

Uptime: Promoting Careers In Maintenance

Written by Bob Williamson, Contributing Editor
Thursday, 20 September 2012 12:41



“I’m 18 years old and don’t especially want to go to college. I’m not sure what I want to study or what kind of a program or career to pursue. I’ve got good grades. I suppose I could figure it out if I went to college like my parents and teachers want me to do.” Hold on just a minute! There is, unfortunately, entirely too much emphasis in America on pursuing a “college education/having a college degree.”

Not everyone “needs” a college education to be highly successful. About half of the high-school graduates won’t go on to college. Many who do will not finish a degree. Couple that with a high-school dropout rate of about 30%, and it’s clear we are fooling ourselves into believing that the pathway to success in life is a college education.

Basic education that is focused on how to become a productive member of society can be obtained in high school with some post-secondary trade, industrial or vocational education, or through formal and structured on-job training such as apprenticeships. Problem is, in the past two generations, we have rarely exposed school-age students to meaningful careers in business and industry that do NOT require a college degree.

This trend has created a huge and growing skills mismatch in many business and industrial sectors in America. Still, if you ask most educators, teachers, counselors, school board members, politicians and parents, they typically DO NOT consider “post-secondary industrial and technical education” or “trade school” to be as valuable as a “college education.”

Consider this: A skilled trades- or crafts-person can earn from \$50,000 to \$85,000 per year in a rewarding career without the huge expense or debt of a college education. Careers in maintenance can be highly rewarding and diverse. So why don’t educators, teachers, counselors, school boards, politicians, community leaders and parents promote these rewarding careers? What has happened to our “industrial education” curriculum in schools?

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The total cost of a four-year “college education” can run from \$100,000 to more than \$500,000 plus personal expenses and transportation costs. That’s a huge financial gamble for someone who is faced with a significant career indecision, is not interested in “college,” has a marginal academic record or someone who has to rely on loans for the cost of his/her college “experience.” After all, there is NO guarantee of a “high-paying job” after four years of college.

Skills mismatch

This “industrial-education” deficit has also created a significant mismatch between the skill sets required by the tens-of-thousands of open jobs in America and the skill sets among the job seekers. Just look at one of the current, highly publicized examples—*North Dakota*. In this state, there are more job openings than applicants in three occupational groups: “Installation, Maintenance and Repair,” “Production” and “Construction and Extraction.” (And this has been a multi-year deficit.) What’s more, these broad job groups require applied skills and knowledge in maintenance, repair, electrical, plumbing, carpentry, fabrication, machining, tool & die and welding/cutting.

In November 2011, according to the North Dakota Job Service, out of a total of 19,627 jobs, the state had 4246 openings in these three job groups.

North Dakota, however, is not the only place where there’s a rapidly growing skills shortage. It’s just the oil and gas exploration and production in the Bakken trend—*America’s largest known reserves of light, sweet crude oil*—that’s capturing all the attention.

There are honorable and rewarding maintenance careers in a huge part of our economy. In some sectors there is a growing skills shortage that will only get worse. In these industries there are tens-of-thousands of job openings. But because of a “skills mismatch” most people looking for work are not qualified.

Maintenance MIA

In the past two years there has been a renewed emphasis (yes, again) on careers in manufacturing (i.e., the U.S. Department of Labor, Department of Education and the White House in all their discussions of the “Manufacturing Skills Certification System,” “advanced manufacturing skills” and “Skills for America’s Future”). But, awareness- and skills-building for *careers in industrial maintenance and repair*

have been missing in action in many middle- and high-school programs. This gap, in my opinion, reflects a serious mistake based on misconceptions about what careers “industrial maintenance” truly represents.

I've had (and continue to have) many conversations with younger plant maintenance technicians. This is what I frequently hear: *"If I knew these types of jobs existed and could have taken classes to prepare me better, I would have been really excited about school. But, despite my lack of interest, my teachers and counselors kept pushing me toward college."*

The U.S. Department of Labor/Bureau of Labor Statistics lumps "maintenance jobs" into a category called "installation, maintenance and repair." Most people—*not necessarily readers of this magazine*—could be thinking that "maintenance" jobs are in manufacturing plants... and that manufacturing is on the decline in America... so, why pursue careers in maintenance? This type of thinking would be flawed.

What's a maintenance career?

"Maintenance is the least defined of all industrial activities." I've been saying that for years. Why? There are no clear job roles that can be easily converted into an easy-to-sell career path or educational program of study. After all, where would someone with "installation, maintenance and repair" skill sets really work?

Many maintenance jobs are in manufacturing or "goods-producing" industries. Contrary to what countless people believe, the U.S. continues to have the largest manufacturing economy in the world. And, according to the Federal Reserve Bank of Cleveland regarding "U.S. Manufacturing and the Economic Outlook": *"U.S. manufacturers are likely to become even more **capital- and skill-intensive***

, leading to further productivity gains

(emphasis added)

"
This continuing emphasis on manufacturing being "capital and skill intensive" should send a powerful message about the critical importance of careers in industrial maintenance and reliability.

Every physical-asset- and skill-intensive business and industry has equipment and facilities that need maintenance: That translates into 60 industry sectors. (The accompanying sidebar lists a partial breakdown of types of industries and sectors that offer "Installation, Maintenance and Repair" career opportunities. For a complete breakdown, refer to the online version of my column at www.mt-online.com/uptime.

Entry-level requirements

Careers in maintenance can be rewarding and personally satisfying. Many don't require a "college education" in the traditional sense of a four-year degree. Regardless of business sector, careers in maintenance build on a person's interests and abilities. Basic entry-level requirements should include evidence of a student's interest in and ability to:

- Diagnose mechanical problems
- Seek solutions
- Do precision work with their hands
- Read
- Write
- Use math
- Use computers
- Verbally communicate
- Work in collaboration with others

All students in middle school and high school should be exposed to these basics as part of their developmental path—and, *most important*—as a way to assist them in making informed career choices and decisions.

Let's do our part

As maintenance professionals and Americans we owe it to our youth, our schools, our country and our standard of living to spread the word: ***There are plenty of rewarding careers in industrial maintenance and repair.*** We also have not only the opportunity, but the obligation to encourage our educators, politicians, community leaders and well intentioned, deeply concerned parents to back off the ill-informed message that a college education is the (only) pathway to success in America.

Share this article and information about the industries that offer honorable, rewarding jobs in our field with your local school administrators and board members. Do your part in helping teach students in school and on the job. Most students learn by doing rather than reading and studying. Find ways to engage them in pursuing careers in maintenance and repair, as maintenance and reliability technicians. **MT**

60 U.S. Industry Sectors Offer Career Opportunities In Installation, Maintenance & Repair

Goods Producing Industries:

Manufacturing: (21 industries)

- Food Manufacturing
- Beverage and Tobacco Product Manufacturing
- Textile Mills
- Textile Product Mills
- Apparel Manufacturing
- Leather and Allied Product Manufacturing
- Wood Product Manufacturing
- Paper Manufacturing
- Printing and Related Support Activities
- Petroleum and Coal Products Manufacturing
- Chemical Manufacturing
- Plastics and Rubber Products Manufacturing
- Nonmetallic Mineral Product Manufacturing
- Primary Metals Manufacturing
- Fabricated Metal Product Manufacturing
- Machinery Manufacturing
- Computer and Electronic Product Manufacturing
- Electrical Equipment, Appliance, and Component Manufacturing
- Transportation Equipment Manufacturing; Motor Vehicles & Parts
- Furniture and Related Product Manufacturing
- Miscellaneous Manufacturing

Mining, Quarrying, and Oil and Gas Extraction: (3 industries)

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- Oil & Gas Extraction
- Mining
- Support Activities

Construction: (3 industries)

- Construction of Buildings, Residential & Non-Residential (includes maintenance & repair)
- Heavy Civil Engineering Construction
- Specialty Trade Contractors, Residential and Non-Residential

Agriculture, Forestry, Fishing & Hunting: (5 industries)

- Crop Production
- Animal Production
- Forestry and Logging
- Fishing, Hunting and Trapping
- Support Activities for Agriculture and Forestry

Trade, Transportation and Utilities:

Wholesale Trade: (3 industries)

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- Merchant Wholesalers, Durable Goods:
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- Wholesale Electronic Markets and Agents and Brokers

Retail Trade: (11 industries)

- Motor Vehicle and Parts Dealers
- Furniture and Home Furnishings Stores
- Electronics and Appliance Stores
- Building Material and Garden Equipment and Supplies Dealers
- Food and Beverage Stores
- Health and Personal Care Stores
- Gasoline Stations
- Clothing and Clothing Accessories Stores
- Sporting Goods, Hobby, Book, and Music Stores
- General Merchandise Stores
- Miscellaneous Store Retailers

Transportation and Warehousing: (11 industries)

- Air Transportation
- Rail Transportation
- Water Transportation
- Truck Transportation
- Transit and Ground Passenger Transportation
- Pipeline Transportation
- Scenic and Sightseeing Transportation
- Support Activities for Transportation
- Postal Service
- Couriers and Messengers
- Warehousing and Storage

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Utilities: (3 industries)

- Electric Power Generation
- Natural Gas Distribution
- Water, Sewage and other Systems