# The Training Manufacturers Really Need

By MIKE COLLINS, Author, Saving American Manufacturing

A recent study authored by Deloitte LLP and the Manufacturing Institute says that “for years, manufacturers have reported a significant gap between the talent they need and what they can actually find.” In fact “67 percent of manufacturers reported that moderate to severe shortages of available, qualified workers exist. And 56 percent anticipate that these shortages will only grow worse in the next three to five years.”  The workers hardest to find are machinists, tool makers, mold makers and other craft workers, and technicians.

Six million people have been laid off from manufacturing jobs since 2001 and still five percent of all manufacturing jobs (600,00 jobs) remain unfilled. The manufacturers don’t want to hire back the low skilled people; they want multi-skilled people who can do a wide variety of jobs. Because of automation and the changing nature of manufacturing work, I will make the case that the skills we need are very similar to the skills you get in a long term or apprentice-style programs. Perhaps the best way to do this is to explain some exemplary programs and the skills they teach.

**Penn United Technologies**

Penn United Technologies is a mid-size manufacturer located in Western PA that specializes in precision metal manufacturing. Jim Ferguson, director of training, explained that in 1997, they were doing most of their training through local

vocational technology centers, but the training did not cover all of the skills needed for their type of manufacturing. They decided that they would invest in their own training and designed the Learning Institute for the Growth of High Technology (L.I.G.H.T.).

The Institute is 17,000 square feet, and equipped with the most up-to-date manufacturing machinery and state-of-the-art equipment so they can provide customized manufacturing training for both external customers and their internal employees.

L.I.G.H.T.'s main mission is to assess, design, and develop manufacturing training programs to meet the needs of their customers and employees. The Institute offers short term training, long term apprentice programs, tuition reimbursement for college courses, and customized training.

Their short term training is a roster of 25 courses and a growing selection of metalworking seminars and workshops. This training covers everything from 5S and introduction to machining, to CNC programming and manual machining. Long term training for employees includes four apprenticeship programs approved by the Pennsylvania Bureau of Apprenticeship Training as well as three inter-company programs.

Penn United's L.I.G.H.T. is a great model for all manufacturers who need the advanced skills of real journeymen. They recognize that to produce world-class products, they must offer world-class training.

**MAG IAS, LLC**

Another good example is MAG IAS. They are an American-based manufacturer of machine tools with plants in Germany and the United States. I have always been a big fan of the German training model for manufacturing because I believe it is the key to why German Manufacturing is 21 percent of their GDP, while American manufacturing has slipped to 11 percent of GDP. MAG's U.S. operations uses a system with similarities to the German training model because the amount of OJT and the special individual attention given to each apprentice by senior level master technicians matches the hands-on German philosophy.

MAG recognized the problem of retiring baby boomers and the impact it would have on their production systems and, most importantly, on their skilled trades. They reintroduced the apprenticeship program for their skilled trade workers that had, at one time, been commonplace in the machine tool industry.

The apprentices are full-time employees of the company, receiving wages and benefits, and the company pays for their training. Two of their apprentice programs take 8,000 hours of OJT combined with night classes to receive a Manufacturing Engineering Technology or Electrical Technology Associates degree. The Master Assembler position is 6,000 hours of OJT combined with the MET Associates degree. MAG's Hebron, KY operation partners with Gateway Community and Technical College to do much of the class work. Their other U.S. facilities partner in a similar

manner with other schools.

Their 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.

**Conclusion**

A key issue in advanced training that will produce 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. But 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.

The above training programs are good examples of what needs to be done in this country to meet the requirements of advanced training. These companies offer apprentice and short term training, tuition reimbursement, customized training, and skill certificates. Both companies also describe their manufacturing jobs as career opportunities and are willing to make long term commitments to the employees.

According to the U.S. Department of Labor's Department of Apprentice Training, only about four percent of the apprentices in their database are manufacturers. I also found that very few Fortune 500 companies – except for those in the auto industry – were sponsoring apprentice type training.

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. This will probably be an investment of three 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 skills shortage surveys; it is time to act.

*What's your take? Please feel free to comment below!*

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