NTMA THE RECORD

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NTMA-U NEARS 225 FULL TIME STUDENTS

Trade schools across the U.S. are beginning to feel the demand for skilled manufacturing workers, demand that is pushing enrollments to record highs. —p13

IMTS 2014

Many NTMA members, national associate members and NTMA staff were at McComick's Place in Chicago for this biannual manufacturing and technology extravaganza. —p14-15

DEVELOPING YOUR FUTURE SMART Workforce

How CEOs are solving the shortage of young, skilled workers threatening manufacturing gains. —p23

NTMA CFO ROUNDTABLE

The NTMA will hold its second CFO Roundtable on Wednesday, November 12 in St. Louis. —p31

NATIONAL NTMA, CALIFORNIA CHAPTERS MEET WITH GENE HAAS FOUNDATION AND HAAS AUTOMATION

THE GENE HAAS FOUNDATION HAS BECOME A SIGNIFICANT INVESTOR IN CONTINUING EDUCATION AND STRATEGIC INVESTMENT IN WORKFORCE DEVELOPMENT AND EDUCATION WITHIN THE MANUFACTURING INDUSTRY. — P8

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NEW VTM-2000YB MULTITASKING CNC TURNING CENTER PROVIDES

New NTMA Focused Programs

Emerging Leaders Webinar - October 7, 2014

CFO Roundtable - November 12, 2014

Sales & Marketing Seminar - April 16, 2015

CALENDAR OF EVENTS

MFG DAY October 3, 2014 Manufacturers across America

EMERGING LEADERS WEBINAR Stepping UP to Leadership October 7, 2014

> NTMA FALL CONFERENCE October 22-24, 2014 New Orleans, LA

CFO ROUNDTABLE November 12, 2014 St. Louis, MO

TEAM LEADERS MEETING January 18, 2015 Miami, FL

MFG MEETING March 4-7, 2015 Orlando, FL

HANNOVER MESSE April 13-17, 2015 Hannover, Germany

SALES & MARKETING SEMINAR April 16, 2015 Akron, OH

ONE VOICE LEGISLATIVE CONFERENCE April 21-22, 2015 Washington, D.C.

> NTMA LEADERSHIP SUMMIT June, 2015 Cleveland, OH

> > FALL CONFERENCE October, 2015 St. Louis, MO



This month we will review some of the Team Roundtables for the Fall Conference in New Orleans. We'll also review some of the most important and under-rated workers, our Chapter Executives and the Star Chapter Program.

FALL CONFERENCE BREAKFAST AND LUNCH INFORMATION

If you are planning on attending the upcoming Fall Conference in New Orleans, you may have noticed a few breakfast and lunches are included. Some are by invitation only, some are first come, first served and require that you sign up when you pick up your registration packets at the hotel. The events include:

WEDNESDAY 10/22, 8:00 FIRST TIMERS BREAKFAST

Reserved for all first timers WEDNESDAY 10/22, 8:00 CHAPTER EXECUTIVES BREAKFAST

Reserved for Chapter Executives

WEDNESDAY 10/22, 11:30 GAT TEAM MEETING LUNCH

Reserved for GAT Team members and their invited guests

Must sign up at registration

WEDNESDAY 10/22, 11:30 NTMF BOARD MEETING LUNCH

Reserved for NTMF Board Members only

WEDNESDAY 10/22, TECH TEAM ROUNDTABLE LUNCH

Open for all; first come, first served Must sign up at registration

WEDNESDAY 10/22, 11:30 CHAPTER EXECUTIVES LUNCH

Reserved for Chapter Executives Must sign up at registration

THURSDAY 10/23, 8:00 BOARD OF TRUSTEES BREAKFAST AND MEETING

Reserved for Board of Trustees and their invited guests

CHAIRMAN'S CORNER

TED TOTH / NTMA CHAIRMAN OF THE BOARD

FRIDAY 10/24, 8:00 TEAM LEADERS BREAKFAST

Reserved for Team Leaders and their staff liaisons

FRIDAY 10/24, 12:30 PAST CHAIRMAN'S LUNCH

Reserved for all Past Chairmen and their wives

FRIDAY 10/24, 12:30 EMERGING LEADERS LUNCH

Reserved for Emerging Leaders only Must sign up at registration

FRIDAY 10/24, 12:30 WORKFORCE DEVELOPMENT ROUNDTABLE LUNCH

Open for all; first come, first served Must sign up at registration

You will also notice that most Member Teams are having roundtables instead of a Team Meeting. At past conferences it was not understood that most team meetings were open to all members. This year Teams will provide a short summary of current projects, then open up the roundtable for discussion. We are hoping the roundtable discussions lead to providing the Team with feedback and ideas for their current programs. This new format will allow more open communications between our Member Teams and our Members.

CHAPTER EXECUTIVES AND THE STAR CHAPTER PROGRAM

One of the overlooked and misunderstood NTMA Teams is our Chapter Executives Team. As this team is comprised of Chapter Executives, it is the only current team that is not a member team – meaning that it is not entirely made up of NTMA members. This team reflects the varying Chapter Executive structures: some are full or part time chapter employees or contract employees, some are from administrative firms hired to run the chapters, some are NTMA members or their employee and some are members' spouses. So this team is very diverse and dedicated.

The Chapter Executive Team is part of the Member Value Leadership Team, which is led by Paul Sapra, from Upland Fab, Inc. (Ontario, CA). The CE Team is led by Tami Adams, Northwestern PA Chapter Executive. The Staff Liaison is Kelly Kasner, a part time NTMA employee (Chapter Support Coordinator) and the Michiana Chapter Executive.

The Team has many duties:

• Welcoming, training and mentoring new CEs.

• Managing the Star Chapter Program.

• Developing chapter best practices.

• Providing feedback to staff on NTMA products and services.

First of all, let me describe the basic tasks that many of our CEs perform, noting that every chapter is different and Chapter Executives' roles are varied:

• Aid the local board to develop and run chapter and regional meetings/events.

• Create marketing and managing registration for local and regional meetings/ events.

• Manage chapter finances, including budgets, invoicing/receivables and payables.

• Manage chapter operations to assure legal, bylaw and IRS compliance and best practices.

• Help orient chapter board members.

• Assist with NTMA president, chairman and/or staff visits.

• Help promote national events and programs.

• Aid the chapter board with operating committees and functions.

• Develop and manage Chapter com-CONTINUED ON - P5

THE RECORD

OPERATIONS & EDITORIAL

Dave Tilstone, President Emily Lipovan, Managing Director and Editor Sally Safranski, Associate Editor

NTMA EXECUTIVE TEAM

Theodore O. Toth, Jr., Chairman Rosenberger-Toth - Pennsauken, N7

Herb Homeyer, Vice Chairman Homeyer Precision Manufacturing - St. Louis, MO

Dave Sattler, Treasurer Sattler Companies - Sharon Center, OH

Ken Seilkop, Secretary Seilkop Industries - Cincinnati, OH

Robert Mosey, Past Chairman of the Board Moseys' Production Machinists Inc. -Anaheim, CA

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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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munications, including electronic, social media and print formats.

The NTMA provides assistance for chapters and their CEs. In a few cases someone from the NTMA staff functions as the chapter's CE and in other cases staff helps direct members to the meetings and the local CE is the boots on the ground who helps run local events.

Chapter Executives help run our chapters and help keep a connection between the local chapter and the national association. THE STAR CHAPTER PROGRAM

This program was developed in 2008 by the Chapter Executive Team. It was developed with the intent of creating a standard of what a NTMA chapter needs to look and act like, then measuring those standards with an annual Star Chapter survey. A number system determines Star Chapter status.

Using the CE's best practices located on the website and sometimes mentor assistance from other chapters, chapter are able to identify and improve their weak areas with a goal to improve their score for next year. Mentors are available from the Chapter Executive Team and from Star Chapters to assist chapters that wish to improve operations, develop best practices and achieve Star Chapter status.

Star Chapter Awards have been traditionally presented at the spring MFG Mtg. However, more CEs attend the CONTINUED ON - P6



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Chapter Leadership Summit and the Fall Conference, so the 2015 Star Chapter Awards will be presented our 2015 Fall Conference in St. Louis.

The 2014 Star Chapters are: Arizona Chapter, Boston Chapter, Connecticut Chapter, Kansas City Chapter, Los Angeles Chapter, Michiana Chapter, North Texas Chapter, Northwest Pennsylvania Chapter, Pittsburgh Chapter, Rock River Valley Chapter, St. Louis Chapter and Western Massachusetts Chapter.

The Most Improved Chapter: Rock River Valley Chapter, received a \$1000 award.

The Star Chapter of the Year was the Michiana Chapter. They received \$500 and the Star Chapter Trophy.

The goal of the Star Chapter Program is to bring all NTMA chapters up to the same level of operational standards and best practices.

CHAPTER LEADERSHIP SUMMIT

For the last two years the NTMA was been holding a Chapter Leadership Summit. All Chapter Executives and chapter leaders are invited. We have a few goals with this summit, among them educating new CEs and chapter officers, opening the communication between national and chapters, and peer networking. **CHAPTER RESOURCES**

Did you know that there is a list of the

best practices categories on the NTMA website, listed in the Chapter Resources section? This includes but is not limited to:

BEST PRACTICES AND GOOD IDEAS

~ Finance, Annual Meetings, Chapter Meeting Program Ideas - Examples and How To's, Program Professionals You Can Book, Evaluation, Sample Surveys, Social Events, and Non-dues Revenue

BOARD/GOVERNANCE RESOURCES

~ Assorted Board/Leadership Aids and Articles, Board Job Descriptions Samples, Board Meetings, Orientation, Recruitment Responsibilities, and Committees, How to Run a Great Meeting or Seminar, Sample Policies, and Strategic Planning

• CHAPTER ADMINISTRATION

~ Chapter Executive Job Position Info Center, and Chapter Executive Orientation

• CHAPTER AFFILIATION CENTER

~ Chapter Start-up Guide

NON-PROFIT ORGANIZATION HELPFUL LINKS

Our Chapter Executives play an impor-

tant part in our association. They are the glue that holds us together. The next time you talk to your chapter's CE, thank them for what he/she does.

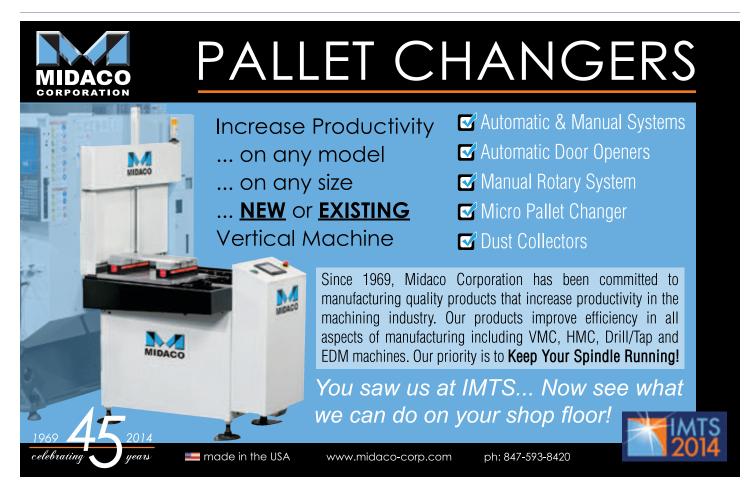
As a side note: back in 2004 thru 2006 our chapter was struggling; as the chapter president, I was also acting as our chapter's CE. Networking with the other CEs gave me the support I needed to turn around and grow our chapter. I was recently told that I was the first CE to become a National Chairman. I personally know what it takes to be an NTMA Chapter Executive and I give them my respect and support.

Next month we will review IMTS2014 and other Member Value Tools.

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

no Call







Welcomes New Members

BLACK WING MACHINE, LLC

Northern Utah Chapter Mr. Rob Clark 673 W. 1st Street, Building 4A Bay 5 Ogden, UT 84404

DC MACHINE, LLC General Mr. David Zeller 3420 C Street NE, Suite 303 Auburn, WA 98002-1752

EXPRESS EMPLOYMENT PROFESSIONALS

National Associate Robert A. Funk 9701 Boardwalk Boulevard Oklahoma City, OK 73162

GRACE ENGINEERING CORPORATION

Detroit Chapter Mr. Jeff White 34775 Potter Street Memphis, MI 48041

OWENS MACHINE & TOOL COMPANY

North Texas Chapter Ms. Danita Grill 561 N. Cowan Avenue, Suite 201 Lewisville, TX 75057-3099

> REX AIR, INC. Detroit Chapter Ms. Barbara Depew 230 7th Street Cadillac, MI 49601

ROSS ENGINEERING & MACHINE, INC.

Michiana Chapter Mr. Eric Morris 70100 Stephens Street Walkerton, IN 46574-1243

SNK AMERICA, INC.

National Associate Mr. Mike Schlipf 1150 Feehanville Drive Mount Prospect, IL 60056

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NTMA

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NEW VTM-2000YB MULTITASKING CNC TURNING CENTER PROVIDES HEAVY-DUTY CONSTRUCTION FOR LARGE PARTS MACHINING

CNC TURNING CENTER FROM OKUMA IS IDEAL FOR THE AEROSPACE INDUSTRY.

At IMTS 2014 Okuma introduced its new VTM-2000YB multitasking CNC turning center, which provides heavy-duty construction for large parts machining. The extreme rigidity and powerful cutting capabilities of this machine make it ideal for machining large diameter workpieces, such as those in the aerospace industry. The vertical architecture offers the advantage of "natural" part handling and excellent chip fall, while taking up minimal floor space. At IMTS this machine utilized the full work envelope, cutting on a fan hub and engine case, featuring SuperNURBS and tooling from Sandvik, a member of Partners in THINC.

The VTM-2000YB takes the successful concept of the VTM-200YB and advances the design to increase rigidity, power, B-axis range, speed and accuracy. It utilizes Okuma's Thermo-Friendly Concept to enhance thermal stability, and has powerful turning and milling capabilities with .001° B and C axes. This CNC turning center has 1.6 meters of Y-axis travel, combines powerful turning and milling functions for large parts in the same machine and includes a 36 tool ATC for tool

changing.

KEY SPECS OF VTM-2000YB CNC TURNING CENTER

Max Turning Diameter: mm (in) Ø 2,000 (Ø 78.74") Spindle Nose Type: 380mm Flat Nose Lathe Spindle Speed: min¹ 4~200 Milling Spindle Speed: min¹ 10,000 Rapid Traverse (X/Y/Z) m/min (ipm) 32/32/32 (1,260/1,260/1,260) Rapid Traverse (B/C): RPM 19.5/20

NTMA





National NTMA, California Chapters meet with Gene Haas Foundation and Haas Automation

The Gene Haas Foundation has become a significant investor in continuing education and strategic investment in workforce development and education within the manufacturing industry. The NTMA began a dialogue with new Foundation Administrator, Kathy Looman, as she began her tenure with the Gene Haas Foundation in April 2014.

Managing Director Emily Lipovan and NRL Program Director Maureen Carruthers worked collaboratively from different angles on the foundation and Haas Technical Education Center (HTEC) efforts. Learning more about the priorities of one of the largest partners to education in our industry was and is a top priority.

The investment worked. Looman has identified NTMA as a priority partnership for her and the foundation's agenda and notes that rebuilding the relationship with Haas Automation is equally important. The areas of interest included the NRL, NTMA-U in how it could further elevate the HTEC Schools, and the roles NTMA chapters and national could play with the Haas Factory Outlets (HFOs).

The next step was not only an invitation from Gene Haas Foundation for our Managing Director to come and meet and discuss strategy, but also a summit with chapter leadership from the four California Chapters. With the date set for the last week of August, Haas Automation also stated that they would sit in on these meetings.

This beginning dialogue identified barriers and opportunities for all parties for further growth, which was encouraging. The beginnings of a blueprint were created and another invitation to further develop these ideas was offered to Lipovan and Carruthers with Looman, Peter Zeirhut of Haas Automation and Bob Skodzinsky of HTEC.

California chapter leaders included the San Diego and San Francisco Chapters (LA and San Fernando Valley had last minute cancellations, but are enthusiastically involved in all discussions). Haas Automation suggested that the chapters work with their HFO as the first line of technical communication and support and that Looman is their liaison with the Gene Haas Foundation.

Haas brings ambassadors, underwriting and sponsorship support. Haas Automation and the Gene Haas Foundation invited all California NTMA members to the Northern CA HTEC on October 25 at DeAnza, Laney and Chabot Colleges. The National HTEC is July 2015 at Cal Poly San Luis Obispo. CA Chapters were identifying other collaborations with SAE Automotive teams and further tie-ins with SFO NTMA.

A discussion followed about eligibility with chapters for funds from the Gene Haas Foundation and it was confirmed that the recipient of the funds must be a 501(c)3.

NTMA



HANNOVER MESSE 2015 - April 13-17, 2015 - Hannover, Germany

Exhibition Headlines



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What are capacity charges on electricity bills?

CAPACITY RATES INCREASED ON JUNE 1, 2014 AND WILL INCREASE AGAIN ON JUNE 1, 2015 FOR MANY ELECTRICITY CUSTOMERS IN THE PJM INTERCONNECTION REGION

ENERGY

Do you understand the "capacity charge" line item on your electricity bill? Consumers can greatly benefit from learning more about this charge, which can be reduced and managed through best practices. The capacity charge is comprised of two separate components: 1) peak load contribution, and 2) capacity rate. Peak load contribution (PLC) is a controllable factor, meaning electricity customers potentially can reduce it. Capacity rates, on the other hand, are non-negotiable and are decided in advance. For example, in the PJM Interconnection region, which transmits electricity to 13 states, capacity rates are decided three years prior to taking effect.

WHAT IS PEAK LOAD CONTRIBUTION?

Electric utilities measure and average each customer's energy usage in kilowatts on the five highest demand days of each year, and then provide that average, known as peak load contribution (PLC) or "installed capacity tag," to electricity suppliers. Suppliers use each customer's PLC from the prior year to calculate monthly capacity costs/obligations. Each utility bill is different, and each utility may call the PLC something else, such as "demand charge" or "billed load KW." In any case, customers should be able to review their bills and identify their PLCs at a glance.

Electricity consumers can reduce their PLC by reducing energy consumption on the five days of the year when they suspect peak electricity demand on the grid could occur. Electric utilities will use the customer's energy consumption on these five days to calculate their average PLC for the following year.

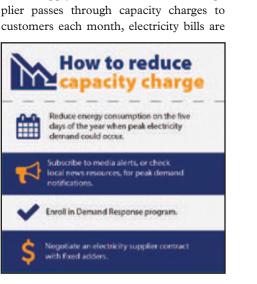
WHAT IS A CAPACITY RATE?

To ensure sufficient energy is always available to meet demand, electricity suppliers purchase adequate capacity to cover their total customer peak load. Capacity auctions in the PJM Interconnection region are held three years in advance. Taking effect each year on June 1, capacity rates are passed through to consumers as part of their electricity supply charge.

Capacity rates increased drastically on June 1, 2014, from \$28.45 to \$128.17 per megawatt day (MW-day), for many electricity customers in the PJM Interconnection region, which is the regional transmission organization that transmits electricity to 13 states. For many of these customers, capacity rates will increase again on June 1, 2015. WHAT IS A CAPACITY CHARGE?

The total monthly capacity charge on an electricity bill is the peak load contribution in kilowatt hours multiplied by the capacity rate in dollars. This charge appears as a per-

	RPM Rate				
Utility	2013/14*	2014/15**	2015/16***	2016/17***	
American Electric Power (AEP)	528.45	\$128.17	\$134.62	\$59.37	
Duke Energy Ohio (Duke)	\$28.45	\$128.17	\$134.62	\$59.37	
Dayton Power & Light (DPL)	528.45	\$128.17	\$134.62	\$59.37	
FE-OH	\$28.45	\$128.87	\$294.03	990.54	
Atlantic Electric	\$248.30	\$137.61	\$165.78	\$118.89	
BGE	\$231.58	\$137.60	\$165.78	5118.09	
ComEd	\$28.45	\$128.17	\$134.62	\$59.37	
BLCO	\$28.45	\$128.17	\$184.62	\$59.37	
Delmarva	\$248.30	\$145.32	\$165.78	\$118.09	
JCP66	\$248.30	\$137.61	\$165.78	\$118.89	
Met-Ed	\$282.55	\$137.60	\$165.78	\$118.89	
PECO	\$248.30	\$137.61	\$165.78	\$118.89	
Penelec	5232.55	\$137.60	\$165.78	\$118.89	
Penn Power	\$28.45	\$128.17	\$294.03	\$90.54	
PEPCO	\$244.94	\$137.60	\$165.78	\$118.89	
otomac Edison/West Penn Power	\$28.45	\$128.17	\$134.62	\$\$9.37	
PPL	\$212.55	\$137.60	\$165.78	\$118.89	
PSEG	\$248.30	\$170.24	\$165.78	\$177.61	



centage or line item on electricity bills. All

suppliers must pay identical capacity charg-

es to the utility, but whether those charges

are passed through to customers depends

on the supply contract conditions. If a sup-

directly impacted. If a supply contract stipulates that adders, such as capacity charges and non-energy costs, are fixed, then bills are not affected. Although each supplier contract is different, many suppliers omit capacity charges and non-energy costs from their fixed-price offers. Contract terms are also important. For customers currently locked into a supplier contract that expires in 2014 or 2015, capacity charges will likely increase after their contract expires, and future supply contracts may be impacted, as well.

HISTORICAL DATA

Because capacity rates are determined three years in advance in PJM, past market trends influence today's rates. Capacity rates were low throughout the PJM Interconnection during fiscal year 2013-2014 because those rates were decided in 2010 when the U.S. economy was beginning to recover from a recession. Power demand was low, which led to lower capacity rates. Also in 2010, demand response programs became more prevalent, helping consumers to lower PLCs that are an important component of capacity charges.

Today's capacity rate increases are partly because energy experts are cognizant of CONTINUED ON - P13

^{**} Based on RPM First Incremental Auction Results *** Based on RPM Base Incremental Auction Results



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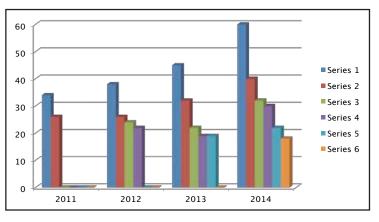
NTMA-U NEARS 225 FULL TIME STUDENTS

Trade schools across the U.S. are beginning to feel the demand for skilled manufacturing workers, demand that is pushing enrollments to record highs.

NTMA-U is also on that upswing, with 58 new students this fall sememster. In September 2011, NTMA launched the on-line training program, NTMA-U (the brainchild of Herb Homeyer – Homeyer Precision Manufacturing and then Workforce Development Team Leader) with thirty-four Series 1 apprentices (Identified on the 2011 chart with the color blue, with the second semester for those students identified by the color burgundy). Fast-forward to May 2014: NTMA-U graduated 18 of those first year apprentices (identified in the 2014 graph as Series 6 in gold).

As most in the industry are aware, American manufacturers are enjoying a rebirth of our trade, fueled in part by the return of overseas production back to the United States. Our members have an urgent need for high-skilled workers such as precision machinists and tool-and-die makers who are knowledgeable in our trade. The problem in the past was identifying where that needed training could be found. NTMA-U Modules and courses have been developed by our Education Team to fit the immediate and specific workforce development needs of our members.

NTMA



U.S. Environmental Protection Agency rules and regulations coming into play, forcing the retirement of many coal-fired power plants. The U.S. Energy Information Administration forecasts that 16% of coalfired capacity available at the end of 2012 will be retired by 2020. Adequate capacity is a concern, causing capacity rates to increase.

OUTLOOK

In Fiscal Year 2016-2017, all capacity rates in the PJM Interconnection region will decrease, most notably in First Energy Ohio and Penn Power regions, where prices per MW-day will decrease from \$294.03 to \$90.54. As capacity rates for Fiscal Year 2017-2018 will be established in 2014, today's market conditions are driving factors.

Aging infrastructure concerns, such as the prevalent need to upgrade the nation's grid, generators, and transmission systems, are major influencers. Planned coal-fired generation retirements are another primary driver. Two dozen coal-burning generators in the U.S. are scheduled for decommissioning beginning in 2015. Natural gas storage capacity, coupled with increased demand for natural gas-fired generation, will also influence future PJM capacity auction results.

NTMA endorses APPI Energy to provide unbiased energy consulting services to members. For more information on capacity charges and how to reduce energy costs and consumption, contact NTMA's trusted energy experts at 800-520-6685 or info@appienergy.com.

NTMA

WEB-BASED MODULE TRAINING

NTMA-U Modules began mid-September. However, there's still time to register - you can sign up this month with the understanding and commitment that the module must be completed by December 21, 2014.

• Modules are self-paced and interactive.

• Each module takes approximately 30-40 hours to complete.

• Instruction includes quizzes to progressively test the user's understanding.

• Content introduces basic concepts, sound manufacturing practices and practical uses – key topics that are required to become successful in the manufacturing trade.

Participants can earn 21 articulated education credits with the completion of 18 modules, Certified Journeyman's Status and NIMS credentials.

The new modules introduce a select training format for users, from the basics of manufacturing technology courses to Advanced Manufacturing Procedures:

NTMA 1000 Basic Math / NTMA 1100 Basic Blueprint / NTMA 1110 Basic Shop Technology / NTMA 2110 Manufacturing Applied Intermediate Math / Intermediate Blueprint Reading / NTMA 2200 Intermediate Shop Technology / NTMA 3500 Manufacturing Technology / NTMA 3500 Manufacturing Technology / NTMA 4420 Specialty Materials / NTMA 4600 CNC- Programming Operations / NTMA 4800 Quality Control – SPC / Inspection / NTMA 5500 GDT / NTMA 5210 Advanced Applied Math / NTMA 5720 Advanced Manufacturing Technology / NTMA 5901 – Advanced Manufacturing Processes / NTMA 6300 Diemaking - / NTMA 6410 Moldmaking / NTMA 6500 Jig and Fixture / NTMA 6800 Advanced Math II / NTMA 7300 Diemaking

Module cost is only \$199 for each topic, or three topics taken by the same student in the same semester for a total of \$449. A \$148 savings.

For more information please contact: Ken McCreight (kmccreight@ntma.org) or call (216) 264-2834.

NTMA

IMTS 2014

September 2014 was, of course, IMTS month. Many NTMA members, national associate members and NTMA staff were at McCormick Place in Chicago for this biennial manufacturing and technology extravaganza.

"The buzz at IMTS was advanced manufacturing technologies that will change the future of manufacturing. From a car made by additive manufacturing at IMTS that drove off the show floor on Saturday to hybrid machines that combine additive manufacturing and 5 axis machining capabilities, the show was a must see for our members. The NTMA Tech Tours were a high point for members who wanted a personalized overview of the world's technology leaders latest developments and how they could help our members be more competitive."

Dave Tilstone, President, NTMA

"The sheer number of visitors – 114,147 – gives proof that there is plenty of interest in manufacturing and the technology that makes it more efficient, more productive, more flexible, and more innovative," noted Douglas Woods, AMT President. Comments from among the NTMA membership and those who exhibited at IMTS reflected the excitement and energy.

A new NTMA member feature at this year's IMTS: Tech Tour. Tours were offered by:

Abbott Workholding **BIG Kaiser** DMG MORI Doosan Epicor Exact JobBOSS ExOne GF Machining Solutions GROB Kennametal Makino Mazak Midaco Okuma **Royal Products** Sandvik Walter USA

Thank you to each of these NTMA partners for their generous time opening up their booths to host the NTMA members.

NTMA



The Strategic Planning group of ISTMA. ISTMA board members and association presidents came from South Africa, Brazil, Argentina, Finland, The UK, Portugal, Canada and the U.S. to conduct two days of strategy meetings during IMTS.



Clockwise from above:

-Gisbert Ledvon welcomes Tech Tour attendees to the GF Machining Solution booth

-Walter USA booth with tour given by Mirko Merlo, CEO Walter AG who welcomed NTMA and shared the Walter story

-Tiffany Bryson, National Account Manager and Jeff Walmsley, Director of Membership and New Business Development

-Mazak Pre-show tour given by Rick Ware

-Reid Leland, President of Lean Werks and Chris Kaiser, BIG Kaiser President at the Tech Tour Preshow breakfast hosted by BIG Kaiser

-Akron Chapter members Shannon Adolph, FM Machine; Jim Bradshaw, Allen Randall Enterprises Inc. and Joel Christian, FM Machine



















Above, starting from the top: NTMA Member Ahaus Tool & Engineering at IMTS

Tech tour at Okuma

TCI Precision Metals at IMTS

BIG Kaiser's booth at IMTS

IMTS SMARTFORCE STUDENT SUMMIT – An NRL TEAM'S EXPERIENCE

BY ALYSSA MUTTILLO, JULIE SCHIFFER AND ANA MARIA VARGAS, BEAUMONT SCHOOL

Beaumont School's varsity robotics team traveled to Chicago from Cleveland Heights, Ohio to display and demonstrate our robot at the International Manufacturing Technology Summit (IMTS) and SmartForce Student

Summit. We were invited by Maureen Carruthers of the National Robotics League to this biannual conference that showcases the latest technological advances in the field of manufacturing. Companies from around the world exhibited their newest products and processes. Operating in conjunction with professionals, SmartForce Student Summit exposed students of all ages to potential STEM careers in manufacturing.

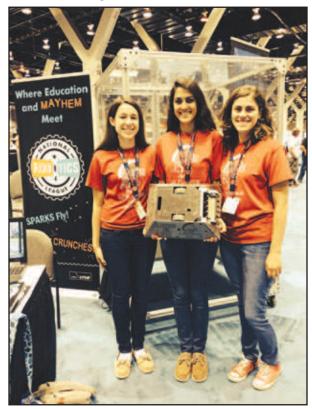
After we arrived at McCormick Place, we were amazed by all that we saw. We were gratified to recognize technologies that we had used before, as well as intrigued by new and innovative machinery. Maureen enthusiastically greeted us at the NRL booth. We quickly situated our equipment and took a

few minutes to explore what the summit had to offer. Walking from booth to booth, we talked to students and professionals from different organizations. One student from Northern Illinois University explained the unique structure of his autonomous robot's wheels which allowed it to move precisely in any direction. As we explored the FIRST Robotics station, a female reporter asked to take our photo to represent the "girl power" present at the Summit.

We returned to the NRL booth to begin a demonstration of our robot. We plugged in our newly charged battery, replaced screws and set Alexander the Great into the safety cage. The sound of our weapon in action attracted a large crowd. We answered their questions and encouraged them to learn more about combat robotics and the NRL.

Ultimately, we had a memorable day. We noticed that the vast majority of the partici-

pants were male. Despite this fact, we felt no hesitation in exploring and engaging in all activities. Today, we were definitely in the minority. Perhaps, in a few years, this will no longer be the case.



HIGHLIGHTS OF THE DAY:

• Viewed the zero-emission 3D printed car that is being printed over the course of the Summit

• Learned MasterCam's more advanced features, such as a sprocket -rendering application

• Earned an official FIRST Robotics robot driver's license

• Controlled a robot that was designed to retrieve and launch a ball

• Saw one of the first all-electric cars which was built in Cleveland, Ohio in 1908

Sat behind the wheel of a 2015 Corvette
Climbed into the Carbiliner vehicle, a jet-propelled car

• Briefly visited Millennium Park and the famous "Bean" sculpture Cloud Gate

You can learn more about Beaumont School at www.beaumontschool.org

NTMA

GF Machining Solutions

Serving moldmakers and manufacturers of precision components, GF Machining Solutions is the North American leading supplier of AgieCharmilles wire cut, die-sinking and hole-drilling EDM machines; Mikron 3- and 5-axis high-speed and high-performance milling machines; 3D laser texturing solutions; System 3R clamping and palletization systems; automation solutions; and spare and consumable parts.

GF Machining Solutions' UPTIME+ service and support program further leverages the competitive advantages of the company's advanced product portfolio through applications expertise, comprehensive training, technical assistance, preventive maintenance, world-class warranty coverage as well as parts and consumables.

Originating in Switzerland in 1861, GF Machining Solutions is part of the Swiss Georg Fischer Group, which has 50 locations worldwide. While Lincolnshire, Illinois is home to the company's U.S. headquarters, manufacturers can benefit from four application centers located nationwide in Lincolnshire, Illinois; Holliston, Massachusetts; Irvine, California; and Charlotte, North Carolina.

GF Machining Solutions 560 Bond Street Lincolnshire, IL 60069 847-913-5300 www.gfms.com/us



CUT 200 Dedicated

Aerospace-dedicated EDM Unveiled at IMTS

For the first time in the United States, at IMTS 2014 in Booth #S-8754, GF Machining Solutions debuted its new CUT 200 Dedicated wire electrical discharge machine (EDM) for aerospace work. The machine delivers some of the industry's highest levels of speed, performance, quality and productivity — giving manufacturers more control of production costs.

The CUT 200 Dedicated features a built-in A/B tilt/rotary table to easily cut complex aerospace alloy components such as turbine disks using B-axis rotation and +/- 20-degree A-axis tilt. It also incorporates on-machine, in-process inspection that encompasses a measuring probe and supporting software.

To significantly reduce non-cut times, the CUT 200 Dedicated boasts extremely fast axis speeds and quick wire threading. The latest generation of GF Machining Solutions' spark generators allows the machine to cut up to speeds of 38"2/hour (400 mm²/min) and up to 30-degree tapers in the Z-axis height, while also producing superior part surface finishes and eliminating recast layers and micro-cracks. Additionally, energy saving functionality and advanced software help reduce operational costs and provide increased system connectivity.

GF Machining Solutions Expands Presence in Promising Aerospace Sector

GF Machining Solutions, a division of GF, recently acquired Liechti Engineering AG, Langnau/BE (Switzerland). Liechti 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 allows 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 10 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 has a yearly turnover exceeding CHF 50 million and employs 120 people worldwide. Its customer base includes all significant names of the aircraft and power generating industries.



New West Coast Facility

GF Machining Solutions has opened a state-of-the-art facility in Southern California. This "Center of Competence" is part of a brand new, 105,000-square-foot Georg Fischer campus in Irvine, Orange County. With its large machine demonstration space, customer training rooms and resources for sales, service and applications staff, as well as an extensive spare parts and consumables warehouse, this impressive facility will further strengthen support for West Coast customers.

The region's manufacturers will have the opportunity to experience what the leading provider of high-speed machines, EDM, laser texturing and automation solutions can offer them at an open house and ribbon-cutting ceremony scheduled for October 9-10 in Irvine. During the event, visitors can tour the facility and consult with application and product specialists from GF Machining Solutions.

According to Gisbert Ledvon, director of business development for GF Machining Solutions, "GF Machining Solutions is committed to continuously offering the highest level of customer application support. This commitment is evident in the opening of our Center of Competence in California. We look forward to providing our West Coast customers with even more of the solutions they need to maximize the productivity and profitability of their operations."



HEM 500U Offers Cost-Effective 5-Axis Milling

GF Machining Solutions' Mikron HEM 500U milling machine provides high-performance, high-value 5-axis capabilities to manufacturers focused on efficient, accurate and reliable parts production.

+GF+

Ideal for cutting parts from aluminum alloys and steel, the HEM 500U features a highly dynamic 12,000-rpm ISO-B40 spindle and 30-tool magazine that provides a 2-second chip-to-chip time for high-speed continuous milling operations and increased spindle uptime. Additionally, a 20,000-rpm spindle and 60-tool changer are available.

A trunnion table measuring 19.7" (500 mm) in diameter and accommodating workpiece weights up to 440 lbs tilts +2.000"/-4.330" in the B-axis and rotates 360 degrees in C for full 5-axis simultaneous machining, as well as 3 + 2 machining and 5-side positioning. Axis travels in X, Y and Z measure 19.7", 17.7" and 15.7", respectively, while a distance of 5.9" between the machine spindle nose and rotary table surface allows for ample maneuverability around workpieces.

The highly robust HEM 500U works well under a variety of working conditions. Its C-frame structure supports a cross-sledge for the transversal X- and Y- movements. All three linear axes are located on a sturdy block that houses the B-axis. The vertical Z-movement, which contains the inline spindle, mounts to the rigid Y-axis column.

The HEM 500U relies on a new Heidenhain iTNC 530 control for quick and reliable machining. This versatile, workshop-oriented control for full 5-axis simultaneous machining features an integrated digital drive control with integrated inverter, enabling it to produce a highly accurate workpiece contour while machining at high velocity. The HEM 500U also comes equipped with Smart machining modules that provide advanced levels of monitoring critical to the production of aerospace and defense parts.

Featuring a small footprint, the HEM 500U is ideal for tight setup areas in small job shops and large production plants. The attention to the ergonomics of the machine's design allows for easy access to workpieces. Its highly accessible structure makes it possible to load and unload workpieces using a forklift as opposed to a crane. Additionally, an optional compact pallet changer is available to further enhance productivity and capacity.

Get Out and Vote.... for Manufacturing!

Washington, DC - It's that time again: the weather's getting cooler, Halloween's approaching, and Congressional political ads are running on TV. That's right, campaign season is back, and it's time for manufacturers to have their voices heard at the polls on November 4.

No matter your political views, the most important thing is to turn out and vote. Each election outcome depends heavily on a candidate's ability to mobilize voters. On non-Presidential election years, it tends to be even more challenging to get people to the polls, which is why it's all the more important to participate this year.

The Senate majority is clearly within reach for Republicans, according to most political experts, though each race will be hotly contested all the way to the finish line. Meanwhile, as President Obama remains in office for two more years, many Democrats are focused on gaining a few seats back in the House of Representatives, where Republicans currently hold a 17-seat majority.

To help all manufacturers participate in the important upcoming elections, One Voice has assembled a number of tools offering information about the various candidates for office. Pay a visit online to www.metalworkingadvocate.org and choose "Resources" to find the following:

• A "Get Out The Vote" (GOTV) poster for the shop;

• Congressional Scorecard – This tool allows you to see members of Congress voted and their level of support for small and medium-sized manufacturers;

• Invite a Member of Congress to Your Plant – A how-to guide to requesting that an elected official tour your plant, which is by far one of the most effective ways to educate policymakers about our industry;

• Voter Registration and Early Voting Options – Help employees register to vote, find out if you can vote early, and locate a polling location.

Manufacturers can make a difference. Hosting plant tours for political candidates helps them understand what it takes to operate a business, and how the industry contributes to the broader economy. Help drive voter turnout by downloading a "Vote for Manufacturing" poster and putting it in a place where everyone can see it.

Our industry has made a lot of progress in getting Washington's attention. But attention in Washington can be fleeting. Let's use this opportunity wisely and make sure that between now and November 6 we do all we can to educate and invigorate candidates about manufacturing and make certain that we all get out and vote.



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.



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



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 ****

				 NTMA Precision Machining Round Ta
8:00am - 5:00pm	Information Center			6
8:00am - 10:00am	Continental Breakfast			 NTMA Precision Machining Round Ta
	WOW Breakfast - Sponsored by Mazak			 NTMA Precision Machining Round Ta
8:00am - 10:00am	Board of Trustees Meeting w/ Breakfast	6:0	0pm - 7:00pm	Cocktail Hour
9:00am - 12:00pm	Spouses Program – Mask Making	7:0	0pm - 10:00pm	Silent Auction/Gala
10:15am - 11:00am	Tech Seminar 1 – Sponsored by Big Kaiser		Conversation Lo	unge – Sponsored by GF
	Machine Interface Training			o catch up, meet up or just relax in the
11:15am - 12:00pm	Tech Seminar 2 – Sponsored by Mazak		Conversation Lo	
	Tool Handling and Management		Open Wed	nesday, Thursday and Friday
12:00pm - 1:15pm	Lunch/Social Media Seminar		• 8:00am to	5:00pm
	- Sponsored by DMG Mori		 Located just 	t outside the Waldorf Astoria Ballroom

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

8:00	0am - 12:00pm	Information Center		
8:00	0am - 9:00am	Continental Breakfast		
8:00	0am - 9:00am	Team Leaders Breakfast Roundtable		
		*Team Leaders Only		
9:00	0am - 10:15am	NTMA General Membership Assembly		
		 The Franklin Partnership Updates 		
		Team Updates		
10::	15am - 10:30am	Break		
10:3	30am - 12:30am	INDUSTRY ROUNDTABLES		
		Aerospace / Defense		
		Automotive		
		• Fluid Power		
		Medical		
		• Oil & Gas		
12:3	30pm - 2:00pm	Past Chairman's Lunch		
		*Past Chairmen & Spouses Only		
12:3	30pm - 2:00pm	Emerging Leaders Lunch		
		*Emerging Leaders Only		
12:3	30pm - 2:00pm	Workforce Development Round Table Lu	nch	
		*First Come First Served—Limit 40 Lunches		
	30pm - 2:00pm	Lunch (on own)		
1:30pm - 4:30pm Optional Activity – Steamboat Jazz Cruis		Optional Activity – Steamboat Jazz Cruis	e	
2:00	0pm - 4:00pm	INDUSTRY ROUNDTABLES		
		NTMA Tools, Dies & Molds Round Tab	е	
		NTMA Precision Machining Round Tab	le I	
		NTMA Precision Machining Round Tab	le II	
		• NTMA Precision Machining Round Tab	le III	
6:00	0pm - 7:00pm	Cocktail Hour		
7:00	0pm - 10:00pm	Silent Auction/Gala		
[•	a		
		unge – Sponsored by GF		
You're invited to catch up, meet up or just relax in the				



NTMA Fall Gala 50/50 Raffle



ticket in our 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.

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THANKS FOR SUPPORTING THE

Help us grow the National Robotics League

and possibly your bank account by buying a

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!*

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.

NTMA WAGE AND FRINGE BENEFIT SURVEY

BENCHMARKING TOOLS TO HELP MAINTAIN YOUR TOTAL COMPENSATION PACKAGE

Are you overpaying or underpaying your employees?

How will Obamacare influence the employee benefits being offered?

Find out by taking part in the NTMA Wage and Fringe Benefit Survey.

Maintaining a competitive and effective compensation program helps you get and keep top-notch employees. Do you know what employees with similar experience earn at other companies? Is your benefits package competitive? NTMA can help you determine how you compare to the market in your chapter, in your industry segment (Tools & Dies, Molds, General Precision Machining, Aerospace Machining & Fabrication, Special Machines, Production Operations) and at similar size companies. The NTMA Wage and Fringe Benefits Survey reports include job-specific com-



pensation data, thus providing your company the ability to make reliable and impartial financial decisions regarding wages and benefits.



Participating firms will receive information on topics such as:

• LOW, HIGH & AVERAGE WAGE RATES

Manual Machining Operations, CNC Operations Wages and Support Function Wages

• BENEFIT PROGRAMS INCLUDING:

Health Care Plans, Retirement Income Plans and Paid Vacation & Holidays SCHEDULE

NTMA members received the survey in Excel and .pdf format in September. They are due back by **November 1st**. Don't miss this opportunity!

NTMA

THE RECORD - OCTOBER 2014 / P21

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Part: chassis Industry: aerospace Ra 0.0002 in. surface quality



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Developing Your Future Smart Workforce

How CEOs are solving the shortage of young, skilled workers threatening manufacturing gains.

Ted Toth is the third generation of his family to run a small precision-manufacturing company in Pennsauken, N.J., located in a working class suburb east of Philadelphia. The Toth company was recently purchased by a larger company called Rosenberger and is now called Rosenberger-Toth, but Ted Toth is still vice president and managing director, which means that the problems of running a plant fall to him. The company makes antennae parts for globalpositioning-system satellites and sells them to Lockheed Martin. With 35 employees, Rosenberger-Toth does about \$6 million a year in sales.

"That's the trouble with the skills gap. The technology is growing at [such] a [fast] pace that the training can't keep up with it."

It's highly precise work because the satellites are positioned 200 miles above the earth's surface and can never be repaired. Their antennae either work perfectly or they don't work at all. Forget about tolerances measured in millimeters. These devices have tolerances within a nanometer.

The problem is that it takes more computerized machines and related software to make the antennae parts; and therefore, it takes more sophisticated operators to run the machines—who are increasingly difficult to find. "That's the trouble with the skills gap," says Toth. "The technology is growing at [such] a [fast] pace that the training can't keep up with it. Instead of blue collar workers, who work with their hands and backs on a production line, we now need 'blue-tech' workers who use their heads and use technology like computerized machines and robots."

Toth will need to hire several new workers in coming months, but schools in the area are not developing enough candidates for him. The company hosts a "Manufacturing Day" each October for students from the Pennsauken High School that does attract job seekers—but they are not yet ready to operate the machines immediately after graduating. Toth, who made one entry-level hire recently from Camden County Community College, says he finds that community colleges in his area don't have high enough graduation rates and don't train on the latest equipment. "It's going to be difficult to find the people," he says. "We currently have to steal them from other shops."

Toth knows whereof he speaks partly because he is the new chairman of the board of the National Tooling and Machining Association, which has 1,400 members with an average of 30 workers. They are thus one of the backbones of the industrial economy and all of them have the same problem of finding workers. "The image of industry is one of the biggest problems we have," he adds. "Most people think of manufacturers as having smokestacks and dark, dirty and dangerous environments. We're very clean, modern and computerized. But kids see the images in movies and don't want to get their hands dirty."

The problem of attracting younger, skilled workers to replace Baby Boomers, who are retiring, is serious enough that it may threaten the ability of small and medium-sized manufacturers to continue to eke out productivity and quality gains, says ThomasNet.com, a New York-based company that connects buyers and sellers of industrial and commercial products. In late 2013, it surveyed 1,209 executives from companies with fewer than 100 employees and less than \$10 million in revenue and concluded that the "manufacturing sector's 'biological clock' is ticking away."

Among companies surveyed, ThomasNet.com's president Eileen Markowitz says there is a "lack of urgency when it comes to filling their pipeline of talent." Overall, manufacturers now face 600,000 to 1 million job openings, according to various estimates.

"To attract millennials, manufacturers have to recognize that they are looking for "knowledge workers" and cater to their needs.

Perhaps only 10 to 20 percent of major manufacturers have adequately addressed the challenge of securing new flows of young, skilled labor, estimates George Bouri, global board member and managing principal for the Americas Region at consulting firm Trascent in New York. "We Americans are laggards in this area compared with Japan, the Southeast Asians, Germany and Switzerland. Smaller manufacturers face even greater odds because they may not be able to afford to have large human resource departments and can't afford programs in high schools and community colleges that big companies such as Boeing, IBM and Intel can."

A BRAVE NEW WORK FORCE?

The enormity of the challenge is captured in the contrast between what consultants describe as the ideal environment for young workers and the realities of managing a factory. "The entire manufacturing apparatus—from recruitment to retention—is still built to the industrial era," says Bouri.

To attract millennials, manufacturers have to recognize that they are looking for "knowledge workers" and cater to their needs, he argues. That means workers should have flextime and be able to dial in to work during a family or life event. Training, benefit and retention programs have to be oriented toward them. "They have different expectations of the work experience," Bouri adds. "They want rotation and growth."

He cites what Google did in taking an ugly high-tech building and turning it into the highly vaunted Googleplex. "We now have to cater to a workforce that will work longer, more flexible hours but are looking for an experience at work that their parents and grandparents didn't expect," he adds. They want better dining options, places to exercise and to read and transportation incentives.

However, tell that to a hard-core manufacturing guy like Toth. "Some students came through here and asked, 'Where's your game room?'" he recalls with an air of obvious disbelief. The notions of flextime and onsite day care are equally beyond the pale in his view. "We have \$500,000 machines," he explains. "If somebody doesn't come in, you still have to produce a certain number of parts to make payroll. We have to have structure. We can't have kids running around. It's a lot more rigid a system" than young people may think.

"We now have to cater to a workforce that will work longer, more flexible hours but are looking for an experience at work that their parents and grandparents didn't expect."

To fill the vacuum, manufacturers are relying on a potpourri of devices. Many encourage visits from high schoolers and even middle schoolers to try to capture their imagination about making things that help others. Teachers also are targets because they need to be reminded of the value of STEM (Science, Technology, Engineering and Math) educations. Getting through to high school counselors about the choices that students face—whether to incur the debt of going to a four-year university or to take more practical work-oriented routes is also key.

Many manufacturers reach out to community colleges and work with them to shape their curricula so that students obtain skills that are immediately valuable. In some cases, companies donate equipment to community colleges and send executives or employees to teach classes or to mentor promising students.

CEOs say it's increasingly important that students at community colleges learn certain skills sets and then take a test to prove their mastery of that subject. They are issued a credential for a course of, say, eight to 10 weeks. That way, even if they don't graduate, they can demonstrate that they have specific credentials. Many companies also offer summer internships and apprentice programs for new employees that mimic Germany's famous apprenticeship programs.

In fact, German companies with extensive operations in the U.S., such as Siemens, are replicating some of their apprenticeship programs here. Siemens opened what it calls the world's most advanced gas-turbine plant in Charlotte, North Carolina, in 2011 but had difficulty in finding people to operate it. In particular, the company needed people trained in mechatronics, a new interdisciplinary profession that includes mechanical, computer and electronic engineering with software control and system design.

The company developed a skills-assessment method and trained or retrained 500 people during the ramp up of the plant, says Eric A. Spiegel, Siemens USA president and chief executive.

"Mechatronics is a new interdisciplinary profession that includes mechanical, computer and electronic engineering with software control and system design."

In addition, it created an apprenticeship program with Central Piedmont Community College. "Currently, there are a couple dozen recent high school graduates and veterans who are sitting in a classroom in Charlotte learning about advanced mechatronics," Spiegel says. "These students are in the second year of a $3\frac{1}{2}$ year apprenticeship program. They attend classes on advanced mechatronics half of the time." The other half of the time, they work in the plant.

Siemens pays the students throughout this period and they will receive a certificate from the state of North Carolina that says they are trained in mechatronics. "They are guaranteed a job in our plant when they graduate," Spiegel explains. The starting salary is \$55,000 a year.

ASSESSING APPRENTICESHIPS

At least some CEOs of small and midsized companies appear to be imitating CONTINUED ON - P26

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<u>Agenda</u>

Monday, April 20, 2015 4:00p.m. – 5:30p.m. – Early Conference Registration 5:30p.m. – 6:30p.m. – Optional Early Arrivals Reception

Tuesday, April 21, 2015 8:00a.m. – 11:30a.m. – Conference Registration 11:30a.m. – 1:00p.m. – Conference Opening Remarks, Briefing, and Lunch 2:00p.m. – 4:30p.m. – Capitol Hill Visits 5:30p.m. – 6:30p.m. – Networking Reception

Wednesday, April 22, 2015 8:00a.m. – 9:30a.m. – Breakfast, Issues Presentation 10:00a.m. – 4:00p.m. – Capitol Hill Visits

Save the Date



aspects of the German system-but on a highly localized basis rather than on a national one. One is Michael Araten, CEO of the Rodon Group, a privately held, midsized company that makes an impressive 5 billion to 6 billion customized, plastic products each year for the medical, pharmaceutical, consumer-products, construction, food and toy industries.

Rodon has about 200 workers in its vast factory in Hatfield, Pennsylvania, which is equipped with highly specialized equipment that runs 24 hours a day. The company has two specialists on staff who help develop the software that controls the company's advanced robots. "We've tried to address the pipeline of talent through apprenticeship programs, summer internships and partnerships with local trade schools and community colleges to help them understand what our needs are," Araten says.

One particularly innovative action his company has taken is to help create a consortium of 100 manufacturers in Montgomery and Bucks counties called the Bucks-Mont Manufacturing Consortium.

It is a nonprofit organization led by Rodon's head of human relations. HR representatives from other companies volunteer their efforts, as well.

"CEOs looking to expand and improve their manufacturing must pay keen attention to where workers will come from."

The consortium works with the state government and with federally funded workforce-development boards to tap whatever government funds are available to pay for training at community colleges and other institutions. In this geographic area, at least, community colleges seem to be cooperating in the push to train new workers.

Araten's workforce has grown from 140 to 200 people in recent years and he anticipates that number will increase to 250 people over the next four years-assuming the company achieves its growth targets. "I think we're going to be in good shape," he says. "We will make sure we're first in line at community colleges and trade schools."

But more fundamentally, he says he

perceives a shift in how average Americans are beginning to calculate their life choices. "Look at North Dakota," he says. "People [there] never considered that they would work in energy, but now people are clamoring for those jobs."

Parents and their children also are beginning to recognize that four years of university education could leave them with six-figure debt levels and that manufacturing jobs pay 30 to 40 percent more than retail jobs, he says. "People go where the opportunities are," Araten concludes. "Manufacturing is becoming a more viable option than it has been in a long time."

Bottom Line: Manufacturing jobs are no longer old-fashioned positions on the assembly line. CEOs looking to expand and improve their manufacturing must pay keen attention to where workers will come from.

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DATA-DRIVEN ECONOMIC DEVELOPMENT SOLUTION

The Reshoring Initiative, an organization markets than in offshore export markets," he continues. "With this solution, companies, government and economic developers can collect the data and do the analysis they need

to identify and benefit from this advantage." The Datamyne trade data provides descriptions of the products being shipped in volumes, the values of shipments as well as the names and addresses of the companies shipping and receiving the imports. Datamyne U.S. import trade data can be filtered by port of entry, customs district, importer's state, city or zip code. See www. datamyne.com.

"Datamyne offers clear visibility into the operation of cross-border supply chains," says Mark Condon of Datamyne. "Most important, our data covers the essential details of the businesses that make up these chains, including executive contact information."

With the data-driven research on the offshore supply chains that feed their locales, economic development agencies can identify businesses that might profit from closer sources of supply. Using the Reshoring Initiative's Total Cost of Ownership Estimator software, they can work with businesses to evaluate whether local alternatives are competitively priced or offer savings over offshore suppliers.

Reshoring Initiative[®]

"We are eager to share our solution with economic development agencies, chambers of commerce, and local governments," adds Moser, who invites developers and manufacturers to review the details of the solution at http://reshorenow.blogspot. com/2014/08/the-reshoring-initiatives-economic.html#more and use the Total Cost of Ownership Estimator for free at http://www. reshorenow.org/TCO_Estimator.cfm.

ABOUT THE RESHORING INITIATIVE

Α 47-year manufacturing industry veteran and retired President of GF AgieCharmilles, Harry Moser founded the Reshoring Initiative to move lost jobs back to the U.S. For his efforts with the Reshoring Initiative, he was named to Industry Week magazine's Manufacturing Hall of Fame in 2010. Learn more at www.reshorenow.org.

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LAUNCHED BY RESHORING INITIATIVE

dedicated to bringing manufacturing jobs back to the United States, has launched an economic development solution that can be used by regional, state and local agencies to identify opportunities to attract production facilities and promote sourcing from existing businesses in their areas.

The solution offers a combination of U.S. trade data from Datamyne to research offshore supply chains and Total Cost of Ownership EstimatorTM software from the Reshoring Initiative to evaluate the competitiveness of local sourcing alternatives.

Economic development programs in Mississippi, Pennsylvania and central New York state are currently implementing the Reshoring Initiative solution.

Harry Moser, founder and president of the Reshoring Initiative, says the new solution for economic development "is aimed at shifting collective thinking among manufacturers from 'offshoring is cheaper' to 'local reduces the total cost of ownership'."

"U.S. manufacturers' products are 30% to 40% more price competitive in domestic



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WHEN YOU MAKE WHAT MATTERS



EMPLOYERS ARE ASKING: WHAT ABOUT VETERANS WITH PTSD? CAN THEY BE GOOD EMPLOYEES?



Steve Nowlan - President, Center for America

"Long before post-traumatic stress syndrome (PTSD) was identified and named, an untold number of soldiers returning from world wars and conflicts suffered from this and subsequently joined the workforce," said Steve Nowlan, director of the American Jobs for America's Heroes (AJAH) campaign. "In fact, many people who have never served in combat have PTSD arising from car accidents, the unexpected deaths of loved ones, and a myriad of other causes. Employers need to be alert in hiring all employees, of course, but they don't need to be scared of hiring veterans."

Many non-profits are working with veterans who need a help to move beyond the effects of PTSD to rejoin the workforce. One largely unsung and exemplary nonprofit very relevant to NTMA members that AJAH is working with is Manpower to Horsepower (MP2HP) founded in 2010 to help veterans negotiate the challenging transition from military service to civilian life.

MP2HP offers a hands-on training and rehabilitation program based on motorsport management, automotive mechanics and custom metalworking to post combat veterans and National Guard members who suffer from PTSD and traumatic brain injury. MP2HP provides these veterans with employable skills in a supportive and constructive environment where they may begin to recover from their injuries. Race Shop and at racetracks where students learn the finer points of building, restoring and repairing cars used in high-

native and racecar devotee, and her

husband, Matt Young. Together they de-

signed and built a racecar that enabled

disabled vets, previously relegated to the

sidelines, to take to the track. After that,

it was just one short step to the MP2HP

community colleges and the Veteran

Administration (VA) in developing the

motorsport certificate program. It offers

four, 10-week semesters each year, with

12-15 students in each session. The col-

leges developed the curriculum and pro-

vides the instructors, and the VA certifies

the courses so that veterans' benefits can

Sue's amazing gen-

erosity of spirit and compassion does not

preclude her from

running the school

like a boot camp: the

rules are tough and

compliance is non-negotiable. She is part-

be used to cover the cost of tuition.

Sue collaborated with two local

ly competitive dirt track racing. MP2HP is the brainchild of Sue Roberson, a North Carolina

racecar program.



and it is here that many of our nation's most deserving soldiers who are unable to find help elsewhere, are finding their

way forward.

Nearly all veterans complete the program and the vast majority of students find jobs in the industry. A high percentage of graduates elect to

continue their education in conventional colleges. Even after they are employed, many veterans continue to spend time at the Race Shop. Their continued presence is part of the deal each one struck with Sue when they first arrived at MP2HP: to pay it forward and try to help new students.



Dan Burns spent 20+ years in the U.S. Coast Guard and saw combat in Afghanistan before returning home and enrolling in the MP2HP program.

NTMA members wanting to talk with graduates for employment or get involved with MP2HP through financial or used equipment donations are encouraged to contact Sue Roberson in Salisbury, NC at 704-638-9330 or MP2HPS@gmail.com. www.MP2HP.com

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MP2HP takes an unconventional approach to education because many of the veterans reject traditional classroom settings where they often feel like outsiders. Instead classes are held in the MP2HP time mother, part-time drill sergeant, and full-time advocate.

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