and training for careers in industry and industrial maintenance has plummeted from the levels in their parents’ generation. This is part of the reason that vocational-technical programs have declined: lack of interest.

The “perfect storm” is on the horizon, and most businesses are unprepared for the dangers that lie ahead. Where are the skilled maintenance and reliability technicians going to come from? Where are the maintenance and reliability engineers, managers, and other leaders going to come from? Massive retirements will happen between now and 2012. The vocational-technical education infrastructure that supplied the skills and knowledge to fuel industry growth, expansion, and reliability during the 1970s, 80s, 90s, and the past five years is no longer there. And over the past 15 years, many companies have cut back their training departments and their spending for job-specific employee training.

As maintenance and reliability professionals, we know that job training is an essential ingredient of equipment reliability. Human error is one of the biggest causes of equipment problems. Many people who operate and maintain equipment unknowingly introduce or ignore failure modes due to the lack of proper training--basic skills as well as equipment-specific skills and knowledge. Employers also design jobs that promote a separation of skills and knowledge: "I operate it; you fix it."

We can no longer afford to ignore the effect of untrained operators and maintainers on our equipment reliability. Manufacturing jobs will ultimately go to regions and countries where skills and knowledge exist to make these plants reliable and financially viable. Employers who have strong focused job-related, equipment-specific skills development programs will thrive. And they will thrive not only because they have job-focused training but because they are appealing to the needs and interests of the generation of employees (Generation X) inheriting the jobs of the retirees. Generation X wants to learn. Learning new things that they can use is very important to them. They like challenges. But they will also look for the easiest way, the path of least resistance. And that can be good for our businesses. They will change careers numerous times looking for a more rewarding, more satisfying job. They will shy away from workplaces that are problem-prone, unfriendly, dark and dirty.

Today, our training programs must be fast and focused, highly efficient and effective. If your company is not training with this focused approach, it may not survive the "perfect storm." Training today cannot be the long drawn-out curriculum of the past. Apprenticeship programs must be accelerated and very, very job specific. Every employee who operates and maintains equipment must be trained in the equipment-specific requirements with a narrow foundation of the basic skills and knowledge. This is a different kind of training than most of us experienced in our career development. Training in today's industrial workplace is a "must do." But as some employers have said: "What if we train them and they leave? We can't afford to be the training company for the area." Well, I have to counter with "What if we don't train them and they stay?"

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