

# Learn to Work, Work to Earn

## Apprenticeship programs are back in the USA – sort of

By Jack McGuinn, Senior Editor

Once upon a time, long before shiny young people began eagerly humiliating themselves on The Donald's cable "reality" dumbfest *The Apprentice*, to actually be an apprentice in this country was a noble enough thing. And to learn, train, and work to become a master craftsman — especially, by the 1900s, in the industrial trades — was to earn the respect of ones' peers and "betters."

The apprenticeship formula was a triad representing a mutually beneficial — almost populist — bargain struck between a local area's businesses, indigenous workforce, and local public school entities. This unofficial clause in the country's social contract served its willing participants and the nation well. Proof of this was provided at war's end in 1945, and the United States found itself — by an almost grotesque serendipity (due to a war it did not want) — the one and only economic/military superpower on the planet. Hell — along with maybe Switzerland and a few other countries that managed to avoid the hostilities, ours was the only country left that *had* an economy.

Those of us paying attention in grammar school history class know that apprenticeships harken back at least to medieval times. Here in the U.S. the apprenticeship movement, brought over from Mother England, took hold in the early 1700s, once there was semblance of an economy not entirely agrarian-driven. With the blooming in the mid-1700s in England of the Industrial Revolution, and its booming in America from the early to mid-1800s, apprentice programs flourished in this country's cities and towns — helping to plant, grow and sustain OEM factories and family job shops with the aid of a steady stream of eager and able tradesmen. Until, that is, the 1970s — and the beginning of U.S. manufacturing's ongoing, thus far inexorable, decline.



**Mike Bryan, (center) veteran Bosch Rexroth training specialist, has had a lot to do with the success of the German company's apprenticeship program here in America. Bosch Rexroth's long history and an inherent dedication to training their own, coupled with Bryan's expertise and dedication, are a powerful combination (photo courtesy Bosch Rexroth).**

Like a marriage gone bad, the trusting relationship between those very same businesses, workers and local school boards frayed over the years and finally broke down — each group seemingly losing relevancy, one to the other. Result: cuts in apprenticeship funding and other programs led to a disconnect between young people and any interest they may have once had in pursuing work in high-tech manufacturing.

And so from the 1970s onward apprenticeship programs began falling increasingly into disfavor, although falling down the memory hole might be more precise. It wasn't long before anybody was even talking about apprenticeships. But by that low-point, the business consensus had coalesced that apprenticeship programs were "too expensive," and led to "job flight (we train them, they go elsewhere)." From the educators, with full parental backing, it went something like, "We don't educate kids for manufacturing jobs. What's the point?"

With dwindling funding, technical schools across the country folded their tents and its precious pool of qualified and dedicated instructors was lost, forced off looking for jobs. And as the '70s unrolled, kids with Education degrees were proliferating like drunken rabbits; but not to teach gear crowning or gear

design. In fact, a great many of them ended up not teaching anything at all and pursuing altogether different careers.

Back here in 21st century U.S.A., it is truly a *Bizarro World* moment when you think about it: even some 40 years out, as need and demand continue for skilled manufacturing talent, apprenticeship programs — a proven winner throughout history — are largely ignored in this country. Indeed, despite support for apprenticeships from President Obama, who cited the German model in his last State of the Union address, these positions are becoming ever harder to find. Since 2008, the number of apprentices has fallen by nearly 40 percent, according to a Center for American Progress study.

Oh — almost forgot. Meanwhile, over in Europe: Germany, England, France, etc. — apprenticeships? Flourishing. But not so much the European economy right now, so go figure.

Who said this stuff had to make sense?

But the end of 2013 did bring some welcomed good news with the distribution of a press release announcing, "Bosch Rexroth's Mike Bryan Named Trainer of the Year by the German American Chambers of Commerce (GACC)."

Bryan is a training specialist — and obviously a very good one. He trains

American workers at the German-owned Bosch Rexroth manufacturing facility in Fountain Inn, S.C., and was recently recognized for his invaluable expertise in workforce training and skills development—especially of young people, where it counts most. But it so happens that this year's award was presented in recognition of Bryan's success with Bosch's apprenticeship program (*In fact, it was the impetus for this article*). So we presented some apprenticeship-specific questions to three people who are intimately involved in working to help American manufacturing—and its workers—restore their swagger and reclaim some bragging rights.

We began by asking Bryan why there aren't more apprenticeship programs in the U.S., since the ones that do exist here seem to be successful, regardless of ownership.

"Apprenticeships traditionally haven't played a major role in the educational institutions in the U.S. or in the U.S. business environment. I think the tradition here has always been oriented more toward a short-term internship, followed by entry-level employee 'baptism by fire.' The difference now is that everything is moving much faster, so we need to bring in technically skilled employees who are ready to go."

As for Laura Hopkins, executive director of the Washington state-based Aerospace Joint Apprenticeship Committee (AJAC), it's a three-part answer (italics ours): "*Infrastructure*: the United States' entire education system and funding structure are set up to support students pursuing the four-year college degree; this type of degree has been established as a pathway to success. *A lack of awareness*: no marketing of apprenticeship programs to employers, candidates, parents, teachers, counselors, etc. *The history of manufacturing*: outsourcing manufacturing jobs to other countries."

In researching this article, it appeared that those companies with the most successful apprenticeship initiatives were foreign businesses with U.S. locations, such as the mentioned Bosch Rexroth, but also BMW, Tognum AG (now Rolls-Royce Power Systems AG) Michelin, and Germany's Continental Tire among them.

In acknowledging the many valuable benefits of the Bosch program,

one can't help wonder why more—a lot more—American-owned companies aren't doing the same thing.

"Sometimes our international investors can also be tremendous innovators," said Scott Paul, Alliance for American Manufacturing (AAM) president. "After all, they've come willingly into the American system, while many American companies spend a lot of time fighting or complaining about our system. Companies like Siemens and ArcelorMittal, just to name two, have

fantastic programs that could be called apprenticeship programs.

"That's not to say there are no good ideas that have originated from the U.S. In my travels I've come across dozens of great examples of companies that have partnered with their union or workforce and local community college to develop strong programs."

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We also asked Bryan why he thinks Europe leads the way on apprenticeships.

“The concept of apprenticeship has a very long tradition in Europe,” said Bryan, “and especially in the area of technical education. It’s a model that’s been very successful. However, the apprenticeship idea has gained significant traction in the U.S. on its own.

“Especially when I think about the students I mentor who are involved in the FIRST Robotics program (*An international high school robotics competition organized by For Inspiration and Recognition of Science and Technology*), they leave the program ready for technical challenges. And FIRST has been around since 1989. We use FIRST Robotics as part of our high school youth apprentice program and it serves as a feeder program for our adult apprenticeship as well.”

Turning once again to Paul, it has been written that “The central answer to the mismatch between jobs and employment is a 21st-century apprenticeship program.” If you agree, how can that happen on a national scale?

“I disagree with the thesis. I’m more of a *Field of Dreams* kind of guy: “If you build it, they will come.” The central problem is not enough jobs, rather than not enough pathways. If our economy grows at a strong rate, you’ll see more jobs, and along with more job openings, you’ll see more innovative apprenticeship and workforce programs materialize to meet the demand. While some like to think it’s the other way around, that’s simply not the case.”

The responses by Bryan and Paul led to wondering whether Hopkins’ AJAC recruits—or needs to recruit—apprentices.

“No, AJAC is a non-traditional aerospace and advanced manufacturing apprenticeship program that does not serve as a placement agency for apprentices, but instead is employer-driven. AJAC enrolls the employees of its 140-plus participating companies (training agents). AJAC and its advisory committee, comprised of employers and employees, have developed and implemented AJAC’s apprenticeship programs based on employer and industry need for machinist (aircraft-oriented); aircraft mechanic airframe; precision metal fabricator; and tool and die maker.” AJAC

does attend career fairs and other outreach events to create awareness of apprenticeship programs, explain the benefits and requirements, and to educate attendees on how to start a career in the aerospace and advanced manufacturing trades, which is by contacting one of AJAC’s participating companies.”

Backing things up a bit, we asked Bryan—a guy who should know—if reaching students at the elementary and middle school age is perhaps the best time to spark their interest in manufacturing—years before the job fairs and career days, etc.

“The earlier, the better,” he affirmed. “One of the schools I work with is now implementing FIRST programs in their elementary and middle schools, too—and the kids love it. Clearly, if students become active with technical education early in their lives, they’ll have more options later in life—even if they choose a different career path.”

And as a follow-up: Are there any pre-qualification steps required before one joins the Bosch apprenticeship program? (As you’ll see, the program is not for slouches—goofs need not apply.)

“Applicants wanting to join our apprentice program are well aware that they are competing with other applicants for a chance to become a Bosch Rexroth apprentice,” he said. “They are working on gaining a competitive advantage by preparing for the entry-level position with taking various courses at Greenville Technical College, learning manufacturing processes, and working on their workplace skills.

“The applicants have raised the bar for becoming a candidate for our program. Candidates are those that move to the next level of the selection process and they must be ready to learn and be able to attend college at the starting level of our program’s academics.”

Some have called for a public-private apprenticeship initiative, saying it would increase competitiveness and youth employment, upgrade skills and wages, achieve positive returns for employers and workers, and reduce government spending if companies played a larger role (i.e., spent more) in skills development. We asked Paul if that could ever happen here.

“I think there’s a reasonably strong chance that we’ll see more robust public-private partnerships to promote career pathways and apprenticeships,” he said. “And I think that more executives will concede they have to invest more company cash in these, and not wait for some massive (but imaginary) spending increase from Washington.”

Others point to the thoughtless disparity in public funding of the college-only approach as the top reason why apprenticeship programs went away. Government spending on colleges and universities tops \$300 billion per year, while outlays to apprenticeship programs total less than \$40 million annually. Is there any way to turn this tide?

“Increased student debt and an emerging reality in our economy will help to turn the tide on this equation,” said Paul. “A four-year degree is still incredibly valuable, but there are likely to be many more opportunities for non-college graduates to secure jobs that come with a middle-class label. An aging manufacturing workforce, the U.S. energy boom, and the re-shoring fad all contribute to this. You’ll see public policy respond in some way to this, but by no means will it reverse the imbalance in spending for universities compared to training programs.”

So the need and demand for highly and middle-skilled manufacturing talent intensifies, but apprenticeship programs remain a largely untapped source for advanced manufacturers facing a skills gap. But not in Washington state. What makes it different? Aerospace—and foresight.

“The demand in Washington (for apprentice programs) is driven by employers in the aerospace and advanced manufacturing supply chains,” said Hopkins. “AJAC’s apprenticeship program supports over 140 aerospace and advanced manufacturing companies across Washington state.

“Washington aerospace and advanced manufacturing employers realized a considerable portion of their workforce is going to retire and there isn’t going to be a large pool of highly skilled candidates to select from due to the lack of high school shop classes and the emphasis on four-year college degrees being the only path to pursue after high school. As a result, former Governor Chris Gregoire took action and identified funding for

aerospace and manufacturing apprenticeships.” (Wonder what *she’s* doing in 2016.)

We conclude with asking Paul to comment on the thinking in some quarters that the solution to the needs of both job seekers and employers is a modern-day apprenticeship program.

“I was recently at a major manufacturing expo in Chicago,” Paul said. “Every welding class instructor there told me he had a waiting list for his program. I think the answer is to expand a number of pathways — community colleges, high school technical programs, training programs and apprenticeships — to meet the interest of younger people in manufacturing careers.”

A final word about the three organizations involved in this article.

For those of you reading this who happen to be involved in some way in your company’s employee training program — and, even better, have the “juice” to implement needed changes — you will find a mother lode of valuable information on apprenticeship programs at both the Bosch Rexroth ([www.boschrexroth.com](http://www.boschrexroth.com)) and AJAC ([info@ajactraining.org](mailto:info@ajactraining.org)) sites. More than just coursework offerings, the information includes instruction and insight for both would-be apprentices and employers. Check it out.

And just a bit more on the Alliance for American Manufacturing (AAM) ([info@aamfg.org](mailto:info@aamfg.org)), a non-profit, non-partisan organization formed in 2007 by some of America’s leading manufacturers and the United Steelworkers. They exist “to strengthen American manufacturing and create new *private-sector* jobs through smart public policies.” For the AAM, a robust and sustaining manufacturing base is as vital to Homeland security as is the latest jet fighter. And it is much easier to build another fighter plane than to build and maintain an economy. The AAM strives daily to build coalitions around the issues that matter most to the country, etc., its manufacturers, and its workers. ⚙️

(Sources for this article: Washington Post, May, 2013; AJAC ([info@ajactraining.org](mailto:info@ajactraining.org)); New York Times, Nov., 2013.)

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