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Contemporary Controls Interviews Mark Hoske, *Control Engineering* Magazine

***Control Engineering* is one of the most influential publications in the controls industry, reaching almost 90,000 readers. Editor-in-Chief Mark Hoske has been with the magazine for nine years and has seen a lot of things happen in the controls business. We caught up with Mark recently to get his perspective on the controls business and where it's going.**

By Perry Marshall, Contributing Editor

How did you find your way into this business and this industry?

I "paid my dues" for four years at weekly and daily newspapers after I got my journalism degree, and I did a year in marketing as well. I found a position in 1987 at Electric Light & Power magazine, and I found much greater satisfaction in technology journalism. I wrote for the electric power industry for seven years, and I have been with *Control Engineering* for the past nine years.

Being a newspaper reporter has to be totally different from a trade journal—can you describe the difference? What are the pros and cons of the two worlds?

The monthly pace of technology journalism fifteen years ago differs a great deal from the daily, weekly, monthly deadlines we have today. Now we have *Control Engineering* Online, e-mail newsletters, multiple print editions, custom publishing projects, Buyer's Guide and Automation Integrator Guide, technology webcasts, research, and many other projects. The way we offer information to readers keeps diversifying to meet their specific needs.

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The pace of a trade journal is more like a daily newspaper than ever before.

Even so, technology journalism allows for more evenings with the family than newspaper reporting ever did. Face time with news sources, a staple of local papers, remains appealing now, when circumstances allow it.

But regardless of the medium, the goal is still to cultivate useful and interesting stories from sources that you can trust.

What do you feel is the most important development in the industrial control market in the last 25 years? In the last five years?

The integrated circuit has probably had the widest-reaching impact. Lower-cost silicon has given control systems additional intelligence. Its expanded logic and analysis capabilities. It has enabled distribution of intelligence into the process, whenever and wherever it makes sense. Chips have spread into sensors, communications—just about everywhere.

In the last five years, easier-to-use software has helped maximize the value of existing assets, it has enabled wider communications, and helped to move information through the organization and supply chain.

What do you NOT like about the automation business? What drives you nuts? What gene do you wish they'd fix in this industry?

Automation vendors are like a kitchen full of world-class chefs. It seems that some have only recently discovered that if they stop arguing over the proprietary slice of pie they get, and focus more on making additional pies, that everyone's going to get more dessert.

Some standardization efforts, when applied in reasonable time, allow value to be added where it really matters, and where it can do the most good. End-users and system integrators can complain all they want, but if they don't get involved in the standards process, they're going to have to like what they get.

Those involved in automation, controls, and instrumentation in all areas could certainly do a better job quantifying what it is that they do, beyond traditional engineering measures. That's for the engineers' own good—and for the good of their organizations. Bean counters need to understand the extreme value that the right application of new technology can bring to the whole enterprise.

Are you seeing the convergence of industrial automation standards with IT standards? What do you think is going to be the impact on our industry?

IT technologies will continue to be applied to industrial automation where they make sense. By that I mean non-proprietary, standard or widely used, commercially available technologies, which are then widely applied to automation, controls and instrumentation. These include Ethernet, Microsoft-based tools, and PC-related hardware.

> "Old or young, I think everyone's being asked to provide more value. I also think there's less time than ever to seek customized specification for a particular engineering application."

But for any technology to be used effectively, it has to be applied with the understanding of control engineering principles. That means that engineers who do have expertise in that area will continue to be valuable in those types of organizations.

Wherever enterprise resource planning investments haven't been linked with the plant floor, they haven't been as effective. That's not to say that everything should be fully integrated at every point. But with the wider adoption of standards (those related to IT and others), manufacturing can deliver more value to the rest of the company.

In what ways do you feel print media is superior to the Internet?

Other than being tangible paper, a magazine has a start and a finish. It comes regularly. And it's a nice package of information that editors think readers should see.

Engineers can spend 20 or 30 minutes with an issue, glean needed knowledge and ideas, and perhaps tear out a few pages for reference. Nevertheless, the Internet is always available, always on, and nearly infinite. It's as easy to get lost for hours browsing around as it is to quickly find what you need.

Control Engineering, is part of a wider manufacturing and electronics resources of Reed Elsevier. We put issues online, post fresh news and products, we send topical and weekly e-mail newsletters, we do technology webcasts; we have a bookstore, and will continue to provide information in whatever form readers find useful—print or electronic.

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Will the Internet ever replace print advertising?

I don't think the Internet will replace print anytime soon. Readers use printed products very differently than they use the Internet. The newer technology won't have a chance at displacing print until the electronic format becomes as portable and as easy to use as a common magazine.

An inexpensive roll-up screen that you can fold or stick in your back pocket and sit on probably won't be around in this decade! For now, websites are used more as a reference tool. Trusted editors and writers will continue to provide information, no matter what the media.

What do you see as the information needs of the industry one year, and five years from now?

Isn't that the $64,000 question? In the medium and method of information delivery, we're trying to stay ahead of the information-delivery curve of our readers. The speed of adopting new technologies will depend on the portability and usability of new devices.

I don't know if I'm typical, but after working in front of a screen much of the day, in the evening, the feel of newsprint or a magazine that's flexible and portable is a nice break. Even though I have electronic book-reading technology, a paperback is still light, low-cost, easy, and expendable.

At the magazine, we make decisions, daily, weekly, monthly, and every year about what's best to give to our readers. Commercial technologies will continue to make inroads; however, they can't substitute for knowledge of control engineering processes.

As more experienced readers retire, the kind of educational resources we provide will become even more valuable.

What is one specific innovation, method or product that you predict will change manufacturing and automation in the next year or two?

To mention one, non-contact temperature sensing continues to evolve. It offers significant advantages in places where the process cannot be touched, and it adds value in other areas. Infrared temperature mapping over an area can help feed predictive maintenance software, augmenting benefits. Catch the June 2003 *Control Engineering* cover story, at www.controleng.com/issues.

This is one example of how connecting control engineering technologies to other parts of the enterprise helps prove our worth.

As existing engineers age and retire, what demands will younger engineers put on suppliers?

There's always growing pressure on suppliers to provide more functionality, more features, more power, more speed—but in a smaller package and at lower cost—and all with more up-front collaboration and back-end support.

Old or young, I think everyone's being asked to provide more value. I also think there's less time then to seek customized specification for a particular engineering application. And there's more pressure on vendors to make sure that the best combination of technologies is installed and running as quickly as possible.

> "Too much TV and sports, I say! If people would take half the time they spent on TV and sports and apply that to the communities around them, we'd see much healthier families, healthier faith communities, schools, and workplaces; healthier cities, states and federal governments, and more."

Will we continue to see installation design responsibilities being pushed back to the supplier?

Yes, end-users will always ask for more. That includes better support in specifying and applying the technologies, making the most of their limited assets, and providing assessments about which upgrades will be cost-effective and when. As competition grows, companies will more often have to reassess what they're doing and how they do it. Doing nothing just because an old process still works simply will not be an option.

What's the most interesting story you've written about during the time that you've worked at Control Engineering?

I like doing one-on-one interviews, although it's really strange to be the interviewee this time!

In general, the piece I'm working on, or doing next, is what's most interesting, because the fun is in the discovery —in learning, teaching and helping readers share information and solve problems. There's a lot of satisfaction to finishing anything—an article, a column, a breaking news story, getting an issue back from the printer—even an e-mailed newsletter that the team helped assemble. I also really enjoy getting feedback from readers or peers on the work that we do. That's as good as any award—although awards are nice, too!

I particularly enjoyed doing a piece on distributed intelligence a few years back. Like the logic that's distributed through the process, explanations were distributed in sidebars throughout the piece, so the article design corresponded nicely with the topic. It's fun to create.

That article is at www.controleng.com/issues. It's from October, 1999, and the title is "Cover Story: Pouring Thought into the Process." There's a link at:

www.ccontrols.com/hoske

although that online archive version unfortunately doesn't contain the nice images that the print edition did!

The business is in a funk right now. What habits or practices do you think are holding U.S. manufacturing back? What policies and norms do you think need to change for the industry to bounce back?

I think there might be a tendency to try to do what we think is easiest and move manufacturing elsewhere. Global investments are good, but seeing and touching manufacturing here helps us understand the full product life cycle—from inception, through design, manufacturing, and the modifications that meet customers' changing needs.

Avoiding issues like education, training, and labor by moving manufacturing abroad, only trades one set of problems for another.

Organizations need to communicate effectively throughout and make use of all their resources - both their people and their technology - to redesign processes and be able to compete cost-effectively. It can be done, and it can be done here in the U.S., as part of a balanced global manufacturing plan.

On a more personal level, people need to get involved. We need to suggest new ideas, work together, and personally influence what goes on around us, things that really matter. We need to examine what's important to us, observe what needs changing, and do it.

Too much TV and sports, I say! If people would take half the time they spent on TV and sports and apply that to the communities around them, we'd see much healthier families, healthier faith communities, schools, and workplaces; healthier cities, states and federal governments, and more.

Here's my suggestion for your readers: Find or create a place where you can spend some time teaching basic applied technology to young people. The next generation of manufacturers—before they commit to that as a career choice—need to discover how great it is be involved in creating something of value.

Automation, Foreign Labor and the State of US Manufacturing

By Perry Marshall

Last week I toured a loudspeaker manufacturing company in Minneapolis, Minnesota. The #1 topic of discussion there was the impact of Chinese imports on the speaker industry, which has almost completely evacuated the United States. Since nearly everyone reading the Extension newsletter is involved in manufacturing, this is a trend that affects all of us.

We discussed, one by one, a list of US speaker manufacturers who have closed their doors, and the "inside story" of why. The most interesting fact was that foreign competition was rarely the deciding factor in the company's downfall.

In most cases, large conglomerates, who did not understand the business they were in, had bought these companies. They paid too much for their acquisition and could not service the debt load. They could not or would not invest in new tooling and product development, and a vicious cycle ensued.

One company was taken over by sons and daughters after the founder died. They immediately bought office furniture and new cars. Bankruptcy proceedings followed within six months.

In the case of this particular manufacturer in Minnesota, their business is good, they have no debt, and they've had the opportunity to buy machines at bargain prices at their own competitors' liquidation sales. And competing with the Chinese isn't that much of a problem when their customers consider all the costs involved, and not just the bill of materials price.

But knowing the real price instead of just the price of the part is the key. Customers have to ask questions like:

- What does it cost you to run out of product?
- What does it cost you to re-qualify a product if there's a design change?
- What does the 4-8 week shipping time cost you?
- What happens if your supplier substitutes critical materials and doesn't tell you?

Sometimes the Chinese price is still less, even after all of those problems. And it's interesting to note that a large percentage of the parts used by this manufacturer are now made in China, since many suppliers have closed their doors, too.

But once again, the foreign competition was not the primary enemy of those suppliers—their worst enemy was themselves, largely their unwillingness to continue to invest money back into their own business. Instead, companies are investing in foreign factories.

There's no way I can possibly solve the trade deficit in a single page, but I can certainly point to where the solutions will be found.

1) The name of the game is: Differentiate or Die. Every business that is not interested in competing purely on a "cheapest price" basis must constantly, incessantly be innovating their way out of commodity markets. Nowhere is this truer than when you compete with the Chinese. You need to do something that they're not good at, so you don't have to compete with them on an apples-to-apples basis.

2) Don't be excessively paranoid. After 7 hours of taxi-cab terror from Suzhou to Dongyang, dodging bicycle taxis, blue delivery trucks, pedestrians and motor scooters, I called my brother and assured him: "Don't worry, the Chinese won't be taking over the planet any time soon. They've got plenty of problems to work on right over here."

3) Understand the real cost of doing business. China is not always the least expensive option; buying anything is a multi-dimensional choice. If you're on the selling side of the equation, make sure you're educating your customers about the true cost issues.

4) It won't do you much good to view China as "the enemy." Like it or not, commerce is a truly global game. It's just about impossible to buy anything that hasn't been touched by hands from at least a dozen countries. It's particularly impossible to manufacture electronics without parts made in China.

Contemporary Controls has recognized this and now manufactures some of the most cost-sensitive parts of their products (i.e. PC boards) in their Chinese facility. They still manufacture the majority of their products in Downers Grove, Illinois and also in Eisleben, Germany —but they do the job wherever makes the most sense for a particular assembly.

Finally, I believe that "China Paranoia" is at its peak right now, and the trends of the last four years will be unable to continue at their previous rate. SARS has sent huge shockwaves through the Chinese economy; urban unemployment has shot from 0.1% to 4.5%, and I believe that the Chinese investment bubble is about to burst. Some of the most automated facilities in Guangdong are sitting idle, and the headlong rush to invest in Chinese manufacturing is about to stop. Investors will more wisely consider investments at home.

Workers in Contemporary Controls' Suzhou facility do finishing touches at printed circuit board assembly. The company manufactures its products in Downers Grove, Illinois, Suzhou, China and Eisleben, Germany.

I predict that twenty years from now, China will have modernized much as Japan has, they'll have several hundred million middle-class citizens, and what goes around will have finally come around: They'll be concerned about losing manufacturing jobs to ambitious upstart companies with cheap labor — in Africa. How will they survive? By innovating and differentiating, just like the United States did 20 years earlier.

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