

NTMA MEMBER ROY SWEATMAN RECEIVES FLATE INDUSTRY DISTINGUISHED SERVICE AWARD

NTMA member Roy Sweatman, President and CEO of Southern Manufacturing Technologies, was awarded the FLATE Industry Distinguished Service Award on December 5, 2013.—p9

CONGRATULATIONS PENN UNITED AND MANUFACTURER OF THE YEAR FINALISTS

The NTMA is proud to congratulate member company, Penn United Technologies, Pittsburgh Business Times Manufacturer of the Year. —p25

GF AGIECHARMILLES TO BECOME GF MACHINING SOLUTIONS

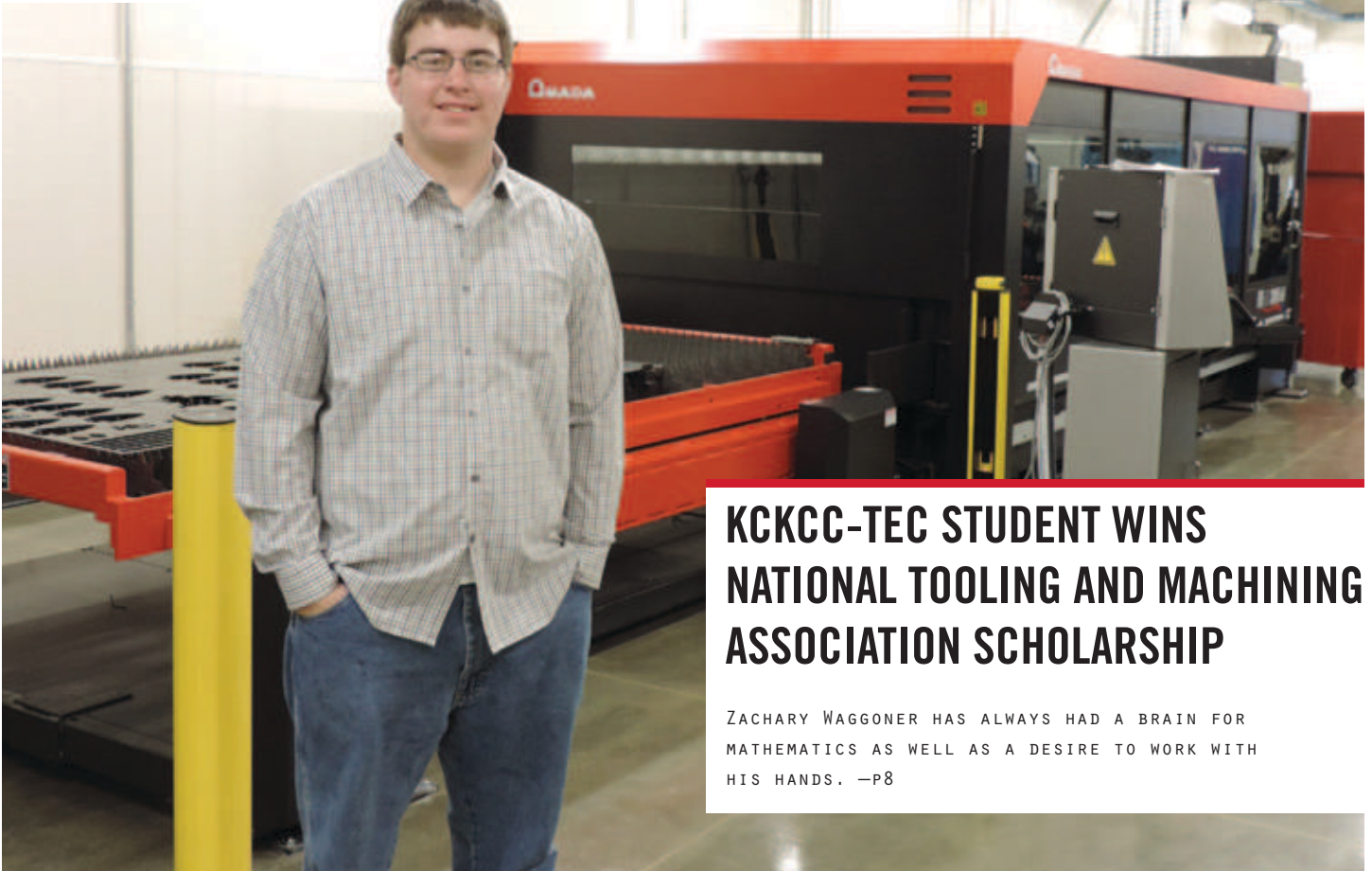
Effective January 1, 2014, GF AgieCharmilles will become GF Machining Solutions, a name change that underscores that Georg Fischer AG (GF) is a unified company with three divisions.” —p30

THE R&D TAX CREDIT

Sometimes the Internal Revenue Code (IRC) giveth more than it taketh. —p45



KANSAS CITY CHAPTER



KCKCC-TEC STUDENT WINS NATIONAL TOOLING AND MACHINING ASSOCIATION SCHOLARSHIP

ZACHARY WAGGONER HAS ALWAYS HAD A BRAIN FOR MATHEMATICS AS WELL AS A DESIRE TO WORK WITH HIS HANDS. —P8

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MANUFACTURING AMERICA'S FUTURE



CHAIRMAN'S CORNER

ROBERT MOSEY / NTMA CHAIRMAN OF THE BOARD

Happy New Year!

NTMA's theme for 2013 is "Stewardship of the Manufacturing Industry". Our four main focuses are; Membership Value, Industry Advocacy, Workforce Development, and Governance. As I travel this year and visit many of our chapters, I will be reporting to you all of the great stewardship activities that are occurring across the United States.

Just for clarity, I will remind you that these Chairman's Corner articles are written well after the actual visit. I visited the St. Louis and Philly Chapters back in November, I am writing this article in December and you are just now reading it in January. So much for breaking news.

On November 4th, I landed in St. Louis and was picked up at the airport around 4:00pm by the ever smiling St. Louis Chapter President, Bill Bachman of Bachman Machine Company. We had two shop tours before dinner! Talk about hitting the ground running. We first visited Bob Roseman and Pat Walsh at Ehrhardt Tool & Machine Company. One of the first things they showed to me was the first

purchase order that they received in December 1937. If my iPhone calculator is correct, that makes Ehrhardt 76 years old! Wow! They informed me that they were, along with a few other companies in the area, founding fathers of the NTMA. Today Ehrhardt is a 150 person ESOP company that provides stamping dies, nuclear components, and special machines, some over 100ft long! A very diverse portfolio of services.

As with most other companies in the NTMA, they struggle with the lack of skilled labor. To meet that need they are training from within and have their own apprenticeship program. Great Workforce Development! Bob has a very interesting view point on the labor issue. He believes that we are about 3 years into a 13 year generational enlightenment of manufacturing. The work that we have done to bring manufacturing back to main stream needs about 10 more years of promotion before our country really embraces it as a viable career as it once did. We really do need to keep up the work with One Voice and NRL as well as our efforts with local school programs etc. His hope is that we, as an industry, do not back down on this front before it is entrenched into mainstream society. I couldn't have said it better myself.

Next stop was at Bachman Machine Company where Bill gave me the grand tour of both the machining facility as well as the plastic injection facility. These two divisions work together to supply, mostly, the automotive industry. On the machining side, they make stamping dies for their customers as well as doing stamping themselves. They also make plastic injection dies that are utilized in the plastic injection division. Sometimes these diverse operations come together and produce metal stampings that go into assemblies that



Bill Bachman and Bob Mosey

also use the plastic injection parts. Very cool! Bachman is a 3rd generation company that, along with Ehrhardt, was a founding member of NTMA. They too, continue to train new employees and maintain an in-house apprenticeship program. Great work Bill!

If you think that the picture of Bill and me looks a little weird you would be right. It was quite late and there was no one around to take the picture for us so it is a selfie (for us oldsters, selfie means we took the picture of ourselves). Not bad if I do say so.

The next morning, Chapter President Elect, Nick Berilla of Hartwig Inc. picked me up from the hotel and was my tour guide for the rest of the day. Our first stop was to visit James Martin, President of Patterson Mold and Tool. What a great company! They build very complex molds for the die casting industry utilizing 5 axis machine and EDM. James was very embarrassed of the mess in the shop as they were in the process of stripping the floors of the old chipped paint. Even with all of that going on, I could see that they have a very clean operation and are well organized. James is doing a terrific job of growing the company and the employees. While he participates in the

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Ehrhardt Tool & Machine's first purchase order from December, 1937

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Nick Berilla, Bob Mosey, James Martin

chapter, we are encouraging him to become more active. He could bring a lot to the table at the chapter level. No pressure James.

Our next stop was to see Darrel Keesling

and Lance Pendleton at Component Bar Products, Inc. I've always had an interest in Hydromat Rotary Transfer machines. They look so cool and can machine complex parts from bar stock of any shape in very high volumes. CBP had rows of these machines all purring away producing baskets full of parts. Wow! Some of the machines are older but are still in very good condition. Turns out that CBP has a full rebuild shop that is continually rebuilding and updating their machines as well as other company's equipment. Great diversity!

And now the best part of the story. In an effort to resolve the skilled workforce shortage, CBP company owner Troy Pullman, has committed to building an entire new building

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Darrel Keesling, Lance Pendleton, Bob Mosey

next door that will include a school for training entry level machinists not only for his own employee base but for other companies in the area that need employee training, all at his own cost! Talk about great Stewardship. This guy gets it! I was so impressed.

Our last stop for the day was at Designs for Tomorrow, Inc. where we met company owner Judith Harris. As we all know, it is uncommon to have a woman owned company in our industry. Judith is a 2nd generation owner but not because she meant to be. There is a whole story behind how she got there but I will leave it up to you to talk to her yourself when you see her at the next Purchasing Fair. Business development is her number one business issue and what better tool than our NTMA Purchasing Fairs to help with that issue? At Design for Tomorrow, they manufacture machined metal and plastic parts for several industries but mostly medical device. I was amazed at some of the microscopic holes that they were machining into their parts. I didn't even realize that there were holes in the part until they handed me a loop. .003dia! Really!



Nick Berilla, Bob Mosey, Judith Harris, Pat Matthews

General Manager, Patrick Matthews, gave us a tour of this wonderful company. When we entered the shop, Judith was apologizing for the "mess" as the employees had just left for the day. I just looked at her and asked "What mess?" The shop was absolutely spotless! I couldn't figure out how they gotten any work done. What a great company!

Before we knew, it was time to head to the Chapter meeting where we were met by Chapter Executive Sally Safranski. Sally does a great job for the chapter and keeps all of the board members in line. That's the number one job for a Chapter Exec! I had the honor of installing the new officers including the aforementioned Nick Berilla as Chapter President. Bill Bachman has been President two times now and continues to be involved in the chapter. What a great Steward of the Manufacturing Industry.

At the conclusion of the meeting, the board presented me with a gift from the chapter... a brand new, bright red, Cardinal's hat. Gee. Thanks. Hey, I'm an Angles fan. Both teams are red. Maybe they won't notice when I wear it to Angel Stadium. Seriously, I wear the hat proudly as it came from a very good chapter.



Nick Berilla, Sally Safranski, Bob Mosey with his St. Louis hat

The following week I made my way to Philadelphia to visit the Philadelphia Delaware Valley Chapter. This is the chapter that Ted Toth calls home so it was Ted that picked me up from the airport Monday evening and was my tour guide all day Tuesday.

Ted picked me up from the hotel at 7:30am to start our tours. No rest for the weary. Our first stop was to visit Tony Sala, President/Owner of Marlton Pike Precision in Cherry Hill NJ. Tony purchased the company in 2005 however the company was established in 1945. He and his team have been working to grow the company. They became AS9100 Rev C Certified in 2012. This has opened new doors into companies that they were unable to get into before. Tony joined the NTMA for the benefits of networking but has also used the services of our labor attorney, Tom McCarthy



Bob Mosey, Tony Sala, Ted Toth

as well as saving money by purchasing many of his supplies from Grainger.

The next stop was at Ted's company, Rosenberger-Toth. I'd heard things about Ted's company and the products that they build but none of that prepared me for what I saw. Basically, if I can use that word, they manufacture parts and antennas for satellites, connectors for cell towers and parts for radar systems. Okay. What that doesn't tell you is the details and processes that are involved in those products. Again I can't divulge too much here but they have some very proprietary processes, many that Ted created himself. The minuet size of some of the parts is just unbelievable. Many of the assembly processes are done under microscope. There is just no way to explain what they do in words. You just have to see it yourself. If you are ever in Ted's neck of the woods, ask for a tour. It is a very special company.

For any of you that know Ted, he is the king of PowerPoint's and the NTMA champion for training. Single handedly, he has created all of the training programs that Rosenberger-Toth uses in all of their manufacturing processes all the way from entry level machinist training to sophisticated wrapping and bonding of



Ted Toth & Bob Mosey

microwave antennas. He is a great Steward of Workforce Development!

After visiting Rosenberger, Ted and I drove over to visit the guys at the Inventors Shop. What a cool company. It's kind of like a gi-

ant hobby shop. You bring in your idea, they help design it, manufacture it and assemble it and ship it. From wooden electrical insulators to giant electrical disconnects, broadcast antennas, and the list goes on and on. They are owned by a larger corporation called Sea Box which builds and customizes shipping containers. Much of what they manufacture at Inventors is for the parent company products. More on that in a minute. Harry Keeny and



Harry Keeny, Bob Mosey, Mike Amato

Mike Amato gave us the grand tour of the manufacturing floor and shared with us all of the services that do in house. From turning to milling, punching, forming, welding, plastic thermoforming and much more. Very diverse. Like I said, it is like a giant hobby shop where they have everything you need to bring a product to life. I could have spent all day in there looking around!

We were picked up by Tom Simons, Assistant to Director of Operations, and taken over to the parent company Sea Box. I didn't know what to expect especially when we pulled up in front of the building and saw that part of the offices were made up of shipping containers. Crazy. Inside, we met up with Sea Box Vice President, Jay Frederick. Jay gave us a video overview and it was off to the plant floor. They manufacture shipping containers from the ground up for the normal uses that you



Tom Simons & Bob Mosey

might imagine like... shipping stuff.

But where they really shine is what else they can do with an off the shelf container. They customize all different sizes of contain-

ers, making them fit together like Legos and configuring them for all kinds of uses. We saw full field latrines for the military where you walk into one end to go to the bathroom and walk out the other end all showered and ready for battle. There were portable living quarters that I would have loved to have when I was single. We saw a full machine shop that included a Haas mill and lathe. It was outfitted with everything that you need to do tank repair in the field. As we walked outside at the end of the tour, there was the pièce de résistance. They had connected multiple containers to form a three bedroom house! Unbelievable. From inside, you would have no idea that you were living in shipping containers. Very cool!

The next and final stop before the chapter meeting was at Connector Products, Inc. (CPI) where we met up with 3rd generation company President Nicholas Polidori. Nick shared with us their product line which includes all kinds of hardware used in the electric distribution industry. Most of their product is designed in house and all of the product testing is done before any new product hits the catalog. Nick is slowly converting many of the home made "custom" machines that have been used for years to make their product, with late model CNC equipment.



Nicholas Polidori & Bob Mosey

All of the machines are equipped with custom holding devices designed and built in-house. This allows them to mass produce more accurately and at a higher volume than previously done on the older equipment. Nick joined the NTMA because of the networking potential but has found even more value with other services like the employee testing. Since he is hiring a more sophisticated workforce to manage the new equipment, this test is really paying off in his selection process.

From CPI, Ted and I headed to the chapter meeting where we met PVDNTMA's new Chapter Executive, Michele Martin. Michelle just happens to work for the new chapter president, John Shegda's, company, M&S Centerless Grinding. Even though we didn't get a chance to visit John's company, we did

get to hear what they do. The format for this annual Chapter meeting was Member Display Night. This gave all of the members an opportunity to show off some of their products and speak a bit about what they do in their companies. What a novel idea. I had never seen this done before and thought it was a great way to help the members with their networking efforts. It never hurts to let other people know what you do. They just might know someone who needs your services.

From a Chapter perspective, the PVDNTMA is focusing their stewardship efforts by:

WORKFORCE DEVELOPMENT

The chapter is working with their local community colleges, in an effort to implement NIMS training. Ted Toth is instrumental in this effort.

INDUSTRY ADVOCACY

Bob Guam works the advocacy piece and they have Franklin Partners visit every few years. They also promote and participate in the legislative conference.

MEMBERSHIP VALUE

This year Chapter Exec Michelle Martin will be gathering information on NTMA programs and the board will be presenting that information to members to increase their awareness of some of the programs.

GOVERNANCE

The chapter's board is going to update their bylaws to align them with the national bylaws.

Things were quiet for me in December, from a travel perspective, so next month's Chairman's Corner should be a lot shorter. I want to thank you for all of your positive remarks on the articles. I am happy that someone is reading them but elated that some actually enjoy reading them.

As always, keep up the good work in your own chapters and communities!

Peace,

ROBERT MOSEY / CHAIRMAN



KCKCC-TEC Student Wins National Tooling and Machining Association Scholarship



Zachary Waggoner has always had a brain for mathematics as well as a desire to work with his hands. So for the student at Kansas City Kansas Community College's Dr. Thomas R. Burke Technical Education Center, machine technology was a logical course of study.

But what recently made this first semester KCKCC-TEC student so excited was the news that he is the recipient of a \$1,500 Ivan and Holder Memorial Scholarship from the Kansas City Chapter of the National Tooling and Machining Association.

"I was shocked. Still am," he said of the news. "Especially since I am the first student from KCKCC to receive this (scholarship). It is the first time ever that I was first for something in my life."

The NTMA provides resources to member businesses on a local and national level. The Kansas City chapter of NTMA currently has 40 full members (manufac-

turing companies) as well as 20 associate members.

One of the initiatives of the KC NTMA is the Ivan and Holder Memorial Scholarship, which was created to support students who are advancing their education and pursuing careers in manufacturing. Applicants who are chosen receive a minimum award of \$500 for either the fall or spring semester.

"I felt exhilarated when I heard he had been chosen," said Paul Hancock, employment coordinator at TEC. "I am very proud of his drive and ambition to pursue this scholarship. He has an excellent rapport here at the school and credibility with his instructor."

Scholarship applicants must be between 17 and 40-years-old; have a high school diploma or GED; earned a grade point average of at least 2.5; be nominated by an NTMA member company in good standing or an accredited education partner; provide

one letter of recommendation from a business professional; complete a scholarship application and be a full-time manufacturing technology student at KCKCC-TEC or the MCC-Business and Technology Center in Kansas City.

"This is a good program. Very hands-on, and you can apply concepts like math very well," Waggoner said. "I have learned a lot and am always busy working."

Waggoner, who will complete the KCKCC-TEC program in summer 2014, has aspirations of one day working in the aerospace industry. He said he would ultimately like to work on airplanes or helicopters.

"It is something that I have always found fascinating," he said. "But really, I can take what I learn here and work in almost any industry. I have a lot of options available to me."



U.S. JOBS PICTURE IMPROVING, MANUFACTURING MAY BE SLOWING

BY LUCIA MUTIKANI, REUTERS

The number of Americans filing new claims for unemployment aid unexpectedly fell last week, but continued weakness in business spending on capital goods suggested slower economic growth in the fourth quarter.

Initial claims for state jobless benefits fell 10,000 to a seasonally adjusted 316,000, the Labor Department said on Wednesday. The second straight week of declines defied economists' expectations for a rise in claims to 330,000 and raised hopes for strong payroll growth in November.

"We are at a level that, if sustained, would point to solid job gains ahead. There is also a good chance that the October payroll gain may not have been an aberration," said Joel Naroff,

chief economist at Naroff Economic Advisors in Holland, Pennsylvania.

Employers added 204,000 new jobs to their payrolls last month, far more than expected, fanning speculation that the U.S. Federal Reserve might start to wind down its economic stimulus sooner rather than later.

The improving labor market tone has helped to boost consumer sentiment. The Thomson Reuters/University of Michigan's final reading on the overall index on consumer sentiment increased to 75.1 for November, up from a final reading of 73.2 in October.

The preliminary November reading of the overall index was reported at 72.0 earlier this month.

But while the labor market picture is firming, businesses appear to be cautious about investment spending.

A separate report from the Commerce Department showed non-defense capital goods orders excluding aircraft, a closely watched proxy for business spending plans, dropped 1.2 percent last month.

It was the second monthly decrease in these so-called core capital goods. The data surprised Wall Street economists who had expected a gain, partly because private surveys of national factory activity had shown strength in October.

"The picture of manufacturing strength from survey data is not being captured in the

CONTINUED ON — P10

NTMA member Roy Sweatman receives FLATE Industry Distinguished Service Award

NTMA member Roy Sweatman, President and CEO of Southern Manufacturing Technologies, was awarded the FLATE Industry Distinguished Service Award on December 5, 2013. FLATE (The Florida Advanced Technological Education Center) is a National Science Foundation Center of Excellence in high-technology manufacturing education. FLATE's administrative partnership includes St. Petersburg College, the College of Engineering at the University of South Florida, and Hillsborough Community College. To support the Florida workforce, FLATE conceived, engineered, and coordinated the Engineering Technology degree and certificate programs, and works with industry leaders and educational partners across the state.

In 2007, FLATE began recognizing educators and industry professionals who have made significant contributions in enhancing technician training and education in Florida at the annual MAF (Manufacturers Association of Florida) Summit and Awards Banquet. Each year, three awards are presented to educators and industry personnel who have made significant contributions in manufacturing and engineering education and awareness. Roy Sweatman is the 7th recipient of the FLATE Industry Distinguished Service Award.

Southern Manufacturing Technologies (SMT) is a high-tech manufacturer in Tampa. An NTMA member for over 20 years,



for the past two years Roy has also been an appointed member of the U.S Department of Commerce's Manufacturing Council and its subcommittee for workforce development. As well as being an industry leader, Roy has devoted significant efforts to engage students in Pinellas, Pasco and Hillsborough counties. At SMT, Roy has developed an open and inviting atmosphere with local middle and high schools, hosting "Made in Florida" tours and mentoring students to help promote interest in manufacturing careers.



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government-collected data on new orders and this divergence is a puzzle,” said John Ryding, chief economist at RDQ Economics in New York.

Nevertheless, the latest report suggested some ebbing in the factory sector’s momentum, and hinted that a 16-day partial government shutdown last month hurt business confidence.

TRIMMING GDP FORECASTS

Shipments of core capital goods, used to calculate equipment spending for the government’s measure of gross domestic product, fell 0.2 percent for a second consecutive month.

The drop suggested investment in equipment would probably not rise much this quarter after falling in the third quarter for the first time in a year.

Economists at Morgan Stanley trimmed their fourth-quarter GDP growth estimate by two-tenths of a percentage point to 1.2 percent on the data. Barclays lowered its forecast to 1.7 percent from 1.8 percent.

“Investment has slowed, but it’s going to be temporary,” said Ryan Sweet, a senior economist at Moody’s Analytics in West Chester, Pennsylvania. “As long as there is no policy misstep, we will start to see investment pick up.”

The report showed overall orders for durable goods - items from toasters to aircraft that are meant to last at least three years - fell 2 percent, largely because demand for civilian and defense aircraft tumbled.

Durable goods orders had increased 4.1 percent in September.

A fourth report showed some easing in the pace of factory activity in the Midwest this month, although it remained strong and showed factory employment surged to a one-year high.

The Institute for Supply Management-Chicago business barometer fell to 63.0 from 65.9 in October. A reading above 50 indicates expansion in the regional economy, which is

dominated by automobile production.

Along with the drop in new claims for jobless benefits, the data helped lift stocks on Wall Street in light trading ahead of Thursday’s Thanksgiving holiday. U.S. Treasury debt prices fell, while the dollar rose marginally against a basket of currencies.

A number of other regional factory reports for November had suggested the sector had taken a step back, and even the reading for the Midwest showed weaker new orders and order backlogs.

Economists say a strong inventory build-up in the third quarter is likely weighing on activity.

“Businesses were caught off guard by the softening in demand. Some of the build-up in inventories was unwanted, so that is going to lead to weak production early this quarter,” said Moody’s Analytics’ Sweet.



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Olathe, KS 66061-3693

PROTO-TEL, INC.

Rocky Mountain Chapter
Mr. Richard Drewes
16800 W. Hwy 72
Arvada, CO 80007

STAHL SPECIALTY COMPANY

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Mr. Chris Johnson
111 E Pacific St
Kingsville, MO 64061-2510

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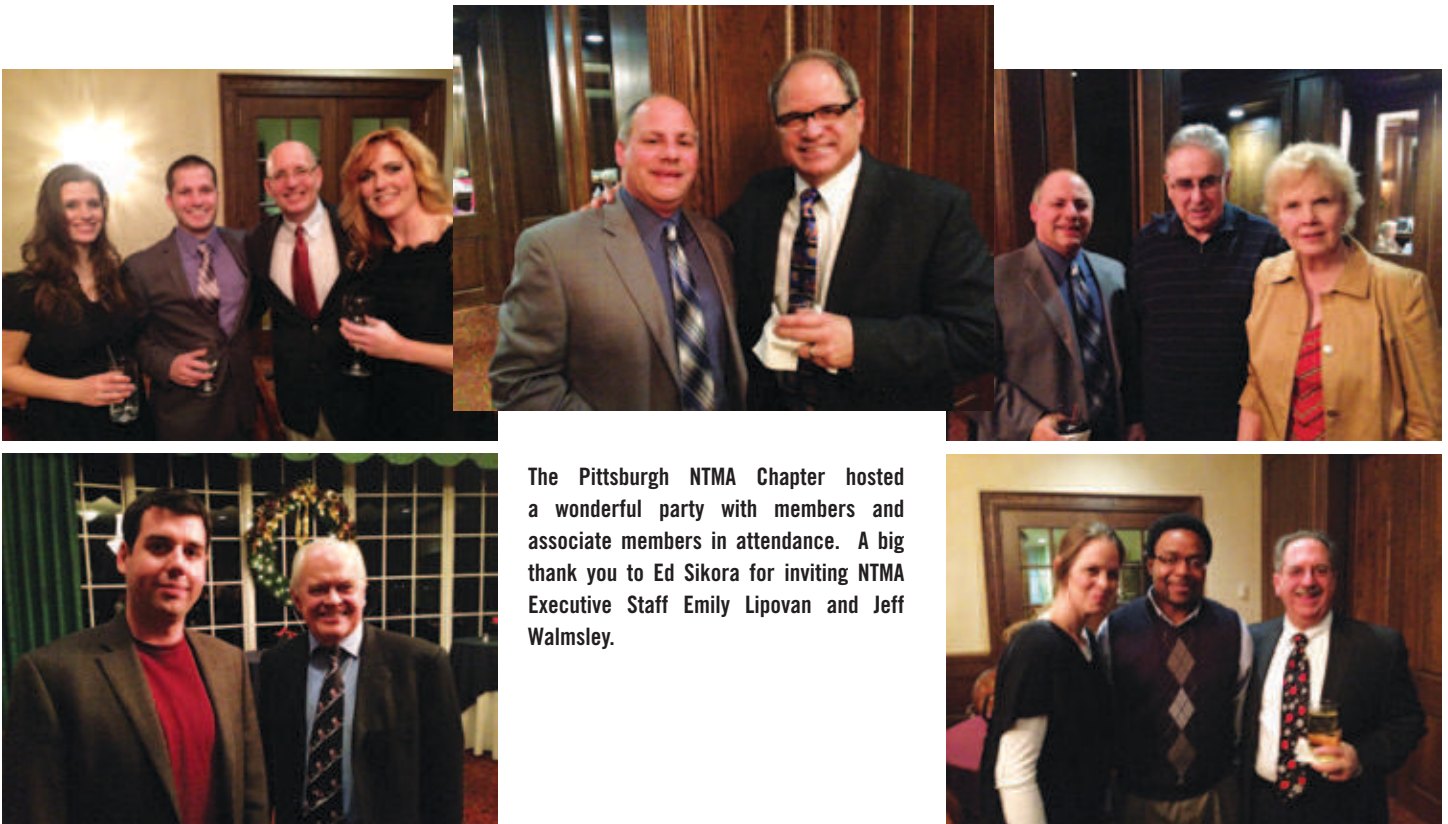
THE TOOLROOM, INC.

General
Mr. Robert P. Alexander
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Clearfield, UT 84016

US INTEGRITY MACHINE

St Louis Chapter
Mr. Ken Unnerstall
530C East Independence Dr
Union, MO 63084

PITTSBURGH NTMA CHAPTER HOLIDAY PARTY



The Pittsburgh NTMA Chapter hosted a wonderful party with members and associate members in attendance. A big thank you to Ed Sikora for inviting NTMA Executive Staff Emily Lipovan and Jeff Walmsley.

SUPPLIER CONTRACT TERMS & CONDITIONS DRIVE CUSTOMER CHOICE



Middle-market businesses rank contract terms and conditions as more important than customer service in their selection of a competitive electricity supplier, according to a recent survey by the Energy Research Council (ERC). In April 2013, the ERC conducted a survey of 1,254 middle-market companies in states that have deregulated energy markets to assess how they procure electricity supply.

The survey found that 56% of respondents consider contract terms and conditions to be very important in their selection of an electricity supplier. Only 42% ranked customer service as very important. Although 85% of survey participants ranked “price” as the most important factor impacting supplier se-

lection, ERC analysts found that a major challenge for middle-market companies is how to identify contract conditions that impact the final bill.

“Two fixed-price contracts could produce different electricity bills, based on bandwidth restrictions, capacity charges, line loss provisions, change-in-law clauses, and other contractual items that create pass-through fees,” explained James Moore, Ph.D., President of the ERC. Early termination fees and auto-renewal provisions are additional contract features that affect price. “Understanding what will happen if your business uses significantly more or less energy than in the past, and what happens when the contract expires, is crucial to selecting the right supplier,” said Dr. Moore.

In July 2013, the ERC conducted a second survey to gauge the middle market’s familiarity level with supplier contract terms and conditions. Those survey results will be detailed in future ERC research reports. The April 2013 ERC survey examined how frequently middle-market companies review energy costs, how many price quotes they evaluate, and which factors impact selection of an electricity supplier. For more survey results, visit <http://energyresearchcouncil.com/best-practices-electricity-procurement.html> or contact James Moore at 410-749-5519.



BOSTON NTMA HOSTS EVENT AT TD GARDENS AND THE BOSTON BRUINS

Closing out 2013 in style, the BNTMA hosted their annual event with the Bruins where over 60 people were in attendance. Members got a chance to network and enjoy an outstanding game with the Boston Bruins and not to mention having the evening honoring the legendary Bobby Orr! Wow! NTMA Executive Team Secretary, Dave Sattler was in attendance with

Managing Director Emily Lipovan. Sattler and Lipovan continued their visits with members of the chapter at this event and securing shop tours of O-D Tool & Cutter, F H Peterson Machine Company and M & H Engineering Company.



NTMA Wage and Fringe Benefit Report based on 2013 data

**Know if Your Benefits
Package is Competitive**

**Know the Low, High and
Average Wage Rates**

**Make Reliable and Impartial Financial Decisions
Regarding Wages and Benefits**

**Maintain a Competitive and
Effective Compensation Program**

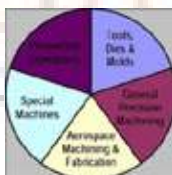
**Get and Keep Top-Notch
Employees**

Market Comparisons by:

Region/Chapter



Industry Segment



Company Size



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WHERE FACTORY APPRENTICESHIP IS LATEST MODEL FROM GERMANY

BY NELSON D. SCHWARTZ, THE NEW YORK TIMES



Tognum
HOME OF POWER BRANDS

For Joerg Klisch, hiring the first 60 workers to build heavy engines at his company's new factory in South Carolina was easy. Finding the next 60 was not so simple.

"It seemed like we had sucked up everybody who knew about diesel engines," said Mr. Klisch, vice president for North American operations of Tognum America. "It wasn't working as we had planned."

So Mr. Klisch did what he would have done back home in Germany: He set out to train them himself. Working with five local high schools and a career center in Aiken County, S.C. — and a curriculum nearly identical to the one at the company's headquarters in Friedrichshafen — Tognum now has nine juniors and seniors enrolled in its apprenticeship program.

Inspired by a partnership between schools and industry that is seen as a key to Germany's advanced industrial capability and relatively low unemployment rate, projects like the one at Tognum are practically unheard-of in the United States.

But experts in government and academia, along with those inside companies like BMW, which has its only American factory in South Carolina, say apprenticeships are a desperately needed option for younger workers who want decent-paying jobs, or increasingly, any job at all. And without more programs like the one at Tognum, they maintain, the nascent recovery in American manufacturing will run out of steam for lack of qualified workers.

"South Carolina offers a fantastic model for what we can do nationally," said Ben Olinsky, co-author of a forthcoming report by the Center for American Progress, a liberal Washington research or-

ganization, recommending a vast expansion in apprenticeships.

Despite South Carolina's progress and the public support for apprenticeships from President Obama, who cited the German model in his last State of the Union address, these positions are becoming harder to find in other states. Since 2008, the number of apprentices has fallen by nearly 40 percent, according to the Center for American Progress study.

"As a nation, over the course of the last couple of decades, we have regrettably and mistakenly devalued apprenticeships and training," said Thomas E. Perez, the secretary of labor. "We need to change that, and you will hear the president talk a lot about it in the weeks and months ahead."

In November, the White House announced a new \$100 million grant program aimed at advancing technical training in high schools. But veteran apprenticeship advocates say the Obama administration has been slow to act.

"The results have not matched the rhetoric in terms of direct funding for apprenticeships so far," said Robert Lerman, a professor of economics at American

of apprenticeship program, which leads to a formal certificate in the chosen skill and often a permanent job at the company where the young person trained.

If there is a downside to the German system, it is that it can be inflexible, because a person trained in a specific skill may find it difficult to switch vocations if demand shifts.

In South Carolina, apprenticeships are mainly funded by employers, but the state introduced a four-year, annual tax credit of \$1,000 per position in 2007 that proved to be a boon for small- to medium-size companies. The Center for American Progress report recommends a similar credit nationwide that would rise to \$2,000 for apprentices under age 25.

The emphasis on job training has also been a major calling card overseas for South Carolina officials, who lured BMW here two decades ago and more recently persuaded France's Michelin and Germany's Continental Tire to expand in the state.

"The European influence is huge," said Brad Neese, director of Apprenticeship Carolina, which

"As a nation, over the course of the last couple of decades, we have regrettably and mistakenly devalued apprenticeships and training."

Thomas E. Perez, U.S. Secretary of Labor

University in Washington. "I'm hoping for a new push."

In Germany, apprentices divide their time between classroom training in a public vocational school and practical training at a company or small firm. Some 330 types of apprenticeships are accredited by the government in Berlin, including such jobs as hairdresser, roofer and automobile electronics specialist. About 60 percent of German high school students go through some kind

links the state's technical college system with private companies to help create specialized programs. "They are our strongest partners."

European companies are major employers in the state, with more than 28,000 workers for German companies alone. The influx has helped stanch much of the bleeding caused by the decades-long erosion of jobs in the textile industry, once the economic bulwark of the Palmetto state.

Of course, there are other

reasons foreign companies have moved here. For starters, wages are lower than the national average. Even more important for many manufacturers, unions have made few inroads in South Carolina.

Still, the close cooperation between employers and the state educational system is unusual, and despite initial skepticism on both sides, apprenticeship opportunities are rapidly expanding both for high-school age students and for older workers.

Apprenticeship Carolina started in 2007 with 777 students at 90 companies. It now has 4,500 students at more than 600 companies in the state, with the typical apprentice in his or her late 20s. Mr. Neese's goal is to have 2,000 companies by 2020.

To help develop his program, Mr. Neese has traveled to Germany, Austria and Switzerland, where apprenticeships are thriving, youth unemployment is relatively low and blue-collar jobs are still prized. That contrasts with the United States, where the economic fortunes of younger people with just a high school diploma have plummeted, and the unemployment rate among workers age 16 to 19 stands at more than 20 percent.

"This generation has taken a huge hit from the economic crisis," said Alexander Gelber, an economist at the University of California at Berkeley and a former senior Treasury official. "Apprenticeships offer people the possibility of building skills when they often don't have many other options."

So why have they not caught on in the United States like in Germany, which has 1.8 million apprentices with less than one-third the population?

CONTINUED ON — P15

DID YOU KNOW? ...

Natural gas prices reached the highest level in more than six months yesterday, partly because of extremely cold weather forecasts across most of the U.S.

ELECTRICITY

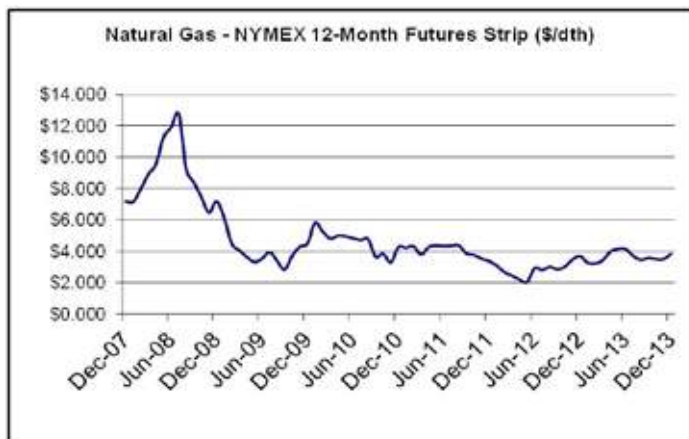
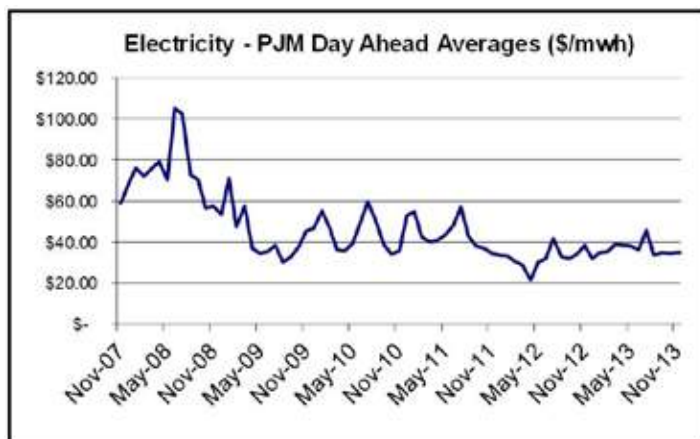
- Electricity prices are higher across most of the U.S. today, as weather forecasts continue to call for below-normal temperatures.
- Less natural gas was used to generate electricity in 2013 than in 2012, partly because of a cooler summer and lower coal prices, according to the U.S. Energy Information Administration (EIA).
- In deregulated markets, 62% of middle-market companies require two to three electricity supply price quotes before selecting a competitive supplier, according to the Energy Research Council.

NATURAL GAS

- The January 2014 monthly Natural Gas NYMEX price is up \$.05 today at \$4.28 per MMBtu.
- Last week, the EIA reported a withdrawal of 162 Bcf from natural gas storage. Storage is now at 3,614 Bcf.
- Last week's storage withdrawal was larger than expected, partly because freezing temperatures limit natural gas production.
- Last week, the EIA reported that natural gas consumption was down 10.5% for the week.

CRUDE OIL

- The January 2014 Crude Oil NYMEX price is up \$.88 to \$98.22 per barrel.



2013 MARKET TRENDS

(Arrows indicate if market prices are driven upward or downward.)

- ↓ **Shale gas storage inventory:** The gas storage level is historically high for the start of the winter heating season. Strong withdrawals are expected going forward.
- ↓ **Drilling:** Domestic production remains historically high.
- ↑ **Weather:** Winter temperatures increase heating demand, which drives up gas prices.

All information is provided "as is." It is not intended as advice for any purpose. APPI Energy makes no representations or warranties, expressed or implied, as to the accuracy, completeness, or reliability of the information provided in this newsletter. APPI Energy assumes no responsibility for informational errors or incompleteness or for actions taken in reliance on the information herein. This snapshot is based on market information at a specific time. Energy prices change constantly.

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NTMA MEMBERS CAN SAVE MONEY ON ENERGY COSTS BY CONTACTING NTMA'S ENERGY PARTNER APPI.



Besides a longstanding stigma attached to vocational education, opposition from entrenched interests on both the left and the right has hobbled past efforts to promote apprenticeships, including under President Clinton in the 1990s.

Joerg Klisch discovered this firsthand when he started seeking support for the program in 2011.

School officials were wary of allowing a private company to dictate the curriculum. Meanwhile, among employers, “there seems to be a perception that apprenticeship means unions,” Mr. Klisch said. “It doesn’t, but we have to overcome this hurdle.”

Here in Greer, where more than 7,000 employees produce over 300,000 S.U.V.’s and other luxury cars a year in a sprawling, ultramodern BMW factory, Richard Morris, vice president for assembly and logistics, identifies one of the company’s biggest problems: a serious shortage of medium-skilled workers who specialize in mechatronics, or repairing robots and metal presses when they break down and operating the computers that dot the paint shop, body shop and assembly shop. Not only do these jobs pay better than typical assembly-line positions, they also open up avenues for advancement.

Werner Eikenbusch, manager of work force development for BMW in the Americas, is himself the product of an apprenticeship program in Germany who later went back to school and earned a master’s degree in engineering. He helped create the BMW Scholars program in 2011, he said, “to build the skills from the ground up.”

The BMW Scholars are older than Tognum’s apprentices — mostly in their 20s and 30s — and they study full-time at local technical colleges for two years while also working in the BMW factory for 20 hours a week.

“It is a struggle, but if you know how to manage the time, it is not hard,” said Benjamin Peoples, a 27-year-old BMW Scholar who dropped out of Clemson University a few years ago because he could no longer afford it. “I wanted to work with my hands and with machines, but I didn’t have experience with robots.”

Mr. Eikenbusch has been pitching the program to European parts suppliers in the area, as well as to executives at Boeing, which began building sections of the new 787 Dreamliner in Charleston in 2011. He hopes they will follow BMW’s lead.

“We need to find a way to establish two-year training programs on a broader scale,” he said. “Everybody who I hire is someone who is not available for our suppliers to hire.”



NATIONAL GUARD JOB POSTING CAMPAIGN GAINS MOMENTUM

MORE THAN 950 ARE PARTICIPATING IN AMERICAN JOBS FOR AMERICA’S HEROES



VETERANS FROM ALL BRANCHES GET EMPLOYMENT HELP VIA NATIONAL GUARD.

Veterans from all branches are being encouraged to get employment help in their home communities. With more than 2,800 Guard armories throughout the country, many are visiting local armories to find help and they’re getting it. The Army National Guard reports that every veteran is welcome to draw upon the state National Guard employment teams and AJAH job postings are being promptly shared with them.

MORE ASSOCIATIONS PUBLICIZING AJAH.

More than 137 trade associations, state and local chambers, and professional societies are publicizing AJAH with their members. Nearly 1,000 employers are now participating in the campaign! Here is a link to the current list of associations publicizing the job posting campaign:

HONOR ROLL OF ASSOCIATIONS

We were very glad to see this web page posted by the North Dakota Chamber of Commerce about the American Jobs for America’s Heroes campaign! 27 State Chambers are now supporting the campaign.

<https://www.ndchamber.com/the-american-jobs-for-americas-heroes-campaign/AJAH-ON-PUBLIC-TELEVISION-STATIONS>.

During the last three months, 140 public television stations have aired the AJAH five-minute video (at no cost) a total of 760 times for a total of 4,228,500 viewers. 85 stations in the “top 100 markets” aired the video and 42.5% of all airings were during “primetime” – 7 PM to 11 PM. Here is a link to the video:

<http://www.CenterForAmerica.org/video.html>

CORPORATE AMERICA SUPPORTS YOU (CASY) HONORED.

CASY and Military Spouse Corporate Career Network (MSCCN) are the pioneering nonprofit organizations that manage the job postings from AJAH employers and collaborate with the state National Guard employment teams on placements. Both were founded in 2004 and both are headed by Stacy Bayton, chief operating



officer, and Erin Voirol, executive director. Both are featured in the AJAH video mentioned above.

CASY has been selected from among hundreds of applicants to receive the “Seal of Distinction” from the Code of Duty Endowment (CODE), which is sponsored by Activision. The rigorous selection process was completed by Deloitte on behalf of CODE. According to the CODE news release CASY “has proven to be one of the most efficient and productive organizations we have encountered based on cost-per-veteran job placement.” This conclusion addresses CASY’s work with all the military branches including the National Guard.

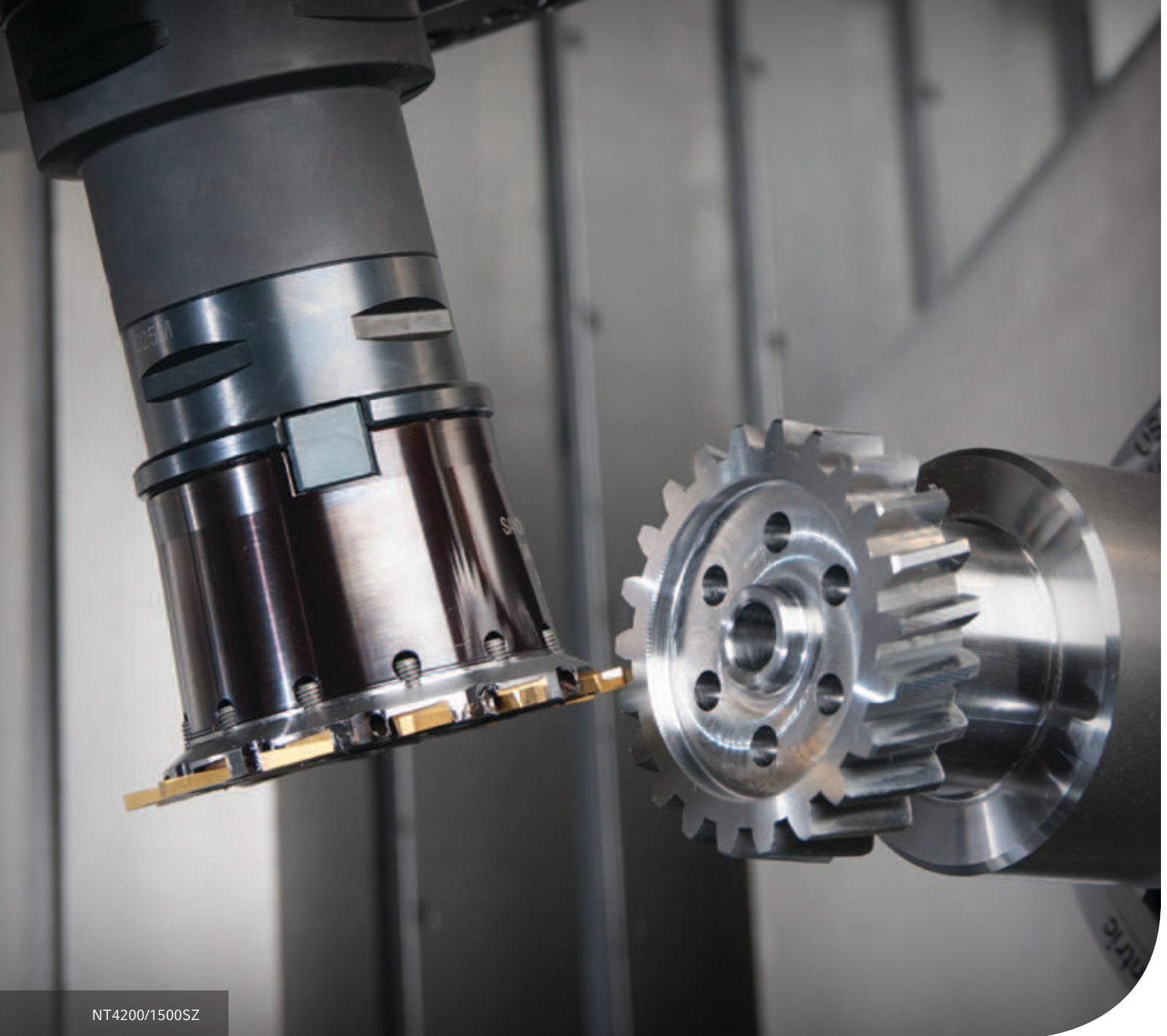


Nearly 40 companies in the machining and metalworking industry are participating in the campaign now. Thanks to the support of NTMA and other associations, more than 950 employers from all over the country are posting jobs for the Guard through the Center For America website at www.CenterForAmerica.org. All services to employers and candidates are free.

Please consider introducing the campaign to managers in other NTMA companies that would benefit from posting jobs for Guard members and veterans. A few minutes to send an email to a colleague in another company could lead to a lot of veterans getting good job opportunities! We’re very grateful for your help in spreading the word!

For more information and materials to share, contact Steve Nowlan, Center for America, snowlan@CenterForAmerica.org





NT4200/1500SZ

It's time to shift gears—by combining complex machining processes on standard machines.

Revolutionary gear-milling solutions from DMG MORI enable all types of gear machining with innovative milling programs and off-the-shelf tooling—so you can slash setup times and boost profit.

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DMG MORI USA OPENS DMG MORI SALES FOR NEW DIRECT OPERATIONS

DMG MORI

DMG MORI USA will conclude its relationship with Maruka, a distributor of DMG MORI machines in six states. The separation is effective January 1st, 2014. While the two companies will sustain an international relationship, each will pursue other opportunities within the United States.

DMG MORI USA customers affiliated with Maruka will now have direct access to DMG MORI USA for Service, Sales, Parts and Customer Service Support. DMG MORI is currently adding staff and opening local facilities in Tampa, FL; Parsippany, NJ; Wichita, KS; Kansas City, MO and Tulsa, OK.

"We accept full responsibility for all service and support needs,

so you need only one number: 855-DMG-MORI (855-364-6674)," says DMG MORI USA president, Mark Mohr. "This number will connect you with our call center, parts ordering group and engineering support line. We hope this direct line of communication and streamlined procedure will improve turnaround time on all requests."

Current customers have already been contacted about transferring their account information to DMG MORI USA. Any questions or concerns can be directed to DMG MORI USA at 855-364-6674.



NEW 120 VAC TO 12/24 VDC EXPLOSION PROOF STEP DOWN TRANSFORMER FROM LARSON ELECTRONICS

Industrial lighting specialists Larson Electronics have announced the release of a new portable explosion proof transformer designed to provide low voltage 12/24 DC current. Featuring wheeled mobility and explosion proof certification, the EPL-TX-320-2XLV-DC Explosion Proof Transformer allows operators in hazardous locations to safely and easily step down 120 VAC to 12 or 24 volt DC.

The EPL-TX-320-2XLV-DC from Larson Electronics is a convenient and reliable solution for operators in hazardous locations who need the ability to easily convert standard 120-277 VAC to low voltage 12/24 VDC current. This explosion proof transformer also acts as a power distribution panel through the inclusion of two 20 amp Class 1 and 2, Division 1 and 2 receptacles designed to accept twist lock explosion proof plugs. This industrial grade transformer is ideal for maintenance and turnaround operations and includes 25 feet of heavy duty 16/3 SOOW cord ending in a 250V, 20 amp explosion proof male plug for safe and secure connections. The receptacles on this transformer accept either Larson Electronics' own EPP-15A and EPP-20A explosion proof plugs, or cross compatible Crouse-Hind™ ENP general purpose plugs. Each receptacle features twist lock connection, deep recessed contacts, and chained dust caps to provide protection against contamination when not in use. The entire assembly is mounted to a heavy duty cart fabricated from non-sparking

aluminum with no flat rubber rear tires and solid front caster wheels. The cart is designed for easy mobility and also includes integral side brackets to provide easy storage of hand lamps and cords. This explosion proof step down transformer carries approvals for use in Class 1 Division 1 and 2 locations and is an ideal solution for operators who need the ability to run low voltage from any location where 120 VAC power is available.



explosion proof step down transformer carries approvals for use in Class 1 Division 1 and 2 locations and is an ideal solution for operators who need the ability to run low voltage from any location where 120 VAC power is available.

"The EPL-TX-320-2XLV explosion proof low voltage transformer provides operators with a class rated transformer for use within hazardous locations," said Robert Bresnahan with Larson Electronics LarsonElectronics.com. "This cart mounted explosion proof step down transformers allows operators to supply low voltage to equipment in from readily available 120-277V AC power sources."

Larson Electronics carries an extensive line of power supplies, power distribution systems, portable power supplies, and explosion proof lighting equipment. You can view Larson Electronics' entire line of explosion proof equipment by visiting them on the web at LarsonElectronics.com. You can also call 1-800-369-6671 to learn more about all of Larson Electronics' lighting products or call 1-214-616-6180 for international inquiries.



BEST PRACTICES: ELECTRICITY PROCUREMENT



Which variables affect your electric bill? The Energy Research Council's latest report, *Best Practices: Electricity Procurement*, discusses how two fixed-price contracts could produce different electricity charges, and examines the responses from 1,254 mid-size business executives regarding how they procure electricity supply. "Before signing a contract, determine what will happen if your business uses significantly more or less energy than in the past, and what happens when the contract expires," said Michael Payne, JD, LLM, Executive Vice President & Corporate Counsel for consulting firm APPI Energy.

In April 2013, the Energy Research Council (ERC) conducted a survey of 1,254 middle-market companies in states that have deregulated energy procurement to assess how they procure electricity supply. Today, approximately one quarter of the U.S. energy marketplace has actively deregulated electricity procurement. In deregulated states, businesses can enter into contracts with competitive retail electricity suppliers. These suppliers can sell directly to customers or market electricity through third-party sales channels like energy aggregators, brokers, and consultants.

Best Practices: Electricity costs have a major impact on middle-market operating budgets. In deregulated states, mid-market companies should compare competitive electricity supply prices to the local electric utility's rate, and review expenditures on a frequent basis.

HOW DIFFICULT IS IT TO COMPARE COMPETITIVE ELECTRICITY SUPPLIERS?

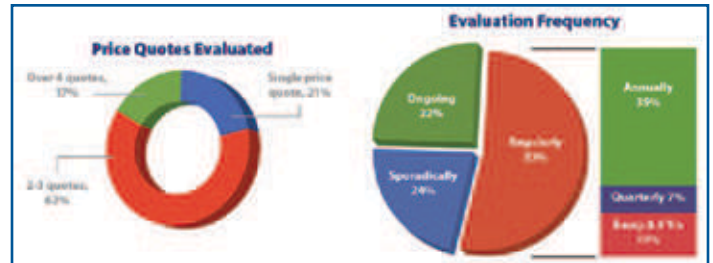
Perhaps the most complex issue in selecting the right electricity supplier is comparing "apples-to-apples" regarding pricing and contract terms & conditions. While most price quotes are based on a fixed price per kilowatt hour (kWh), many variables and pass-through items in electricity supply contracts can impact the final bill.

For example, two fixed-price contracts could produce different electricity charges, based on bandwidth restrictions, capacity charges, line loss provisions, change-in-law clauses, and other contractual items that create pass-through fees. In addition, many electricity supply contracts differ in early termination penalties, auto-renewal provisions, term flexibility, and other standard contract features. Comparing prices is also challenging because different electricity suppliers provide indexed quotations based on different contract terms and rate components.

"Middle-market decision makers must clearly understand the terms and conditions in each competitive supplier's contract," said Michael Payne, JD, LLM, Executive Vice President & Corporate Counsel for consulting firm APPI Energy. "Before signing a contract, conduct due diligence to determine what will happen if your business uses drastically more or less energy than in the past, and what happens when the contract expires."

Because electricity market prices change on a daily basis, most

Best Practices: Utilities' rates change regularly because of tariff structures and market fluctuations. Forecasts of electricity market trends, and information about proposed future rate increases or decreases, are helpful, but complex for most companies to track.



companies review multiple price quotes. ERC research shows that only 21% of middle-market companies sign an electricity supply contract based on a single price quote. Most (62%) require at least two to three price quotes before selecting a supplier.

HOW FREQUENTLY SHOULD MIDDLE-MARKET COMPANIES EVALUATE ELECTRICITY PRICES AND ALTERNATIVE SUPPLIERS?

Negotiating an electricity supply contract is only one part of managing your electricity needs. ERC research shows that almost one quarter (22%) of middle-market companies continually evaluate their electricity expenditures and pricing. Two-thirds report that they review their energy expenditures at least annually. Combined, that means three quarters of the middle market evaluates their energy costs on a regular and frequent basis. Only one quarter of the companies surveyed by the ERC review energy costs less than once per year, presumably based on internal needs or exposure to external opportunities.

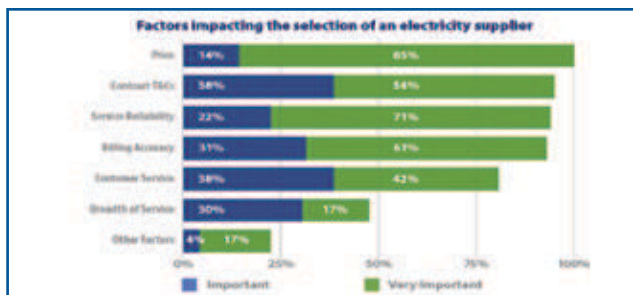
Best Practices: Middle-market companies should continually monitor the electricity market for buying opportunities. Companies can take advantage of today's prices in a supply agreement that begins when their current contract expires, even if the expiration date is one or more years in the future..

Electricity prices fluctuate constantly based on a variety of market, political, economic, and environmental factors. Many companies review electricity supply pricing regularly to secure future contract prices when market rates are low. Early termination penalties prohibit simply switching suppliers, but middle-market companies can commit to a new contract for a future timeframe, based on current dips in the market. Opportunities to capture market dips come and go quickly, making it important to monitor market conditions regularly.

WHAT DO MIDDLE-MARKET COMPANIES LOOK FOR IN A COMPETITIVE ELECTRICITY SUPPLIER?

Ask middle-market decision makers to name the most important factor in selecting an energy supplier and most will tell you, "price." But price is not the only factor impacting the buying decision. Demonstrating an advantage in certain other factors, such as service reliability, billing accuracy, or contract terms & conditions, may offset pricing gaps between different competitive suppliers.

ERC research shows that most middle-market companies rate service reliability and billing accuracy as critical to selecting the right electricity supplier. These factors impact customer satisfaction and the total cost of managing a company's electricity supply. For example, consider the internal cost of resolving billing errors. Billing problems can result in inaccurate fees and require significant



time and effort to detect and resolve. Further complicating the process of correcting billing errors is the fact that electricity bills may come from a local utility, an electricity supplier, or both.

BOTTOM LINE

In states with deregulated energy markets, middle-market companies can reduce electricity supply costs in a contract with a competitive supplier. Decision makers must thoroughly evaluate price components and contract terms and conditions to ensure they select the most advantageous supplier. Price, billing accuracy, and service reliability drive customer selection of competitive suppliers. The majority of middle-market companies review energy expenditures on a frequent and ongoing basis.



ABRASIVE GRINDING WHEELS BLEND AND FINISH ALUMINUM IN ONE-STEP

A line of Type 27 cotton-fiber abrasive grinding and blending wheels that provide smooth controlled grinding action, run cool, and are non-loading on aluminum is available from Rex-Cut Abrasives of Fall River, Massachusetts.



Rex-Cut® Type 27 Cotton Fiber Grinding Wheels feature multiple layers of cotton fiber that are impregnated with aluminum oxide abrasive grains and then pressed and bonded together. Ideally suited for blending and finishing aluminum in one-step, they provide smooth controlled grinding action, run cool, are non-loading, and eliminate the need for waxes and lubricants.

Constantly revealing fresh abrasives as they work, Rex-Cut® Type 27 Cotton Fiber Grinding Wheels for aluminum incorporate a GFX synthetic latex bond and come in 36- and 54-grit versions. Sizes offered include 4", 4-1/4",

5", 7", and 9" dia., in 1/8", 3/16", and 1/4" thicknesses; available with or without 5/8-11 throw away adapters.



ATTENTION S CORP. OWNERS: BE REASONABLE

BY WASACZ & SKVORETZ LTD.

Small business owners like the S corporation business structure for several reasons, two of which are tax related. For federal income-tax purposes, an S corporation's profits "pass through" and are taxed to individual shareholders. C corporation profits, on the other hand, are taxed twice — once at the corporate level and again at the shareholder level when paid out as dividends.

WAGES VERSUS OTHER PAYMENTS

The other potential tax benefit involves federal employment taxes. S corporation owners/employees can — and often do — keep employment taxes down by paying themselves low salaries. But they make up for that by compensating themselves with payments that are not subject to employment taxes (e.g., cash distributions). That's not always a good strategy. The IRS is on the lookout for owners who report low or no wages on their tax returns.

CASE IN POINT

The U.S. Tax Court recently ruled in favor of the IRS in a case that pitted the agency against the sole owner of a real estate firm. The owner was in charge of every aspect of the business and often worked 12-hour days without taking any time off in between. The trouble is, the owner didn't report any wages on his tax return.

NOT CHUMP CHANGE

After studying the facts and circumstances of the case, the Tax Court arrived at what it deemed to be a reasonable hourly rate (\$40) and ruled that the business should have paid the owner wages of \$83,200 for the year. As a result, the owner owed significant employment taxes and penalties.

WINNING WAYS

The moral of the story is that if you perform services for your company and you don't take a reasonable salary, the IRS may be able to reclassify dividends, distributions, or loans you've received as salary — and you could end up owing employment taxes and penalties as a result. That doesn't mean there aren't opportunities for tax savings. You can avoid paying unnecessary employment taxes by paying yourself a reasonable salary.



MICHIGAN MANUFACTURING INTERNATIONAL (MMI) OPENS NEW HEADQUARTERS



Michigan Manufacturing International (MMI), a leading broad line supplier of high-quality mechanical assemblies and components, held a Grand Opening at their new headquarters in Stevensville, Maryland on Thursday, November 21.

Senator Steve Hershey congratulated CEO Jacob Prak for being the first to open in the Matapeake Professional Park. The ribbon cutting ceremony also included remarks by County Commissioner Phil Dumenil, Delegate Mike Smigiel, County Administrator Gregg Todd, Commissioner Bob Simmons, and Faith Elliott-Rossing, Economic Development Council Director.

Founded in 1991, Michigan



MMI CEO Jacob Prak cuts the ceremonial ribbon at the Grand Opening of the company's new headquarters in Stevensville, Maryland, while Senator Steve Hershey, Delegate Mike Smigiel and others look on.

Manufacturing International (MMI) specializes in supplying manufactured to print assemblies and components to original equipment manufacturers (OEM). Products include assemblies, castings, stampings, machined parts, gears, bearings and more. Services include product engineering, manufacturing, inventory management and stocking programs — all designed to streamline client operations and increase profitability. MMI designs the most effective, highest quality solutions from anywhere in the world.

For more information about MMI, visit www.michmfg.com or call 800-677-0504.



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FORD AND SIEMENS: GOOGLING THE FUTURE OF MANUFACTURING

BY TRAVIS HESSMAN

This is the future: a smooth synthesis between the physical and the virtual worlds—a seamless integration between things and information, between activity and data.

This is what every innovation the last five years has been leading toward and what forms the subtext to every manufacturing technology story published in the last year—from big data and analytics to augmented reality and Google Glass. Even the 3-D printing craze is part of it, actually creating reality out of data.

Ford (IW 500/8) has been at the forefront in this movement for years, which we have dutifully covered here at IndustryWeek. As has Siemens (IW 1000/35) with its increasingly sci-fi PLM offerings. And with them, of course, is the real harbinger of the future, Google, which offers just about everything else.

But last night news broke that these three agents have combined forces to give

the world its first clear view of how this future is really going to look.

It came in the form of Siemens' IntoSite application, which Ford will be soon begin piloting across several of its facilities.

According to Siemens, the software, which is one-part simulation, one-part communication, one part PLM and one part Google Earth is designed to help improve communication efficiency, globalization and standardization across a diverse array of manufacturing facilities and assembly plants.

It allows users to navigate plants and workstations virtually a la Google Earth, creating a "private virtual space where users can easily save and share materials, helping to better communication within plants and around the world," according to the official Siemens release.

For its part, a representative from Ford says the software will "increase the speed of adopting and implementation for our

manufacturing teams around the world" in such a way that caters to "a world where visual communication now can be more effective than email."

And that sounds great. It sounds very much like the future we've been waiting for.

But what's really exciting here, as Ford's Marty Smets, describes the video below, is how far the list of possible applications extends and how there doesn't seem to be any end to them in sight. No one really knows how this will work, what benefits it will offer, or how much value it will add. All they know is that the potential is huge.

It is, as it stands, an open experiment in the physical/virtual merger in the industrial space. From it, success or failure, value or none, we'll see a model form on how this next evolution of manufacturing software is going to shape the future of industry.



LARSON ELECTRONIC PROVIDES AFFORDABLE OPTION TO UPGRADING TO LED AT HOME OR OFFICE

Larson Electronics is making it easier than ever for companies or families who want to begin the transition to LED lighting with their 10 watt Directional LED light bulb. When replacing burned out bulbs to LEDs, or direct replacement, the new Magnalight LED-A19-10-E26 will save you time and money.

The Magnalight LED-A19-10W-E26 Directional 10 Watt LED A19 Style Bulb is designed to fit in standard light bulb sockets but provides durability and multi color adjustability that makes it ideal for industrial and commercial applications. This 10 watt LED provides 1050 lumens from only 10 watts.

The LED-A19-10-E26 is the ideal upgrade or replacement for directional hand lamps and drop lights. This bulb produces nearly 20% more light at 5 feet than a standard 100 watt rough service bulb. Combined with a "cool white" color output, this bulb is ideal for improving the light output of hand lamps, drop lights, and other standard

incandescent lighting within industrial or residential applications. Operators will also benefit from the cool operation of portable lighting equipped with LED bulbs, and can stop burning themselves and others with incandescent versions of the same lights.

The base is the same screw in base that the standard light bulb will have in the US and Europe. You can use this LED light bulb in a standard lamp in your home and install it in seconds. However, given the durability and longevity, we also see this LED light bulb as an ideal solution for industrial and commercial applications. As such, this LED light bulb can provide additional safety measures and time savings; given the low heat production and that it does not require replacing for 50,000 hours. Since the LED bulb uses solid state technology, the vibration that degrades conventional incandescent bulbs is not an issue with these LED bulbs.

"The Edison filament based incandescent light bulb was a horrible idea and now we can be rid of it." Rob Bresnahan,

with Larselectronics.

com said. "The longevity and durability of this bulb, along with the significant reduction in costs to operate it, it will pay for itself again and again."

Larson Electronics carries an extensive line of LED spotlights, LED hunting lights, colored LED lights, portable work lights and industrial grade LED area lights. You can view Larson Electronics' entire line of lighting by visiting them on the web at Larselectronics.com. You can also call 1-800-369-6671 to learn more or call 1-903-498-3363 for international inquiries.



US ON MACHINE TOOL SPENDING SPREE

GARDNER SAYS 2014 PURCHASES WILL JUMP NEARLY ONE-FIFTH, AND THE DIE AND MOULD SECTOR IS SHOWING 'STRONG' DEMAND

If spending on machine tools is any indication, the state of the US manufacturing industry is vibrant, according to data collected and collated by US publisher Gardner Business Media, the North American media partner of ETMM parent Vogel Business Media.

According to the December issue of the Gardner magazine Modern Machine Shop, information from companies around the US indicates that spending on machine tools will rise 19% to \$7.4 billion.

This predicted rise follows a trend, according to Travis Egan, publisher of Modern Machine Shop. Speaking with the ETMM Show Daily on Wednesday, Egan noted that US demand for machine

tools has been rising over the past few years. According to Gardner and market estimates, spending since 2011 has been above 2008 levels.



Travis Egan from Gardner Business Media noted that next year's expected growth is the continuation of an ongoing trend. (Source: Culp)

Egan also cited reshoring, the return of metalworking business to the US from Asia, as another factor for the rising demand for machining equipment.

Looking at the sector, Egan pointed to aerospace and oil and gas as areas that have been displaying the largest spending growth for machine tools over the past few years. "Die and mold has been a very strong area," Egan added.

Purchases at US job shops are forecast to jump some \$700 million to nearly \$2.6 billion next year, according to the survey.



VALVE MANUFACTURERS ASSOCIATION'S VALVE TRAINING COURSE GOES VIRTUAL;

ONLINE VALVE BASICS COURSE NEXT STEP IN EDUCATING INDUSTRY EMPLOYEES



The Valve Manufacturers Association (VMA) is now offering an online version of its popular Valve Basics Training course. In an effort to reach more industry employees, VMA adapted its place-based training to the Web with the launch of Valve Basics Online Training (VBOT).

"We recognize that not everyone can travel for training so the next best option is going online. That's why we've created an engaging and informative Valve Basics Online Training program to ensure we are providing many ways for our member companies—as well as end-users and others who work with valves and related products—to train their workforces," said VMA President William Sandler. "This is also an important way to reach the younger generation since they are so attuned to working in a digital environment."

According to recent VMA research, the valve industry employs 30,000 people—a 50% increase from a decade ago, provides great jobs and is expecting to add many more in the coming year. However, the industry faces competitive challenges as the industry grays and it gets harder to find new employees, which makes it even more im-

portant to find creative ways to attract and keep them.

In response, VMA established an in-depth valve education program—Valve Ed—in 2009 to help those working in the valve industry, or the industries that use valves, train current and future valve employees. Four years after its introduction, more than 900 people have taken the 101 course, which includes a hands-on component called the "Valve Petting Zoo," and hundreds more have ordered other educational products from the association. The new online training program will provide still another vehicle to promote valve literacy and career interest.

VBOT provides eight lessons and features live narration. Students can complete the course at their own pace and will receive six hours of continuing education credits and a Certificate of Completion. Similar to what is offered in the onsite Valves & Actuators 101 seminars, lesson topics include:

- An Introduction to the valve industry, including pressure ratings and classes, standards organizations, valve components and more
- Multi-turn valves
- Check valves

- Quarter-turn valves
- Pressure-relief valves
- Actuators – pneumatic, hydraulic and electric
- Control valves

Those interested in signing up for VBOT should visit The VMA Store on www.VMA.org. Discounts are available for the Beta version: \$295 per license for non-members, \$235 per license for members. In addition, group licensing and company-wide discounts are available. VMA will be making improvements and upgrades in the coming months, including adding more animation and upgraded graphics. When Version 1.0 is released—projected for the second quarter 2014, the price will rise; but Beta users will be granted access to Version 1.0.

To participate online, users need a high-speed, persistent Internet connection and a recent desktop, laptop or tablet. For more information, visit VMA's website at www.VMA.org > Resources > Online Education or contact Abby Brown at abrown@vma.org.



OKUMA AMERICA CELEBRATES 50TH ANNIVERSARY OF THE OSP CNC CONTROL

OKUMA'S REVOLUTIONARY CONTROL TECHNOLOGY DEBUTED IN 1963, AND ITS LATEST INNOVATIONS WILL BE FEATURED AT THE TECHNOLOGY SHOWCASE EVENT, DECEMBER 10-12, 2013



Okuma America Corporation, a world-leader in CNC machine tools, will celebrate the 50th Anniversary of its THINC®-OSP CNC control at the company's Technology Showcase event, December 10-12, 2013 in Charlotte N.C. Developed in 1963, OSP stands for "Okuma Sampling Path," to emphasize the innovation of creating a digital representation of the machine tool cutting path. Today the OSP continues to deliver innovation with functionalities that enable users to have better control of their machine tools and create manufacturing efficiencies that increase productivity.

MECHATRONICS, SINGLE-SOURCE AND THE OSP CNC CONTROL DIFFERENCE

Okuma developed the OSP control because of its deep commitment to the mechatronics approach, which blends mechanical and electrical systems to maximize seamless communication between the machine and its control. The company is now the industry's only single-source provider, with the CNC machine, drive, motors, encoders, spindle and CNC control all manufactured by Okuma, allowing for synergies that

enhance reliability and performance. The single-source approach also provides users with unique opportunities for innovation and creating their own competitive advantage. Following are just a few of the characteristics of the OSP control that make it unique in the marketplace:

- Delivers the industry's only open architecture platform – a fully open system that removes the barriers, limitations and planned obsolescence imposed by proprietary CNC control systems
- Provides opportunities for continuous process improvement through easy incorporation of best-in-class upgrades and even the development of apps that optimize productivity
- Allows for development of innovations such as Okuma's Intelligent Technologies, which enhance CNC machine performance and productivity
- Enables easy connectivity throughout the shop environment – to peripheral devices such as measurement equipment and to interoffice business systems

OKUMA TECHNOLOGY SHOWCASE: DECEMBER 10-12, 2013

Okuma's Technology Showcase gives attendees the opportunity to witness the latest technology via hands-on demonstrations and allows them to learn how this can be applied to their specific manufacturing challenges. One of the highlights of the event will be the hands-on "Try It" demonstra-



tions of the THINC-OSP-P300 CNC control. With its transformation from a mode-based to a process-based intuitive interface, Okuma's P300 delivers dramatic enhancements in user functionality as evidenced by its new "EASY OPERATION" run screen. This combines functions in one place, eliminating the tedious process of toggling between various screens to input settings. The Try It demos will also feature applications including the Collision Avoidance System, One-Touch IGF, 3D Virtual Monitor, Caron Engineering's TMAC and data-Zen's Mira. All attendees who complete a Try It demonstration will be entered in a drawing to win an iPad.



Dave Tilstone, Jim King President of OKUMA and Herb Homeyer

For more information about the history of Okuma's OSP control, read the blog post by Okuma America Corporation's Chief Executive Officer Tad Yamamoto, "50 Years of CNC Control Innovation." For more information on the Technology Showcase, or to register for this event, visit www.okuma.com/events/2013TechShow.





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Congratulations Penn United and Manufacturer of the Year finalists



The NTMA is proud to congratulate member company, Penn United Technologies, Pittsburgh Business Times Manufacturer of the Year.

Penn United Technologies, headquartered in Cabot, PA with locations in Saxonburg and Sarver, employs 580 people. It is a precision manufacturing solutions provider. The company started out building progressive stamping dies in 1971 and over the years built up their production area with stamping teams, plating teams and a product assembly team. The company has also developed their carbide division taking powder to finished product. Their customers run the gamut from medical to energy and aerospace to telecom.

Bill Jones, the President and Chairman

of the board describes the honor as a humbling experience. When asked what he believes sets Penn United apart, Bill points to the employees.

“We have the best employee owners in western Pennsylvania. With the company being employee owned, each employee does their job like an owner would to ensure the best product is getting to our customers each and every time. We all as employee owners share in the profits in the form of monthly bonuses. I believe we have one of the best management teams around at all levels of the company. We also give our success to the glory of our Lord and savior, for with that strong foundation, for which we were founded gives us the ability to manage Penn United each and every-

day,” Jones said.

The NTMA is proud to count Penn United Technologies among our long-time members. For more information about the company, visit their website at: www.PennUnited.com <<http://www.PennUnited.com>>

Special congratulations also go out to two other member companies, Alle-Kiski Industries and Stellar Precision Components who were both named finalists for the award.



DILLON SOFT BLANK TOP JAWS HOLD MATERIALS WITHOUT MARKING ITS SURFACE

Soft blank top jaws from Dillon Manufacturing, Inc., provide a smooth gripping surface, low T.I.R. (Total Indicator Reading), and have greater holding power due to increased part contact. The smooth jaw surface leaves little or no markings on the finished surfaces. Available in 1018 steel, and 6061 aluminum, as well as 4140, 8620 and A2, brass, delrin, or stainless steel to suit virtually any CNC or manual chuck project involving turned or bored parts. Dillon soft blank top jaws can be removed and later reused for the same operation, or machined to grip an altogether new part, until the blanks are consumed, making them ideal for

machine shops which routinely handle parts with different shapes and geometries. The soft blank top jaws can be custom bored, turned, or shaped. A shoulder can be machine to provide a locating stop for parts to gain close tolerance repeatability for the parts length and depth. They may be left soft or heat treated if the material is steel, depending upon project and quantities machined. Dillon soft blank top jaws are ideal for second operation finishing work such as shafts, gear blanks, wheel hub, and bearings.

Dillon Manufacturing, Inc. manufactures a complete line of standard and custom workholding solutions including chuck jaws,

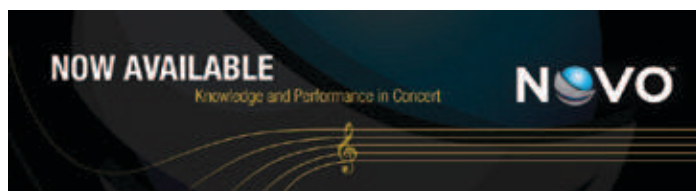


chucks, vises jaws, soft jaws, hard jaws, collet pad jaw systems, chuck lubrication, and more. All products are made in the USA and Dillon is ISO 9000:2008 registered. For additional information visit www.dillonmfg.com, e-mail sales4@dillonmfg.com, call (800) 428-1133, or write Dillon Manufacturing, Inc., 2115 Progress Drive, Springfield, OH 45505.



KENNAMETAL LAUNCHES NOVO™ — DIGITAL INTELLIGENCE TO ACCELERATE PRODUCTIVITY IN CUSTOMER MANUFACTURING PROCESSES

REVOLUTIONARY SOLUTION INTEGRATES COLLECTIVE MACHINING KNOWLEDGE AND EXPERIENCE TO DRAMATICALLY CHANGE THE WAY THAT WORK GETS DONE.



In a revolutionary development designed to address the critical need for improved productivity and process knowledge for manufacturing companies, Kennametal is launching NOVO™, a new set of digital tools that promises far-reaching improvements in manufacturing efficiencies.

“This is a huge leap beyond simply providing a digital version of the tool and its physical properties,” says John Jacko, VP & Chief Marketing Officer at Kennametal. “With NOVO’s embedded intelligence in application engineering and process planning, Kennametal and our partners are opening the path to a completely connected digital art-to-part-to-profit process. NOVO is a big step in bringing such a vision to reality.”

EXPERIENCE POWERING PRODUCTIVITY

Online catalogs and tool selectors have become common options for manufacturers looking for the latest tool solutions for their production process. NOVO goes far beyond the concept of the online catalog by integrating the application engineering and production experience of Kennametal’s 75-year history.

“This is the true integration of our knowledge with our customers’,” says Francois Gau, Vice President, Strategic Marketing and New Business Development. “Simply put, NOVO is a process enabler – a true digital assistant with data-rich machining strategies that starts working from the moment you receive a parts drawing. With a refined and intuitive tool advisor, tool selector, and tool configurator, everything down the line gets more efficient—from parts quoting through programming, pre-setting, and production. The result is the absolute assurance you have the right tool to do the job.”

NOVO is process knowledge delivered via the Machining Cloud™. It stands alongside such web-available solutions as MTConnect™ for data gathering and ISO 13399 for standardizing tool data.

NOVO solves many challenges for pro-

cess planners, manufacturing engineers, and those who want the most efficient machining strategies based on the features of their parts. Customers are able to access NOVO via a PC application and tablet solutions coming later this fall. With the click of a button, the user will have access to all of the knowledge from more than 50,000 branded Kennametal products to achieve a more productive solution in a fraction of the time spent searching catalogs.

“NOVO works like a process planner,” explains Thomas Long, head of the newly formed Virtual Machining RDE department at Kennametal. “It works from the feature back to the machining strategy and then finds the best tools for each strategy. In addition, each project is tied to application data gleaned from Kennametal’s experts and decades of experience. Search for a specific Kennametal part and you also get models and all associated inserts, adaptors, and spare parts. Not only does it accomplish in minutes what formerly took hours, it yields an optimized solution, backed by Kennametal expertise, every time.”

ADDRESSING THE SKILLS GAP

Facing ever-increasing demands for productivity and efficiency, manufacturing technology providers have responded with computer-driven machine tools, digital-based computer-aided design and manufacturing software (CAD/CAM), and significant advances in tooling. Yet one major barrier threatens this scenario: a significantly widening skills gap as older workers retire and new workers fail to engage in manufacturing careers.

“To effectively bridge the skills gap for our customers, we have developed this innovative platform to distribute the collected knowledge of Kennametal,” says Gau. “More than a catalog, NOVO brings users into a community, harnessing all ongoing expertise, and providing fast access to best-in-class process knowledge. The result empowers users by providing the right solutions specifically tailored to their

operations. It solves problems instead of managing data.”

ONLY THE BEGINNING

The vision for NOVO is to be integrated with major CAD/CAM packages and machine tool CNC controls, so designers or programmers will have instant access to Kennametal knowledge at the touch of a button without having to leave their function.

“NOVO means new way of doing things—the ability to get information quickly combined with the best strategy on how to use it,” Gau says.

For more information, visit www.kennametal.com/NOVO.

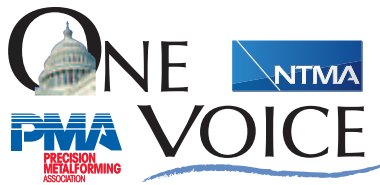
KENNAMETAL INC.

Celebrating its 75th year as an industrial technology leader, Kennametal Inc. delivers productivity to customers seeking peak performance in demanding environments. The company provides innovative wear-resistant products and application engineering backed by advanced material science, serving customers in 60 countries across diverse sectors of aerospace, earthworks, energy, industrial production, transportation and infrastructure. With approximately 13,000 employees and nearly \$3 billion in sales, the company realizes half of its revenue from outside North America, and 40% globally from innovations introduced in the past five years. Recognized among the “World’s Most Ethical Companies” (Ethisphere); “Outstanding Corporate Innovator” (Product Development Management Association); and “America’s Safest Companies” (EHS Today) with a focus on 100% safety, Kennametal and its foundation invest in technical education, industrial technologies and material science to deliver the promise of progress and economic prosperity to people everywhere. For more information, visit the company’s website at www.kennametal.com.



US MANUFACTURING GROWS AT FASTEST IN 2½ YEARS

BY CHRISTOPHER RUGABER, THE ASSOCIATED PRESS



healthy clip.

The Institute for Supply Management said Monday that its index of manufacturing activity rose to 57.3. That was up from 56.4 in October and was the highest since April 2011. A reading above 50 signals growth.

One component of the index, a measure of hiring, rose to its highest level in nearly 18 months. And a gauge of export orders reached its highest level in nearly two years. Overseas demand is benefiting from modest recoveries in Europe, Japan and China.

The ISM is a trade group of purchasing managers.

Manufacturing activity has now expanded for six straight months after hitting a rough patch in the spring. The steady gains suggest that growth is remaining solid in the current October-December quarter.

And U.S. builders increased construction spending in October at the fastest pace in more than four years, a separate report on Monday showed. Government spending on public projects drove the increase. By contrast, spending on home construction fell.

Still, the encouraging figures in the ISM's report conflict with weaker recent data on factory activity, making it difficult to discern a clear trend.

"We continue to believe that this indicator is overstating the health of the broader economy," said Joshua Shapiro, chief U.S. economist at MFR Inc.

For example, businesses cut back on orders for long-lasting factory goods in October, according to a government report Wednesday. Orders for durable goods, which are meant to last three years, fell 2 percent.

A fall in aircraft demand drove the decline. But companies also spent less on machinery, computers and metal parts. The weak showing suggests that businesses might have been reluctant to order more goods during the 16-day partial government shutdown in October.

One reason for the divergence could be that the ISM's index doesn't adequately measure smaller manufacturers, according to Ian Shepherdson, an economist at Pantheon Macroeconomics. Larger companies are likely benefiting more from recoveries overseas.

Separate reports Monday showed that manufacturers in China and Europe expanded in November, though more slowly than in the United States. Still, factories in Europe grew at the fastest pace in nearly two years, according to a survey by Markit.

Another reason for the conflicting reports may be that production of non-durable goods appears to be stronger than production of durable goods. For example, the ISM report showed that manufacturing in non-durable areas like the food, textiles, petroleum, chemical and paper products industries grew. At the same time,

U.S. manufacturing grew in November at the fastest pace in 2½ years as factories ramped up production, stepped up hiring and received orders at a

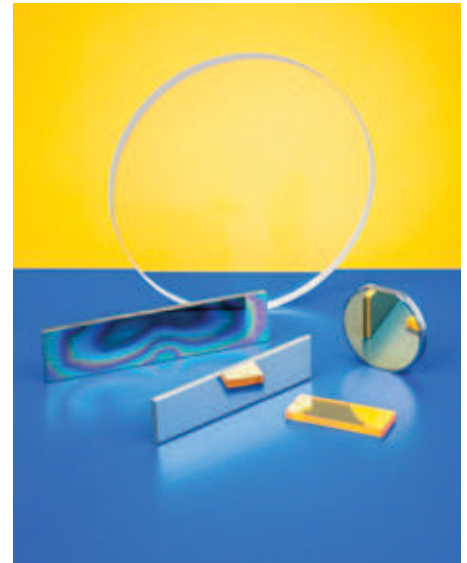
LASER OPTICS MANUFACTURED TO SPECIFICATION

Custom laser optics made from zinc selenide and zinc sulfide in virtually any shape and size, with precise tolerances and surface finishes, are being introduced by Laser Research Optics of Providence, Rhode Island.

Laser Research Custom Optics can be supplied plano-convex, plano-concave, and as wedged-windows and mirrors in round, rectangle, and square shapes that can include steps, holes, and other special features. Manufactured to specification from ZnSe and ZnS in sizes from 1/2" to 5" O.D., they can be coated to achieve specific wavelengths from 8 to 12 microns typical.

Conforming to ISO ISO-10110 specifications, Laser Research Custom Optics can be fabricated in a variety of thicknesses with typical dimensional tolerances of ± 0.001 to ± 0.005 ". Surface finishes of 10 waves to 1/10th wave flatness and 10-5 to 80-50 scratch-dig can be provided.

Laser Research Custom Optics are priced according to configuration, material, and quantity. Price quotations are available upon request.



some durable goods industries, such as machinery, contracted in November.

Some respondents to the ISM's survey said federal spending cuts and budget battles in Washington limited business spending on durable goods last month.

Separately, factory output rose for a third straight month in October, according to the Federal Reserve, driven higher by greater production of primary metals and furniture.

The mixed picture comes as the economy is thought to be slowing in the October-December quarter to an annual rate of 2 percent or less. That would be down from a 2.8 percent annual pace in the July-September quarter.

Much of the third quarter's growth was due to companies rebuilding their stockpiles. The economy is unlikely to benefit from a similar trend in the current quarter.



5 KEY STRATEGIES TO CONTROL SHIPPING COSTS



Many companies feel a constant strain on their businesses in the form of ever-increasing expenses. Day-to-day business expenses such as rent, utilities, and insurance all continue to climb, while competitive pressures deter companies from raising prices to cover any shortfall. Businesses must find a way to cut operating expenses.

Reducing shipping costs is an often overlooked way to combat rising expenses. With annual carrier rate increases, skyrocketing fuel costs, and accessorial charges that may increase 20% or more year over year, finding a way to reduce your shipping expenses can make a serious impact on your overall balance sheet.

But how do you know if you're spending too much on shipping? One easy way is to determine your shipping expenses as a percentage of total sales. On average a business spends 1.5% to 4% of total sales on shipping. This can vary by the size of the company, total company sales volume, or the type of products the company is shipping and receiving. How much is your business spending on shipping? Conduct an analysis.

Here are five key strategies to help you get your shipping costs in line. Implement one or all five of them and watch your shipping costs go down—increasing profits.

KEY STRATEGY #1

OBTAIN DISCOUNTS WITH CARRIERS

If you think you have to be the size of Wal-Mart or Home Depot to obtain discounts with carriers, think again. Many larger businesses have the volume and favorable shipping characteristics to negotiate directly with carriers. If you, too, have been able to successfully navigate this process, you are on the right track. If you have not been successful, or simply don't have enough volume to negotiate such discounts, there are still opportunities available to obtain them. You can work with a 3rd party logistics provider, who can leverage their buying power to obtain discounts for you. There are also many institutional, government, and association programs that can help members receive discounts.

KEY STRATEGY #2

DEVELOP AN INBOUND SHIPPING PROGRAM

Reducing inbound shipping costs is one of the easiest, yet most overlooked ways to reduce overall transportation expenses. Vendors typically receive volume discounts from carriers—but are your vendors passing those discounts along to you? When you control and route your inbound shipments, you have an excellent opportunity to significantly lower your costs. If you allow suppliers to route your shipment and invoice you for shipping charges, your transportation costs are probably higher than they should be. Being the buyer allows you to not only determine what you purchase from a particular vendor, but also how it is shipped to you.

As the buyer and receiver of the goods, you can—and should—designate the carrier and arrange for shipping charges to be billed directly to you at rates you've established with carriers. This is called routing inbound "Collect." Collect is a billing option, in which you are invoiced by the carrier. It does not mean paying the driver at the time of delivery. Routing shipments Inbound Collect can save you significant dollars. If you continue to allow vendors to prepay for shipping and add it to your merchandise invoice, in most instances you will continue to pay more than you should for incoming product.

The first step in reducing inbound shipping costs is to notify your vendors that you want your shipments routed Inbound Collect (Example: Send all ground shipments under 250 lbs. FedEx Ground Collect). A Customized Routing Instruction Letter specifically states to your vendors how you want your merchandise shipped to your store. In the Routing Instructions Letter, indicate to the vendor that if they do not follow your shipping instructions, you will not pay for shipping charges on merchandise invoices. Allow no exceptions to these instructions. Send the Routing Instructions Letter to your sales representative, customer service manager, or to the accounts payable department. Do not send your instructions directly to the shipping department.

KEY STRATEGY #3

USE THE CORRECT MODE & SERVICE LEVEL

Examine where you spend your transportation dollars. Is your spending concentrated in less-than-truckload (LTL) freight rather than small package, or air instead of ground? These distinctions are called modes of transportation. Ground shipping and air shipping are the two most common transportation modes that businesses use on a day-to-day basis. An example here helps illustrate the impact of using the correct mode. For two-day guaranteed service, you can send a 35 lb. package from Cleveland to Boston and pay a ground rate of \$16.50. Sending the same package second day air would cost approximately \$60.75. That's a difference of 73% to ship air versus ground for the same two-day level of service.

Service level refers to the time frame in which the carrier will ship the package from origin to destination, such as same day service, next day, two day, three day, etc. Why pay for next day service if you don't need next day service? Another example helps illustrate the impact on your bottom line by using the wrong level of service. Let's use the same example above. To get a 35 lb. package from Cleveland to Boston the next day, you would need to use the services of an air express carrier and your cost would be around \$168. If time permitted, you can send the same package second day air at a cost of approximately \$60.75 (a 64% savings). The same package via two-day ground costs about \$16.50. Clearly, using the correct service level to meet your needs is critical in keeping your transportation costs down.

KEY STRATEGY #4

AUDIT ALL INVOICES

It is estimated that between 5% and 10% of freight invoices contain some sort of error. Auditing your freight invoices can help you catch and receive credit for costly mistakes. You should audit several line items on a carrier invoice, most notably: checking for the correct discount, making sure you are billed for the service you requested, verifying product clas-

sification (freight shipments only) and monitoring extra service charges. Also, if you have an inbound shipping program in place, be aware of double billing for shipments. If you're routing inbound shipments from vendors, shipping charges should never be on the merchandise invoice from the vendor.

KEY STRATEGY #5 CONSOLIDATION OF SHIPMENTS

Why send three separate shipments if you can consolidate and send just one? Consolidation will save you time and money, as an example here helps illustrate. For two-day guaranteed service, you can send a 45 lb. package from Cleveland to Boston and pay a

ground rate of \$73.50. Sending three separate 15 lb. packages would cost approximately \$99. That's a difference of 26% to ship one versus three separate shipments!

Utilizing some or all of the 5 key strategies to control shipping costs can eliminate the strain shipping expenses put on your business. For more

information or additional help on implementing these key strategies call PartnerShip at 800-599-2902 or email sales@PartnerShip.com. Your shipping costs will go down and your bottom line will improve!



MACHINE TOOL ORDERS CONTINUED TO RISE IN OCTOBER

THIRD STRAIGHT MONTHLY INCREASE BUT 10-MONTH TOTAL TRAILS 2012

BY ROBERT BROOKS

New orders for machine tools and related technologies rose 10.2% from September to October, according to data in the latest U.S. Manufacturing Technology Orders report. Domestic machine shops and other manufacturers booked \$435.02 million during October, up from \$394.57 million for September. Still, the new figure indicates a 3.2% decline from October 2012, continuing the weaker year-on-year results that have prevailed for much of 2013.

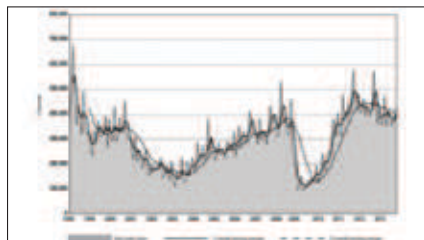
The monthly USMTO report is compiled by AMT – the Association for Manufacturing Technology based on actual data for metal cutting equipment and metal forming equipment, as reported by participating companies. The data covers nationwide results as well as activity in six geographic regions.

In the October results, orders for metal cutting equipment rose 7.9% from September, totaling \$418.09 million for the month, and metal forming equipment sales rose 139.7%, totaling 16.92 million for the month.

Year-to-date manufacturing technology orders now total \$3.94 billion across the U.S., which is 10.6% off the pace set from January to October 2012.

Current year sales continue to lag the impressive pace set during 2012, in particular the high volume of sales during September last year.

“October's order growth, combined with the latest PMI reading, is added reinforcement that manufacturing is continuing on its positive trend,” offered AMT president Douglas K. Woods. “We expect



The three-month average and total orders for October indicate a solid result for new orders -- though the 12-month average is less positive for the machine tool sector

more good news headed into 2014, especially as domestic energy costs continue to drop and as key industry segments show solid growth, particularly automotive.”

REGIONAL IMBALANCE

Data for U.S. regional orders for machine tools and related technology showed widely varying results, with strong activity in North Central-West, West, and Northeast, a smaller improvement in the Southeast, but single-digit declines elsewhere.

The Northeast delivered a positive result for the month. New orders of manufactur-

ing technology rose 16.8% from September to October, up to \$71.51 million. The figure is 12.1% higher than the October 2012 total, and brings the region's annual total for new orders to \$655.0 million, up 2.1% from the January-October total.

New orders for cutting tools in the Southeast totaled \$38.71 million, up 6.0% from

and brings the 2013 year-to-date total to \$1.008 billion, down 11.0% compared with the comparable 2012 figure.

The North Central-West region posted new machine tool orders of \$91.72 million for October, up 26.8% over September's \$72.32 million, but 3.4% more than the October 2012 result. For January-October 2013, the region has compiled new orders worth \$737.92 million, 14.0% less than the ten-month total for 2012.

In the South Central region, October new orders fell 4.5% from September to \$57.88 million, and 11.2% from the October 2012 total. The year-to-date has seen machine tool orders of \$599.64 million, 20.8% less than the January-October 2012 figure.

Lastly, in the West, regional new orders for metal cutting tools increased 21.5% to \$70.75 million in October, up 23.5% over the October 2012 result. For the first ten months of this year, the West region recorded new orders totaling \$578.59 million, 2.5% higher than at the same point of last year.



The North Central-East region saw new orders for machine tools fall slightly, 0.2% during October, to \$103.72 million. The figure is off the October 2012 pace by 15.1%,

GF AgieCharmilles to Become GF Machining Solutions

Effective January 1, 2014, GF AgieCharmilles will become GF Machining Solutions, a name change that underscores that Georg Fischer AG (GF) is a unified company with three divisions. Today, GF AgieCharmilles has grown to offer one of the industry's most diverse portfolios, including milling, EDM, laser texturing, spindles, tooling, automation and customer services. The new name emphasizes the company's role as a total solutions provider.

By changing its brand identity, the company also communicates its role as an extension of its customers' expertise and capacity, and conveys GF's customer-centric mission. Descriptive and easy to remember, the GF Machining Solutions name reflects how the company's evolution has made it far more than a supplier of machine tools.

"The GF AgieCharmilles name is intimately linked to our leadership in the field of EDM technology," said Glynn Fletcher, president of GF Machining Solutions Americas. "While EDM remains a vital part of our company, we have grown to offer a much more comprehensive portfolio of products and services. This change communicates to the market what our customers already know: that we offer world-class, comprehensive solutions for every aspect of their operations."

The change in name will not affect the terms of existing agreements with customers, and the names of the company's legal entities will remain the same. Due to their rich history and high recognizability in the market, the AgieCharmilles, Mikron, Step-Tec and System 3R product names will still be used within the umbrella of the GF Machining Solutions portfolio. A new product naming system is in development and will be introduced during the first half of 2014.

In addition to the name change, a new design style will be implemented for the GF Machining Solutions website, sales literature and other external communications. This new design conveys the diversity, unity and innovation that are keystones of GF Machining Solutions' relationships with its customers.

To simplify the transition for customers, the change of email and web addresses will be transparent and GF AgieCharmilles email addresses will continue to be active through December 2014. Beginning in January 2014, the current company website will automatically redirect to a new URL. There will be no changes to telephone numbers.

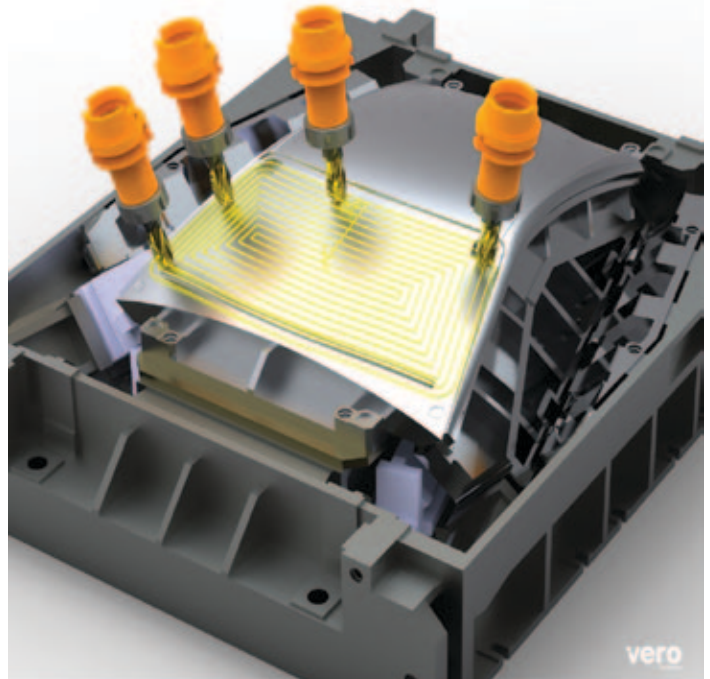


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Hannover Messe 2014 - SPACE IS LIMITED – NTMA MEMBERS TO ATTEND Trade Show

APRIL 7-11, HANNOVER, GERMANY

WELCOME TO THE WORLD'S LEADING TRADE FAIR FOR INDUSTRIAL TECHNOLOGY.

A PERFECT NETWORK OF SEVEN FLAGSHIP FAIRS

International appeal, coverage of all the relevant issues and a concentration of senior decisionmakers make HANNOVER MESSE the premier destination for doing new business and making new contacts – and the first choice for industry professionals, politicians and the scientific community.

The core display categories at HANNOVER MESSE are inspired by global megatrends and drivers of growth such as energy and environmental engineering, mobility and urbanization. All these themes are addressed in the 7 leading trade shows in the 2013 line-up.

If you are interested in attending this show, please contact Emily Lipovan at elipovan@ntma.org



2014 TRADESHOW LINEUP

SYNERGISTIC TECHNOLOGIES. GET THE FULL PICTURE AT HANNOVER MESSE. WWW.HANNOVERMESSE.DE



ENERGY

The energy industry worldwide is facing the need for change.

At the trade fair Energy trade visitors from across the globe can discover how, with the right mix and control, state-of-the-art technology and solutions can meet this challenge. This is the only trade fair for the energy sector which covers the entire value chain – from energy generation, supply and storage through to transmission and distribution to smart grids. All at one venue.



MOBILI TEC

Leading Trade Fair for Hybrid and Electric Powertrain Technologies, Mobile Energy Storage and Alternative Mobility Solutions

This leading trade fair is now firmly established as the No.1 business platform for hybrid and electric mobility technologies. The entire industry comes to Hanover to meet its customers worldwide. This is where the key contracts are signed, projects launched and joint ventures further developed.



INDUSTRIAL GREENTEC

Leading Trade Fair for Environmental Technology Following its successful launch, the Leading Trade Fair for Environmental Technology is being further expanded. Themes such as sustainable production,

techniques for safeguarding air and water quality and the recycling industry attract a lot of interest from visitors and the media.

Green technologies, developed by industry for industry, form the core of the exhibition.

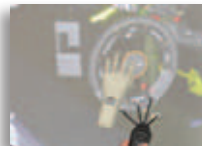


INDUSTRIAL AUTOMATION

The international profile of the event and the broad spectrum of topics and trends covered by Industrial Automation offers exhibitors new opportunities to tap into global markets and thus helps secure your

business success.

In 2014 Industrial Automation will again take up the themes that interest trade visitors from various sectors: the networking of automation and IT, process automation, energy and materials efficiency, robotics and systems integration, as well as smart systems offering solutions in assembly and handling.



DIGITAL FACTORY

Leading Trade Fair for Integrated Processes and IT Solutions.

From the very start the integration of all processes in the industrial value chain has been the core topic of Digital Factory, the Leading Trade Fair for Integrated Processes and IT Solutions.

This focus was reflected by the HANNOVER MESSE slogan in 2013 – Integrated Industry. Embedded software is the most important driver of innovative products, while IT solutions such as those showcased at Digital Factory are the key tools for developing and manufacturing these products.



INDUSTRIAL SUPPLY

Boasting highly specialized expertise and adaptability, industrial suppliers play an important role in their customers' ongoing drive for innovation.

The components and assemblies supplied by these specialist subcontractors are vital for the manufacture of all downstream end products. This symbiotic relationship makes today's industrial suppliers the forerunners of what we now call "Integrated Industry". Exhibitors at Industrial Supply will show how the growing demands of customers can be met through intelligent components and assemblies and collaborative partnerships. Attended by decision-makers from all your user sectors and over 50 nations, this show is the ideal place for you to market your solutions for materials, components, systems and processes.



RESEARCH & TECHNOLOGY

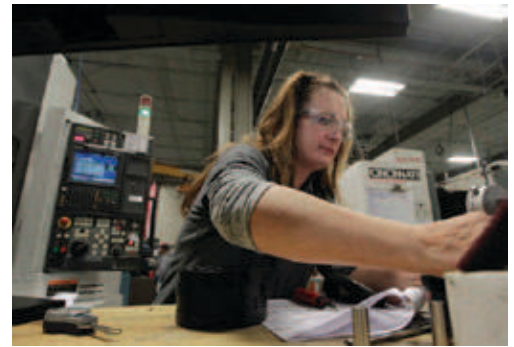
Leading Trade Fair for R&D and Technology Transfer. Industry worldwide faces enormous challenges.

In order to deal with complex issues such as the continuing integration of industrial processes, the transition to renewable energy, the efficient use of resources, sustainability, mobility, lightweight construction and the development of alternative resources and new materials, industry needs science. At the same time, R&D professionals need effective partners in industry and government in order to market their innovations successfully.

Growing Ogden machine company moves into new building



Move enables the specialized manufacturer, which caters to oil exploration companies, to grow.



(Leah Hogsten | The Salt Lake Tribune) LeanWerks Machinist Christine Prisbrey manufactures leaching trays for use in the oil industry. LeanWerks, an Ogden company that makes high pressure valves and pumps for the medical, aerospace, automotive and oil exploration industry, has recently expanded its production facility and celebrated the company's new location with an open house on Dec. 5, 2013.

As a former player for the Weber State University football team, LeanWerks president Reid Leland likes to incorporate things he learned on the gridiron into his fast-growing precision manufacturing business.

The company has a board for "chalk talks." LeanWerks has a game plan and performance indicators.

It sets goals that enable its entire team to reap rewards if the company does well. It has a weekly huddle with all its employees.

Now, LeanWerks even has the equivalent of a brand-new stadium in a new plant and headquarters building at the Ogden Commercial and Industrial Park.

Leland founded LeanWerks

as a tool machine job shop in 2003 and soon found growth opportunities in the early stages of U.S. oil field resurgence.

The company uses computerized technology and sophisticated machinery to build parts such as valves, pressure pads and power rings from high alloy carbon and steel. Some of the production caters to oil companies' specific needs. Companies provide plans of what they need and LeanWerks turns those plans into parts.

LeanWerks now employs 53 people. It kept outgrowing space it was leasing, so in 2012 Leland decided to buy a lot that included an old Young Electric Sign warehouse for about \$925,000. He said at last week's opening of the new

facility that he spent nearly another \$1 million remodeling the building to suit the company's needs.

Employees such as Matt Sadauckas of the engineering department appreciate the change.

"The other building was pretty cramped and the light was not good," he said. "This is much bigger."

Larry Weir, a quality engineer for the company, said LeanWerks could not keep up with demand at the smaller building.

The manufacturing facility looked like a maze when it was first purchased but LeanWerks removed walls to create an open warehouse feeling. Sophisticated machines that tool steel parts based on

what computer programs tell them to make fill much of the space, although there are a few stations were specialized parts can be tooled by hand.

Employees moved into the facility about six weeks ago.

Leland's strategy seems to be working.

In 2008, LeanWerks employed 20 people when Mountain West Capitol Network recognized it as Utah's fifth fastest growing company. Today its workforce is more than double that.

It runs three shifts and sells more than two-thirds of its products outside Utah.



CEOS, BRING YOUR MANUFACTURING BACK TO THE U.S.!

BY ERIC SPIEGEL, THE WALL STREET JOURNAL

One thing that business could do to improve the business climate in the U.S. would be to bring more manufacturing back to America. U.S. manufacturing is grow-

ing again, albeit slowly, and is becoming more competitive.

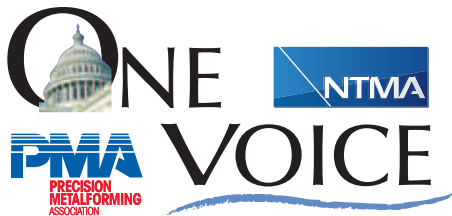
Over the past three years, more than half a million manufacturing jobs have been added to our economy.



Eric Spiegel (@ericspiegel) is the president and CEO of Siemens U.S.A. and the author of the 2009 book "Energy Shift: Game-changing Options for Fueling the Future."

Most of this growth is in advanced manufacturing, which plays to America's strengths. The technology is much more sophisticated; it is driven by software that is helping companies increase flexibility and productivity, while shortening time to market for goods; it benefits from strong research and development leading to even more product innovation.

Thanks to low energy prices, rising labor rates in emerging countries, the productivity of the American worker, and American expertise in software development, many companies have already made the decision to bring their manufacturing back to the U.S. In fact, over \$90 billion in new manufacturing investments are being planned for the next few years, including energy-intensive industries like chemicals, steel, and aluminum. Who would have thought that we would see the chemical and steel industries come back to the U.S.? What's more, these manufacturing investments are supporting many other industries because manufacturing impacts so many other sectors.



Manufacturing has the largest multiplier effect out of any major economic activity—generating \$1.35 in additional economic activity for every \$1 spent in manufacturing. Currently, the manufacturing sector accounts for about 70% of all private U.S. firms' R&D, 70% of patents, and nearly 90% of U.S. exports. Additionally, these jobs are high-paying—traditionally paying nearly 20% more than jobs in other sectors.

Right now, America is uniquely positioned for a manufacturing resurgence. If more businesses would take advantage of this opportunity and drive additional investment in and expansion of American manufacturing, we could dramatically improve America's economic outlook.



ISTMA 2014



The Toolmaking Association of South Africa (TASA) is a full member of the International Special Tooling & Machining Association a multi-national organization representing the world tooling industry. ISTMA promotes international meetings to support a worldwide exchange of experience. Every three years a major World conference takes place. In March 2014 we are privileged to be its host in Cape Town.

The ISTMA World Conference will bring together the special tooling and machining industry business owners and senior management from around the world.

This highly influential group will meet to discuss international and regional trade, government regulations and international trading conditions, trends, new technology and new techniques driving the industry and any other critical issues of



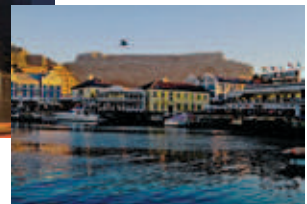
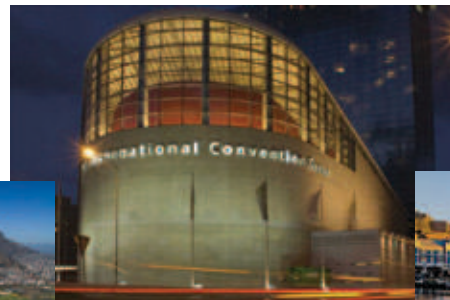
some of the people involved.

OUR 14TH WORLD CONFERENCE WILL INCLUDE:

- Carefully researched and identified technical sessions to keep you up to date with the latest trends and technology
- Regional meetings to enable you to network with like-minded colleagues from your regions and around the world
- Tooling Industry and Associated Skills Exhibition
- Plant tours to showcase some of the tooling activities in the Western Cape

In addition we have arranged a selection of carefully prepared tours for accompany-

ing partners and pre and post tours to enable you to explore and experience what this most beautiful part of the



concern.

ISTMA therefore, offers suppliers an excellent opportunity to gain international and local exposure to these influential people for their products and services in an unbelievable cost effective way by participating as a sponsor and or exhibitor.

Most governments around the world are focusing on strengthening their manufacturing capabilities and capacity to counter the drift towards low cost manufacturing in the Far East and China. Many new initiatives by government and government agencies are developing to stimulate the industry and particularly in the areas of skills development and assistance packages for asset investment.

So as a supplier come along and join us to find out about these opportunities and meet

world has to offer to further enhance the networking opportunities.

TARGET AUDIENCE

- Machine tooling business owners and senior management
- Training companies and technical colleges
- Industrial design engineers
- Production managers
- Procurement managers
- R & D personnel
- Government trade and development agencies
- Plant and equipment suppliers
- Finance and investment companies
- Insurance companies



**"OUR TOOL LIFE'S BEEN EXTENDED
UP TO 23 PERCENT, WHICH HAS LOWERED
TOOL COSTS BY ROUGHLY 15 PERCENT.
AND OUR PRODUCTIVITY HAS
INCREASED AROUND 25 PERCENT."**

**"WE'VE SEEN NOTICEABLE
DIFFERENCES IN TOOL LIFE AND
LOWER TOOLING COSTS."**

**"EXTENDED TOOL LIFE AND
REDUCED TOOL BREAKAGE HAVE
DECREASED OUR OVERALL TOOL
COSTS BY 30 PERCENT."**



For people who make what matters, tool life is critical. Which is why these companies chose Makino. They appreciate how Makino's comprehensive approach to machine design extends their tool life. But mostly, they're thrilled with how Makino has helped their cost per part and improved their efficiency and profitability.

Read their stories and watch their videos and cutting demonstrations at makino.com/tool-life.



CLOSING THE SKILLS GAP

BY CONGRESSMAN BILL OWENS (NY) , THE HUFFINGTON POST



Our natural resources are at least as great as those of any other nation. We believe that in ability to develop and take advantage of these resources the average man of this nation stands at least as high as the average man of any other. Nowhere else in the world is there such an opportunity for a free people to develop the fullest extent all its powers of body, of mind, and of that which stands above both body and mind – character. Much has been given us from on high, and much will rightly be expected of us in return. Into our care the ten talents have been entrusted; and we are to be pardoned neither if we squander and waste them, nor yet if we hide them in a napkin; for they must be fruitful in our hands.

**-THEODORE ROOSEVELT,
THANKSGIVING DAY PROCLAMATION
(1907)**

President Roosevelt wrote these words as advancements in technology allowed the American middle class to emerge for the first time. As we take stock of the many things for which we are thankful, we are at another defining moment. Our economy is improving but we still have room to grow. To speed growth, we must close the widening skills gap that exists in communities across the country. Many unemployed Americans lack the skills to stand at least as high as their competitors in foreign markets, and they cannot fill the jobs available in their communities. Inaction now will lead to the unpardonable squandering of a big moment

for the American worker.

The U.S. Chamber of Commerce estimates nearly four million full-time positions in the U.S. are unfilled, a figure expected to rise significantly in the coming decade. In the manufacturing sector alone, the consulting firm Deloitte estimates the national skills shortage has left approximately 600,000 vacancies and, according to the National Association of Manufacturers (NAM), 67 percent of U.S. manufacturers reported a moderate to severe shortage of available, qualified workers. If we find a way for American workers to access the vocational training, practical skills-based degrees, and professional certification pathways necessary to take advantage of these opportunities, our economy can thrive.

This shortage is not a weakness of the American workforce, but rather, a tremendous opportunity. Filling these jobs could reduce the national unemployment rate by as much as three percent and generate new consumer-led economic growth. In my congressional district alone, the New York State Department of Labor estimates more than 3,700 job openings await workers with 21st Century skillsets. Often, they require more than a high school diploma, but less than a bachelor's degree.

Many vacant positions pay well and sustain families. NAM reports that the annual average salary of manufacturing workers is slightly above \$77,000, and the average entry-level salary for manu-

facturing engineers is about \$60,000. While structural economic changes may prevent total manufacturing employment in the U.S. from reaching pre-recession levels, advanced technologies, increased foreign labor wages, and the rising availability of affordable energy sources created completely new jobs since the recession began.

In northern New York, local and regional collaboration has propelled middle-skilled workers to a standing at least as high as our global competitors. Earlier this year, a New York Board of Cooperative Educational Services (BOCES) in my district joined local manufacturers, the area workforce investment board, and economic officials to teach high school students computer-controlled industrial machine operation skills. This group identified a skills gap and used local resources to give willing workers the skills they need to land well-paying, locally-available jobs.

There are more examples in northern New York. In 2011, Clarkson University partnered with Clinton Community College and the New York state government so thousands of New York high school graduates can access and earn the associate degrees required for jobs in the technology and manufacturing sectors. Similarly, the New York State Pathways in Technology Early College High School partnership tailors its curricula to the local job market's needs and matches graduates with available jobs.

As baby-boomers retire, the demand for skilled tradespeople in advanced manufacturing and other sectors will continue growing. The Boston Consulting Group and U.S. Bureau of Labor Statistics estimate that by 2020, the nation could face a shortfall of around 875,000 machinists, welders, industrial-machinery operators, and other skilled manufacturing professionals.

We are rightly thankful for our nation's history of productivity and innovation. To build on our economic strengths, the public and private sectors must collaboratively re-orient our schools and connect them to better-developed networks of skills-based training opportunities tailored to local business needs. If we are successful, we will enhance America's long-term economic competitiveness. We will have heeded Teddy Roosevelt's warning and made the most of our workforce and the resources we are blessed to possess.



Bill Owens is a U.S. Representative from New York's 21st Congressional District.





2014 NRL COMPETITION

CLEVELAND, OHIO

MAY 16-17

Lou Higgins Center at Baldwin Wallace College

THE PREMIER NATIONAL ROBOTICS COMBAT LEAGUE

LOU HIGGINS CENTER

136 E. BAGLEY RD.
BEREA, OH 44017
(440) 826-2285



The newly renovated Lou Higgins Center is the centerpiece of the BW athletic facilities. The 170,000 square-foot complex houses the Ursprung Gymnasium, Harrison Dillard Track, Natatorium, updated workout spaces, a state-of-the-art athletic training facility, classroom space, and offices for coaches and faculty

Mark your calendars, and plan to join us in Cleveland, May 16-17 for the 2014 NRL National Competition. The event will be held in the Lou Higgins Center at Baldwin Wallace College, a venue that offers easy airport access, free parking and plenty of space for up to 100 teams, 500+ spectators, two arenas, as well as exhibit space for sponsors to interact with students and spectators.

The move to Cleveland also means the teams from many of our most active regions will spend considerably less time on the bus, and everyone can expect to pay less than \$100 per room for overnight accommodations.

Stay tuned for more information about this event. We have some cool things planned for you and can hardly wait to see you there!

Check it Out

Servo Combat Zone is looking for articles by combat robot builders like you! Stories



about recent events, favorite parts or tools, as well as build tips are welcome. Remember, if you are a High School or College rising senior, there's nothing better than

a few published articles on your resume to rise out of the slush heap!

E-mail Kevin Barry, the Servo Combat Zone editor for more information @ legendaryrobotics@gmail.com

Rules Update

Over the summer, the NRL rules committee will be reviewing and updating our technical regulations and competition rules, and we want to make sure we address the concerns of everyone in the league. To that end, if you have a rules change request please email Maureen Carruthers at

mcarruthers@ntma.org and let her know which rule(s) you'd like us to consider changing, and your rationale for the change.



We Love our Sponsors!

Big Kaiser
Boston Centerless
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Grainger
Ivy Tech Community College
Moseys' Production Machinists
National Tooling and Machining Foundation
Overton Industries
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Sandvik Coromant

These companies and organizations gave \$1,000 or more to help make the 2013 National Competition a reality. Want to join them? E-mail Tiffany Bryson @ tbryson@ntma.org for help finding the perfect package for your company.



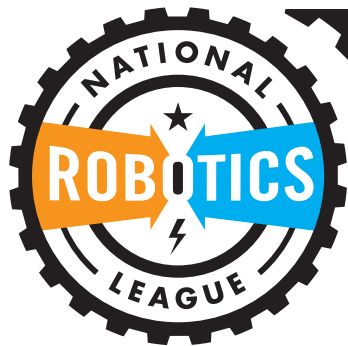
SPONSOR SPOTLIGHT

DEPCO exists to challenge the idea of a general education model that marches students through a uniform curriculum. DEPCO's approach to educating today's youth stands to revolutionize the education environment by offering engaging curricula that takes the intimidation and confusion out of the learning for both students and instructors.

THE NATIONAL
ROBOTICS LEAGUE
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NATIONAL TOOLING AND
MACHINING FOUNDATION



Building America's technology leaders, one robot at a time.

GONRL.ORG

2014 SPONSORSHIP OPPORTUNITIES

EXCLUSIVE MEDIA SPONSOR \$10,000

Sponsorship Includes:

- Sponsor recognition on final cut of promotional video and LiveStream channel
- Logo and recognition as an Exclusive Sponsor on the new NRL website
- Logo and recognition as an Exclusive Sponsor in the NRL Program Guide
- (1) Full Color ad in the NRL Program Guide
- Recognition in the NTMA RECORD as an Exclusive Sponsor
- Logo and recognition on official NRL T-shirts as an Exclusive Sponsor
- Social Media recognition on Facebook, Twitter and LinkedIn
- Free Exhibit table to be positioned in the Manufacturing Gallery



EXCLUSIVE ARENA SPONSOR \$7,500 (2 AVAILABLE)

Sponsorship Includes:

- Introduction of last (4) matches with company recognition
- Logo and recognition as an Exclusive Sponsor on the new NRL website
- Logo and recognition as an Exclusive Sponsor in the NRL Program Guide
- (1) Full Color ad in the NRL Program Guide
- (1) Post event article to promo your philanthropic support in the NTMA RECORD
- Logo prominently displayed around Arena with branded banners
- Logo and recognition on official NRL T-shirts as an Exclusive Sponsor
- Branded Banners prominently displayed throughout competition area (*at expense of sponsor*)
- Arena naming rights for competition
- Social Media recognition on Facebook, Twitter and LinkedIn
- Free Exhibit table to be positioned in the Manufacturing Gallery

NOTE: Additional Branding opportunities of floor clings and other materials are available at the request and expense of the sponsor.



EXCLUSIVE COMPETITION AWARDS \$5,000

Sponsorship Includes:

- Award presenter for 1-3rd place winners and company recognition as award presenter
- Logo and recognition on new NRL Website
- Logo and recognition in NRL Program Guide
- Option to have logo on 1-3rd place trophies
- Social Media recognition on Facebook, Twitter and LinkedIn

NOTE: Additional branding opportunities and other material are available at the request and expense of the sponsor.



For sponsorship inquiries and discussions, contact: Tiffany Bryson 216.264.2847 • tbryson@ntma.org

ROBO-LOUNGE PREMIER SPONSOR \$5,000 (2 AVAILABLE)

Sponsorship Includes:

- Consistent company recognition as lounge sponsor throughout event
- Logo and recognition as a Premier Sponsor on the new NRL website
- Logo and recognition as a Premier Sponsor in the NRL Program Guide
- (1) Full Color ad in the NRL Program Guide
- Logo prominently displayed above Robo-Lounge area
- Branded floor and table clings
- Recognition in the NTMA RECORD as a Premier Sponsor
- Logo and recognition on official NRL T-shirts as a Premier Sponsor
- DJ recognition throughout event
- Social Media recognition on Facebook, Twitter and LinkedIn

NOTE: Additional Branding opportunities and other materials are available at the request and expense of the sponsor.



PREMIER PIT SPONSOR \$3,500 (2 AVAILABLE)

Sponsorship Includes:

- Logo and recognition on the new NRL website
- Logo and recognition in the NRL Program Guide
- Logo and recognition above Pit Area
- One (1) ½ page, 4-color ad in the NRL Program Guide
- Recognition in real-time during competition; live and via social media
- Logo and recognition on official NRL T-shirts as a Premier Sponsor
- Logo prominently displayed on Safety Inspection Station (test cages)
- Logo prominently displayed on each pit table, branded floor clings
- Social Media recognition on Facebook, Twitter and LinkedIn

NOTE: Additional Branding opportunities of floor clings and other materials are available at the request and expense of the sponsor.



REGISTRATION SPONSOR \$3,500

Sponsorship Includes:

- Logo and recognition on the new NRL website
- Logo and recognition in NRL Program Guide
- Logo prominently displayed on event badge
- Logo prominently displayed at and around registration area
- Logo prominently displayed on registration folder (option to include business card)
- Opportunity to meet and greet the teams at registration
- Opportunity for company branded give-away or material
- Social Media recognition on Facebook, Twitter and LinkedIn

NOTE: Additional branding opportunities and other material are available at the request and expense of the sponsor.



MERIT AWARDS SPONSOR \$3,000

Sponsorship Includes:

- Introduction of Award presenter and company recognition
- Opportunity for announcement of 5 awards post event
- Logo and recognition on new NRL Website
- Logo and recognition in NRL Program Guide

NOTE: Additional branding opportunities and other material are available at the request and expense of the sponsor.



SHIPPING SPONSOR \$2,500

Sponsorship Includes:

- Logo and recognition on the new NRL website
- (1) ½ page Ad in NRL Program Guide
- Social Media recognition on Facebook, Twitter and LinkedIn



INTERACTIVE MANUFACTURING GALLERY EXHIBIT TABLE \$1,500 (ASK FOR AVAILABILITY)

"BUY A PIECE OF THE ACTION AND SHARE YOUR STORY"

Sponsorship Includes:

- Logo and recognition as an Exhibitor on the new NRL website
- Logo and recognition as an Exclusive Sponsor in the NRL Program Guide
- Prominently displayed logo banner above exhibit table
- 6 ft table provided
- Exhibit table to be positioned in the Manufacturing Gallery in high traffic/action area
- Opportunity to tell your company's manufacturing story to the next generation
- Social Media recognition on Facebook, Twitter and LinkedIn

BLEACHER SPONSOR \$1,500 (6 AVAILABLE)

Sponsorship Includes:

- Logo and recognition on the new NRL website
- Logo and recognition in the NRL Program Guide
- Prominently displayed LARGE logo banner
- Logo seat clings
- Bleachers located in high traffic/action area



TRAVEL SPONSOR \$1,000 (ASK ABOUT AVAILABILITY)

Help get our next generation to the competition

Sponsorship Includes:

- Logo and recognition on the new NRL website
- Logo and recognition in the NRL Program Guide
- Personal 'Thank You' from the team your sponsorship supports
- Social Media recognition on Facebook, Twitter and LinkedIn
- Tax deductible

NRL COMPETITION T-SHIRT SUPPORTER \$500

Sponsorship Includes:

- Logo prominently displayed on Back of T-Shirts to show your support of this educational initiative
- Logo and recognition in the NRL Program Guide

SUPPORTING PARTNERS OPPORTUNITIES:

Platinum- \$1,000

- (1) Full Page Ad in the NRL Program Guide
- Logo and recognition on the NRL Website

Gold-\$500

- (1) ½ Page Ad in the NRL Program Guide

Silver-\$250

- (1) ¼ Page Ad in the NRL Program Guide

Don't see a sponsorship that meets your needs? Let's have a conversation and develop a customized package that fits your company's vision of support.



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For Sponsorship inquiries and discussions, contact: Tiffany Bryson 216.264.2847 • tbryson@ntma.org

UPGRADING T8 FLUORESCENT LAMP FIXTURES TO LED NOW EASIER THAN EVER WITH LARSON ELECTRONICS

Larson Electronics is pleased to announce their new 28 watt LED 4-foot replacement lamp. When upgrading existing T8 fluorescent fixtures to LEDs, or direct replacement, the new Magnalight LEDT8-28W-V1 will outperform a standard T8 fluorescent and save money too.

The 28 watt T-series LED Bulb works with any T8 fluorescent light fixtures and can be configured for any T-series fluorescent bulb fixture and requires no ballast for operation. The polycarbonate lens diffuses the light and makes this bulb ideal for food safe environments since there is no glass. The aluminum housing serves as a heat sink and provides rigidity and strength for this LED bulb. The Magnalight 28 Watt LED tube produces more light than a T8 fluorescent and saves on electric costs and maintenance costs while resisting shock and temperature extremes. These LED light tubes can also be plugged directly into fluorescent light

fixtures with magnetic ballasts, which make them an ideal retrofit for older T12 fluorescent lights with magnetic ballasts.

These are the first generation of our 28 watt LED tubes. Lumen output is 98.21 lumens per watt for a total of 2750 lumens

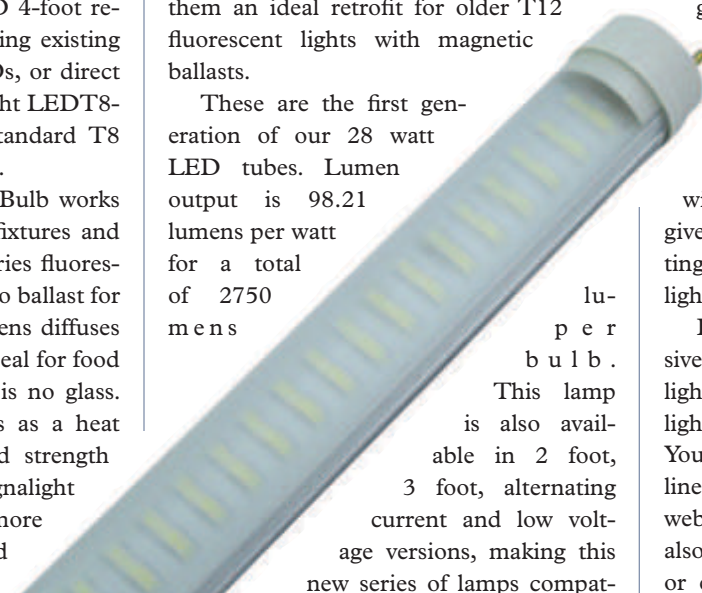
lumen per bulb.

This lamp is also available in 2 foot, 3 foot, alternating current and low voltage versions, making this new series of lamps compatible with numerous different commercial and industrial fixtures. Facility maintenance people will find these bulbs easy to retrofit as there are solutions

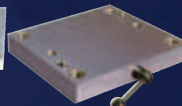
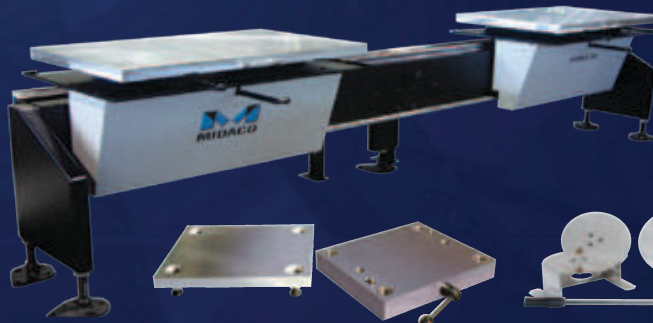
for ballasted fixtures and fixtures with single end AC power. Most importantly, they will increase the light output and save on electric consumption.

"We couldn't be more excited about the flexibility and compatibility of these lamps," Rob Bresnahan, with LarsonElectronics.com said. "This gives both commercial and industrial settings an opportunity to upgrade to LED lighting with little or no hassle."

Larson Electronics carries an extensive line of LED spotlights, LED hunting lights, colored LED lights, portable work lights and industrial grade LED area lights. You can view Larson Electronics' entire line of lighting by visiting them on the web at LarsonElectronics.com. You can also call 1-800-369-6671 to learn more or call 1-903-498-3363 for international inquiries.



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The R&D Tax Credit



Scott Schmidt, principal of the Black Line Group

Look at your company's research and development activities for another way to lower your tax bill.

FROM THE MONTHLY COLUMN: BLACKMAN ON TAXES

Sometimes the Internal Revenue Code (IRC) giveth more than it taketh. Section 41 of the code created a research and development tax credit designed to be your tax pal and reward you for improving your business within the United States. But he's a complicated fella.

The Federal Research and Experimentation Tax Credit was added to the IRC in 1981 to incentivize companies to increase their research activities. It enables businesses to apply for a reduction of taxes for qualified expenditures related to virtually everything they do to modify and improve their products and processes.

Large corporations most often take advantage of this credit, but small- and medium-sized companies also are eligible. It is available to every type of entity, including an S or C corporation, limited liability company, partnership, etc.

One of the reasons section 41 is such a good tax friend is that he enables you, as a business owner, to get two tax advantages—a deduction and a credit—for a single expenditure. For example, say you spend \$1,000 for wages on a qualified R&D project. First, you get a \$1,000 deduction, then you use the same \$1,000 to make a calculation that gives you a credit that can be deducted dollar-for-dollar to reduce your income tax liability.

In addition, many states also

have joined the tax-saving fun, awarding their own R&D credits toward state income taxes.

The R&D tax credit is not just for new inventions. In a nutshell, the credit can be taken advantage of by any company that develops, makes or improves products, software and/or processes—not just scientists or engineers in a lab who are inventing new things.

When you consider pursuing an R&D credit, you must assess two factors: 1) Do you conduct “qualifying activities/projects” and 2) What amount of “qualifying expenses” do you incur?

QUALIFYING ACTIVITIES/PROJECTS

Your company is in a position to take advantage of the credit if you do any of the following:

- Develop/improve/test new concepts and/or technology

- Conduct certification testing
- Manufacture products
- Create new, improved or more reliable products, formulas or processes
- Create prototypes or models, including computer-generated models
- Automate, streamline or improve internal processes
- Develop or improve production, manufacturing processes, software or hardware
- Add or improve equipment
- Try using new materials
- Design new or improved tools, dies, molds or other devices.

If your company doesn't undertake any of these activities in house, but you hire outside consultants or contractors to do any of the above, you are still eligible for the credit.

It's quite a lengthy list of projects. If you have an R&D product development or design department, or provide engineering, design or testing services for your customers, qualifying activities are likely taking place within your business.

QUALIFYING EXPENSES

Once qualifying activities/projects have been identified, you must accumulate certain qualifying expenses to determine your R&D credit. Internal labor (i.e., salaries, wages, bonuses), costs of supplies consumed and third-party consultant/contractor expenses are the primary qualifying expenses. These expenses normally are incurred in many different areas of your business, not just in your R&D or engineering departments.

Type of Business	Federal/State Credit - 2012	Total Credit for All Years
Manufacturer	\$29,200	\$124,000
Foundry	\$112,000	\$226,000
Metal Stamper	\$223,000	\$1,532,000

Of course, you must properly document any of these expenses in case of an IRS audit. It is essential to retain in an organized system such items as product and/or project specifications, descriptions or proposals; technical reports/test reports and results; patent applications and

results; contractual agreements with consultants; and other documents that support your qualifying activities and expenses.

MAXIMIZING YOUR R&D CREDIT

Naturally, you want to maximize your R&D credit, and you most likely will need professional help. Think of building a new plant or warehouse. You would not even think of doing so without hiring an experienced architect and general contractor. This tax incentive can benefit your company, but it also is complex. If you have been doing your R&D credit planning internally, you probably have been leaving money on the table.

The rewards of the R&D tax credit will be easy to recognize. The table below offers real examples of tax benefits realized by clients of NTMA member Scott Schmidt, principal of the Black Line Group. Scott, considered a guru in the R&D tax credit area, provided most of the information for this article.

To learn more: Don't miss the January 29th webinar featuring NTMA member, Scott Schmidt from Black Line Group! Visit www.ntma.org for more information.





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CALENDAR OF EVENTS

TEAM LEADER MEETING

January 16, 2014
Tampa, FL

CHAPTER LEADERSHIP SUMMIT

January 16-17, 2014
Tampa, FL

MFG MEETING

March 5-8, 2014
Phoenix, AZ

MFG MEETING

March 5-8, 2014
Phoenix, AZ

HANNOVER MESSE TRADE SHOW

April 7-11, 2014
Hannover, Germany

NTMA/PMA ONE VOICE LEGISLATIVE CONFERENCE

May 6-7, 2014
Washington, DC

NATIONAL ROBOTICS LEAGUE COMPETITION

May 16-17, 2014
Cleveland, OH

NTMA PURCHASING FAIR

April 1-2, 2014
Pittsburgh, PA

NTMA FALL CONFERENCE

October 22-25, 2014
New Orleans, LA

MEMBER TESTIMONIAL

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NTMA CA Member

"I needed to start diversifying my customer base because I was so dependent upon the automotive industry for my business. I was over 90% automotive and over 75% in Michigan. I started going to NTMA Purchasing Fairs and now my customer base is about 60% Automotive, but 70% outside Michigan."

NTMA MI Member

"Attending NTMA Purchasing Fairs has given our company more than enough business to pay our dues forever. I met another member at a Purchasing Fair as we were standing in line waiting to talk to a buyer. Several months later, I got a call from that member that had just landed a huge contract that he needed out kind of expertise to fulfill. We ended up with a long-term contract worth over \$7 million because, I happened to start talking to another member."

NTMA PA Member