The Kind of Training America Really Needs, Part 2

MICHAEL COLLINS, Author, Saving American Manufacturing

By MICHAEL COLLINS, Author, *Saving American Manufacturing*

This is part two of a two-part piece. Part one can be found here *[1].* [1]

Apprentice Training

MAG offers apprentice training, engineering co-ops and internship programs. The company recognized the problem of retiring baby boomers and the impact it would have on its production systems, and most importantly, on its skilled trades. The company reintroduced the apprenticeship program, which at one time had been commonplace in the machine tool industry, to its skilled trade workers.

The apprentices are full-time employees of the company. They receive wages and benefits, and the company pays for their education and training. Two of the apprentice programs (The Run-Off Technician and Electrical Technician) take 8,000 hours of on-the-job training (OJT), combined with night classes to complete, and the trainees receive a Manufacturing Engineering Technology (MET) or Electrical Technology associate degree.

The master assembler position is 6,000 hours of OJT, combined with the MET associate degree. The associate degree is typically earned in 3-1/2 years. MAG's Hebron, KY operation partners with Gateway Community and Technical College to do much of the classwork. Its other U.S. facilities partner locally in a similar manner with other schools.

The apprenticeship program in Hebron is registered with the Kentucky Department of Labor division of employment standards, apprenticeship and training, in cooperation with the U.S. Department of Labor Bureau of Apprenticeship and Training. In addition, it is registered as part of the national apprenticeship program

in accordance with the basic standards of apprenticeship established by the Secretary of Labor.

A key issue in advanced training that produces the multi-skilled people we need in manufacturing is the skill called troubleshooting. The media talks about advanced skills, problem-solving, knowledge of computers and programming, but they never tie these general problems to advanced skills. To maintain, repair, and operate today's machine tools and packaging equipment takes excellent troubleshooting skills, and I think that people acquire these kinds of skills through apprentice training.

In an *Industry Week* article, the president of MAG Global Services, Bill Horworth, made a point on the usefulness of apprentice programs on troubleshooting skills. He says, "To troubleshoot the product and understand why it is doing what it is doing takes a lot of skill and experience, which you don't learn in the classroom."

Mark Logan, vice president of marketing for MAG, agrees that troubleshooting is important and requires advanced skills. He says, "When it comes to diagnosing and repairing sophisticated machinery and equipment, we are dealing with a very broad skill set, ranging from precision mechanical components, electronic and electro-mechanical systems, plus computer and software programming. All of these functions interact with one another under varying operating conditions in factories around the world. As a result, classroom and theoretical training must be combined with practical on-site experience, along with mentoring by seasoned professionals. One of our most acute needs is for customer support technicians with proven on-the-job skills."

Internship Programs

MAG's internship programs are student trainee positions for people who are finishing high school, college or a master's degree. The internships are currently being used for engineering students and students seeking an associate degree. Interns receive an hourly wage and usually work 40 hours a week. In some cases, interns travel with the field service group and work overtime. The externship is a lesser non-paid program, but designed to give pre-apprentice applicants hands-on experience.

I am particularly impressed by the company's promotion of its manufacturing jobs as a career. Younger people are very wary of taking a job in an American manufacturing company because of offshoring, plant closures, and little commitment to the employee for training or a future. MAG describes future jobs in its company as a career, which means that they are envisioning a longer term arrangement and help the new employee describe a career path, while providing the necessary training and education to be successful.

Mark Logan says, "We developed and expanded our apprenticeship and other programs out of necessity. We need a pipeline of talent to backfill for current and upcoming retirements, and also to support our global expansion and need for future leaders. Our competitors face the same challenges. It is important that people in

our training programs know their potential path and are motivated to have their training develop into a long-term career opportunity; for example, we currently have two of the graduated apprentices using tuition assistance towards a bachelor degree."

Conclusion

Since 2000, about 6 million people have lost their jobs in manufacturing, yet *The Wall Street Journal* and other major newspapers say that manufacturers don't want these people back — they want people with advanced skills who are problem-solvers, multi-skilled and good troubleshooters. I suggest that these kinds of people will only be available by investing in long-term training that can eventually turn into some kind of journeyman status.

The training programs described in this article and used by Penn United and MAG IA are good examples of what needs to be done in this country to meet the requirements of advanced training. Both of these companies offer apprentice training, short-term training, tuition reimbursement, customized training and skill certificates. These are comprehensive programs that include long-term training and investment. Both companies also describe their manufacturing jobs as career opportunities and are willing to make long-term commitments to the employees.

At the same time, it is clear that most Fortune 500 companies are not investing in these long-term training programs, particularly apprentice training. In a recent article in *USA Today*, the shift away from extensive training began after the 1980 recession as companies began to find ways to cut more costs.

I also saw this trend as a manager of a division that built automatic machines for the Fortune 500 companies. In the 1970s, many of these companies sponsored apprentice programs and invested in extensive training, but in the 1980s, most of the extensive training was dropped and many of the craftsmen began to retire. The inadequate skill training immediately resulted in more service problems on our machines because new workers were not able to operate, maintain and repair them. The most obvious service problems occurred during troubleshooting, which by definition, takes extensive and advanced training.

According to the U.S. Department of Labor's Department of Apprentice Training, only about 4 percent of the apprentices in its database are manufacturers. In looking into the apprentice database by states, I found very few of the Fortune 500 companies (except for the auto industry) were sponsoring apprentice-type training.

If we are going to train the new manufacturing workers to do advanced troubleshooting and have the multi-skill ability to do many jobs as a generalist, I believe it will require long-term, comprehensive training programs. I suspect that the publicly held companies will continue to view training as an expense rather than an investment. This kind of mindset is very suspicious of training programs that take years to complete, paying people for skills they attain or issuing certificates to people that make their skills transferable.

We have done enough studies to know what kind of skills and training programs are needed. Companies like Penn United and MAG Industrial Automation have already designed their curriculums and made the investment in facilities. They know what skills are needed and are already training the future manufacturing workers of America.

It is time for the large companies who have the majority of U.S. manufacturing employees to quit stalling and make the commitment to long-term training. Yes, this will probably be an investment of 3 percent of sales, and a commitment to long-term training in years, certificates for skills learned and recognizing the training as an investment, not an expense. We don't need any more "shortage of skills" surveys; it is time to act.

This is part two of a two-part piece. Part one can be found here. *[1] What's your take? Please feel free to comment below! For more information, please visit* www.mpcmgt.com *[2].*

[1] Boiling Point? The skills gap in U.S. manufacturing, Deloitte Consulting LLP, the Manufacturing Institute, August 2011.

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