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A BRIGHT FUTURE FOR MANUFACTURING?

Magnatech has emerged as a shining star in what some say is a cloudy sky

By Harlan Levy
Journal Inquirer

In a time when the woes of Connecticut manufacturers fill the air, the word on Magnatech of East Granby, a welding equipment maker near Bradley International Airport, stands out in stark contrast.

"In one year we've doubled our staff and gone from virtually no profits to a 12.5 percent profit," says company President John Emmerson, "and we're on target for at least 65 percent sales growth and maybe even 80 percent between 2007 and 2008."

How Magnatech achieved such a remarkable record is not just an individual story, Emmerson says. What happened to Magnatech is also an illustration of how manufacturing can have a bright future in Connecticut and nationwide.

The story starts two years ago. "Suddenly we got a raft of orders," Emmerson recalls. "What's driving it are a lot of big infrastructure projects going on worldwide and a need for electric power and pipelines for oil and water, and a worldwide shortage of skilled craftsmen. One of those groups is welders."

Welders are needed to accommodate the recent explosion of growth in developing countries like China and India, as well as in the U.S., where numerous power plants are being constructed, as well as "some refineries being built finally," Emmerson says. "Also, a lot of the oil and gas now being discovered are in the middle of nowhere, and it has to be brought to a place where it can be used."

As the demand for welders and welding equipment mushroomed, the world came to Magnatech, which makes equipment specifically for welding round objects, mainly tubes and pipe. Why were there so many orders for this 62-year-old little company that had been modestly turning out products in East Granby across from Bradley International Airport since 1964?

"We definitely have competitors," Emmerson says, "but we don't have a lot of them both in the U.S. and abroad."

The big challenge

When the orders began cascading in, Magnatech was simply not prepared to efficiently and easily fill them.

"What works in a small company all of a sudden doesn't work anymore," Emmerson explains. "It has to evolve new ways of doing things. Instead of a simple batch mode type of manufacturing in which you build up five of these products and

five of those products, with the tremendous growth we were facing we were seeing maybe up to 25 to 50 orders at a time in our entire range of products and to make timely deliveries required keeping all these balls in the air, being able to work on all of the orders simultaneously, which is a very skilled choreography of events for it to work properly and successfully."

It wasn't easy, and Emmerson quickly realized he needed help. He found it with the Connecticut State Technical Extension Program, a quasi-public agency sponsored by the state Department of Economic and Community Development. CONNSTEP is a team of 20 manufacturing specialists experienced in helping small-to-medium-size companies like Magnatech improve their processes.

So starting in 2007 — and continuing — a CONNSTEP manufacturing expert began visiting Magnatech's offices to teach a course a half-day a week.

But this was no ordinary course. "It wasn't just academic book learning," Emmerson says. "It's hands-on looking directly at our specific data and problems: 'Let's take a look at what's happening today in your facility.' And he was extremely instrumental in review-

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John Emmerson
President of Magnatech

ing and creating new techniques in how we managed our inventory, purchased parts, and managed our supply chain."

Emmerson describes the challenge as the difference between cooking breakfast for yourself and being a short-order chef.

"A short-order chef would be out of business if he puts toast in the toaster and then cooks the eggs," he analogizes.

The CONNSTEP instructor helped Magnatech adopt "lean manufacturing" techniques as a way to eliminate what Emmerson calls "the wasted effort and time taken when people don't realize that it's not contributing to the bottom line. In terms of inventory management, it means proper scheduling of parts



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John Emmerson is the president of Magnatech, a manufacturing company near Bradley International Airport. Its success contradicts a common perception that the sector has a bleak outlook in Connecticut.

when you need them in the course of manufacturing products so there's a minimum amount of time that the money has to be spent before you can collect from the customers. For us that could be six months or more."

Magnatech's problem, Emmerson says is that "we were not properly coordinating purchases with time requirements. For example, it would seem to be common sense to order the longest lead time first, but when you start dealing with literally thousands of parts, unless you have a very good system for identifying the lead times for each part, it's easy to say I think I should get that on order when in fact that part is available in two weeks and you're missing a part that takes two months."

More specifically, Emmerson says, "When you have thousands of things you're purchasing in the course of a month for many different customer orders, if you don't have a really well-designed system in place you can be spending all of your time on things that can be done later rather than right now if you're going to make timely delivery."

The CONNSTEP instructor examined Magnatech's software system for resource planning, "but we realized that the software we had was not suitable for our task, so he encouraged us to take a look at what was better suited." As a result Emmerson purchased an expensive software package, "but it will suit us for a long time to come."

The area the CONNSTEP instructor and Magnatech staff is now starting to work on is reorganizing the assembly floor and the machine shop to make it operate more efficiently.

"This includes the concept that anything you're doing that isn't

required is both a waste of time and not adding value to the product, and you should eliminate it," Emmerson says. "For example, ideally you'd like to have a flow from where raw materials come in the door to where the final assembled product is shipped out the door, but in a lot of factories — and we're guilty of this — you can have product moving around within the shop much more than it needs to be, and all of that time whether it's a minute here or a minute there adds up to man-weeks of lost time that is detracting from the profit of the company and certainly adding nothing to the value of the product."

If you go to a factory that has properly gone through lean manufacturing, Emmerson says, everything is perfectly logical, "but it's very hard to get to that point, if it's a factory or a hospital or a home. It's something that takes a lot of time and thought, and when it gets complicated, it's very hard to do by yourself through book learning. It's really helped to have the CONNSTEP individual training us, who's been there and done that before."

Jobs, but not enough workers

Magnatech has added 25 employees since the beginning of 2007 and now has 52 workers.

"We're continuing to add employees all the time," Emmerson says. "All we've been doing the last year is advertising for people and interviewing."

Right now the company is interviewing for three new jobs, a sales person, a machinist, and an inventory manager. But there's a major problem.

"The one specific challenge we face today is to hire skilled manufacturing people," Emmerson says. "Unfortunately, a lot of manufacturing has left Connecticut, and

more than that, there's not enough new manufacturing going on that creates these jobs, and we really need more vocational high schools and two-year colleges to produce the kind of people we need to hire.

"Manufacturing is looked at as a poor step-child. We sell welding equipment, and part of the reason for our success is a worldwide demand for welders, but welding has a very poor image, and I would ask how many people would say to their kids, 'Why don't you become a welder rather than a lawyer or a doctor,' although a welder can make as much money as a doctor."

A lot of people are good with their hands and are not suited for a desk job, Emmerson says, "and there are a lot of opportunities in manufacturing that are going wanting just because nobody perceives them as desirable anymore."

An answer to outsourcing

Manufacturing has a healthy future here in the States, Emmerson says, in spite of the trend of outsourcing manufacturing jobs to other countries "if we can make a craftsman here 300 percent more productive."

He adds, "If we can increase the productivity of a person with a tool, which is what we make, you can effectively decrease the big discrepancy in pay between an American worker and a Chinese worker."

Some people think that outsourcing to China is the answer to a lot of problems, Emmerson says, "but it has its own set of problems, including quality of goods, timely delivery, and cost of transportation, so a lot of the business we're seeing is to some extent from people who've decided they can compete in the States, but they need automation and mechanization technology to make them competitive with cheap labor."

Developing products that do that is a solid and effective response, Emmerson says.

There is also a political cry to alter free-trade treaties like NAFTA, which affect Mexico and Canada, to stop job losses from the U.S. to those countries.

Emmerson doesn't agree.

"Fifty percent of our business is export, and Canada represents a very important export market for us," he says. "If the next president decides to dilute the effects of NAFTA on free trade, for Magnatech, it would immediately have an effect on our overall business, because we have a lot of good customers in Canada and Mexico."

Political rhetoric is one thing, but policies must be thought out carefully to avoid making changes for all the wrong reasons, which, Emmerson says, can have exactly the negative effects no one wants.