
**BIG VICTORY FOR MANUFACTURERS
AS WORKFORCE BILL BECOMES LAW**

Just when you're about ready to give up on Washington, good news comes around the corner. —p9

**BEHIND THE EMPLOYMENT DATA:
THE HIDDEN MANUFACTURING
JOB OPPORTUNITY**

It's no secret to economists that the health of the manufacturing sector serves as a bellwether for the U.S. economy. —p12

**CONGRESSMAN KENNEDY VISITS
NORTH EASTON MACHINE**

Congressman Joseph Kennedy III made a visit to North Easton Machine Company, Inc. on July 2 for a plant tour and meeting with owner, Jon Holbrook. —p15

**WORKFORCE DEVELOPMENT MODULES
ARE HERE!!!**

Starting September 2014, module format will be offered through NTMA-U. —p18



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NTMA WELCOMES NEW NATIONAL ASSOCIATE: SPACECLAIM CORPORATION



SpaceClaim, the leading provider of flexible and affordable 3D modeling software for engineers, develops the best direct modeling solution for engineering and manufacturing. SpaceClaim's acclaimed software is easy to learn and use and is completely CAD-neutral. It enables engineers and other manufacturing professionals to rapidly create new designs or manipulate and edit existing 2D and 3D geometry, without the complexity of traditional CAD. Visit www.spaceclaim.com for more information.



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CHAIRMAN'S CORNER

TED TOTH / NTMA CHAIRMAN OF THE BOARD

Last month we reviewed the Education Team, one of the tools of the Workforce Development Leadership Team. This month we will review the Manufacturing Technology Team, which is again part of the Workforce Development Leadership team led by Kevin Ahaus (Ahaus Tool & Engineering, Richmond, IN). The Manufacturing Technology Team is led by Reid Leland from LeanWerks (Ogden, UT).

Before that review, let me mention IMTS. Many of us are looking forward to next month's IMTS 2014 in Chicago (September 8-13th). Our friends at AMT really put on a great show! If you have never attended, let me encourage you to seriously consider going this year. It is over a million square feet of the most advanced manufacturing equipment in North America. It is where we go to keep up on the latest in manufacturing technology. On a personal note, I have been attending the show since 1974, so this will be my 20th show. For a tech nut like myself, it is my quest wherever I go to gather information on the latest and greatest – IMTS is one of the best sources for that. It is a show that you cannot see in just one day – I normally spend a week at the show.

At their 2012 IMTS, AMT assembled a sports car. How can they top that? Well, at this year's show they will be 3D printing most of the components of a sports car less the drive train. Produced from a new fiber-reinforced thermoplastic strong enough for use in an automotive application, the chassis and body without drivetrain, wheels and brakes weigh a scant 450 pounds. Things like wiring brackets and channels are built

right in. The completed car is comprised of just 40 components, a number that gets smaller with every revision. Fewer parts can mean fewer problems. AMT says the minimalist machine is rock solid and squeak free.

The first example was printed in just 40 hours and took two technicians only three days to assemble. Compare that to a team of seven working around the clock for 45 days on the first Rally Fighter, which relied on more traditional construction methods. AMT hopes to cut the printing time almost in half by September, and to 2.4 hours within a year. They believe the entire manufacturing process can be reduced to one hour in the future. But it could potentially be much less than that. While the current technology extrudes about 12 pounds of plastic per hour, AMT says the experimental limit is 1,000 times as fast. This event is a collaboration of Local Motors; industrial parts shaping specialist Cincinnati Incorporated; and the Oak Ridge National Laboratory, where a custom printer was created for the car.

The NTMA Manufacturing and Technology Team is sponsoring special "Tech Tours" at IMTS this year – just for NTMA members. Overwhelmed with the thought of navigating through IMTS? Skip the sales pitch and focus on the technology with an NTMA guided tour! You can maximize your IMTS experience with an NTMA guide who will personally escort you to the "Hot Spot" Tech Tour of your choice. More details and the schedule for this NTMA members-only IMTS experience can be found on p. 17.

Our Manufacturing Technology Team

support programs that really benefit our members:

- 6S Excellence
- Member Technology Award
- MTConnect
- Working with AMT
- Fall Conference Tech Suites and Business Sessions

6S EXCELLENCE PROGRAM

This program was developed in 2007, at the request of NTMA apprentice contest winners returning from a trip to Switzerland. They had visited clean and modern shops, and asked the Technology Team to develop a tool to help clean up our industry's image in this country. The team chose the 5S's plus added the sixth "S" for Safety. The 6S program is a self-study housekeeping and lean program.

THE 6S'S ARE:

1. **Sort** ("Get rid of clutter. Separate out what is needed for the operations.")
2. **Set-in-Order** ("Have a place for everything and everything is in its place.")
3. **Shine** ("Clean work areas and equipment. The best cleaning is not to need cleaning.")
4. **Standardize** ("Establish schedules and methods of performing the cleaning and organizing.")
5. **Sustain** ("Audit and monitor the schedules. Stick to the rules.")
6. **Safety** ("Are the areas safe?")

THE 6S PROGRAM INCLUDES OTHER TOOLS SUCH AS:

- An article entitled "Changing our Image"
- A presentation explaining the 6S program
- 6S standard: what a shop should look

CONTINUED ON – P5

THE RECORD

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To advertise in *The Record*, or for information on publishing your corporate newsletter or sales literature, contact NTMA at (216) 264-2847 or tbryson@ntma.org for advertising, ssafranski@ntma.org for editorial content. Design & layout by Z Graphics david.zablo@gmail.com



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and act like

- 6S manual: Implementation Instructions
- 6S Training Presentation
- Audit Worksheet
- Self-Audit
- 6S Award Application

The 6S Program is a free, self-auditing program available to the industry. Applicants submit their final audit results, backed up with photo and paper documentation. The Technology Team reviews application documents and presents 6S Excellence Awards each year at the Fall Conferences.

PAST AWARD WINNERS ARE:

- Bowden Manufacturing (Willoughby, OH)
- Hobson & Motzer, Inc. (Durham, CT)
- Major Tool & Machine (Indianapolis, IN)
- Overton Industries (Mooresville, IN)
- Pointe Precision (Plover, WI)
- Toth Technologies (Pennsauken, NJ)
- Homeyer Precision Manufacturing (Marthasville, MO)

The team is currently looking to expand the 6S Excellence program – more to follow.

CONTINUED ON – P6

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MEMBER TECHNOLOGY AWARD

This award recognizes one of our members that chooses to inform or educate NTMA members about a successful process through a short presentation during the Fall Conference. Past topics have focused on technology; however, the team has expanded the topic to any manufacturing or business best practice and has renamed the award simply the Member Award. Anyone can nominate their own company or a follow member. The award will also be detailed in The Record following the Fall Conference.

MTCONNECT

MTConnect is an AMT program that the Technology Team supports. It is a generic protocol, universal language established so machines' controls and external software can communicate to provide advanced monitoring and performance feedback. The program was developed in 2008 and is slowly becoming industry norm. The challenge is: the power of the older controls simply have been unable to deliver the data necessary. Many machine tool manufacturers support MTConnect on their new con-

trols, so over the next 10 years MTConnect will be commonplace. The Technology Team is working on NTMA MTConnect user kits. In the future MTConnect will have the same impact as DNC did to paper tape, and CNC to NC.

WORKING WITH AMT

The Association of Manufacturing Technology (AMT) is one of the trade association we partner with for The MFG Meeting each spring. In addition, the team meets with AMT's Technology Committee two times a year to exchange ideas. In that discussion they ask "what are NTMA members looking for in new technology?" and they review new emerging technology with the team.

CONFERENCE TECHNOLOGY SUPPORT

The Technology Team is working closely with NTMA staff to develop the Technology Track for our 2014 Fall Conference, in New Orleans (October 22-24). This conference will be slightly different this year: there will be a day of business tracks, a technology day and more roundtables. Most teams will hold roundtables instead of team meetings. As our highly attended Industry

Roundtables, we will also have Industry Sector roundtables focused on specific industries such as Aerospace/Defense, Oil/Gas, Automotive, and Fluid Power to name a few. Some of the roundtables will be during and include breakfast or lunch.

The Technology Team has reinvented themselves and will continue to grow and develop under the leadership of Reid.

In next month's Chairman's Corner we will provide more details about the upcoming 2014 Fall Conference in New Orleans and will review the tools of the Emerging Leaders Team.

THEODORE O. TOTH, JR. (TED) /
NTMA CHAIRMAN



MACHINE TOOL GIANT FADAL ENGINEERING BACK UNDER NEW OWNERSHIP

Fadal Engineering (Fadal), a Michigan-based company, and Merrill Technologies Group (MTG), a Michigan-based, family-owned manufacturer, have joined forces to launch a new Fadal CNC full-range product line.

"Fadal will manufacture in Michigan and California, and sell globally through a distributor network. Fadal was a global leader in the production of Vertical Machining Centers (VMC) before closing its manufacturing facility in Chatsworth, CA in 2008" said Tansel Avci, Chairman.

Fadal will launch its new Classic Series VMC at this year's International Manufacturing Technology Show (IMTS), September 8-13, 2014, in association with Ingersoll Cutting Tools of Rockford, IL.

The Classic Series; VMC2516, VMC3016, VMC4020, VMC6030 and VMC8030 mirror the legacy box-way machine models that made Fadal one of the most prominently known CNC machine tools for nearly 30 years. Fadal is also proud to announce the following CNC horizontal turning centers: FG5, FL6, FL8, FL8L, FL10 and FL12.

Fadal has updated the legacy American-made VMCs with the latest in engineering enhancements. "Fadal consistently ranked best-in-class with Cat-40 spindle torque rate of 220 ft-lb, nearly double that of its competition. MTG updated not only the mechanicals, for instance a new spindle design to incorporate Big Plus technology, but the new Fadal CNC-64MP control functions with the same language and compatibility of the legacy Fadal CNC-88, CNC-88HS and CNC-32MP control, but operates with greater processing power and speed. This provides accuracy, simplicity and a price point our customers deserve," said Michael Naert, Vice President of Operations.

"The new Fadal is all about bringing back to market an easy to use, CNC machine tool of sound design and state-of-the-art technology" said Tim Consalvi, Director of Sales.

Later in 2014, Fadal will release its VMC Performance Series, offering larger travels, greater weight capacity, higher traverse rates and greater CAT-50 spindle speeds. In 2015, Fadal will offer customers even bigger machines; The Heavy Series will be Fadal's third entry into the market. This series will

have extremely large machining and turning ranges and capacity, making it desirable for the energy, off-road, aerospace and defense markets.

"Our complete line of VMC's and turning centers offer machinists varying levels of performance options to accommodate application demands and budget, said Naert."

After being sold by its founders to Giddings & Lewis in 1995, the Fadal name has changed hands numerous times through a series of mergers and acquisitions. "Fadal was once synonymous with quality, affordable CNC machinery and we look forward to restoring that reputation," said Naert.

"There is something kind of nostalgic about bringing a once family-owned company back to its roots, said Robert Yackel, CEO of family-owned Merrill Technologies Group and now Fadal Engineering. The founding family of Fadal was a lot like my family. Entrepreneurial, hardworking, resourceful and determined. We're proud to lead Fadal into its next era of success and the market is hungry to have Fadal back."



THE PITTSBURGH APPRENTICE PROGRAM STANDS THE TEST OF TIME

HOW THE PROGRAM HAS EVOLVED FOR A CHANGING INDUSTRY AND WORKFORCE

BY MOLLY WEST

1976. JVC introduced the world to the VCR, Dorothy Hamill won Olympic gold and there was a small start-up company called Apple Computers. In Pittsburgh, PA, Elvis Presley rocked the Civic Arena, the city celebrated the Steelers Super Bowl X win over the Dallas Cowboys and the Pittsburgh Chapter NTMA launched its apprenticeship program.

Jim Gilmore, supervisor of Adult Education at Central Westmoreland Vo-Tech

38 years ago helped to get the program off the ground. "There were over 500 shops in the area. There was a real need for beginners in these shops and working through the vo-tech school they were exposed to three years of hands-on training. This made an ideal situation for the industry to have young people with skills who could be trained," Gilmore explained. However, there was a need to take those skills to the next level and "the apprenticeship training allowed them to get their papers to certify they were journeymen."

The Pittsburgh Chapter Apprenticeship Program's numbers peaked in the 1980s with as many as 100 graduates a year; however in the 1990s those numbers made a sharp decline as there was a new emphasis on getting a college degree and less on learning a trade. In this fast-paced world, things can quickly become obsolete—but it was the willingness to adapt to changing needs and requirements that keeps the Pittsburgh Apprenticeship Program relevant in such a dynamic environment.

The Pittsburgh Apprenticeship Program's curriculum is continually reviewed and updated by journeymen machinists, industry professionals and instructors to ensure that the program is up-to-date and effective.

Apprentices complete 144 hours of classroom training and 2000 hours of hands-on application at his or her job site annually in this stringent 4-year curriculum. Additionally, Pittsburgh apprentices have the opportunity to earn NIMS (National Institute for Metalworking Skills) credentials in specialty areas. The organization also holds an articulation agreement with Westmoreland County Community College. Apprentices who com-

plete the NTMA program earn 31 credits toward an associate's degree in Applied Science.

lent. However, some things have not changed, as you still need problem solving skills (think trigonometry) and a good understanding of manual machining to learn to build fixture and jigs properly. The program provides a good balance of each component."

This spring, three Schroeder employees completed their training and graduated from the Pittsburgh Apprenticeship Program. "Our employees have taken great pride in completing the program, as have we as a company. Our company has changed just over the past five years as we move into new markets, and having employees skilled not only with their hands, but in problem solving, is what lets us continue to be the leader in providing advanced fluid conditioning solutions," Wick said.

In just the last five years, enrollment in the Pittsburgh Chapter NTMA's Apprenticeship Program has doubled. With a renewed emphasis on apprentice training through federal programs like the American Apprenticeship Program which was appropriately rolled out by President Obama in Pittsburgh this spring, it seems that learning a trade is becoming a strong alternative to the university path that so many students have taken in recent decades. Gilmore said his phi-

losophy has always been "build your education around a skill." While educational needs and methods may evolve, the skill itself will stand the test of time—and programs like the Pittsburgh Chapter NTMA's Apprenticeship Program will be around to make sure the next generation can learn a skill that leads to a solid manufacturing career.



These are 1st year students at New Century Careers Training Innovation Center site. The Apprenticeship Program has three sites throughout the Pittsburgh region. Lou Pavsek, a long-time instructor with the program, is doing a demonstration on the vertical milling machine. Lou is the instructor for Year 1 subjects: Blueprint Reading, Technology of Machine Tools and Math.



GETTING TO KNOW GROB SYSTEMS

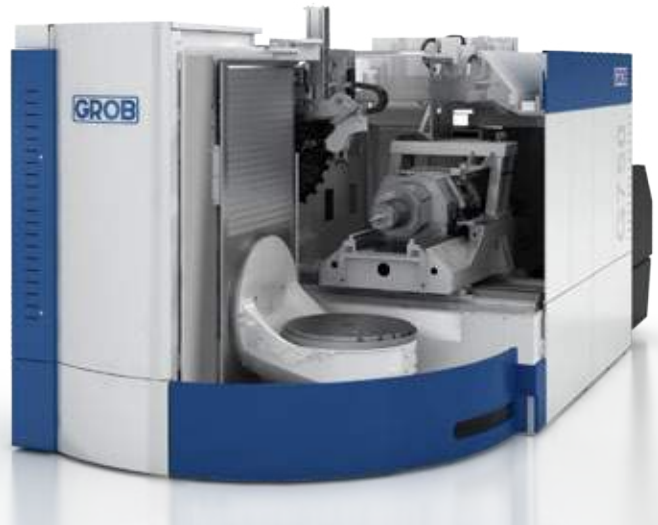
A family-owned company, GROB Systems is among the world's largest machine tool builders with a full range of production and universal machining centers. In 2014, GROB Systems joined NTMA as a National Associate Member and sponsor to increase awareness of the company's line of stand-alone, universal machines.

Many people outside the automotive world have not heard of GROB, even though the company has been building machines in Ohio for nearly 30 years. In 2012, the company introduced the G-Series 5-axis machines, based on the horizontal machine platform proven in the automotive industry. The G-Series machines have quickly gained popularity in applications for surgical and orthopedic components, aerospace, die/mold and other industries.

"GROB Systems has a concept for 5-axis machining unlike others you've seen," explains GROB Vice President Bill Vejnovic. "It starts with the horizontal machine platform, and we add two hundred twenty-five degrees of rotation to the 360-degree table. The table and part can be completely inverted in the work zone so that chips just fall away from the part."

The unique spindle design, built by GROB in Germany, is another important feature. It fully retracts from the work zone, which allows very long tools to be used with out any interference with the part or work holding fixture. These features are combined in a machine that has the smallest footprint for the work zone capacity.

As an award-winning supplier to automotive OEMs around the world (most recently named 2013 GM Supplier of the Year), GROB has learned best practices



that benefit manufacturers in any industry. To excel in demanding manufacturing environments, GROB machines must be extremely reliable and high performing, with many features included as standard. Service must also be best-in-class. All spare parts are stocked at the 300,000 square-foot facility in Bluffton, Ohio. If field support is needed, GROB machines are serviced by the same technicians who built them.

To ensure a highly-skilled workforce, GROB Systems launched a full-time apprenticeship program in 1990. The program allows apprentices to work part time and earn a two-year associates degree in manufacturing engineering technology, all while earning a full-time salary. The apprenticeship program prepares students for careers with robots, CNC machines and CAD design in a total flexible manufacturing environment.

NTMA members are invited to visit GROB Systems at IMTS Booth S-9490 to learn more about G-Series Universal Machining Centers, a full range of automation solutions, and flexible machine and turnkey financing packages. For complementary exhibition passes or to pre-scheduled booth tour, please send e-mail to sgriffiths@grobgroup.com. To find a distributor near you, visit www.grobgroup.com.





Big Victory for Manufacturers as Workforce Bill Becomes Law

Just when you're about ready to give up on Washington, good news comes around the corner. In July, Congress passed into law an update to the Workforce Investment Act of 1998, a centerpiece of the country's workforce training program blueprint, which Congress had allowed to expire back in 2003. By a 415-6 vote, the U.S. House of Representatives passed the new version – the Workforce Innovation and Opportunity Act (WIOA) – after the Senate passed the same bill 95-3 in late June. President Obama signed the law at the end of July.

The rare bipartisan passage of the WIOA comes after years of hard work to mobilize interest and support for this bill among members of Congress, which has long been a top priority of the One Voice government affairs team in Washington.

The new law reforms the original Workforce Investment Act by eliminating 15 outdated programs, encouraging the use of industry recognized skills certifications, and providing a greater role for businesses in implementing workforce programs locally. It also provides accountability, data reporting and oversight requirements of state programs; increases the ability of companies to use on-the-job training, incumbent worker training, and customized training; and reforms Job Corps center procedures and accountability. Taken together, the new law will provide billions of dollars to help fund job training and education programs to help steer young people and adults toward promising, good-paying jobs in manufacturing – all while steering them away from unemployment.

The bill marks a major victory for manufacturers, who have been increasingly contending with the dilemma of needing to fill jobs in the face of limited numbers of qualified applicants despite the large numbers of unemployed or underemployed workers in the U.S. In a survey, 74% of One Voice members reporting having at least one skilled position open.

The skills gap issue has steadily attracted more and more attention thanks to the efforts of key groups like the NTMA, whose

members have worked locally, on the state level and at the federal level in Washington to draw attention to the issue. The NTMA itself has designed and supported programs such as NTMA-U, the National Robotics League and the new Military to Precision Manufacturing program to help boost the ranks of qualified workers. With the passage of the WIOA, more and more momentum is getting behind this important issue.

Manufacturers can make a difference in Washington, but only if they participate in the process. NTMA members can give unlimited corporate or individual contributions to the NTMA Government Affairs Administrative Fund which supports the work done by The

Franklin Partnership and Policy Resolution Group at Bracewell & Giuliani LLP. Additionally, NTMA members can make limited personal donations to the Committee for a Strong Economy (CFASE) PAC, which supports pro-manufacturing Congressional candidates.

One Voice is leading the way representing your issues in Washington D.C. For a year-to-date list of all the successes and status on issues important to you, your business and manufacturing, go to <http://www.ntma.org/events/news/our-2014-successes-one-voice-leading-the-way-july-2014/>.



WOMEN IN MANUFACTURING™ 2014 SUMMIT HEADS TO SCHAUMBURG, ILLINOIS

Women in Manufacturing™ (WiM) is hosting its fourth annual SUMMIT in Schaumburg, IL on September 29-October 1, 2014. Nearly 300 leading women in manufacturing from around the country are expected to attend.

SUMMIT 2014 will provide opportunities for women who have chosen careers in manufacturing to share perspectives and network with colleagues and other female executives in the sector. The conference will feature industry plant tours, a networking dinner, panel discussions, professional development tracks and keynote presentations on pertinent business and technical topics.

This event offers participants numerous personal and professional development opportunities with highlighted programming content featuring leadership engagement, project management, lean manufacturing, risk management, CEO Fishbowl, appren-

ticeship programs, product liability and networking.

Please visit www.womeninmanufacturing.org/summit2014 or contact Kristin Moore at (216) 901-8800 or kmoore@pma.org for more information or to register for this event.

Women in Manufacturing™ is a more than 400-member-strong national organization dedicated to the attraction, retention and advancement of women who are pursuing or have chosen a career in the manufacturing industry. This group encourages the engagement of women who want to share perspectives, gain cutting-edge manufacturing information, improve leadership and communication skills, participate in sponsoring programs and network with industry peers. www.womeninmanufacturing.org



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Don't miss Makino at IMTS 2014, booth S-8700.
Go to Makino.com/IMTS to book your personal appointment.





NTMA Fall Gala 50/50 Raffle

In support of the National Robotics League



To purchase your tickets, fill out the form below and return it to the NRL info table at Fall Conference, email it to Kristen Hrusch (khrusch@ntma.org) or fax it to (216) 264-2840. We'll contact you upon receipt of this form to collect payment information.

Name: _____

Company: _____

Phone Number: _____

Email Address: _____

of Tickets: _____

Total (\$100 per ticket): _____

Note: You do not need to be present, or even an NTMA member to win. We'll announce the winner at the Fall Conference Gala as well as on the NRL Facebook page. If the winner isn't present, we'll contact him or her after the conference and send a check with winnings.

Help us grow the National Robotics League and possibly your bank account by buying a ticket in our 50/50 raffle.

Half of what we collect will support this great program, and the other half will support a great holiday season for the lucky winner.

Last year's winner took home \$11,000!



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2014 FALL CONFERENCE GALA IN OCTOBER: AUCTION DONATIONS SOUGHT

It's the time of year when your NTMA staff starts to work on fundraising activities for the Fall Conference in New Orleans, specifically the silent and live auction at the Friday evening gala. We are again looking for help from members to donate objects to be auctioned for two worthy causes:

1. National Robotics League (NRL) - As many know this activity has taken off and we're reaching more kids to look at manufacturing as a career. We've added new teams, which in turn are becoming the launching ground for other teams. Our NRL national champions from MN came from one of our first NRL areas. The goal of NRL is to bring young people into manufacturing companies in order for them to see that manufacturing isn't dead, but alive and well.

2. NTMA Government Affairs Administrative Fund (GAAF) - This fund supports expenses generated by our advocacy efforts in DC. These costs include funding for One Voice, which helps inform government legislative and policy makers of NTMA members' interests and introduces NTMA members to members of Congress, helping to influence the direction Congress moves. You can see the many One Voice 2014 successes posted on the NTMA web site. This fund also helps pay for some of the travel of our DC team to chapters throughout the year, thus bringing the One Voice message out to the chapters.

The auction's success depends on the generosity of members like you. Please send information about your donation to Emily Lipovan (elipovan@ntma.org) with details on how you wish to support the success of this important evening.

SURVEY FINDS 73% OF SMALL-TO-MEDIUM SIZED BUSINESS OWNERS ARE MOST INTERESTED IN FIXED-PRICE ELECTRICITY SUPPLY CONTRACT



The most commonly selected type of electricity supply contract is one with a fixed price. In 2013, the Energy Research Council (ERC) surveyed approximately 1,300 executives from small-to-medium sized businesses (SMBs) with less than 250 employees and with average monthly electricity bills less than \$25,000. The survey found that 73% of SMB executives are most interested in locking in a fixed-price electricity supply contract.

The ERC's new research brief "Are fixed-price electricity supply contracts really fixed?" examines supplier contract conditions that can add unanticipated costs to

customers' monthly electricity bills, such as assignability, bandwidth clauses, change-in-law provisions, early termination fees, and expiration procedures. The brief also describes the importance of ensuring each fixed-price quote from multiple competitive electricity suppliers includes the same components, such as adders, capacity costs, ancillary charges, gross receipt tax, and sales and use tax. The ERC survey found that only 17% of SMB executives believe a fixed price can be affected by change in law, while 60% believe "fixed price" means no price change whatsoever, and 6% don't know the definition of fixed price.

The entire ERC research brief is available to view and download at <http://energyresearchcouncil.com/Are-fixed-price-electricity-supply-contracts-really-fixed.html>.

The National Tooling and Machining Association (NTMA) endorses independent firm APPI Energy, an ERC Charter Sponsor, to provide unbiased energy procurement and consulting services to members.

To learn more about fixed-price electricity supply, contact NTMA's trusted energy expert partners at 800-520-6685 or email info@appienergy.com.



SUMMERTIME AND THE SKILLS GAP

BOLSTERED BY GOOD INDUSTRY PERFORMANCE NEWS, THE MANUFACTURING SECTOR SEEKS NEW WORKERS.

It's summertime and the sun is shining on the manufacturing sector. Good industry news came out at the end of June when new data showed that the U.S. manufacturing sector expanded stronger than expected. In fact, financial data from Markit showed that the rate of growth in the sector advanced to its highest level in more than four years.

And when manufacturing grows, the economy grows. Frequently cited data from the Bureau of Economic Analysis indicates that manufacturing supports jobs in other sectors and is a strong multiplier in the U.S. economy. The data shows that for every \$1.00 spent in manufacturing another \$1.32 is added to the economy.

But there are still some hot-weather thunderstorms lurking. A recent article posted on the Monster blog describes a major challenge U.S. manufacturers are facing today: the difficulty in finding qualified workers. Monster, best known for their online platform for job seekers, publishes blog posts on employment trends in

various sectors including manufacturing. "Contrary to popular belief," author Bret Silverberg wrote in the July 2, 2014 article, "the demands of the manufacturing industry today require significant technological expertise."

Drew Greenblatt, president of the Baltimore, Maryland-based Marlin Steel Wire Products, and a member of the Precision Metalforming Association (PMA) shares his experience with the evolving manufacturing sector in the Monster piece. "People think of the production lines, and what people did in the 1920s," he is quoted as saying. "That's out of date. It's not measuring what's really happening in American manufacturing. Factories today are very sleek technologically."

Greenblatt's assessment of the modern manufacturing sector captures the problem American manufacturers are facing. The industry continues to modernize and develop technologically, but many of today's workers do not have the skills needed by today's industry, creating a gap. And this

skills gap is leaving many high-tech and high-paying American jobs unfilled.

PMA and another leading manufacturing sector association, the National Tooling and Machining Association (NTMA), together known as "One Voice," have specific awareness of this issue. According to a recent survey, nearly 75% of One Voice members have job openings in manufacturing plants, and 80% report that they are having challenges recruiting qualified employees.

Now, Congress is taking on this issue. This week, One Voice praised the U.S. Senate for passing the Workforce Innovation and Opportunity Act (WIOA), H.R. 803. WIOA covers dozens of job training programs and includes provisions which direct governors to create State Workforce Development Boards, a majority of whom must represent businesses in the state; prioritize the use of industry-recognized standards and credentials; eliminate outdated programs; provide accountability and data reporting requirements; and increase the

CONTINUED ON — P15



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ability to use on-the-job training (reimbursement rates up to 75%) and incumbent worker training (may use up to 20% of local funds), among others. WIOA now heads to the U.S. House of Representatives for a vote.

The growing U.S. manufacturing sector has a strong bolstering effect on the American economy. This summer, manufacturers are working to build on promising numbers and attract new workers to the sector.

Edited by Brittany Merchut, Project Manager, CFE Media, bmerchut(at)cfemedia.com.



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Congressman Kennedy visits North Easton Machine



Congressman Joseph Kennedy III made a visit to North Easton Machine Company, Inc. (NEM) on July 2 for a plant tour and meeting with owner, Jon Holbrook and members of his management team. NEM is an ITAR registered and ISO 9001 certified contract manufacturer located in North Easton, MA. The company, established in 1964, is a family owned and operated small business that employs twenty five people. Congressman Kennedy, the Honorary Chair of the Massachusetts STEM Advisory Board, is very active in the development of a workforce to support Advanced Manufacturing within the 4th Congressional District of Massachusetts and the nation.



From L-R Frank Montgomery, NEM Quality Manager, Paula Martel, NEM HR Manager, Congressman Joseph Kennedy III, Paul Diamond, NEM VP and Jon Holbrook, NEM President

Conflict Minerals oversight by the SEC, and tax code implications for small businesses.

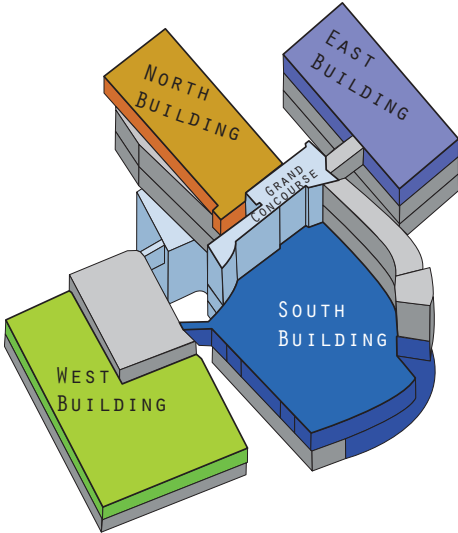
Everyone was pleased to meet and speak with Congressman Kennedy and appreciated the time he took to learn more about the company and the important issues that impact the success of small manufacturers like North Easton Machine.

North Easton Machine Company, Inc. was founded in 1964 by Donald Holbrook. The business is housed in a 15,000 square foot facility in North Easton, Massachusetts. Currently run by Donald's son, Jon Holbrook, North Easton Machine combines fifty years of experience with technology and integrity to provide customers with a valued partner making high quality parts. NEM utilizes the latest CNC Swiss, CNC Lathe and CNC Milling machines for superior speed, precision, and versatility. NEM's equipment has the capability to manufacture complex parts in a single operation, maximizing product quality and minimizing lead times for customers. North Easton Machine proudly serves the bio-medical, microwave, high-tech, musical and electronic industries, among others, with an emphasis on high quality products and exceptional customer service. NEM is a proud 27 year member of the NTMA and its Boston Chapter. For information on North Easton Machine, go to www.northeastonmachine.com or contact them at (508) 238-6219.



Congressman Kennedy learns about parts measurement from OJT Trainee John Zenewicz





WEST BUILDING

BIG KAISER® PRECISION TOOLING INC.

Booth W-1600

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Booth W-2080

The National Tooling & Machining Association (NTMA) was founded over 70 years ago and has led the industry in developing a skilled workforce, creating national apprentice and educational programs, and defining the model for industry standards which are used today. Our vision is to become the premier center of knowledge to lead the U.S. precision custom manufacturing industry in continuing world leadership.

SOUTH BUILDING



NRL & NTMA-U Featured

IMTS has a longstanding tradition of gathering middle school, high school and college students, educators, administrators and parent chaperones to experience advanced manufacturing technology and have direct contact with the industry professionals whose minds move manufacturing forward. It's the next generation Smartforce entering the manufacturing technology industry who will keep the U.S. in its global manufacturing leadership position.



Location: Smartforce Student Summit will be held at McCormick Place in Chicago during IMTS 2014.

Dates: Monday through Saturday
Sept. 8-13, 2014

Hours: 9 am - 3 pm

<http://www.imts.com/student/>



Booth S-9347

Since 1969 MIDACO has been a leading manufacturer of quality machine tool products. Automatic and Manual Pallet Changers, Automatic Door Openers and other accessories INCREASE PRODUCTIVITY in all aspects of manufacturing, including VMC, HMC, Drill/Tap and EDM machines. See us in booth S-9347 and enjoy a fresh baked chocolate-chip cookie!



Booth S-8700

A world leader in advanced CNC machining centers, Makino is committed to providing high-performance, leading-edge machining technologies and innovative engineered process solutions that enable manufacturers to focus on making what matters. Makino offers a wide range of high-precision metal-cutting and EDM machinery, including horizontal machining centers, vertical machining centers, 5-axis machining centers, graphite machining centers, and wire and Ram EDMs. Makino's flexible automation solutions provide reduced labor costs and increased throughput in a variety of production volumes and designs. Makino's engineering services offers industry-leading expertise for even the most challenging applications across all industries. For more information, call 1-800-552-3288 or visit makino.com.



Booth S-8300

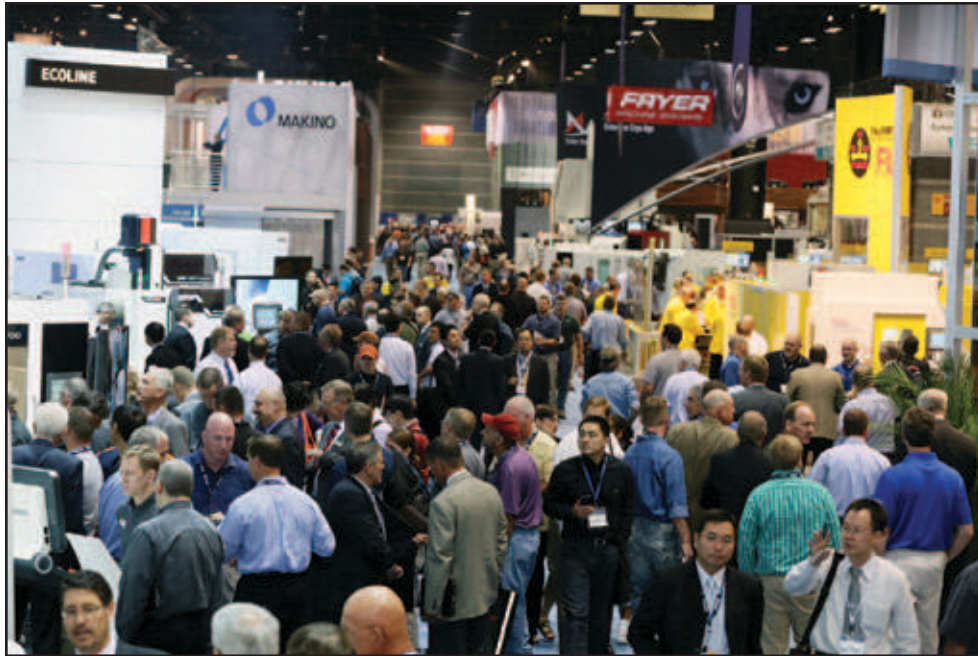
Mazak Corporation is a leader in the design and manufacture of productivity-improving machine tool solutions. Committed to being a partner to customers with innovative technology, its world-class facility in Florence, Kentucky, produces over 100 models of Turning Centers, Multi-Tasking Machines and Vertical Machining Centers, including 5 - Axis models. Continuously investing in manufacturing technology allows the Kentucky plant to be the most advanced and efficient machine tool builder, providing high-quality and reliable products through its Production-On-Demand manufacturing practice. Mazak maintains eight Technology Centers across North America to provide local hands-on applications, service and sales support to its customers.



Booth S-9490

GROB Systems demonstrates G-Series universal machining centers at IMTS booth S-9490. Based on a horizontal machining center platform popular with automotive OEMs, GROB universal machines are designed for manufacturers in medical, aerospace, die/mold and other industries. All replacement parts and factory service are available from the 300,000 square foot factory in Bluffton, Ohio.

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TECH TOUR SCHEDULE

TUESDAY, SEPTEMBER 9

PRE-SHOW (8:00am - 9:00am)

Big Kaiser - Breakfast: W-1600

10:30am - 11:30am

Royal Products: W-1622

12:30pm - 1:30pm

Sandvik: W-1500

2:30pm - 3:30pm

Big Kaiser - Tour: W-1600

4:30pm - 5:30pm

GF Machining Solutions: S-8754

Post Show Events to Come!

WEDNESDAY, SEPTEMBER 10

PRE-SHOW (8:30am - 9:30am)

Okuma: S-8500

10:00am - 10:30am (30 minute tour only)

GROB: S-9490

11:00am - 12:00pm

Makino - Lunch & Learn: S-8700

12:00pm - 1:00pm

Makino - Tour: S-8700

2:30pm - 3:00pm (30 minute tour only)

Abbott Workholdings: S-9347

4:30pm - 5:30pm

DMG MORI: S-8900

Post Show Events to Come!

THURSDAY, SEPTEMBER 11

PRE-SHOW (8:30am - 9:30am)

Mazak: S-8300

10:30am - 11:30am

ExOne: N-6245

10:30am - 11:30am

Exact JobBOSS: E-3249

11:30am - 12:30pm

Epicor: E-3324

1:00pm - 2:00pm - To be determined

3:00pm - 4:00pm

Kennametal: W-1522

4:30pm - 5:30pm

Walter USA: W-1700

Post Show Events to Come!

*Times subject to change

Limited spots available. Contact Kristen Hrusch by August 29 to reserve your spot at khrusch@ntma.org or 216-264-2845

Workforce Development Modules are here!!!

The NTMA-U launches workforce development MODULE training

Starting September 2014, module format will be offered through NTMA-U. Our membership has spoken and NTMA is listening.

Due to NTMA-U's overwhelming success, NTMA membership has indicated the need for not only lockstep workforce and development training, which is currently available through NTMA-U's online format, but also workforce development in module form. What this means to our membership is their employees can enroll in one course at a time and be selective in which course modules would best serve a company's specific training needs. Modules are offered to our members for only \$199 each; if an employer enrolls one student in three modules there is a reduced savings of \$148, making the total cost for three modules only \$449. The employer can now pick and choose from any of the following modules:

SERIES 1

 NTMA-U 1100-1

Basic Blueprint:

This course teaches the proper terminology, symbols and guidelines associated with reading and sketching blueprints, and how these are applied in a manufacturing environment. It focuses on reading as well as interpreting blueprints through the different views of an object, including dimensioning techniques, tolerancing, fraction to decimal conversion, drafting lines using geometric equations, line types, orthographic views, isometric views, offset sections, auxiliary sections, symbols and broken sections.

 NTMA-U 1120-1

Basic Math:

This course introduces math skills and concepts that are necessary in shop activities, including use of fractions, fraction to decimal conversion and calculating angles.

 NTMA-U 1200-1

Machine Tools:

This course has a strong focus on safety in the machine shop. It introduces the metallurgy of steel and iron and the fundamentals of metal cutting operations to produce manufacturing parts. It includes the operation of machinery, terminology, safety, measurement, layouts, print reading, machine set-ups, hand tools, quality measurement devices (e.g., rules, calipers, micrometers) and cutting tools. It highlights the use of typical equipment found in conventional machine shops.

SERIES 2

 NTMA-U 1200-2

Machine Technology 2:

This course offers continued emphasis on shop safety and quality measurement devices. It focuses on the metal removal processes on typical equipment found in the machine shop, with emphasis on the drill press, engine lathe, milling machine and surface grinder. It covers the use of workholding devices, as well as how to properly support and locate workpieces. It also reviews the applications of the Coordinate Measuring Machine (CMM), the optical comparator and the electro-discharge machine (EDM).

 NTMA-U 1100-2

Intermediate Blueprint:

This course is designed to increase your efficiencies in blueprint reading, with an emphasis on the relationship of blueprint drawings and how they apply to manufacturing parts including lines, views, dimensioning and machining processes. It includes fraction to decimal conversion, drafting lines using geometric equations, line types, orthographic views, isometric views, offset sections, auxiliary sections, symbols and broken sections.

 NTMA-U 1120-2

Applied Mathematics:

This course is designed to increase your efficiencies in math skills and concepts that are necessary in shop activities. Emphasis on the relationship of math required for manufacturing of parts as viewed on blueprint drawings and how the concepts apply to manufacturing parts and machining processes.

SERIES 3

 NTMA-U 2300-3

CNC-Immersive to Learn:

This course introduces the tools and technology involved in computer numeric control (CNC) machining. It explains the principles of the Cartesian Coordinate System and how they apply to CNC. It also reviews the use of various metal cutting tools as they relate to CNC programming. This course will cover the process planning involved in creating CNC programs, including safety precautions, proper machine set up and operational skills, creating programs and controlling part sizes with wear offsets.

 NTMA-U 2500-3

Intermediate Applied Math:

This course is the 3rd in a series, and is designed to increase your efficiencies in math skills and concepts that are necessary in shop activities. It explains how to properly use the Pythagorean theory and explains the use of trigonometric functions and their applications. It focuses on solving right triangle trigonometry problems, and also relates these trig functions to the use of sine bars and gage blocks for use in setting up angles to be machined.

 NTMA-U 1500-3

Intermediate Blueprint Reading with Basic Essentials for GDT:

This course introduces the symbols and concepts of geometric dimensioning and tolerancing as they relate to engineering drawings.

SERIES 4

 NTMA-U 2720-4

Metallurgy:

This course introduces the nature and properties of materials. It presents a history of metals – providing background on the origins of various metals and provides an explanation of physical characteristics of metals. Students will study the chemical reactions and thermodynamics related to the production of steel as well as the key processes of iron making from the raw materials through to the final product. It stresses how metals are alloyed and formed to achieve desired mechanical properties, including comparisons between various forming processes including casting, forging, extrusion and rolling.

NTMA U NTMA-U 2800-4
Advanced Math:

This 4th course in a series is designed to increase your efficiencies in math skills and concepts that are necessary in shop activities. It includes more complex applications, such as the use of the law of sines and the law of cosines.

NTMA U NTMA-U 2900-4
Quality Control/SPC/Inspection:

This course introduces the area of quality control of mechanical parts in the industry. You will learn the skills necessary to properly inspect parts by using the skills you have obtained through blueprint reading of geometric dimensioning and tolerancing, as well as inspection tools and equipment. You will learn why these skills are necessary in the industry and how to properly apply them on the job. This course familiarizes students with the applications of statistics in process and quality control function. Upon completion, the

student will be able to verify part dimensions, location and orientation of finished products and parts.

SERIES 5
NTMA U NTMA-U 2420-5
Manufacturing Technology:

This course focuses on the machining of various metals. It will review the variations of speeds and feed rates for different types of material, as well as the use of various cutting tools.

NTMA U NTMA-U 2500-5
GD&T:

This course focuses on how to interpret and apply the concepts of geometric dimensioning and tolerancing to engineering drawings. Topics covered include fundamentals of symbols, terms used in application, positional tolerance applications, data frame and conversion tables.

NTMA U NTMA-U 2800-5
Advanced Applied Math:

This 5th course in the series covers applied mathematics that are required to solve for

unknown surfaces found on advanced blueprints.

SERIES 6
NTMA U NTMA-U 2420-6
Jig and Fixture:

This course covers the necessary information for the designs of jigs, fixtures and dies. It includes the use and application of bushings, locating devices and work holding devices used in jigs, fixtures and dies.

NTMA U NTMA-U 2410-6
Moldmaking:

This course covers the principles of injection molding, including the molding press and how it works, the basics of an injection mold and mold components. It explains the heating of cooling of molds and the runners, gates, venting and hot runner systems. It also describes the various methods of producing cavities, cores and various mold components.

NTMA U NTMA-U 2800-6
Advanced Math:

This course is the 6th in a series. It covers applied math-

ematics required to solve for unknown surfaces found on advanced blueprints.

NTMA U NTMA-U 1300-6
Die-making:

This course provides specialized instruction in die construction, processes and types related to automated manufacturing technology. This is an introduction to the basic types and construction of metal stamping dies. Topics include types of stamping dies and how they process sheet metal, standard die components, concepts of die clearances, die making terminology and materials used in stamping die construction.

To register for any of these modules please call Ken McCreight, NTMA Vice President (216) 264-2834 or email Ken (kmccreight@ntma.org).



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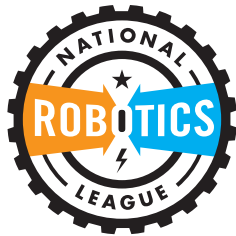
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NTMA OFFERS TOLEDO STUDENTS INFORMATION ON MANUFACTURING

On Saturday, June 7 Toledo Chapter President Mike Pasch of Quality Tool Company, Peter Davis (not pictured) of the Dundee Manufacturing Company and NRL Program Director Maureen Carruthers shared manufacturing as a career choice with Toledo students at the Toledo Public Schools' Choices Day—a district wide education and career fair. Maureen noted that “it’s important for young people to leave high school with a complete perspective of the sorts of career and educational opportunities available to them. Events like these are key because they ensure the variety of manufacturing careers available in our member companies are part of the discussion.”

If your Chapter or school system is interested in information on either the National Robotics League (NRL) program or manufacturing as a career choice, contact Maureen to discuss NTMA resources, including possibly scheduling Maureen to come to your region. You can reach her at (540) 250-2427 or mcarruthers@ntma.org.



Above: Mike Pasch of Quality Tool and president on the greater Toledo NTMA chapter and Maureen Carruthers of NRL at Toledo job fair with Toledo public schools. Below: Toledo NTMA job fair in partnership with NRL and Toledo public schools



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2014 NTMA Fall Conference Schedule of Events

Tuesday, October 21

2:00pm - 6:00pm	Registration
3:00pm - 5:00pm	Trustee & Chapter President Roundtable
5:00pm - 6:00pm	Trustee & Chapter President Reception

Wednesday, October 22

8:00am - 7:00pm	Registration
8:00am - 9:00am	Continental Breakfast
8:00am - 9:00am	First Timers Breakfast *First Timers Only
8:00am - 9:00am	Chapter Executives Breakfast *Chapter Execs Only
9:00am - 11:15am	NTMA General Membership Assembly/ NIMS Presentation
11:30am - 1:15pm	GAT Team Meeting Lunch *Team Members Only
11:30am - 1:00pm	NTMF Board Meeting Lunch *Board Members Only
11:30am - 1:00pm	Tech Team Roundtable Lunch *First Come First Served—Limit 30 Lunches
11:30am - 1:00pm	Chapter Executives Lunch *Chapter Execs Only
1:30pm - 3:00pm	Business & Strategy Tracks: A. Lean Manufacturing B. Manufacturing Metrics C. NTMA-U D. Federal Regulations Impact Update
1:00pm - 3:30pm	Optional Activity – Walking Ghost Tour
3:00pm - 3:30pm	Break
3:30pm - 5:00pm	Business & Strategy Tracks: A. Conflict Minerals/Materials B. Additive Manufacturing C. Sales & Marketing D. Export Promotion
6:00pm – 7:30pm	Transportation
7:00pm - 10:00pm	Kennametal Event: World War II Museum

Thursday, October 23

**** **Technology Day** ****

8:00am - 5:00pm	Information Center
8:00am - 10:00am	Continental Breakfast WOW Breakfast - Sponsored by Mazak
8:00am - 10:00am	Board of Trustees Meeting w/ Breakfast
9:00am - 12:00pm	Spouses Program – Mask Making
10:15am - 11:00am	Tech Seminar 1 – Sponsored by Big Kaiser Machine Interface Training
11:15am - 12:00pm	Tech Seminar 2 – Sponsored by Mazak Tool Handling and Management
12:00pm - 1:15pm	Lunch/Social Media Seminar - Sponsored by DMG Mori

Thursday, October 23 - continued

1:15pm - 2:00pm	Tech Seminar 3 – Sponsored by DMG Mori Laser Tech Machine
2:15pm - 3:00pm	Tech Seminar 4 – Sponsored by Doosan Options for Shop Consumables
3:00pm - 3:15pm	Break
3:15pm - 4:00pm	Tech Seminar 5 – Sponsored by Epicor Quote Management
4:15pm - 5:00pm	Tech Seminar 6 – Sponsored by Okuma What's Next in Technology?
5:00pm - 6:00pm	Tech Reception

Friday, October 24

8:00am - 12:00pm	Information Center
8:00am - 9:00am	Continental Breakfast
8:00am - 9:00am	Team Leaders Breakfast Roundtable *Team Leaders Only
9:00am - 10:15am	NTMA General Membership Assembly • The Franklin Partnership Updates • Team Updates
10:15am - 10:30am	Break
10:30am - 12:30am	INDUSTRY ROUNDTABLES • Aerospace / Defense • Automotive • Fluid Power • Medical • Oil & Gas
12:30pm - 2:00pm	Past Chairman's Lunch *Past Chairmen & Spouses Only
12:30pm - 2:00pm	Emerging Leaders Lunch *Emerging Leaders Only
12:30pm - 2:00pm	Workforce Development Round Table Lunch *First Come First Served—Limit 40 Lunches
12:30pm - 2:00pm	Lunch (on own)
1:30pm - 4:30pm	Optional Activity – Steamboat Jazz Cruise
2:00pm - 4:00pm	INDUSTRY ROUNDTABLES • NTMA Tools, Dies & Molds Round Table • NTMA Precision Machining Round Table I • NTMA Precision Machining Round Table II • NTMA Precision Machining Round Table III
6:00pm - 7:00pm	Cocktail Hour
7:00pm - 10:00pm	Silent Auction/Gala

Conversation Lounge – Sponsored by GF

You're invited to catch up, meet up or just relax in the Conversation Lounge.

- Open Wednesday, Thursday and Friday
- 8:00am to 5:00pm
- Located just outside the Waldorf Astoria Ballroom

2014 Fall Conference Registration

Conference Registration Fees (per person)

Early Bird Discount (Round 1)

Before August 1st

Members Only

- NTMA Member (1st company attendee) \$1195
- NTMA Member (add'l company attendee) \$750
- *limited number (10) available**
- NTMA Member Spouse \$895
- First Time Attendees \$650

***You have not attended a National Event in 3 yrs.**

***limited number (20) available**

Conference Registration Fees (per person)

Early Bird Discount (Round 2)

August 2nd to September 19th

Members Only

- NTMA Member (1st company attendee) \$1195
- NTMA Member (add'l company attendee) \$995
- *limited number (10) available**
- NTMA Member Spouse \$895

Conference Registration Fees (per person)

Standard Registration

After September 19th

- NTMA Member (1st company attendee) \$1395
- NTMA Member (add'l company attendee) \$1195
- NTMA Member Spouse \$995
- Past Service Members \$995
- Affinity Partners \$995
- All persons 6 to 20 years of age not employed full-time by the company \$295
- Non-Members (first company attendee) \$1495
- Non-Member Spouse \$1095
- Non-Member (add'l company attendee) \$1395

REGISTRANT INFORMATION

First Name _____
 Email _____
 Phone _____
 Company Address _____
 City/State/Zip _____
 Home Address _____
 City/State/Zip _____
 Spouse/Guest _____
 Children (w/ages) _____
 Addtl Employee _____
 Email _____
 Phone _____
 Home Address _____
 City/State/Zip _____
 Spouse/Guest _____
 Children (w/ages) _____

CHECK ALL THAT APPLY

____ First Conference _____ Trustee
 ____ Alt. Trustee _____ Chap. Exec
 ____ Chapter President
 ____ Past Service Member
 ____ Emerging Leaders (formerly Next Gen)

OPTIONAL ACTIVITIES

- Walking Ghost Tour—Wed. Oct. 22
\$40 per person
***limited number (50) available**
- Spouse Activity (Mask Making) - Thurs. Oct. 23
No Charge
***limited number (30) available**
- Steamboat Jazz Cruise—Fri. Oct. 24
\$40 per person
***limited number (50) available**

PAYMENT INFORMATION

CONFERENCE REGISTRATION TOTAL \$ _____

- VISA MC American Express
- Card # _____
- Expiration Date _____
- Signature _____
- Check # _____

SUBMISSION INFORMATION

Fax completed form to: 216-264-2840
 Mail completed form to: NTMA
 1357 Rockside Road
 Cleveland, OH 44134

For questions for registration assistance, please contact Brittany Belko at bbeiko@ntma.org or 216-264-2848.

Register Online:

<https://members.ntma.org/eweb/dynamicpage.aspx?webcode=eventregistration>



Payments to NTMA are not tax deductible as charitable contributions for federal income tax purposes.



SATTLER MACHINE PRODUCTS' PRANTE RECOGNIZED: A 2014 SME "30 UNDER 30"

Adam Prante blew away the competition in the 2013 SkillsUSA

CNC Lathe turning challenge—beating his competition by a full 45 minutes. That was last year, and this year, Adam is in an NTMA apprenticeship program working as an apprentice CNC setup and machine operator at Sattler Machine Products (Sharon Center, OH).

Adam Prante blew away the competition in the 2013 SkillsUSA CNC Lathe turning challenge—beating his competition by a full 45 minutes. That was last year, and this year, Adam is in an NTMA apprenticeship program working as an apprentice CNC setup and machine operator at Sattler Machine Products (Sharon Center, OH).

Adam was nominated for the 30 Under 30 honor by Toni Neary, business development for ToolingU-SME, who wrote that Adam was a pleasure to work with during the Regional Skills USA for Ohio.

Adam's interest in working with machines began with exposure to his father's woodworking and carpentry. For the last two years of high school, Adam chose to go to the Medina (OH) Career center where he spent two and a half hours a day in the shop learning to run a Bridgeport, an engine lathe, or program on Mastercam.

Adam was particularly motivated by his getting a 1996 Chevrolet S10 truck when he was sixteen and a half. "I wanted to make some pretty cool stuff for the truck rather than buying it. I painted the truck and lowered it, and last winter I got an aluminum block 5.3 V8. Then I tore the motor back out and boosted it up to 450 hp."

Typically, the NTMA apprenticeship has two or three Tooling U online classes a week: for example, two classes on controllers for a mill and lathe, a Maxi lathe or mill, or a Haas lathe or mill.

"Tooling U Classes covered machining different materials including plastics, steels, and other metals. Then we'll do a materials part in plastic, in different metals, steels and how they're made and their chemical makeup," said Adam.

During his senior year, Adam was pretty much on his own in learning CNC. His teacher was an experienced manual machine operator, so they worked together on learning the CNC ropes. Adam read everything he could about CNC and eventually his teacher said that he was good enough to win the nationals, which he did as well as winning state and regional machining skills competitions.

"The time that I spent learning CNC from the ground up paid off in the competition, and I was able to use that knowledge to my advantage," Adam said.

Adam's future plans, after finishing his apprenticeship, of course, are to become more involved with designing parts with emphasis on

their manufacturability.

Recently, Adam had the opportunity to see the "American Made" movie. A local shop, Automation Tool & Die, sponsored showing the movie, which is a documentary about two small American businesses and how they moved forward and how consumers, business owners, and government can cooperate to bring business back to the US.

Adam returns to his high school regularly where he serves as a part of the school's advisory council. He is involved in touring the shop and offering advice on how to make the class better. He also talks to students about the opportunities for good paying jobs and the bright future that a career in manufacturing can offer them. He tells them that they can look forward to good paying jobs in environments that aren't anything like the negative image that has been portrayed about manufacturing.

For the second year, Manufacturing Engineering is proud to celebrate 30 young people under the age of 30 who have demonstrated exceptional talent and leadership in Science, Technology, Engineering or Mathematics—fields that are essential underpinnings to a career in manufacturing. These young people have taken the road less traveled, and we applaud them for it. This article originally appeared in Manufacturing Engineering magazine, which can be found online at www.MfgEngMedia.com.



MIDACO CORPORATION JOINS PARTNERS IN THINC

MANUFACTURER OF AUTOMATIC AND MANUAL PALLET CHANGERS FOR CNC MACHINES PROVIDES SOLUTIONS TO ENHANCE PRODUCTIVITY AND OUTPUT.



Okuma America Corporation, a world leader in CNC machine tools, is pleased to announce that Midaco Corporation, a leading manufacturer of efficiency products for the machine tool industry, has joined Partners in THINC. As a member of Partners in THINC, Midaco offers Okuma customers the ability to keep their machines running with limited downtime. Users can be confident their Midaco pallet changing system will complement their Okuma machine tool, enhancing productivity and output.

"Partners in THINC is happy to welcome Midaco as a partner. They provide an out-

standing solution for adding an Automatic Pallet Changer (APC) to various Okuma machining centers. These APC's allow machine utilization to be greatly enhanced thus providing higher productivity and lower manufacturing costs when applied to CNC machines like Okuma's GENOS M-560 vertical machining center. This turnkey solution is well suited for manufacturers in all industry sectors and job shops as well," says Jeff Estes, Director of Partners in THINC.

Established in 1969 and based out of Elk Grove Village, IL, Midaco's automatic and manual pallet changers, automatic door

openers and accessories are designed to save manufacturing time and increase productivity on machining centers. The company continually seeks to develop and create new products to stay ahead of the technology curve, providing the latest innovations to customers worldwide.

For more information on Midaco Corporation and other members of Partners in THINC, visit <http://www.okuma.com/partners>.





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Randy Pumputis 877.510.3526 Randall.Pumputis@e-hps.com



+GF+ GF EXPANDS PRESENCE IN PROMISING AEROSPACE SECTOR

GF Machining Solutions, a division of GF, is to acquire Liechti Engineering AG, Langnau/BE (Switzerland). The company is the leading specialist of 5-axis milling machines designed to produce blades and blisks for aircraft engines and power generating turbines.

With more than 10,000 planes in the order books, aircraft production is planned to stay strong for the foreseeable future and so is the demand for engine parts. The acquisition of Liechti Engineering AG will allow GF Machining Solutions to significantly strengthen its presence in this promising market sector.

Both companies can look back to a successful cooperation over the last ten years, with GF Machining Solutions acting as a supplier for Liechti. Their competences and product ranges are also highly complementary. The current management under Ralph Liechti will remain in place and the company continues to operate out of its present premises in Langnau/BE. The two parties agreed not to disclose the purchase price and further details of the transaction.

“Liechti Engineering AG brings a wealth of know-how and a well-established reputation for high performance and superior service for its customers,” comments Yves Serra, CEO of GF. “Together, the two companies



Clockwise from the top: Machine producing blisks for aircraft engines and power generating turbines. Liechti Engineering AG is the leading specialist of 5-axis milling machines. Machine producing blades for aircraft engines and power generating turbines



offer a wide array of technologies for the production of aircraft engine parts as well as a worldwide sales and service organization to support its customers.”

“All of us are proud to become a part of GF Machining Solutions, and I am sure to have found the right partner to continue with our business,” says Ralph Liechti. “We are excited about the idea of combining our know-how with GF Machining Solutions to serve our customers in the aerospace and energy sectors with an even wider range of products and services.”

Liechti Engineering AG is a family-owned company with a yearly turnover exceeding CHF 50 million. It employs 120 people worldwide. Its customer base includes all significant names of the aircraft and power generating industries.

GF comprises three divisions GF Piping Systems, GF Automotive, and GF Machining Solutions. Founded in 1802, the Corporation is headquartered in Switzerland and is present in 32 countries, with 124 companies, 48 of them production facilities. Its approximately 14,000 employees generated sales of CHF 3.77 billion in 2013. GF is the preferred partner of its customers for the safe transport of liquids and gases, lightweight casting components in vehicles, and high-precision manufacturing technologies. You’ll find further information at www.georgfischer.com.



OKUMA AMERICA LAUNCHES NEW APP STORE

APPS FOR USE WITH THE THINC®-OSP CNC CONTROL INCREASE PRODUCTIVITY AND STREAMLINE MACHINE TOOL PROCESSES.

On August 1 Okuma America announced the launch of its new App Store, now open at MyOkuma.com. This online store provides applications for CNC control functionalities that increase productivity and streamline machine tool processes. The ability to use apps is made possible by Okuma’s revolutionary THINC®-OSP CNC control, which is built using a Windows®-based open architecture platform that allows users to easily install PC applications.

CNC CONTROL APPS INCREASE PRODUCTIVITY AND STREAMLINE PROCESSES

Okuma’s App Store contains a variety of apps that increase productivity and streamline user processes. Apps will be added on an ongoing basis, and users can even create custom apps that address their individual needs. Okuma users can visit MyOkuma.com and download apps for useful functionalities



such as:

- **Machine Alert:** Monitors machine alarm status and automatically sends an email, text or phone message to the user when an alarm condition is activated.

- **Part Flip Monitor:** Checks the chuck clamp status to be sure the operator has opened/closed the chuck before cycle start is pressed for Op20 of the part flip program. This reduces the chances that a part will be scrapped.

- **Visual Assistance Support:** Displays helpful on-demand images for the operator at any point in a part program or process. The images assist with machine setup, visual part inspection, and other functions.

- **Scheduled Maintenance:** Shows a reminder of the scheduled maintenance needed for the specific machine where the application is installed. This prompts the user to complete daily inspection tasks that maintain optimal machine performance.

EMPOWERING MACHINE TOOL USERS

The App Store helps users to achieve productivity gains with minimal investment of time and resources. “We designed the App Store with one primary goal: to empower machine tool users so they can continuously improve and customize their processes,” says Brian Sides, director of technology for Okuma America Corporation. “Apps help Okuma users grow their business, reduce overall costs, improve quality, and even compensate for a scarcity of skilled labor.”

For more information visit www.MyOkuma.com.





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WORKSHOPS FOR WARRIORS RECEIVES \$500,000 FROM THE GENE HAAS FOUNDATION TO FUND SCHOLARSHIPS FOR MILITARY VETERANS



The Gene Haas Foundation awarded \$500,000 in scholarship funds to Workshops for Warriors. The funds will allow Workshops for Warriors to provide its most deserving veteran students with stipends while they complete coursework to become certified machinists. The funds will be used as a challenge grant, and the inaugural class of recipients was announced July 3 at a lunchtime ceremony. The Gene Haas Foundation has contributed over \$1 million to date to Workshops for Warriors.

Workshops for Warriors is a San Diego nonprofit that provides free training, certification and job placement to US military veterans. Workshops for Warriors offers classes in welding, fabrication, machining, computer-aided design and manufacture, and machinery repair. Its graduates receive certifications from the American Welding Society and the National Institute of

Metalworking Skills. The school has a 100% job placement rate for its graduates, serving the dual purpose of providing a much-needed training pipeline for the US manufacturing industry, while providing veterans with life-sustaining careers. Workshops for Warriors founder Hernan Luis y Prado was recently honored by President Obama as a White House Champion of Change for his organization's successful model to help returning veterans.

Workshops for Warriors cannot yet accept GI bill funding, placing significant financial strain on enrolled veterans while they complete their coursework. The Gene Haas Foundation Machining for Warriors Scholarship will alleviate this burden for students. The inaugural class of nine scholarship recipients received their first disbursement at the July ceremony.

Since its inception in 1999, the Gene Haas Foundation has awarded deserving charities more than \$8.5 million in grants. Gene Haas is the founder of Haas

CALENDAR OF EVENTS

IMTS

September 8-13, 2014
Chicago, IL

NTMA FALL CONFERENCE

October 22-25, 2014
New Orleans, LA

MFG DAY

October 3, 2014
Manufacturers across America

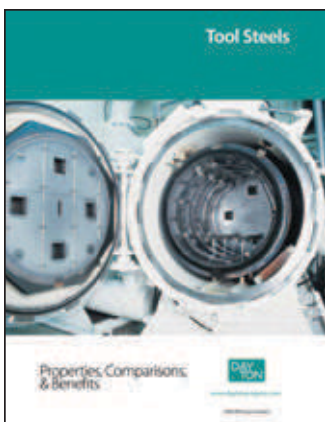
MFG MEETING

March 4-7, 2015
Orlando, FL

Automation, manufacturers of industry-leading CNC machines and technology. The Gene Haas Foundation Machining for Warriors Scholarship unites Haas Automation's leadership in the manufacturing industry with Gene Haas' personal commitment to philanthropy.



NEW DAYTON PROGRESS LITERATURE DETAILS TOOL STEEL CHARACTERISTICS AND HEAT TREATMENT OPTIONS



Wear resistance, toughness and compressive strength are just a few of the characteristics of Tool Steels, detailed in a new 6-page, full-color brochure available from NTMA member Dayton Progress Corporation. Available in print or online at <http://www.daytonlamina.com/tool-steels>, this informative brochure guides readers through the various properties and benefits of some common Tool Steels, allowing the best

selection for a specific application. In addition, the brochure also details the heat treating processes (including both heating and cooling of the material) to further manipulate the tool steels to achieve a desired result. A thorough breakdown of common Tool Steels is also provided so that readers can easily pick which steel would work best for their intended application.

Dayton Progress is a recognized leader for manufacturing and supplying tools and accessories to the Metal Stamping and Metal Forming industries globally. Dayton's more than 800 employees ship hundreds of thousands of tools each year from its 10 factories in North America, Europe and Asia to 20,000 customers in 70 countries.

Dayton Progress Corporation is a division of Dayton Lamina™, a MISUMI Group Company. As the world-wide leader in the manufacture of catalog and special punches, punch blanks and other precision tooling, they provide single source convenience for tooling in both standard-inch and metric sizes. In addition to a full standard line of precision punches, pilots, die buttons and retainers as well as custom tooling in configurations to suit any manufacturing requirements, the company also markets nanoceramic lubricating grease. For additional information visit them online at www.daytonprogress.com, e-mail them at info@daytonprogress.com or call (937) 859-5111.





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