Written by Bob Williamson, Contributing Editor
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Bob Williamson, Contributing Editor Imagine that you're 15 years old. You like new technology. You're a whiz at strategy games. You built your own computer and set up a wireless network. You're yearning for your first car. You have fleeting thoughts what you would like to do when you grow up. Earn big bucks! A job? A career? Go to college? Why? All they seem to care about any more in school is math and science. You would like to do things, make things, build things, solve puzzles and problems, figure things out, investigate.

Then, you hear the news about the auto industry's woes... the meltdown across the industrial sector... the turmoil in banking and finance. It's all over the Internet and on TV. Is this real? Now, what to do when you grow up? Maybe one or more of these global problems has hit real close to home—your home. A relative, neighbor and/or friend's parent(s) may have recently lost their jobs as manufacturing has slowed over the past few months. Would you be interested in learning more about working in a "factory?" Nah, doesn't even register as an option. So much for OUR future capacity assurance talent...

If there ever were a time when we needed to actively nurture and recruit young minds for maintenance and reliability careers, that time is NOW. Yet, the political/media machine keeps chugging along, doing everything possible—it seems—to send a "discouraging word" about one of our nation's largest economic machines: the "Big Two" in auto and truck manufacturing. (Ford, Toyota, Honda, Mazda, Mercedes, BMW, Kia, Hyundai and others in the U.S. are rarely mentioned.

Unfortunately, the impact is truly much more than cars and trucks. Look at all of the jobs in the

supply chain. Look beyond all of the direct suppliers (first, second and third tier). Look past the chemical plants that supply the feedstocks for paints and plastics. Look upstream to the mines and processes that supply ore, limestone, kaolin and other minerals that go into steel, copper, aluminum, paints, composites and plastics. Look further upstream to the companies that produce oxygen, nitrogen, argon, CO2, chlorine and other gases that go into making primary metals and plastics. Look way upstream to petroleum products, another natural resource that is largely worthless until it is processed into usable forms to be used in plastics, composites and metals. Consider the oil and natural gas that fires our boilers to generate steam, hot water and gases to process metals that go into cars, trucks and ever so much more. You'll be looking a long time—the list of affected industries and businesses goes on and on and on. As you do, keep in mind that from this point on, every one of them will need increasingly more reliable equipment and processes in order to remain viable and competitive. What we're talking about here is much more than auto and truck manufacturing. Our economy depends on productive and reliable manufacturing processes found in thousands of different industries. Most are interrelated. It is rare that the auto manufacturing supply chain only affects—or is only affected by the auto industry. Right now, however, the auto industry in America is at risk of bringing our manufacturing capabilities down to their knees. Our media-political machine is missing that point and, quite possibly, sending the wrong message to our best and brightest young minds: our future plant reliability technicians.

The socio-economic impact of auto manufacturing is HUGE! Historically, the auto industry has defined how we manufacture products in most other industries. Sure, in 1913 in his Highland Park, MI plant, Henry Ford—father of the moving assembly line—pioneered many manufacturing breakthroughs with his Model T Ford. But, he had to first create "interchangeable parts" using methods he had learned from handgun manufacturing. Without that critical "tweak," cars would continue to be craft built, each one a bit unique, hand-fitted.

Even today, the Toyota Production System provides a proven model for improving manufacturing performance efficiency and cost effectiveness across thousands of plants and businesses well outside of the auto industry. In fact, the foundations of "lean manufacturing" and the "lean enterprise" can be found in the 60-year history of this Toyota system.

The most successful businesses will continue to depend on the right people with the right skills and knowledge to assure competitive levels of performance and reliability. Of course, many of our readers already know that. What is critically important is helping our teachers, counselors, parents, politicians and students understand that there will be plenty of jobs and careers in technical maintenance and reliability roles in a huge variety of business and industrial settings. This is the job that only we as maintenance and reliability insiders can do.

Factory Man

A Book Review for MAINTENANCE TECHNOLOGY Magazine

Growing up in southern Michigan as I did made it easy to understand what made the U.S. auto industry tick. Henry Ford was heavily involved in the communities of southern Michigan with rural hydroelectric projects, trade schools (one that my dad attended in the 1930s), farming and many other ventures that helped small towns prosper. Having an early pre-teen fascination with cars, I was a student of the industry—*and later on, a tool designer for the Big Three and their suppliers.*

In my career as an educator and consultant I followed numerous "productivity improvement" initiatives in the industry, including some lengthy projects with GM in the mid-1980s. Therefore, when a new book about the U.S. auto industry rolled off the presses—*authored by a legend and an insider in the industry*—I just had to read it. I did, as soon as the copy ended up on my desk.

Factory Man

On February 25, 2009, this insightful new book, published by the Society of Manufacturing Engineers (SME), was introduced by its authors in Detroit. James E. Harbour, a long-time auto industry insider chronicled how he *"discovered Toyota's quality and productivity methods and helped the U.S. auto industry get competitive."* He and his co-author, James V. Higgins, tell a compelling story that starts with them literally growing up with the Big Three and '70s, the auto industry trudged ahead with what it knew how to do best—*make cars and trucks.* The book delves into the differences among the Big Three as they attempted to improve productivity in the 1980s. Mistakes were made—*huge mistakes by some that set the stage for where these automakers find themselves today, in 2009.*

The 15 chapters in this 170-page book include: "The Chrysler Debacle," "GM's Most Dangerous Decade," "The Japanese in North America," "Whither the Big Three?" and many more equally revealing ones. One of the more fascinating parts of the book involves Harbour's early discoveries of production efficiency methods while on a consulting project at Toyota in Japan—*long before Toyota announced plans to build an American plant.* It is interesting to see how these Toyota ideas helped some players in the U.S. auto industry early on and how those same ideas were discounted, ignored and even loudly disputed by others. One chapter, about the author's experiences taking the lessons of auto industry productivity improvement methods to a global pharmaceutical company, show that this stuff really can work—*and does!*

In the 1980s, Harbour began a business of gathering and publishing productivity figures from the Big Three as an attempt to help them improve. His product became known as the *Harbour Report*. What started out as a rocky road, warmly embraced by some and rudely ignored by others, turned out to be today's industry standard. Harbour shares many, many insights that have helped the U.S. auto industry, well beyond the Big Three. His stories provide many an explanation as to automakers (GM, Ford, Chrysler) shortly after World War II, and continues accounts of successes and failures, and very early insights from Toyota well before this Japanese automaker launched its U.S. operation.

Beginning in 1952, as a financial (and engineering) analyst looking for ways to improve productivity and reduce costs, James Harbour was struck by the huge amounts of waste he encountered, the shallow improvement efforts and the lack of a move to address the root causes. His "analyst" work in numerous plants is described in adequate detail to give the reader an understanding of how successful the auto companies were despite how bad things were on the plant floor. Through the 1960s why much of U.S. manufacturing is the way it is today. The stories in this powerful book also give insights to the fundamental ways to improve manufacturing productivity in America. Chapter 15, entitled "Why Should We Care About Manufacturing" is definitely a "must read"—*just like the book's Epilogue that blasts Congress for setting up the industry to fail and points to the government's undermining of our manufacturing sector, and our economy.*

Add this book to your library ASAP. And read it! Please don't let it sit on the shelf. **RW**

Harbour, James E. and Higgins, James V. - Factory Man, *2009. Society of Manufacturing Engineers, Dearborn, Michigan (ISBN: 0-87263-860-X)*

To order this book, visit: www.sme.org/store or telephone: (800) 833-4763.

Factory jobs anyone? *The auto industry must survive and prosper. But look at how the industry has changed in the very early years, and in the recent past. One of my favorite books for this is* The Machine that Changed the World *(Womack, Jones, & Roos, 1990 Harper Collins). A new book that more recently hit the street is equally interesting:* Factory Man *by James Harbour and James Higgins (2009, SME). In the book review here, I share some of my key take-aways from this insider's perspective on the U.S. auto industry, the Big Three, Toyota and other companies that learned from the auto industry to make their businesses more competitive.*

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