



RIPPLE EFFECTS FROM SEQUESTRATION

Congress returned to Washington in September following a 5-week summer recess facing the daunting task of achieving consensus to fund the government before the end of fiscal year 2013 on September 31st. —p11

WORK GLOVES MUST DO MORE THAN PROTECT

Modern plant workers are masters at multitasking—they work on assembly lines, pack materials and record data on a keyboard. —p14

SUCCESSFUL OWNERSHIP TRANSITIONS DEPEND ON PERSPECTIVE AND COMMUNICATION

As a teenager and young adult, I had the attitude that I was always right. —p34

THE FUTURE OF MANUFACTURING TAKES SHAPE HERE

AMTS brings you... Machine Tools, Automation & Accessories. —p46



Massachusetts ADVANCED MANUFACTURING SUMMIT 2013



NTMA BOSTON & WESTERN MA MEMBERS PARTICIPATE IN THE MASSACHUSETTS ADVANCED MANUFACTURING SUMMIT

MASSACHUSETTS HELD ITS FIRST STATEWIDE ADVANCED MANUFACTURING SUMMIT AT GILLETTE STADIUM IN FOXBORO MA. —p10

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CHAIRMAN'S CORNER

ROBERT MOSEY / NTMA CHAIRMAN OF THE BOARD

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

So I now know that I have made it as Chairman. The Kansas City/St. Louis Joint lake "meeting" is famous and stories abound amongst the Past Chairman of all the things that they have "learned" at this event. It is touted as a conference but with fun being a close second. I was expecting more fun than conference, but was pleasantly surprised how balanced the event was. More on that in a moment. I need to back up a bit.

JoAnn and I landed in St. Louis mid-day Thursday and we were picked up



Bob Mosey, Lisa Homeyer, Herb Homeyer, Joanne Mosey

by our own NTMA Treasurer, Herb Homeyer. He whisked us away to the Homeyer estate in Marthasville Missouri. After a quick tour of the house, we loaded up and went down town for a couple hours of music and food at a nearby park where two of Herb's brothers play in a local band. Despite being related to Herb, they were actually quite good.

From there, we went to the Homeyer farm. Herb and Elisa gave us a quick tour of the property before it got dark. What a beautifully, peaceful place! I am happy to report that although the area is rustic, the Homeyer's have fixed the place up really nice. It even has indoor plumbing!

The next morning we headed out to towards Branson. This year the event was held at the Chateau on the Lake Resort near the shore of the beautiful Table Rock Lake. In typical NTMA fashion, we jumped right into meetings. There were three, very good speakers who loaded us up on information on Human Resources, Business Management (presented by our National Associate Member, Clifton Larson Allen), and status of the current economy. I made plenty of notes!

Later in the afternoon, led by Hank Epstein of Quality Coach, there were round table discussions on several subjects. I was actually able to glean a nugget from this roundtable that will more than pay for my trip. That evening we went to downtown Branson for an evening of entertainment. Then back to the resort to crash. What a day!

The next morning started with the fun part; a two hour catamaran boat ride around the lake. Wow! There were lots



of great networking and an abundance of great beverages. A great time was had by all. We ended the second and last day with a wonderful dinner and a few quick speeches by some very distinguished speakers. Now I know what everyone has been talking about. This was a wonderful event and great Membership Value.

The next morning, we headed back to the Homeyer estate. After unloading, Herb took us to visit to his company, Homeyer Precision Manufacturing. We had the honor to be given a tour by Herb's son, Justin, who did a terrific job of explaining to us all the great work they do at their company. This place could be the show room for Okuma but what I was most impressed with was how everyone took ownership of what they were doing to keep the company moving forward. Herb has brought in outside coaches for

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THE RECORD

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all of his key managers to help them be better leaders and it shows throughout the company. Great Governance! Back at the estate, Herb and Elise treated us to a wonderful home cooked meal. Herb grilled up some delicious pork butt steaks. What he lacks in musical talent, he more than makes up for with his culinary skills.

CONTINUED ON – P6



The VERICUT logo features the word "VERICUT" in a bold, white, sans-serif font, set against a blue background with a yellow swoosh underneath.

A graphic of a red roulette wheel with black and white numbers, with a silver ball in the center.

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The CGTECH.com logo features the word "CGTECH" in a bold, italicized, sans-serif font, with ".com" in a smaller font to the right.

The next morning Herb dropped JoAnn and me off at the airport where we flew directly to Charlotte. We met up with Dave Tilstone at the hotel then off to dinner with President and COO of Okuma America, Jim King and VP Sales,



Dave Tilstone, Jim King, President of OKUMA and Bob Mosey

Tim Thiessen. We discussed how we can continue to build our already strong relationship with Okuma. We had some great discussion and the future looks bright.

In the morning, we met Jim and Tim along with Jeff Estes, Director-Partners in THINC at their beautiful facility. After more relationship discussion, Jeff gave us a grand tour showing us how they have worked with all of their partners. The main focus of THINC is to develop and integrate all the tools that we as users could possibly want. It is easy to see that Okuma is really on to something here. We were also introduced to Evelyn Velasquez, Training Program Manager. Evelyn has been challenged with setting up Okuma training centers across the US not only for their own service people but also us as customers. We shared with her our efforts in NTMA-U and connected her with a couple of training centers that we felt would be a good fit for partnering. This trip was a great opportunity to build our relationship with one of our National Associate members, all in the name of Membership Value.

I was honored to be invited to attend the inaugural NTMA Southwestern Regional Conference... in August... in Phoenix. At least it was a dry heat! This event is the brain trust of five of our western chapters including Arizona, North Texas, San Diego, San Francisco, and Northern Utah. These are the same chapters that participate in Precision Machining magazine, a publication first started by the Arizona Chapter. I must

say, that for a first time event, these chapters and their many volunteers did an outstanding job of putting together a great program that went off seamlessly. Talk about Stewardship of the Manufacturing Industry, these folks get it!

Dave Tilstone and I arrived in Phoenix a day early to give us a chance to visit one or two of our member companies and spend some quality time with Arizona Chapter President Dante Fierros and President Elect, David Lair. We had a great dinner and discussed what the Arizona Chapter was working on and shared with them all of the great things that are being done at headquarters. The Chapters main efforts are focused on Workforce Development. More on that in minute.

The next morning, our first stop was to meet Andy Yahraus and Mark Lashinske at Modern Industries. We



Bob Mosey, Mark Lasinski, Dave Tilstone, Andy Yahraus

had a very nice sit down visit with the two of them discussing everything from business conditions to NTMA, and even touched on family. As some of you are aware, Andy's father is Dan Yahraus, Past NTMA Chairman, and one of the most wonderful men I have ever had the privilege of knowing. Dan has had his health challenges over the last several years but continues to fight the good fight. God Bless Dan.

Mark gave Dave and me a grand tour of their facilities and shared with us all of the complex and demanding parts and assemblies that they produce for their customers. If you did not get a chance to tour this company at the MFG meeting in 2011, try to get a tour the next time that you are in town. Maybe not in August though.

From Modern Industries we headed out to the edge of the earth to visit our

National Associate Member Carl Reed, owner of Abbot Workholding, at his new foundry. The word hot doesn't do it justice. It was right at 110 degrees outside so you can imagine what it was like for those guys pouring molten brass and aluminum into the molds. Aside from the temperature, Carl is turning a small, dated foundry into a much larger state of the art facility to serve all of his West Coast customers. With this added capacity, we look for even bigger things from Abbot in the future. Great job Carl!

That evening, Dave and I attended a scheduled dinner with several of the chapter board members and some folks the chapter is working with to create and sustain a qualified workforce for manufacturing. This group is really passionate and committed to Workforce Development. They shared with us their partnership and work on workforce development. I would encourage you to read the sidebar article (Page 21) on this group submitted by Arizona Chapter President, Dante Fierros. This may be a model for workforce development in your part of the country.

All in all, this was a great month of travel and continues to encourage me that there is great Stewardship of the Manufacturing Industry. Next month, I will report on the ET meeting in Monterey, Tennessee Chapter visit, and the Rocky Mountain Chapter visit.

In the mean time, keep up the good work in your own chapters and communities!

Peace,

ROBERT MOSEY / CHAIRMAN



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NCDMM TO EXHIBIT WITH AMT AT THE DESIGN AND MANUFACTURING MIDWEST'S DESIGN, MANUFACTURING & AUTOMATION CONFERENCE TO PROMOTE MTCONNECT CHALLENGE 2

The National Center for Defense Manufacturing and Machining (NCDMM) proudly announces that it will be co-exhibiting with AMT - The Association For Manufacturing Technology to promote the MTConnect Challenge 2 at the Design and Manufacturing MidWest Conference's Design, Manufacturing & Automation (DMA) Seminars at McCormick Place in Chicago on September 10 - 12, 2013. Look for John Wilczynski, NCDMM Program Manager and Hilena Hailu, AMT Manufacturing Technology Project Manager at Booth #1756.

"The DMA seminars are providing a unique opportunity to interact directly with the manufacturing software developer community to promote the MTConnect standard and inform them of the MTConnect Challenge 2," said Mr. Wilczynski. "It is our hope that by making this audience acutely aware of the challenges faced by manufacturers, it will inspire them to capitalize on this industry need and develop MTConnect-based software that enable manufacturing intelligence breakthroughs for the defense manufacturing industry. By participating in the MTConnect Challenge 2, developers will also have the chance to win three cash prizes, totaling \$225,000."

MTConnect is a set of open-source, royalty-free communications standards intended to foster greater communication and connectivity between manufacturing equipment and devices. To



date, harnessing the wealth of available information and data across equipment and devices has been challenging due in large part to the disparate nature of software programs.

The MTConnect Challenge is an Office of the Secretary of Defense (OSD) Defense-wide Manufacturing Science and Technology (DMS&T) sponsored, two-part challenge project to develop manufacturing solutions, using the MTConnect standard. NCDMM, AMT, and the United States Army are overseeing the Challenge to overcome the existing and widespread interconnectability difficulties within manufacturing enterprises. The development of more MTConnect-based applications that can be easily adopted by manufacturing enterprises, especially the lower tier producers, is essential to optimizing manufacturing capabilities and support Department of Defense (DoD) supply chain management goals.

MTConnect Challenge 2 opened for submissions on July 1, 2013, and submissions will be accepted through January 31, 2014. Challenge 2 is for the actual development of functional software applications that use MTConnect to address the objectives of the challenge; whereas Challenge 1 was seeking ambitious yet achievable ideas that harnessed innovation and manufacturing intelligence breakthroughs. It is important to note that participation in the MTConnect Challenge 1 is not a prerequisite for participation in the MTConnect Challenge 2.

As part of the MTConnect Challenge 2, a total of \$225,000 in cash prizes will be awarded, including a \$100,000 award for first prize. There will be three rounds of judging to down select. The winners will be announced at the [MC]2 2014 Conference in April 2014.

Entry details and rules for the MTConnect Challenge 2 can be found at <http://mtconnect2.challenge.gov>.



O.D. CLAMPING END PREP TOOL NOW OFFERED WITH ELECTRIC MOTOR

A new electric O.D. clamping end prep tool for use on both thin-wall and heavy-wall tubes with a high percentage of chrome, especially in high purity applications, is being introduced by ESCO Tool of Holliston, Massachusetts.

The ESCO Electric C-MILLHOG® O.D. Clamping End Prep Tool has a massive clamp that grips tubing from the outside, evenly distributing the holding power, to assure a chatter-free, precision end prep on both thin-wall and heavy-wall tubes. Featuring a 950 Watt electric motor and requiring no cutting oils, this end prep tool is ideal for use on high-purity piping systems requiring 37-1/2°



bevels, flat-facing, J-preps, or orbital welding.

Equipped with a ratchet feed which provides over 1" of stroke, the ESCO Electric C-MILLHOG® O.D. Clamping End Prep Tool operates on 110/230V and is suitable for prepping stainless steel and most hard to machine alloys. It has a narrow body that fits between 1-1/8" tubes, a working range of 1/2" to 2-1/2", and uses an easy to change block for changing tube sizes.



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THE QUALITY COACH BECOMES NEWEST NTMA NATIONAL ASSOCIATE MEMBER



From left: Jeanne Gladden, Colleen Himmelberg, Matt Gildehaus, Hank Epstein, Dr. Pris Bass, Amy Eagan, and Ricki Vaughn.

MANUFACTURING DAY 2013 WELCOMES FOUR KEY SUPPORT ORGANIZATIONS

The roster of Manufacturing Day 2013 sponsors recently added four more key support organizations, with the Precision Metalforming Association (PMA) and the Association for Manufacturing Technology (AMT) both joining the movement at the Silver level, while Women in Manufacturing (WIM) and the Precision Machined Products Association (PMPA) have joined the movement at the Bronze level.

Manufacturing Day sponsors provide the resources to support manufacturers participating in the program, a grassroots effort by U.S. manufacturers to improve public perception of manufacturing in America by coordinating awareness-raising activities at a variety of locations across the country on October 4, 2013.

Manufacturing Day is an annual national event, executed at the local level, that supports hundreds of manufacturers across the nation that host students, teachers, parents, job seekers, and other local community members at open houses designed to showcase modern manufacturing technology and careers.

A panel of co-producers comprised of the Fabricators & Manufacturers Association, International (FMA), the National Association of Manufacturers (NAM), the Manufacturing Institute (MI), the National Institute of Standards and Technology's (NIST) Hollings Manufacturing Extension Partnership (MEP), and guest producer Industrial Strength Marketing (ISM) provide the centralized support necessary to coordinate this nationwide array of simultaneous events. The national media partner for the event is the Science Channel.

"The co-producers are very pleased that these fine manufacturing industry organizations are putting their full support behind Manufacturing Day," said Ed Youdell, president and CEO of the Fabricators & Manufacturers Association. "Their reputation and their reach to professionals in the industry, as well as educators and students, will help to generate participation in Manufacturing Day events across the nation."





Massachusetts ADVANCED MANUFACTURING SUMMIT 2013



NTMA Boston & Western MA Members Participate in the MA Advanced Manufacturing Summit



Boston member, Michael Tamasi addresses attendees during the Competitive Future Panel Discussion.

Massachusetts held its first state-wide Advanced Manufacturing Summit at Gillette Stadium in Foxboro MA. This full-day event brought together over 400 manufacturers, educators and workforce development practitioners to share best practices, network, and discuss future opportunities and challenges.

Chapter members attending the Summit took advantage of OEM panels and peer workshops, moderated by experts from the aeronautics, defense, life sciences, energy, electronics and

manufacturing industries. Several of our members were instrumental in the development and planning of the summit and participated on the Workforce Future and Competitiveness Future Panel Discussions.

The Summit was part of the state's initiative that established an Advanced Manufacturing Collaborative in 2010 to enhance the competitiveness of Massachusetts manufacturing and lead the national effort to revitalize this country as a place that makes things.



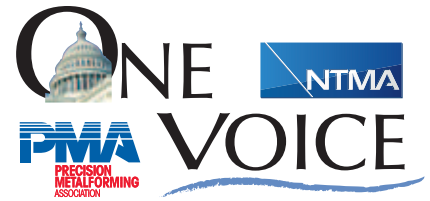
Boston & Western MA members, Joanna Dowling (Custom Group) and Omer Gingras (C&G Machine Tool) discuss training programs & initiatives on the Workforce Future Panel.



Photos L to R: NTMA's exhibitor table, member Chris Kielb networks, AMC Co-Chair, Edward Leyden discusses the Summit with colleagues.



Ripple Effects from Sequestration



Congress returned to Washington in September following a 5-week summer recess facing the daunting task of achieving consensus to fund the government before the end of fiscal year 2013 on September 31st and dealing with the next round of budget cuts resulting from sequestration, the automatic spending cuts that began in March 2013 and have had a serious impact on small manufacturers whose businesses are related to the defense industry.

NTMA member Patrick Shrader of Maine-based Arundel Machine, a leading regional CNC manufacturer of precision machined components, says that the defense business accounts for roughly 35% of the company's sales revenue. "While we understand that defense budgets are always subject to cuts or decreases, the sequestration represents an unheard of amount of money. Businesses cannot work effectively with an unknown aspect affecting 35% of their revenue base."

Arundel Machine is not alone. Many NTMA members have work related to specific defense industry programs. One Voice

has been actively making sure that Congress is aware of the impact of the sequester on America's manufacturing base. This summer, Rick Schwind of Continental Tool & Mfg in Lenexa, KS, testified before the House Small Business Committee about the effects of sequestration on his company:

"Roughly 80% of our business is supplying the defense industry. This is where sequestration has had a real impact on us. We agree with the decision to pass a law holding Congress accountable to reduce our nation's debt and reign in spending. Our company made difficult decisions and significant cuts to survive [the economic downturn], and the federal government should do the same. However, we took a sensible, precision approach to our finances ... while Congress did not. Unless Washington quickly addresses the situation they created with sequestration, the impact to small manufacturers like ours, whose primary customer is the federal government, will be severe."

Unless Congress reaches a fresh agreement on spending reductions, a new round

of sequestration-related budget cuts will be required for fiscal year 2014, cuts which will be steeper than those enacted for 2013. Many think it likely that negotiations will drag on through the end of the year. One Voice will continue to fight for fiscal clarity and an end to the uncertainty that the budget process has caused for businesses throughout the economy.

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.



CAMSHAFT MEASURING MACHINE FEATURES NEW NARROW FOLLOWER HEAD DESIGN

A robot-fed 100% camshaft inspection gage that features a new measuring head design that accommodates six cam lobes per valve with close spacing is being introduced by ADCOLE Corporation of Marlborough, Massachusetts.

The ADCOLE 1310 High-Speed Camshaft Gage is designed for robot-fed 100% camshaft inspection and features new 19 mm wide measuring heads that are capable of measuring six cam lobes per cylinder with up to 32 measuring heads. Capable of rapid changeovers automatically, it has a programmable headstock with 100 mm travel, a programmable tailstock, and achieves 0.1 micron resolution per data point, or 3,600 data points per revolution.



Available with a fast disconnect system for easy setup and reconfiguration, the ADCOLE 1310 High-Speed Camshaft Gage measures 10 or more parameters including radius, profile, taper, crown, timing angle, diameter, velocity, acceleration, run-out, roundness, and chatter analysis. Standard features include dual computers, embedded Windows XP® software, GE Fanuc® motion controllers, and graphic display plotting all relevant statuses.





CORODRILL® 870 EXCHANGEABLE-TIP DRILL NOW EVEN AVAILABLE FOR STAINLESS STEEL

From October 1st, the recently launched CoroDrill 870 for steel and cast iron drilling will now even be available for stainless steel. The CoroDrill 870 is part of a new generation of exchangeable-tip drills and is designed to save time and reduce hole costs.

CoroDrill 870 can be tailored to optimize applications through diameter range, steps and length possibilities. Holes can be made more efficiently and closer to the specifications required, leaving them better suited to subsequent operations. A highly secure interface between drill body and tip ensures reliability and precision, while the quick and easy tip change procedure helps to maximize active machining time.

GRADES AND GEOMETRIES

The new cutting edge geometries and grades provide a safe cutting process, al-



lowing for increased penetration rates while maintaining chip control and increasing tool life. Grade GC2234 includes a fine grained high chromium substrate and a new PVD coating with optimized composition for ISO M drilling (stainless). The thin AlTiN PVD coating includes enhanced adhesion steps resulting in longer tool life and increased chipping resistance.

The drill is available in diameter range: 10.00–26.65 mm (0.394–1.049 inch) and lengths up to 8 × drill diameter as standard. Each drill body has a unique interface size with matching tips to achieve hole tolerances of H9–H10.



US CUTTING TOOL CONSUMPTION UP 3.2% IN JULY

ACCORDING TO THE USCTI AND AMT, JULY U.S. CUTTING TOOL CONSUMPTION TOTALED \$159.5M

July U.S. cutting tool consumption totaled \$159.5 million, according to the U.S. Cutting Tool Institute and AMT – The Association For Manufacturing Technology. This July total, as reported by companies participating in the Cutting Tool Market Report (CTMR) collaboration, was up 3.2% from June's total but down 0.2% from July 2012. Year-to-date shipments are \$1.17 billion, which is down 7.2% from the same period in 2012.

These numbers and all data in this report are based on the totals actually reported by the companies participating in the CMTR program. The totals here represent about 80% of the U.S. market for cutting tools.

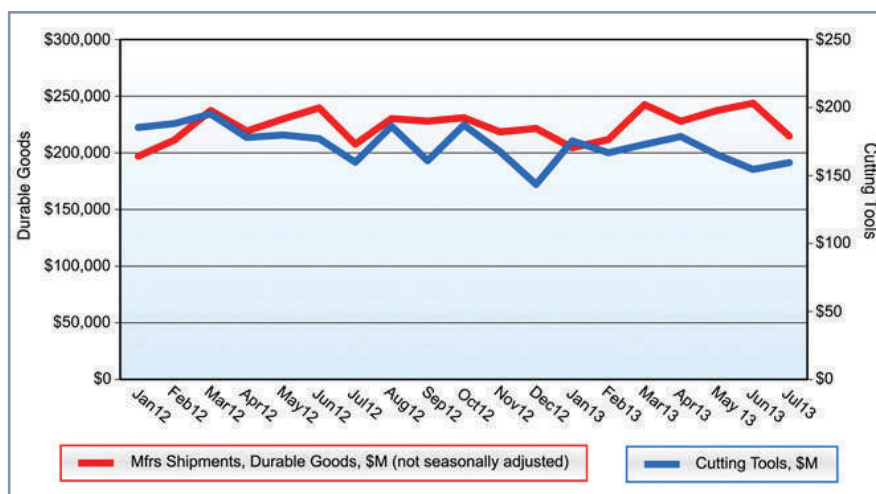
“Most economic indicators for manufacturing for July were in line with cutting tools, showing small improvement for the month,” says Brad Lawton, chairman of AMT’s Cutting Tool Product Group. “Key customer industries such as motor vehicles are poised for a strong autumn.”

The Cutting Tool Market Report (CTMR) is jointly compiled by AMT and USCTI, two trade associations representing the development, production and distribution of cutting tool technology and products. It provides a monthly statement on U.S. manufacturers’ consumption of the primary consumable in the manufacturing process – the cutting tool. Analysis of cutting

tool consumption is leading indicator of both upturns and downturns in U.S. manufacturing activity, as it is a true measure of actual production levels.

Historical data for the Cutting Tool Market Report is available dating back to January 2012. This collaboration of AMT and USCTI is the first step in the two associations

working together to promote and support U.S.-based manufacturers of cutting tool technology.



ONE VOICE PARTNERSHIP HOSTS CONGRESSMAN TIBERI IN CLEVELAND OHIO

CONGRESSMAN DAVE JOYCE STOPS BY FOR SUPPORT OF ONE VOICE AND TIBERI



Congressman Tiberi and NTMA Managing Director Emily Lipovan



Together with NTMA, One Voice Partners, PMA and PMPA, joined forces and leveraged resources of our members to raise money for Congressman Dave Tiberi. This effort organized by the Franklin Partnership and Bracewell Giuliani continued the momentum our strategies are bringing to the national agenda. Approximately 20 people attended and the unanticipated surprise was Congressman David Joyce coming by not only in his support of his colleague, but of NTMA and One Voice Partnership.



Congressman Tiberi and NTMA President Dave Tilstone

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Work Gloves Must Do More Than Protect

They must provide the flexibility workers need to meet productivity objectives. Article provided by: Laura Proctor, Ansell

Modern plant workers are masters at multitasking—they work on assembly lines, pack materials and record data on a keyboard. With the level of global competition in today's marketplace, many workers feel the pressure of productivity quotas requiring them to

New glove technology is helping to bridge the gap by offering the cut protection previously associated with heavier work gloves. The new hand protection also provides the comfort and dexterity required to boost worker productivity and overall performance.



New glove technology has resulted in lightweight work gloves that provide the same level of cut protection previously associated with heavier products.

execute tasks quickly and confidently—even in the presence of potential hazards such as cutting tools and sharp metal edges.

Employees must have work gloves that protect yet enhance their ability to perform their jobs. A plant walk-through may verify that some workers are still wearing the leather and heavy cotton gloves they have always worn in the past. While these materials provide some degree of protection, they often fall short in their ability to protect the hands against risks associated with hand tools and sharp materials. They also lack the dexterity and tactility workers need to efficiently perform a variety of tasks.

THE COST OF INJURY

Worker injury is a serious and expensive problem, with the U.S. Bureau of Labor Statistics (BLS) reporting nearly 3.1 million nonfatal workplace injuries and illnesses among private industry employers in 2010. Hand and finger injuries represented the most common type of injury, accounting for 20 percent of all manufacturing accidents. Forty-seven percent of injuries were cuts that affected the hands, fingers and arms.

According to Bill Margareta, New Jersey State Safety Council president and a panelist at the 2012 America's Safest Companies conference, workplace injuries typically have five cost factors: emer-

gency response, reports and case management, interrupted operations, lost revenue and expenses associated with any damage. (information provided by EHS Today) He added that injury-related costs often add up to more than company leadership anticipates.

"An accident that results in a hand injury may appear to cost \$7,000, but once you consider all of these areas, the true cost may be \$12,000 to \$15,000," Margareta said.

Two U.S. sheet metal manufacturers placed the cost of hand injuries requiring stitches at \$22,000 – \$30,000 per incident. These figures included medical and ambulance transportation, the cost of shutting down the line and cleaning the area, and worker rehabilitation.

"The greatest opportunity to reduce costs of injuries is to eliminate or prevent those injuries from occurring in the first place," said Bill Horsford, manager of team member relations

at Toyota Motor Engineering and Mfg. and a panelist at the America's Safest Companies conference.

THE COMFORT FACTOR

Preventing hand injuries, however, goes beyond providing employees with work gloves that protect against hazards such as cuts. Work gloves must be comfortable enough that workers want to wear them for the duration of their shift.

According to the BLS, 30 percent of all lost time hand injuries result from workers wearing inadequate hand protection, with the remaining 70 percent occurring because workers do not wear their gloves. Even when work gloves provide high levels of protection, workers are unlikely to wear them for extended periods if the gloves are uncomfortable or hinder their ability to do their jobs.

Ansell conducted research that confirmed some workers are willing to sacrifice protection in favor of comfort and



All work gloves should fit and function like a second skin. Factors such as dexterity and tactility will affect a worker's comfort and productivity.

dexterity. In cases where work gloves were too tight or affected tactility, workers altered the product by removing the fabric over the fingertips or clipping the wrists. Some employees removed their gloves entirely or replaced them with hand protection they perceived as more comfortable.

Management at a major chemical company learned that employees were bringing their own

gloves to work because they felt the hand protection the company supplied was uncomfortable. Workers selected a popular glove brand recognized for its comfort and visual appeal that they purchased at a local retailer. The problem was the new gloves did not provide the chemical protection workers needed and resulted in injuries.

Many factors impact worker comfort, including dexterity, tactility and fit. Gloves made with lightweight fabric or designed to provide extra room across the back of the hands promote dexterity by allowing the hands to move freely without restriction. Thin coatings such as polyurethane or nitrile applied to thin, seamless liners constructed of nylon, Lycra, or new Dyneema® Diamond Technology fiber promote tactility in the fingertips, increasing workers' ability to handle ultra fine objects efficiently.

All work gloves should fit and function like a second skin—neither too large, which can interfere with hand movement or become caught in machinery, nor too small, which can constrict hand movements and result in perspiration and fatigue. Many top glove brands offer products in a range of sizes to accommodate almost any worker.

HAND PROTECTION FOR TODAY'S PLANT ENVIRONMENTS

Based on the rate of injuries and increasing emphasis on worker productivity, Ansell conducted global research to identify unmet hand protection needs within the manufacturing industry. Worker feedback demonstrated a demand for lighter weight, cut resistant gloves that provide a high level of protection without sacrificing performance.

In essence, employees wanted work gloves that protect against cuts yet supply the same level of comfort, dexterity and tactility that is possible when working barehanded.

Ansell responded with the development of ultralight duty HyFlex® 11-518 gloves (www.ansellpro.com/hyflex/11-518.asp), with an ultra lightweight 18-gauge seamless liner offering barehand-like sensation



Work gloves must enhance an individual's ability to quickly and confidently perform job-related tasks under the pressure of productivity quotas.

and comfort. Combining strong 220 denier Dyneema® Diamond Technology yarn, nylon and spandex into a sheer, breathable liner, HyFlex® 11-518 gloves are the first hand protection product to provide ANSI Level 2 cut protection in a cool, ultra thin product that replaces the more mature range of 13-gauge cut resistant gloves.

The gloves' palm-dipped polyurethane coating ensures the high levels of dexterity and tactility workers require for fine dedicated tasks in risk applications such as wire assembly and fastening, machining and final assembly. The tough, thin coating contributes to the ANSI Level 3 abrasion resistance rating and extends product wear life for an

overall lower cost of ownership.

D3 pinky knitting ensures a tailored fit at the base of the pinky finger and helps match the natural contour of the hand. HyFlex® 11-518 gloves are offered in sizes 6 to 11.

Field trials conducted in production and packaging environments confirmed that nearly 70 percent of workers preferred the HyFlex® 11-518 gloves for tasks previously requiring heavier gloves. Individuals liked the fact they could wear the same glove for a range of cut and non-cut applications, which resulted in greater productivity.

Workers at a recreation equipment manufacturer were working bare-handed to assemble small parts kits for the production line. In one instance, a worker was cut on a part's sharp edge, so the Safety Director implemented a requirement for workers to use gloves. They tried many cut & sewn, nylon-lined, synthetic-coated products that did not provide the necessary cut resistance, comfort, dexterity and tactility to do the job.

The workers were introduced to the HyFlex® 11-518 and were amazed at the comfort, dexterity and added cut protection the glove provided. In fact, because the trial was so successful, the Safety Director recommended workers on the main production line switch from their existing glove, a nylon-lined, rubber-coated glove, to the HyFlex® 11-518. The production workers commented that they could do their job just as effectively, but with the peace of mind of the added protection.

CONCLUSION

New technology is resulting in hand protection that provides the cut protection and flexibility workers need to perform tasks inherent to today's fast-paced manufacturing environment. Workers who have used leather and cotton gloves for many years, however, may be reluctant to wear the new products—often because they do not understand how thin, comfortable gloves can provide the protection they require.

Education is essential to communicate product features, performance advantages and intended applications. Product trial also allows workers to compare new gloves to the products they previously wore and encourages acceptance—and compliance.





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NTMA EXECUTIVE STAFF VISIT SOUTHERN CALIFORNIA - SAN FERNANDO VALLEY AND SAN DIEGO CHAPTERS

This summer, the NTMA Executive Staff, Emily Lipovan Managing Director and Jeff Walmsley, Director of Membership, had the opportunity to visit our chapters in Southern California. Our visitation schedule started earlier in the year with the San Francisco Bay Chapter and the Installation Dinner with the Los Angeles Chapter in January. August brought Lipovan and Walmsley to the San Fernando Valley Chapter and Members and the San Diego Chapter and the Maraicosta College in San Diego. The member company visits were really great experiences for the promotions of new NTMA member benefits, reacquainting long time member companies with NTMA-U,



Calandra Crawford instructor, Glenn Vannoy, Jeff Walmsley at the San Diego Training Center



Sean Tillett, president of the San Diego Chapter in his office after touring

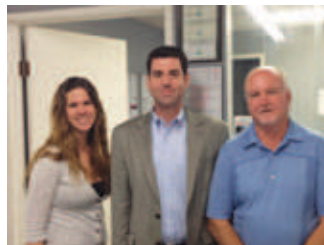
the NRL Program and especially the affinity programs such as Grainger and PartnerShip. While in San Fernando Valley, Lipovan and Walmsley had the opportunity to meet with all the board members and have a frank and candid discussion about their needs and strategies. Great ideas about developing a State wide strategy for California as it relates to manufacturing and the



Cliff Manske and his wife at Manzke Machine

College in San Diego where we met instructor Calandra Crawford, retired Navy Captain, who is now an instructor of machining at the school. HAAS has significantly invested in this training center and we were proud to see NTMA Textbooks throughout the school.

The chapters in California are very open to working together both on State initiatives and events. The excitement is building and the NTMA is proud to support these efforts.



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PRECISION TOOLING INC.

BIG KAISER TO DISPLAY COMPREHENSIVE LINE-UP AT SOUTH-TEC BOOTH #1711

Hoffman Estates, IL – BIG Kaiser Precision Tooling Inc. has been continually expanding its product line while staying true to its mission of bringing the highest quality, most precise, most reliable and most accurate tooling and accessory products to market.

The entire KAISER EWD Series of digital boring heads will be featured—including the brand new 310 medium diameter and 318 large diameter programs, which augment the popular 112 digital program. “These two new lines complement the Kaiser Series 112 EWD 2-54 line of digital precision boring

heads for small diameters,” says Jack Burley, BIG Kaiser vice president of sales and engineering. “Together, they cover the full range of finish boring needs from Ø.016”-118”.”

The Unilock Zero-Point Clamping System will also be on display. Unilock uses spring pressure to drive wedges against a tapered wedge lock (clamping knob). Air pressure is used to compress the springs, releasing the wedge lock. The result is quick and repeatable clamping. The product will be shown in 5-axis setups, tombstone configurations (ROC® Mineral Cast), as well as standard table top solutions.

The new Hydraulic Chuck Super Slim line of tool holders, an expansion of the high performance Hydraulic Chuck line, has received a lot of attention lately. The slender body eliminates interference in confined areas—ideal for 5-axis precision machining. Hydraulic Chuck Super Slim types are ideal tool holders for precision finishing processes in confined areas with drills, reamers, ball mills, end mills, diamond reamers and grinding tools.

Two table-top tool presetter solutions will be presented – a new and improved entry-level Diaset contact presetter, and the tried-and-true Speroni MAGIS vision-based table top model. The Diaset, by Innotool Austria, underwent a major design



overhaul, including new mineral cast construction, an “easy-run” system for fast axis movement, a more robust spindle and a brand new digital control readout.

Finally, be sure to ask a product expert at the booth about the new Mega ER Grip with a KAISER KAB connection from BIG Daishowa, which is a high quality modular ER collet chuck that completely satisfies the 4 requirements for tool holders; clamping force, concentricity, rigidity, and balance for high spindle speeds. Using existing KAISER modular components, custom tool configurations can be made with standard components.

BIG Kaiser Precision Tooling Inc. is a leader in high precision tooling systems and solutions. With brands including BIG Daishowa, KAISER, Speroni, Unilock, Sphinx and more, BIG Kaiser’s line is focused on extreme accuracy and repeatability. BIG Kaiser’s mission is to support North American manufacturers with products that are designed and manufactured to a superior standard. Guaranteed.

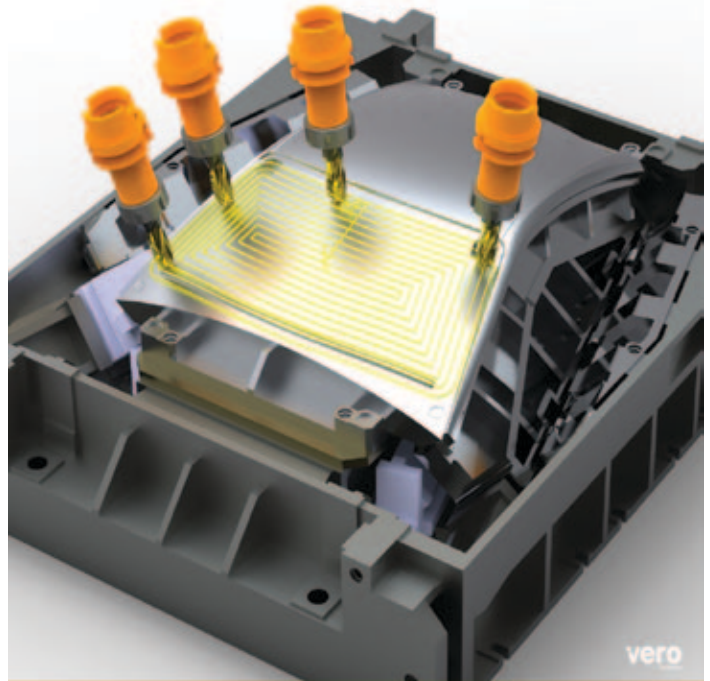


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Second Annual National Manufacturing Day Slated for Oct. 4, 2013



Factory Tours Urged to Raise Awareness of Skilled Career Options

After a successful initial celebration last year, the next Manufacturing Day has been scheduled for Fri., Oct. 4, 2013. Manufacturers, educational institutions and others are encouraged to host events that will highlight the importance of manufacturing to the nation's economy and draw attention to the many rewarding high-skill jobs in manufacturing fields.

The effort is co-produced by the Fabricators & Manufacturers Association, International (FMA), the National Association of Manufacturers (NAM), The Manufacturing Institute and the National Institute of Standards and Technology's (NIST) Hollings Manufacturing Extension Partnership (MEP). Industrial Strength Marketing, a Nashville area marketing agency specializing in marketing services for the manufacturing sector, has joined the effort as a guest producer for the 2013 event.

In its first year, more than 240 events were held in manufacturing facilities in 37 states and more than 7,000 people participated. This year's celebration will feature open houses, public tours, career workshops and other activities to increase public awareness of modern manufacturing. Events also will introduce manufacturers to business improvement resources and services delivered through the MEP's network of hundreds of affiliated centers across the country.

"Manufacturing Day is a great oppor-

tunity to shift Americans' perception that it is not our grandfather's manufacturing anymore and to showcase the tremendous career opportunities manufacturing has to offer," said NAM President and CEO Jay Timmons. "This day is an engaging way to attract young people and get them excited about pursuing a career in a technology-driven, innovative environment that will also provide a good-paying job. We encourage all manufacturers and manufacturing associations to get involved and share what we already know—manufacturing makes us strong."

"Manufacturing Day is a great opportunity to celebrate work and innovation of the 12 million men and women who make the United States the world's largest manufacturing economy," said Ed Youdell, president and CEO of the Fabricators & Manufacturers Association.

"Manufacturing Day provides a focused point in time each year when all manufacturers in America can collaborate to bring attention to this crucial sector of the economy and celebrate their accomplishments," said Jennifer McNelly, president of The Manufacturing Institute.

"This celebration of manufacturing is a chance for all of the great manufacturers who 'Make it in America' to show their value to their communities," said Roger Kilmer, director, Manufacturing Extension Partnership (MEP).

To learn more about Manufacturing

Day, log on to www.mfgday.com, where those wishing to host events will find resources to help them prepare. Visitors to the site also will find an interactive map showing where Manufacturing Day events are planned.

Associations and organizations that support the manufacturing industry are invited to join the program as sponsors or endorsers by calling 888-394-4362 or emailing info@mfgday.com.

For more information contact:

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MANUFACTURING DAY HAS BEEN DESIGNED TO EXPAND KNOWLEDGE ABOUT AND IMPROVE GENERAL PUBLIC PERCEPTION OF MANUFACTURING CAREERS AND MANUFACTURING'S VALUE TO THE NORTH AMERICAN ECONOMY. IN ADDITION, MANUFACTURERS WILL LEARN ABOUT BUSINESS IMPROVEMENT RESOURCES AND SERVICES DELIVERED THROUGH MANUFACTURING EXTENSION PARTNERSHIPS.

HOST AN OPEN HOUSE

As a manufacturer it's your opportunity to:

- Tell your company's story
- Dispel outdated myths about manufacturing
- Inspire a new generation of manufacturers
- Connect with potential customers in your community
- Learn about manufacturing extension partnerships that can improve your efficiencies and work force skills and boost your profits
- Visit other manufacturers to initiate business relationships and learn what is being made in your community

The core element to Manufacturing Day is the schedule of manufacturer's open houses. Manufacturing Day producers will promote the open house schedule through general and trade media campaigns which will alert thousands of people to visit manufacturers and see that American manufacturing is a vibrant career path and employers need skilled workers. The event will also make it possible for manufacturers to visit other participating companies in their region that may be potential business partners – either as customers or suppliers.

ATTEND AN OPEN HOUSE

If you are employed in a non-manufacturing service industry such as accounting, business and MRO supplies, business services, education, media or if you are a student or a parent,*

Visit manufacturers on Oct. 4, 2013 and learn:

- What modern manufacturing facilities are really like these days
- What the companies located in your community make and who they sell to
- What kinds of jobs are available in manufacturing
- What skills and education are needed to qualify for today's manufacturing jobs

*Students under age 18 must be accompanied by an adult or participate with a school group.

REGISTER TO HOST AN OPEN HOUSE
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SIGN-UP TO VISIT OTHER MANUFACTURER'S
OPEN HOUSE EVENTS
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LEARN HOW TO MAKE THE MOST OF
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OCTOBER TO BE CELEBRATED AS MANUFACTURING MONTH IN OHIO

PUBLIC AND PRIVATE ORGANIZATIONS JOIN TOGETHER TO
HIGHLIGHT THE IMPORTANCE OF MANUFACTURING IN THE
BUCKEYE STATE

How important is manufacturing in Ohio? So important that more than one million vehicles are produced in the state each year, more than 1/6 of total U.S. output. Ohio is also the undisputed leader in American aircraft engine production with 17 percent of the total U.S. employment in aviation and aerospace located in Ohio.

And did you know that the state's food and beverage manufacturing industry shipped \$24 billion in products last year?

To showcase the importance of manufacturing in Ohio, various industry leaders have developed a series of activities in October highlight the industry. From plant tours to career workshops to a live interactive telecast being made available to high schools and middle schools statewide, October will be celebrated as Manufacturing Month in Ohio.

"National Manufacturing Day takes place October 4, but with the level of interest from various groups, we felt one day just wasn't enough to pay tribute to the thousands of manufacturing companies, hundreds of thousands of workers in Ohio's manufacturing industry and the billions of dollars in revenue and income generated by manufacturing in Ohio each year," said Gary Conley, President of TechSolve. "We're delighted that there will be activities taking place throughout Ohio in October."

Ohio is still the third largest state in manufacturing as a percent of Gross State Product, ranking only behind the much larger states of California and Texas. Some 600,000 Ohioans are employed in manufacturing, nearly 13% of Ohio's total employment.

While 80 percent of Americans believe manufacturing is important to the country's economic prosperity, standard of living and national security, only 30 percent encourage their children to pursue a manufacturing career. For that reason, a primary objective of Manufacturing Month in Ohio is to have middle and high school students tour a manufacturing facility in their own community to see the high tech opportunities of modern, advanced manufacturing and the well-paying careers available to them in manufacturing. Most students will no doubt be surprised to learn that wages in manufacturing are 9 percent higher than the state's economy-wide average.

All the activities and event related to Manufacturing Month in Ohio can be seen and searched at: www.ohiomanufacturing-month.com. Events in other states can be viewed at www.mfg-day.com.

The sponsors of Manufacturing Month in Ohio include the Ohio Manufacturing Extension Partnership, the Ohio Development Services Agency, OH! Manufacturing, CIFT, TechSolve, MAGNET, the Dayton Region Manufacturers Association, The Ohio State University, the Ohio Department of Education, Ohio Manufacturer's Association, Ohio Manufacturing Institute and The Columbus Region.



**"WE ESTIMATE WE'VE SEEN
A 40 TO 60 PERCENT REDUCTION IN
CYCLE TIMES ON ALL JOBS MOVED
TO THE MAKINO CELL."**

**"THE MACHINE'S RAPID ACCELERATION/
DECELERATION RATES AND 0.9-SECOND
TOOL CHANGES HAVE REDUCED PART
CYCLE TIMES BY 50 PERCENT."**

**"WITH THE MAKINO MACHINING
CELL, WE REPLACED FIVE MACHINES
WITH TWO, WHILE DOUBLING
PRODUCTION CAPACITY AND IMPROVING
QUALITY AND FLEXIBILITY."**



When you talk to people who make what matters, the bottom line on what matters most to them is just that—the bottom line.

See why, for so many manufacturers, Makino and productivity are two words for the same thing. Read their stories. Watch their videos and cutting demos at [Makino.com/productivity](https://www.makino.com/productivity).



NTMA CHAPTERS LEADING REGIONAL MANUFACTURING MOVEMENT ARIZONA MANUFACTURING PARTNERSHIP DRIVES STATE WIDE AGENDA

BY DANTE O. FIERROS, PRESIDENT ATMA

Manufacturing is important for our economy and our country. We need more and better workers to replace an aging and retiring work force. Manufacturing and Industry need to collaborate better on meeting the needs of manufacturing. These things we know. These things are talked about a lot.

A few key Arizona organizations have come together to do something about it and the result has become the establishment of the Arizona Manufacturing Partnership (AMP) under the Arizona Chamber Foundation 501C3 and specific projects to address these key issues have already commenced. Support is growing and many organizations, associations, and companies have come together to pledge involvement in accomplishing the key goals below. The ATMA, the Arizona Commerce Authority, the Arizona Chamber of Commerce and Industry, Arizona Department of Education, Science Foundation Arizona, SUMCO, WestMEC, Arizona Governor's Office of Education Innovation, the Arizona Manufacturers Council and many more too numerous to list here have come together in this initiative.

The ATMA Board of Directors and a growing number of ATMA members have endorsed AMP fully and have pledged to insure the attainment of the following goals:

PURPOSE STATEMENT

A statewide, industry-led initiative that aligns industry needs with education articulation to create and sustain a qualified workforce for manufacturing.

GOAL 1:

Promote the world-class image of manufacturing to schools, teachers, parents and legislators.

OBJECTIVES:

1. Showcase the value and opportunities available in 21st century manufacturing, using industry data resources.
2. Utilize all media outlets to reach stakeholders.

GOAL 2:

Ensure curricular content and education delivery system lead to skill development and qualified workers with nationally recognized, industry-validated credentials.

OBJECTIVES:

1. Promote nationally recognized skill certifications and increase the business demand for their attainment.
2. Create or revamp technical programs to meet certification in a wide range of skills.
3. Design and deliver a way to connect education products to industry needs.
4. Support a Pre-K through Workforce (P20W) curriculum pipeline.

GOAL 3:

Serve as the liaison between manufacturing needs and education articulation.

OBJECTIVES:

1. Serve as the collective voice for industry, recognizing and identifying regional manufacturing workforce needs.
2. Link industry needs with education articulation to close the skills gap.

GOAL 4:

Join with the Arizona Chamber Foundation 501(c)(3).

OBJECTIVES:

1. Identify the partners, relationships and responsibilities necessary to reach goals.
2. Leverage opportunities with the National Association of Manufacturers (NAM) and the Manufacturing Institute.
3. Obtain seed and operating funding.



HOW CONGRESS CAN SUPPORT AMERICA'S MANUFACTURING RENAISSANCE

THE HILL, BY THOMAS GIBSON

Increased energy production within North America is expected to add 1.4 million jobs and create almost \$803 billion in revenues by 2030. These benefits should not be overlooked, especially in light of the fact that each day we find ourselves with more energy resources than we had previously anticipated. The U.S. steel industry is the solutions-provider in the energy renaissance, as the pipe and tube products that steelmakers produce are integral to the exploration, production and transmission of natural gas and oil.

The domestic steel industry has voluntarily reduced its energy intensity by 27 percent since 1990, while reducing its greenhouse gas (GHG) emissions by 33 percent over the same time period. Despite our world-leading levels of energy efficiency, the steel industry consumes substantial amounts of energy each year primarily in the form of coal, natural gas and electricity.

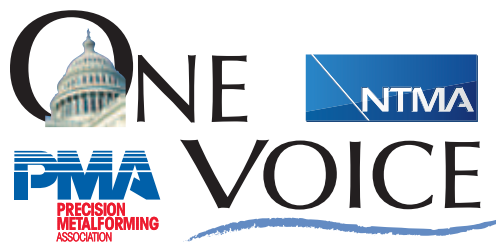
Energy is typically 20 percent or more of the cost of making steel. As major consumers of energy, steel companies are negatively impacted by high fuel prices. Reliable and plentiful sources of energy are essential to our productivity and international competitiveness. Increasing produc-

tion of all of these sources is essential for the industry, which directly and indirectly employs more than one million people in the U.S.

In September of last year, the Consumer Energy Alliance (CEA) released its report, "North America's New Energy Future: A Roadmap for energy self-sufficiency. If we choose it." In its findings, CEA notes that, after

several decades of preparation, the United States is finally in a place to substantially increase its energy generation and reduce oil imports. Part of this new energy reality for the U.S. includes a sweeping national shale gas

CONTINUED ON — P22



boom that has brought economic growth, increases in state and local revenue and a revival for struggling manufacturing sector – including the steel industry. The shale gas revolution has helped to drive up production for many steel plants while reducing operating costs.

To make any further significant improvement in energy use, new breakthrough technologies are also needed. A decade ago the industry began investing, often in partnership with the Department of Energy (DOE), in the CO2 Breakthrough Program – a suite of research projects designed to develop new ironmaking technologies that emit little or no CO2 while conserving energy. We have developed two key technologies to achieve those goals since that time and they are now ready for pilot scale testing. The research is being done at MIT and University of Utah and both projects are the subject of proposals currently under consideration for DOE cost-sharing. This successful partnership with DOE, along with the continued support of Congress, will accelerate the development and deployment of these critical technologies.

For our new energy reality, CEA predicts that while “technology will play a leading role in boosting domestic supplies... the real variable in it all is public policy.” As such, Congress must:

- Promote an abundant and affordable energy supply by fully developing domestic natural gas, oil, coal, and nuclear power resources; including, harnessing the energy and economic benefits of natural gas from shale formations. It is also essential that Congress act to ensure the approval of the Keystone XL Pipeline without further delay.

- Ensure that federal regulations do not unilaterally raise the cost of all domestic energy sources. Several EPA regulations of the utility sector, including for greenhouse gas emissions, could raise the costs of electricity to large industrial customers like steel while potentially lessening the reliability of electricity supply. Proposals to subject shale gas drilling to new federal regulations must maximize the potential economic and environmental benefits of this important domestic resource.

Manufacturing on the whole supports an estimated 17.2 million jobs in the United States—about one in six private-sector jobs. Nearly 12 million Americans are employed directly in manufacturing. Greater development of energy resources means greater demand for manufactured goods, including steel. That translates into more jobs, and that’s good for everyone.



WRITTEN SAFETY PROGRAM

BY US REPORTS

The formal safety program is a set of written documents that describe a company’s safety policies, priorities, and responsibilities. The program is designed to bring structure and consistency into your firm’s accident prevention efforts. Without a written document, you might as well have a construction crew without a blueprint, or a machine shop without a production plan.

However, just because a safety program is written, doesn’t mean it is always followed. To be effective, everyone on the management team must understand what is expected of them and safety must be an ongoing, essential part of production. This means the entire workforce must have an occasional reminder of what accident prevention is all about.

KEY SAFETY PROGRAM ELEMENTS ARE:

1. Management’s Safety Policy - This is usually a simple but important statement, emphasizing that the safety and well-being of employees is of the highest priority in the firm, and will be fully supported by top management.

2. Responsibilities of Management, Supervisors, and Employees - Safety responsibilities at every level of the organization must be clearly defined in writing and in training, so everyone has a fair and equal chance to live up to what is expected of them.

3. Safety Rules - A list of specific Safe Work Practices must be established for the safety of each individual and all co-workers. These “conditions of employment: can prevent accidents during production—but workers and companies often tend to forget them, unless they are enforced.

4. Disciplinary Policy - When any individual fails to follow established safety rules, the entire work team may be at risk. The disciplinary policy defines how safety rules will be enforced fairly and consistently.

5. Specific Written Programs - Federal



and State laws also require that critical jobsite hazards must be controlled through specific written programs and extra em-

ployee training. These include programs in Confined Space Entry, Lock out /Tag out, Fall Protection, Scaffolding Safety, Hazardous Materials/chemicals, Hearing conservation, Machine guarding, PPE, weather / environmental concerns, etc... Strict procedures are necessary to control exposures and hazards, fatalities or serious injuries.

6. Safety Meetings - Responsibilities and safety procedures are rarely followed by everyone without an occasional reminder. Most worksites have a variety of hazards to discuss, and safety meetings provide this opportunity. Remember, though, you needn’t wait for a safety meeting to correct a potentially hazardous situation.

WHY A WRITTEN SAFETY PROGRAM?

All workers need to know specifically what is required to perform their job safely to protect themselves and members of the general public.

US-Reports Risk Services offers on-site consultative services, virtual support and materials to supplement your efforts; can host a safety meeting at your facility and offer specific program development custom to your facility through a comprehensive Risk Assessment and / or Job Safety Analysis. We provide onsite Industrial Hygiene services to sample and monitor for heat stress as well as for potential exposures to potentially harmful vapors, liquids, dusts, fumes, noise and lighting issues.

US-Reports Risk Services can be reached via email at riskservices@us-reports.com or 1-800-223-2310 x223. We are an Affinity partner with the NTMA and the national provider of safety services for AiX Metalworkers Insurance Program.





2014 NRL COMPETITION

CLEVELAND, OHIO

MAY 16-17

Lou Higgins Center at Baldwin Wallace College

THE PREMIER NATIONAL ROBOTICS COMBAT LEAGUE

LOU HIGGINS CENTER

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



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

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

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

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

Check it Out

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



about recent events, favorite parts or tools, as well as build tips are welcome. Remember, if you are a High School or College rising senior, there's

nothing better than a few published articles on your resume to rise out of the slush heap!

E-mail Kevin Barry, the Servo Combat Zone editor for more information @

legendaryrobotics@gmail.com

Rules Update

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

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



We Love our Sponsors!

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Sandvik Coromant

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

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A PRODUCT OF DEPCO, LLC

SPONSOR SPOTLIGHT

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

THE NATIONAL
ROBOTICS LEAGUE
IS POWERED BY:



Hannover Messe 2014

APRIL 7-11, HANNOVER, GERMANY

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

A PERFECT NETWORK OF SEVEN FLAGSHIP FAIRS

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

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

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



2014 TRADESHOW LINEUP

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



ENERGY

The energy industry worldwide is facing the need for change.

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



MOBILI TEC

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

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



INDUSTRIAL GREENTEC

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

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

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

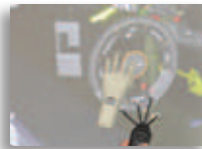


INDUSTRIAL AUTOMATION

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

business success.

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



DIGITAL FACTORY

Leading Trade Fair for Integrated Processes and IT Solutions.

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

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



INDUSTRIAL SUPPLY

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

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



RESEARCH & TECHNOLOGY

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

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

THE 411 TO TRADESHOW SHIPPING



Your Shipping Connection

We know tradeshow shipping can be confusing. When you've been to as many tradeshow as we have, you've seen it all. Here's some of our sage tradeshow shipping wisdom, gathered in one place for your reference.

BEFORE THE SHOW

When preparing for a show review your show's exhibitor manual closely! You will save money by familiarizing yourself with move-in and move-out dates, as well as advance warehouse and show site shipping information. Be sure to order any utilities you might need (electric, water, special services, etc.) well in advance, when discounts of up to 33% can be realized. The closer the show date approaches, the more expensive these types of items become.

IMPORTANT MATERIALS TO SHIP WITH YOUR BOOTH

It seems obvious, but we've seen it a thousand times — booths showing up at the tradeshow floor missing the basic essentials to make unpacking and setup a breeze, including:

- Clear packing tape
- Velcro — two-sided self-stick
- Scissors
- Permanent markers
- Stapler and staples
- Shrink wrap

Place at least two labels on each box in the event pieces get separated during transit. Clearly mark your company name and booth number on each box/label.

ADVANCE WAREHOUSE VS. SHOW SITE

You have two options to ship your tradeshow shipment to your show: the advance warehouse or directly to the show site. If you plan to ship your booth and materials to the show well in advance of the show date, you will want to ship your materials to the advance warehouse. If time is tight and you cannot get your materials there early, shipping to the show site is a viable option as well.

When shipping to the advance warehouse, your freight may arrive up to 30 days prior to the show dates; check your show's exhibitor service kit for information on shipment types and dates. If your freight is ready early, we suggest shipping to the advance warehouse whenever possible. Shipping to the advance warehouse gives you the ability to track your freight and ensure that it has been received, with time to double-check. Your freight will already

be in place when you arrive for setup. Although some show decorators may charge slightly higher drayage for a shipment sent to the advance warehouse, the pros generally outweigh this cost.

When shipping to the show site, your freight may only arrive during the scheduled times of exhibitor move-in. Shipping to the show site brings into play the risks of your shipment not arriving in time, being refused by the facility, or incurring additional charges. If your freight is sent directly to the show site, the carrier controls your delivery time. Carriers are assigned an unloading number according to driver check-in time, so make sure they arrive early!

FURNITURE (SHIP IT)

All tradeshow decorators offer a wide array of furniture for rent, including tables, chairs, bag stands, literature racks, waste baskets, and more. Renting furniture ensures that the decorator handles delivering items to your booth (usually the day before the show opens) and picking them up after the show. While this is certainly easy, we've found that furniture rental can add upwards of 20% to your total show costs.

The PartnerShip tradeshow shipping solution? Go to your local low price warehouse (Costco, Sam's Club, Wal Mart, etc.) and buy collapsible furniture. Then just include it with your pallet and ship it to the show. Your one-time expense of buying a few hundred dollars worth of booth furniture could pay for itself after one show.

CARPET (SHIP IT)

Depending on the venue selected for your event, you can expect either a bare concrete floor or ballroom carpet greeting you when you arrive in your booth space. Not very fun to stand on for eight to ten hours a day for the duration of the show. The solution? Carpet.

All major tradeshow decorators offer carpeting and padding for rental. It is important to note that standard carpet sizes are 9' x 10' even if your booth size is 10' x 10'. This is because most booths utilize a back wall and do not utilize the rear 1' of the booth space.

Renting carpet and padding for the show, similar to renting furniture, can be an expensive proposition. We recommend investing in a portable interlocking floor

system that you can easily ship with your booth exhibit to the show. A typical 10' x 10' booth space will cost less than \$300 to carpet. Rather than renting a couple hundred bucks worth of carpet at every show, just buy some and ship it with your booth.

MATERIAL HANDLING/DRAYAGE

Drayage is the charge for moving your exhibit materials from the dock to your booth space on the tradeshow floor before the show, as well as for moving your materials back to the dock at the end of the show. Drayage is typically calculated on a fee per 100 lbs. of freight per shipment. Drayage fees vary depending on the type of shipment, the amount of handling, the time of day, and other factors. Be sure to review and anticipate drayage fees when you prepare your show budget.

DRAYAGE SERVICE PROVIDES FOR:

- Completing inbound carrier's receiving documents
- Unloading and delivery of the goods to your booth space from the receiving dock
- Storing of empty cartons/crates and extra products at an on-site warehouse
- Returning empty cartons/crates and pickup of the exhibit materials from your booth space to the receiving dock and loading back onto the truck of your chosen carrier
- Completing outbound carrier's shipping documents

COMMON MISTAKES THAT TYPICALLY RESULT IN ADDITIONAL DRAYAGE CHARGES INCLUDE:

- Multiple small shipments arriving separately — it's always best to consolidate your shipment if the weight is over 200 lbs.
- Shipments being delivered after the deadline date
- Missing your target date
- Trucks arriving during "overtime" hours, which include all weekend shipments

INSURANCE

Check with your company's insurance provider for insurance available to you while exhibiting. You are encouraged to make sure your property is sufficiently insured from the time it leaves your place of business until it returns after the show. Speak with your

CONTINUED ON — P29

NTMA



THE OMNI PARKER HOUSE WELCOMES ATTENDEES OF NTMA FALL CONFERENCE.

Block Dates: October 15th - 20th, 2013

Group Rate: From \$250 per night

Cutoff Date: September 16, 2013 to receive special rate

The group rate is made available until the "Book By" date.

Reservations made after the cutoff date are subject to availability and prevailing hotel rates.

TENTATIVE SCHEDULE OF EVENTS

WEDNESDAY, OCTOBER 16

7:30am - 9:00am	NTMA Continental Breakfast
7:45am - 8:30am	First Timers Breakfast
9:00am - 10:45am	NTMA General Membership Assembly/ Awards & Updates/Keynote Speaker
11:00am - 12:30pm	Robotics Team Meeting
11:00am - 12:30pm	Education Team Meeting
11:00am - 12:30pm	Next Generation Team Meeting
11:00am - 12:30pm	NTMF Board of Directors Meeting
1:00pm - 2:30pm	Manufacturing Technology Team Meeting
1:00pm - 2:30pm	Nominating Team Meeting
2:30pm - 4:00pm	Government Affairs Team Meeting
2:30pm - 4:00pm	Workforce Development Team Meeting
2:30pm - 4:00pm	NTMA Chapter Executives Meeting
2:30pm - 5:00pm	NTMA Insurance Board Meeting
1:30pm - 4:30pm	Optional Activity - Boston Duck Tour www.bostonducktours.com
5:00pm - 7:00pm	Tech Suite Welcome Reception

THURSDAY, OCTOBER 17

7:00am - 8:30am	NTMA Continental Breakfast w/ Franklin Partnership
8:00am - 10:00am	NTMA Membership Value Meeting
8:00am - 5:00pm	Okuma Technology Suite
8:00am - 5:00pm	Precision Fluids Technology Suite
8:00am - 5:00pm	Mazak Technology Suite
9:00am - 11:30am	Spouses Program
9:00am - 11:00am	Kennametal/Pioneer Tool Business Track
10:30am - 12:00pm	NTMA Chapter Leadership Development Seminar - Workforce & Economic Development - How to Become a Regional Player
12:00pm - 1:30pm	NTMA Luncheon for Past Chairmen & Wives
12:00pm - 1:00pm	Business/Sales Development with Dan Bagley
12:00pm - 1:00pm	Chapter Executives Roundtable
1:00pm - 3:00pm	Industry Advocacy Team Meeting
1:00pm - 3:00pm	Kennametal/Pioneer Tool Business Track
1:30pm - 4:30pm	Optional Activity - Freedom Trail Tour
2:30pm - 5:00pm	Plant Tours
3:00pm - 5:00pm	Chapter Leadership Development Track - CultureShoc
7:00pm - 10:30pm	New England Aquarium

FALL CONFERENCE

October 16th - 19th,

Boston, MA

Omni Parker House

60 School Street, Boston, Massachusetts 02108

Phone: (617) 227-8600, Fax: (617) 742-5729

Keynote Speaker

Headlining as our keynote speaker will be Robert O'Neill, team leader, Naval Special Warfare Development Group. In his speech, O'Neill shares what he learned dur-



ing his more than 400 combat missions across four theaters of war. Join us as one of the legends of our nation's military shares his views on the ingredients to a successful mission: the right people, preparedness, decision making under pressure, and, above all, a commitment to never quit.

FRIDAY, OCTOBER 18

6:30am - 8:00am	Budget & Finance Team Meeting
7:00am - 8:00am	Continental Breakfast
8:00am - 9:00am	NRL & NTMA-U Update

INDUSTRY ROUNDTABLES

9:30am - 11:30am	NTMA Tools, Dies & Molds Round Table
	NTMA Precision Machining Round Table I
	NTMA Precision Machining Round Table II
	NTMA Precision Machining Round Table III
	Specialty Machines

Lunch BREAKOUT SESSIONS

12:30pm - 1:15pm	Healthcare Reform/Clifton Allen Presentation
1:30pm - 2:15pm	Roundtable regarding Health Care Reform
1:30pm - 2:15pm	CLiftonLarsonAllen-JobBOSS, Epicor and Profit Key Panel
12:30pm - 1:15pm	International Business - Hannover Messe /EMO Speaker
12:30pm - 1:15pm	Additive Manufacturing Breakout
1:30pm - 2:15pm	International Business Panel/Roundtable
1:30pm - 2:15pm	Emerging Technologies Panel/Roundtable
2:30pm - 4:30pm	Workshop with Scott Klososky
6:30pm - 10:30pm	Auction/Fundraiser

SATURDAY, OCTOBER 19

7:00am - 8:00am	Continental Breakfast
8:00am - 9:00am	NTMA Team Leaders Meeting
10:00am - 12:00pm	NTMA Board of Trustees Meeting
12:00pm - 5:00pm	Free time to explore Boston

SUNDAY, OCTOBER 20

9:00am - 11:00am	Executive Team wrap up Meeting
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WWW.GONRL.ORG

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

NTMA Fall Gala 50/50 Raffle

In support of the National Robotics League

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 go to support this great program, and the other half will support a great holiday season for the lucky winner. Last year's winner took home \$7500!



To purchase your tickets, fill out the form below and return to Kristen Reitz via e-mail at kreitz@ntma.org or fax at 216-264-2840. We'll contact you upon receipt of this form to collect payment information.

Name: _____

Company: _____

Phone Number: _____

E-mail Address: _____

of Tickets: _____

Total: (\$100 per ticket) _____

Thanks for supporting the Future of Manufacturing!!



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 their winnings.



National Robotics League GONRL.ORG 800.248.6862



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||||| **FOR THE ONES WHO GET IT DONE**

insurance provider about types and levels of coverage recommended for your particular situation.

Your shipment will also be covered by the carrier's liability, which is different than insurance. Liability is the carrier's financial accountability for lost or damaged goods. Each carrier has specific limits of liability coverage. If your material gets damaged or lost during transport, you must file a claim with the carrier directly.

AT THE SHOW

Always bring master copies of literature and your shipment information (including the pro number) with you to the show, in the unlikely event that your shipment is lost or delayed. If the worst happens, you'll have a method for tracking down your shipment and materials to hand out to customers.

SHOW OFFICE

Once you arrive at the show and determine your booth location, it's always a good idea to locate the show office — it will be your key support center while you are there. If you have questions about show procedures, rules and regulations, or just need general show information, visit the show office.

PREPARING FOR SHOW OPENING

First thing's first — set up your display! After you set up, have your empty packing material and containers ready for removal and storage during the show by labeling them with your company name and booth number. The official service contractor will clear the floor of all labeled material to be

stored throughout the show and return the items to your booth upon show close. If at all possible try to break down your boxes and store your move-out materials under a table in your booth, this way you won't have to wait — sometimes for hours — to receive your empties at the end of the show.

ONCE THE SHOW IS OPEN

Be aware of your dismantle schedule and instructions in advance to avoid any possible confusion. Leave enough time for empty containers to be returned to you from storage.

You will need to confirm your outbound shipping arrangements with your carrier. If your designated carrier does not show to pick up your shipment please be aware that the official show contractor has the right to "force" the freight out with another carrier of their choice.

CLOSING DAY

Once the show is closed, pack up all of your materials to be shipped out and leave them in your booth. Please pay special attention to any move-out bulletins you receive, which will include timelines for turning in your outbound paperwork. You will need to complete the official show contractor's Outbound Material Handling Form and turn it in at the service center desk once you have your exhibit material packed up and ready to go. Please double check that the carrier information and billing information are correct on your form. Show site personnel will collect your materials and take them to the dock for pickup. To ensure that your

materials stay together and minimize the possibility of lost or damaged items, you may want to shrink wrap your materials. Be aware that if you need shrink wrap and/or shrink wrap service from the decorator it will cost you extra money.

AFTER THE SHOW

After the show, make notes of what you learned from your show experience — these will be valuable throughout your exhibiting future. Keep copies of any forms, invoices, and show materials. The next show may be handled by someone else or may be too far in the future to remember all the details when the time comes. Remember to take the time to compare your costs with your benefits after the show as well.

THE NEXT SHOW

Sometimes your schedule demands that you exhibit at another show, in another state, in a few days. This is when you definitely need an expert in handling and expediting your tradeshow materials. PartnerShip can help move your booth and materials in a timely manner, to be sure you are ready to go. We do all the tracking and communication with the carriers to assure this is one thing you don't have to worry about.

PartnerShip is here to provide you with simple, dependable, and exceptional tradeshow shipping — all while saving you money. For a quote on your next shipment to or from a show visit PartnerShip.com/Quote or call us at 800-599-2902.



SANDVIK ACQUIRES REMAINING SHARES IN PRECORP INC., USA

Sandvik Coromant parent company Sandvik AB, Sandviken, Sweden, has reached an agreement to acquire the remaining 51 percent of shares in Precorp Inc., a company based in Spanish Fork, UT.

The acquisition is expected to be concluded by October 1, 2013 and Precorp Inc. will be consolidated into Sandvik Machining Solutions. Sandvik has been the minority share owner (49 percent) of Precorp Inc. since 2008.

Precorp Inc. was founded in 1986 and offers a full line of Polycrystalline Diamond (PCD) and carbide tools including drills, reamers, end mills, port tools, and micro tools to meet the requirements of high speed machining of die cast aluminum, carbide parts and the machining of advanced composite



materials as well as many other materials. The company serves customers worldwide, primarily within the aerospace and automotive segments.

In 2012 Precorp Inc. had sales of approximately \$37 million, (230 MSEK), with 200 employees.

"The already existing co-operation between Sandvik Machining Solutions and Precorp has led to several new business opportunities. The acquisition of the remaining shares in Precorp is a logic step and is in line

with Sandvik's long-term strategy to have full ownership of core assets. Through the acquisition, we intend to further develop and strengthen the global business for engineered special diamond and cemented carbide based cutting tools, particularly in the attractive aerospace segment", says Jonas Gustavsson, President of Sandvik Machining Solutions.

"I am confident that this acquisition is a good step, both for Sandvik and for Precorp. Precorp's long-term strategy for growth in the Aerospace segment is in line with Sandvik's strategy and now we will work even more integrated to generate innovative solutions for our customers", says Richard Garrick, President of Precorp Inc.





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WITTENSTEIN ALPHA LAUNCHES THE NEW HYGIENIC DESIGN GEARHEAD, ALONG WITH THE WORLD'S LARGEST SELECTION OF GEAR-HEADS FOR WASHDOWN SOLUTIONS.

WITTENSTEIN alpha announces an entire new line of multi-level protection solutions to meet technical and washdown requirements in various industries. "WITTENSTEIN alpha is offering one of the largest selections of hygienic and washdown solutions, tailored to our customer requirements", says Peter Riehle, President & CEO of WITTENSTEIN North America.

WITTENSTEIN provides a wide range of solutions to service the needs of the food and beverage processing, dairy, pharmaceutical, medical and other process technology industries. Cleaning intervals, the cleaning detergents and the cleaning procedures are just three factors that must be taken into consideration when choosing the right drive components.

NEW HYGIENIC DESIGN GEARHEADS AND INTEGRATED MOTOR GEARHEAD UNITS OFFER THE HIGHEST LEVEL OF CORROSION PROTECTION



The WITTENSTEIN alpha Hygienic Design gearhead provides the highest possible protection. The Hygienic line is IP69K rated with electropolished surfaces. 316L series stainless steel guarantees highest corrosion resistance.

STAINLESS STEEL AND NICKEL PLATED GEARHEADS WITH MEDIUM CORROSION RESISTANCE



The new stainless steel LP Generation 3 product family as well as our upgraded inline and right angle GCR product portfolio effectively protects the gearheads from corrosion while ensuring reliable performance. All gearheads are supplied with food grade lubrication and a 300 series of stainless steel output configuration to meet your requirements.

BASIC CORROSION PROTECTION FOR ANY WITTENSTEIN ALPHA GEARHEAD



Any WITTENSTEIN alpha gearhead can be supplied with different colors of Steel-It paint and a 300 series of stainless steel output configuration to protect the gearhead. This basic protection is an efficient solution for many axes, where there is minimum direct cleaning of the gearhead required. This configuration is available for the entire WITTENSTEIN alpha gearhead line, and all gearheads are supplied with either food grade oil or grease.

WITTENSTEIN alpha has applied significant research and developed expertise to exceed the requirements in the packaging, food processing, food handling and pharmaceutical industries. WITTENSTEIN alpha provides one of the world's complete line of gearheads for washdown and corrosion resistant applications and meet FDA, 3-A and EHEDG standards.

Our WITTENSTEIN alpha industry experts can help you determine the right gearhead protection, together with you - for your application.

Please visit us at PackExpo 2013, Booth #3029, where the new Hygienic Design gearhead will be demonstrated.



TOYOTA INVESTS \$28M IN MICH. PLANTS

INVESTMENT WILL BE USED TO EXPAND POWERTRAIN R&D OPERATIONS IN ANN ARBOR, MICH.

Toyota Technical Center (TTC), a division of Toyota Motor Engineering & Manufacturing, N.A. (TEMA), plans to invest more than \$28 million to expand its powertrain operations at two facilities in Ann Arbor, Mich.

The new growth will support powertrain development capability, specifically in the areas of design, evaluation and calibration on new engine and transmission projects.

"Toyota is a global leader in the automotive industry and its growth in Michigan is welcome news for all of us," Gov. Rick Snyder says. "Toyota's commitment strongly signals that Michigan offers an improved climate for increased business investment. We welcome this very positive decision."

The expansion projects will occur in Ann Arbor and position TTC to develop engines and automatic transmissions for the North

American designed and manufactured vehicles. For more than 10 years, Toyota has been manufacturing engines and transmissions in the U.S. and in the past 20 months Toyota has invested about \$2 billion in its North American manufacturing facilities, adding more than 4,000 new jobs



DO YOU HAVE A WRITTEN INCOME PLAN FOR RETIREMENT?

THINK YOU HAVE YOUR GOLDEN YEARS COVERED? – GET IT IN WRITING! SAYS EXPERT FINANCIAL PLANNER

“Age 85 is a bad time to go broke,” says expert retirement planner Jeff Gorton. Personal savings, various investments and, yes, Social Security may prove to be short of what you’d expected.

“Budgeting how you spend money before retirement can often be a misleading measurement of how you’ll actually



Jeff Gorton

spend it during retirement,” says Gorton, a veteran Certified Public Accountant and Certified Financial Planner™, and head of Gorton Financial Group (www.gortonfinancialgroup.com).

“Spending 40 hours a week at work not only earns you a paycheck, it also keeps you from spending money on more vacations, matinee screenings at the movie theater, extra trips to the mall or shopping online. You need to be exceedingly realistic in your planning, and the five years before retirement are actually the most crucial in solidifying post-employment stability.”

To prevent a rude awakening during retirement, Gorton makes certain his clients start with a written income plan (WIP). He reviews the benefits and importance of this “living document”:

- A comprehensive list of life expenses paints a clearer picture. For a 65-year-old

married couple today, there is a 72 percent chance that at least one spouse will live to age 85; a 45 percent chance that one will live to age 90, and an 18 percent chance that one will reach age 95, according to a recent study from the CDC National Center for Health Statistics. You may not think of listing things like pet care, yard maintenance, and regular visits to salons or spas. But if you enjoy those services now, you may want them during retirement, and you might find that you underestimated the real cost of maintaining your desired lifestyle. And, that’s not including gifts to children and grandchildren!

- The forecast of a two-legged stool. A WIP helps you appreciate the reliability of retirement income. What sources of income do you anticipate having? Traditionally, retirement funding has been viewed as a “three-legged stool,” implying a balance between Social Security, retirement plans and savings/investments. As the baby boom generation ages, Social Security benefits may decrease — and the age at which an individual can collect benefits may increase. Changes in employment may affect retirement plans. As a result, the third leg of the stool, savings/investments, may become even more important.

- Who is authoring your WIP? As with all written documents, you must always consider the source. What you may not realize is that a financial planner is liable to have a stake in selling you a financial product.

Just like a retailer may have an incentive to move certain brands of products, many planners are incentivized to have you invest in specific financial vehicles from major institutions. What plan works best for you? Seek advice from an expert who isn’t trying to sell you something, such as an independent firm.

“If you don’t have a written income plan, then you’re just hoping things will work out,” Gorton says.

ABOUT JEFF GORTON, CPA, CFP®

Jeff Gorton is a Certified Public Accountant and a Certified Financial Planner™ specializing in individual tax and retirement planning. He is also an Investment Advisor Representative under Alphastar Capital Management, an SEC Registered Investment Advisor, and has a life and health insurance license. Gorton works with individuals and their families to create and protect their financial legacies. He specializes in working with retirees in the areas of tax planning, benefits, retirement planning, estate planning and safe money techniques. He received his BBA in Accounting from the University of Oklahoma. Gorton previously worked for 10 years as the Chief Financial Officer for a large retail organization, overseeing their accounting, benefits and 401(k) retirement plans.



HINGED SHAFT COLLARS SIMPLIFY ASSEMBLY IN REMOTE LOCATIONS

A new line of hinged shaft collars that now includes different bore styles with attached screws to simplify assembly in remote locations is being introduced by Stafford Manufacturing Corp. of Wilmington, Massachusetts.

Stafford Hinged Shaft Collars feature a triple-link hinge and a captive clamping screw but provide the same holding power as standard two-piece collars. Now available with square, hex, round, and threaded bores, they are ideally suited for assembly or repair in remote access locations such

as conveyor systems and other difficult to reach machinery and equipment.

Eliminating two-piece collars with two clamping screws, Stafford Hinged Shaft Collars prevent fumbling and lost screws that could fall into equipment. Available in 25 sizes from 3/8” to 4” I.D. and 16 metric sizes from

6 mm to 50 mm, they are offered in steel and two grades of stainless steel. These collars can be modified with tapped holes for attaching sensors.

Stafford Hinged Shaft Collars are priced according to configuration, size, and quantity. Pricing is available upon request.



MANUFACTURING IS KEY TO GLOBAL COMPETITION

THE MILWAUKEE BUSINESS NEWS, BY JEFFREY IMMELT

I was recently reminded of the value of manufacturing. A couple weeks ago, I spent some time in Mexico, observing our excellent operations there. Later, I was a speaker at Walmart's summit on American manufacturing. There, we announced an initiative to increase our lighting share at Walmart and create new manufacturing jobs in the U.S.

Manufacturing is the new basis for competitiveness for industrial companies and, for that matter, for countries. The notion of manufacturing has changed. Today, materials decide the performance of our products. There are novel processes and capabilities, like additive manufacturing. High-performance computing opens the door for cycle-time reduction. Better labor relations on the factory floor

have allowed for training and empowerment. And, entrepreneurs inhabit the manufacturing space like never before. Manufacturing is being digitized, decentralized and democratized.

GE is pioneering advanced materials and work-force training. We are making big investments at the Global Research Center in high-performance computing, novel processing and additive manufacturing. We are working with suppliers on cycle time and entrepreneurial behavior.

This requires us to think differently about the factory floor. I have seen three generations of manufacturing thinking at GE. The first (1980s+) really dealt with the difficult relations with our workforce and the need to compete. The second (1990s+) led with a desire to outsource. Every

manufacturing leader became a sourcing leader. Today, our manufacturing leaders must exhibit process skills, technical innovation and entrepreneurship. They must leverage their teams. This requires new thinking.

Our goal at GE is to make products to serve our markets. Localization, innovation and materials are far more important than labor cost in our products. We need flexible people in supportive locations. We will grow our supply chain where we are growing our sales and our innovation.

Based on all of this, the geographic nature of manufacturing has changed. The notion that one or two countries will manufacture for the rest of the world is old thinking. Many places can compete. We must be aware of the fact that manufacturing



competitiveness has become the key source of country competitiveness.

We must always challenge old-fashioned thinking. I find that our leaders can have a very old view of manufacturing. Today, there is more innovation in our plants than anywhere in our company.

Jeffrey Immelt is the chief executive officer of General Electric Co.



GRADE GC4325 BRINGS A NEW GENERATION OF PERFORMANCE TO STEEL TURNING

October 1st sees Sandvik Coromant introduce GC4325; a new-generation coated cemented-carbide grade for steel turning.

This latest innovation in tool material provides a new, higher potential for increasing cutting speeds and a longer, more predictable tool life with very high reliability, over an extended broad ISO P25 application area.

Predictability has become increasingly important in today's machining, especially where there is limited supervision in production. There are always a number of threats to the edge line remaining intact

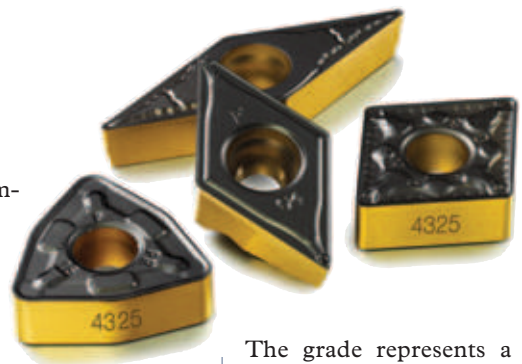
long enough in steel turning. One challenge is the breadth of the ISO P25 application area, which includes several very different materials, from ductile low-carbon steels to high-alloy hard steels, bar material to forgings, castings to pre-machined parts. The advances with the new grade, GC4325, will actually help users resist holding back on cutting-data levels. The grade provides extremely high process security through its ability to retain an intact edge line. **WITHSTANDS HIGHER TEMPERATURES**

The insert substrate and coating of GC4325 have been developed to better withstand

high temperatures, thereby reducing the effect that causes excessive wear.

As a bonus, the grade is highly capable of maintaining the insert edge line at higher temperatures, which translates into the capability for higher cutting speeds with added security through more predictable, longer tool life.

With all this in mind an average productivity increase of 30 percent from today's existing levels is now available.



The grade represents a new generation of performance with coated cemented-carbide indexable inserts, providing a new potential to be tapped throughout a large and diversified application area.

Take a closer look at what this new grade has to offer at www.sandvik.coromant.com/us/gc4325



Successful Ownership Transitions Depend on Perspective and Communication

By Brent Terhaar



We are in the midst of the largest leadership and ownership transition in history.

As a teenager and young adult, I had the attitude that I was always right. I had all the answers and knew my way was the best way. I looked at the way adults operated and said, “I’ll never be that way when I’m their age.” Well, I am now “their age,” and, I am that way.

By “that way,” I mean that I’m slower to make significant changes, I adhere to my philosophies that have been historically successful, I’m more conservative, and I am more sensitive to how my actions affect others. Life’s experiences have shaped who I am, what I do, and how I think; in short, my perspective.

What does this have to do with manufacturing? We are in the midst of the largest leadership and ownership transition in history. Owners are passing their business to their children, their management team, or to new owners from outside the organization. At best, this can be a challenging process; at worst, it can be devastating. At the heart of the challenge is the fact that both parties have valid perspectives that may appear to conflict with the other.

TWO PERSPECTIVES ON TRANSITION

When owners are considering retiring, it’s tempting to look back at how far they have come. They took considerable risks to either start a business or take it over, and it was an exciting and scary time. Part of the fear comes from realizing that their talents and abilities were different than the former owner’s. Looking back is satisfying for owners because they can appreciate what they’ve learned from others and be proud of how they developed their own unique approaches to growth and success.

Every successor faces that same chal-

lenge, and though a departing owner may not agree with all the methods of the new leader, the older and wiser leader can help shape the new leader’s approach and build the confidence that is so critical during any new leader’s transition period.

During a transition, both current leaders and successors must recognize that they will live with today’s decisions for many years to come. For a new leader, the weight of that responsibility may make it more difficult to make decisions. The strongest leaders are those who understand what they do not know, and actively seek the counsel and direction from those with the valuable experience they lack.

A successor must balance the desire to move fast with an understanding of the broad, long-term implications of each decision. Senior leaders can help the next generation understand that small, sustained changes over time often have greater impact than big, broad changes made in haste.

PERCEPTIONS OF FAILURE

Older entrepreneurs have benefited from both success and failure. Although painful at the time, failures shape leaders. Often the next generation has not yet had the benefit of failing. Taking risks and learning from the outcomes is an important part of becoming a leader. For a leader moving out of the organization, it can be extremely difficult to see a successor going down a path that appears to lead to failure. However, you should recognize that failure may help shape the next leader and ultimately lead to future success.

One of the key differences between

older and younger generations is the perception of risk. Of course, reckless risk is not healthy, but a younger leader looking at the same opportunity may see an older person’s perspective as overly cautious — to the point of passing up opportunity. The luxury of experience provides the ability to anticipate outcomes before they play out, but an older leader may also be at a point in life where a significant failure could result in an unrecoverable loss in personal well being.

It is important to recognize that both biases — toward action or inaction — are oriented toward doing what is best for the company. However, one favors opportunity, while the other’s priority is to avoid failure. Negotiating through a transition issue with a healthy respect for each other’s perspective, will provide both leaders with a powerful opportunity learn from each other.

TWO ELEMENTS EVERY TRANSITION DEMANDS

There are no magic answers to a successful business transition, because each situation is unique. However, there are two actions that both an owner and the successor can take to improve the likelihood of success:

- Sincerely attempt to understand the other parties’ perspectives
- Communicate clearly and honestly

The stronger the communication between the current leadership and the next generation, the more clearly each side will understand the other’s perspective, and as a result, both sides will be able to efficiently work through the challenges inherent in a major transition.





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For More Information

Contact: NTMA Vice President

Ken McCreight: 216-264-2834

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THE SMART WAY TO TRAIN YOUR WORKFORCE

NATIONAL PRECISION MACHINING APPRENTICESHIP TRAINING (TOTAL 600 HOURS) 21 COLLEGE CREDITS AWARDED UPON COMPLETION

SEMESTER 1 (100 HOURS) INTRODUCTION TO MACHINING / BASIC SHOP MATH / BASIC BLUEPRINT READING

A foundation for study of manufacturing methods, processes, related equipment, and tools of industry, shop safety practices, job planning, feeds and speeds, layout tools and procedures, hand tools and bench work, metal cutting saws, drilling machines, lathes, milling machines, jig bore and jig grinder, surface grinder, E.D.M, and abrasives. Blueprint Reading-related to the manufacture of a working part, lines, views, dimensioning, calculating cutting planes, fraction to decimal conversion, practical and applied basic shop math, constructing a sketch of an engineering drawing, auxiliary sections, symbols, and broken lines.

SEMESTER 2 (100 HOURS) INTERMEDIATE MACHINING / INTERMEDIATE APPLIED SHOP MATH / INTERMEDIATE BLUEPRINT

Provides skills in layout techniques and operations, including calculating bolt hole circles, location of surfaces related by non-right angle triangles, and points of tangency and other related applied shop mathematics. Included is all learning outcomes that are necessary to successfully layout drawing by understanding the proper views from an actual part. Continues with a foundation for study of manufacturing methods, processes, related machining equipment, and tools of industry, requiring the student to understand shop safety practices, job planning, feeds and speeds, precision measuring and layout tools and procedures, hand tools and bench work, metal cutting saws, drilling machines, lathes, milling machines, jig bore and jig grinder, surface grinder, E.D.M, and abrasives.

SEMESTER 3 (100 HOURS) INTRODUCTION TO CNC / ADVANCED APPLIED SHOP MATH / ADVANCED BLUEPRINT

Computer applications to machining processes. Engineering drawing analysis, using trigonometry to determine programming points; ascertaining implied part dimensions; determinations of machining parameters; calculation of speeds; feeds and tool offset; establishment of work zero and tool home positions. Manual programming of CNC machines using G-codes; tooling and set-up of CNC operations; verification of toolpaths by simulation. Program upload/download, proper collets and guide bushing setting and adjustment, turning tools setting, milling tools setting, ID tools setting, proof running, first part cutting techniques.

SEMESTER 4 (100 HOURS) CNC OPERATIONS / SHOP MATH / BLUEPRINT READING/GDT

CNC machine controls, setting tools, programming and operations of CNC, and machine limits and capabilities. Fundamentals of work planes and the process of setting work planes, fixture offset, determining work offset shifts, input work offset shifts, writing a CNC mill program. Advantage of using canned cycles in CNC mill manual part programming. Codes and information required to program CNC mill canned cycles. Writing a simple CNC mill program using canned cycles, subprograms, the commands and rules for creating and processing subprograms. The advantages of using subprograms. Writing CNC mill programs using subprograms.

SEMESTER 5 (100 HOURS) SPC / MFG PROCESSES

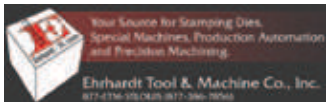
SPC- Quality tools used to solve problems determined by SPC data collection process, basic statistical parameters, interpret variables and attribute control charts, Interpret process capability, measurements of central tendency and variability, descriptive Analysis of Data, Control Charts for Variables Data and attributes. Job Planning and Control Mfg systems, job flow and decision making, specialty tooling and materials. Metallurgy and Composites. The basics of steel manufacturing, the elements used to create steel and steel alloys, the main types of ferrous materials and their properties, and the common tests used to measure metal properties

SEMESTER 6 (100 HOURS) ADVANCED MANUFACTURING PRACTICES AND PROCEDURES

Additive Mfg, Specialty Steels, Advanced manufacturing technologies, processes, performance objectives in modern manufacturing, increased output and quality by integrating the right tools. Jig and Fixture building, CNC, PLC, automation, and software. Calculations of critical performance objectives. The 5S tool used for organizing and maintaining the workplace: Sort, Straighten, Shine, Standardize, and Sustain. properties, elements, and types of ferrous materials commonly employed in metal manufacturing.

EHRHARDT TOOL AND MACHINE SELECTS VIMANA BY SYSTEM INSIGHTS FOR PRODUCTION EFFICIENCY IMPROVEMENT

System Insights (SI) recently announced that Ehrhardt Tool & Machine has chosen vimana as their manufacturing software platform for improving shop floor production efficiency. The selection was made after a vendor competition between System Insights and six (6) other software solutions.



Ehrhardt Tool & Machine has over 75 years of experience as a manufacturer of tools, dies, special machines and automation systems focusing on the needs of sheet metal fabricators.

Bob Roseman, President of Ehrhardt, said, "We evaluated

a large number of MTConnect products with specific goals in mind regarding a baseline to measure improvement, immediate feedback so we could correct situations when they occur and tracking information to discover the root cause of delays and production inefficiencies. The best match to meet our goals from our wide variety of machine brands and data availability was vimana. With System Insights' application assistance and experience we will both be successful in improving efficiencies and securing more business."

Rick Moran, COO of System Insights remarked, "As founding member of the National Tooling and Machining Association,

Ehrhardt has been a strong leader in the manufacturing industry. And now with their support and adoption of the MTConnect standard and our vimana solution, they are once again proving to be visionaries and innovators."

vimana will be monitoring and analyzing data from a range of equipment in the Granite City, Illinois facility - including Mori Seiki, Okuma, TOYADA and Star Swiss machine tools.

vimana software solution monitors and manages machine tool productivity

vimana is the only software product that combines a comprehensive real-time data solution, based on the MTConnect data standard, with multi-dimensional, complex reasoning

and machine learning technologies to deliver predictive manufacturing solutions for both machining-based discrete and process manufacturing industries.

vimana identifies periods of production losses using a sophisticated classification engine, and provides users with the information and insight needed to improve utilization. vimana includes real-time dashboards as well as historical reports and analysis; it integrates with a wide range of modern and legacy factory equipment using the MTConnect open standard for machine tool data interoperability.



COTTON FIBER ABRASIVE WHEELS REPLACE UNITIZED WHEELS IN ROBOTIC DEBURRING CELLS

A line of Type 1 cotton fiber abrasive wheels that outperform non-woven nylon wheels in many robotics deburring cell applications is available from Rex-Cut Abrasives of Fall River, Massachusetts.

Rex-Cut® Smooth Touch™ Type 1 Deburring Wheels are made from cotton fiber, impregnated with abrasives and a proprietary bond, to create a dense yet flexible wheel that constantly reveals fresh abrasives while deburring. Ideally suited for edge finishing in robotic deburring cells, they are comparable to 6 to 9 density unitized wheels, maintain their density while being conformable, and can be dressed for a wide variety of applications.

Capable of lasting up to 10X longer



than unitized wheels, depending upon the application, Rex-Cut® Smooth Touch™ Type 1 Deburring Wheels are available in 1 to 6 dia. sizes from 1/16" to 1/4" thick in coarse, medium, and fine grits. Also well suited for manual applications, they provide the same cushioned feel as non-woven nylon and will not change a part's geometry.

Rex-Cut® Smooth Touch™ Type 1 Deburring Wheels are priced according to grit, size, and quantity. Samples and pricing are provided upon request.



NTMA WAGE AND FRINGE BENEFIT SURVEY

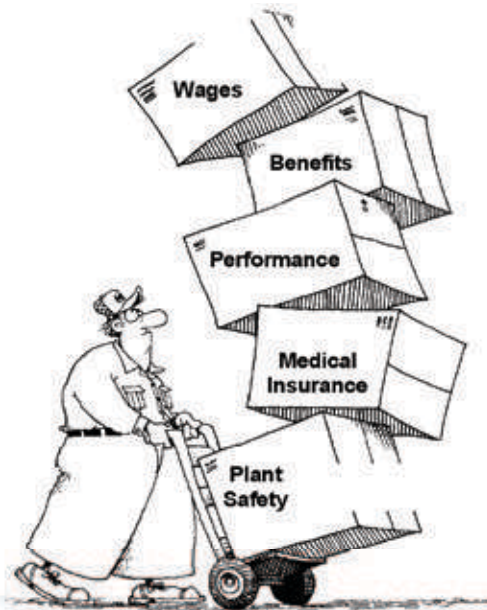
BENCHMARKING TOOLS TO HELP MAINTAIN YOUR TOTAL COMPENSATION PACKAGE

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 compensation 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
- Support Function Wages
- Benefit Programs including:
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Questionnaires will be mailed to all NTMA members in early September. They are due back by the November 1st. Don't miss this opportunity!



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WESTERN MA NTMA CHAPTER HOSTS A FEAST!

PUBLIC OFFICIALS COME TO MEET NTMA MEMBERS AT ANNUAL PIG ROAST

It was a politician's paradise at the Western MA Chapter's annual event that brought over 80 people to the outstanding networking event. NTMA Managing Director Emily Lipovan attended the event in a continuing effort to promote membership and the national support of our four chapters in New England. Western MA leadership is actively working with NTMA to promote the Fall Conference that is to be held in Boston, MA later in the month.



Staff photo by Michael Beswick - Debbie Maier of Peerless Precision and Gary Siedlik of Precise Turning and Manufacturing hosts their 7th Annual Pig Roast for the Western Massachusetts Chapter of the National Tooling & Machine Association and National Machine workers in Westfield.



Staff photo by Michael Beswick - Peerless Precision hosts their 7th Annual Pig Roast for the Western Massachusetts Chapter of the National Tooling & Machine Association and National Machine workers in Westfield. Left to right are Ira Rubenzahl- President of STCC, State Rep. Don Humason, Greg Bialecki-Secretary of Housing & Economic Development, Peerless Precision's Debbie Maier, Gary Siedlik-Precise Turning & Manufacturing, Erik Nakajima-Assistant Secretary for Innovation Policy and M.C.A.D.M.'s Eric Hagopian.



NTMA Managing Director Emily Lipovan addresses the crowd in promoting the Fall Conference in Boston and thanking the Western MA Chapter for their hospitality



Eric Hagopian and Daryl Ott Hagopian, CT NTMA Chapter Executive



Western MA Chapter President- Omer Gingras welcoming the attendees



Western MA Chapter Executive Angie Beavis handling registration of the event



Eric Hagopian briefs the crowd on the MA State Wide Initiative on Education and Training



WESTERN MASSACHUSETTS MANUFACTURING GROUP WORKS TO INTRODUCE YOUNGSTERS TO MACHINE TECHNOLOGY

The region's precision machine shops are working to get more middle school students exposed to their industry and the opportunities it can provide.

"They need to know that it is not dirty, loud and smelly," said Gary Siedlik, of Precise Turning and Manufacturing in Westfield.

Siedlik and Precise Turning sponsored, along with Peerless Precision Inc., the annual pig roast for the Western Massachusetts Chapter of the National Tooling and Machining Association. The event drew hundreds to Mainline Drive in Westfield, where both companies, along with a number of other small machine shops, are located.

The event helps raise money for the Larry Maier Memorial Fund, which helps provide skills training for middle school and high school students in the area. Maier, who died in October, was the longtime owner of

Peerless Precision and a huge booster of the industry and vocational education. The amount raised is not yet available.

His wife, Debbie C. Maier, runs Peerless now and says business is good for local manufacturers. There is high demand for parts, if not for military use then for growing civilian aerospace markets as well as the manufacture of civilian firearms.

Siedlik said all this work requires trained machinists. And many shops are staffed by baby boomers who plan to retire in a few years.

"It takes years to train them," he said. "And the big players in the industry no longer have their apprenticeship programs. Those programs used to feed the entire trade."

So Maier, Siedlik and others hope to work with the Regional Employment Board of Hampden County so middle school students get a chance to visit local machine

shops and the Eastec trade show, a show-place for the latest and greatest technology, put on every other May on the grounds of the Eastern States Exposition in West Springfield.

Housing and Economic Development Secretary Gregory Bialecki was one of the state officials at the event. He said the state is supportive of vocational education. For him, Westfield's Mainline Drive is a bit of a metaphor.

The retail economy nearby on Main Street is the most visible, he said. Anyone from out of town would think that's all Westfield is about.

But Bialecki pointed to all the manufacturers on Mainline Drive, back off the highway. That's the real economic driver, he said.





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MANUFACTURING DISCUSSION DRAWS CONGRESSWOMAN TO SANDVIK COROMANT PRODUCTIVITY CENTER



Congresswoman Tammy Duckworth (IL-08) visited the Schaumburg, Ill. Sandvik Coromant Productivity Center on Friday, Aug 23, to participate in a discussion on future of manufacturing in the particularly fertile Chicago area. Recent studies have shown the region to possess a unique mix of infrastructure, geography, and potential labor force that makes it suitable for ramped up technology and manufacturing sectors. Local manufacturing business owners attended the event, co-hosted by the Chicago Metropolitan Agency of Planning (CMAP).

This event provided an opportunity for public and private stakeholders to discuss the issues facing manufacturing, and actions being taken to support the regional economy. Congresswoman Duckworth addressed the skills gap in manufacturing by highlighting the need for a stronger link between skills certifications and job placement.



Congresswoman Tammy Duckworth (IL-08) discusses Sandvik Coromant's production capabilities with Mark Briel, machine application engineer (right) and Kevin Clay, Productivity Center manager (center). A recent study identified her district, Illinois' 8th, and the Chicagoland area in general, as extremely promising for growth in manufacturing due to a unique combination of available transportation, available labor, and existing manufacturing infrastructure.

"This is a continuation of the work that I've been doing since I got to Congress - moving this district forward is all about manufacturing," Duckworth said. "We have the largest concentration of tool and die manufacturers in the entire nation right here in this congressional district, but we still have capacity. And this

is all about capacity - not just in businesses themselves, but in terms of the manpower and workforce, and the capacity we have there as well."

Sandvik Coromant's Kevin Clay addressed the important support role Productivity Centers, like the one he manages in Schaumburg, Ill., have in the equation. Staffed with highly experienced and knowledgeable instructors and engineers, Productivity Centers serve as resource centers for both theory-based training and education, and real-world manufacturing consultation and solution.



SWIC TECHNICAL EDUCATION STUDENTS MEDAL AT SKILLS USA NATIONAL CONTEST

Education and training paid off for two Southwestern Illinois College (SWIC) Technical Education students who won medals at the recent Skills USA National Competition.

Cody Coffin won gold in precision machining technology and Mike Campbell won bronze in CNC turning at the competition in Kansas City. Both are from Collinsville.

"I am very proud of Cody and Mike for their success at the national Skills USA competition," SWIC Precision Machining Technology Program Coordinator Mark Bosworth said. "Both of them have put in a great deal of extra work over the past six months and they have been rewarded for their efforts."

SWIC is the only college to have two students place at the national level for PMT. \

Skills USA is a national technical education organization that partners educators, employers and students to teach greater skills to Americans, according to its website. Contestants compete at the

local, state and national level.

These two were among the SWIC first-place winners from the Illinois-state competition.

"It was an incredible experience," Coffin said. "It's an honor to be representing SWIC, coming from a community college and getting to that point and winning at a national competition like that." Campbell shared his pride of winning. "I'd like to thank the teachers, the dean and the college for encouraging us to compete," he said. "The teachers came in off the clock sometimes and gave their free time to help us. Without them I don't think I would have been up there." Both are pursuing an Associate in Applied Science in Precision Machining Technology.

For more information on the SWIC Technical Education programs, contact the division at 618-931-0600, ext. 7476.





NCDMM RECOGNIZES DOD LEADERSHIP RETIREMENT AND APPOINTMENT

DEPUTY ASSISTANT SECRETARY OF DEFENSE, MANUFACTURING AND INDUSTRIAL BASE POLICY, BRETT B. LAMBERT RETIRES; ELANA BROITMAN APPOINTED ACTING DEPUTY ASSISTANT SECRETARY OF DEFENSE

The National Center for Defense Manufacturing and Machining (NCDMM) deeply congratulates Brett B. Lambert on the occasion of his retirement as the Deputy Assistant Secretary of Defense, Manufacturing and Industrial Base Policy and Mr. Lambert's replacement, Elana Broitman on her appointment as the Acting Deputy Assistant Secretary of Defense.

"On behalf of NCDMM and the National Additive Manufacturing Innovation Institute (NAMII), I want to extend our congratulations to Ms. Broitman on her appointment," said NCDMM President and Executive Director and Founding NAMII Director Ralph Resnick. "We look forward to work-

ing with her and pledge our continuing support of the U.S. Department of Defense especially its MIBP and Manufacturing Technology (ManTech) offices. I also want to take the opportunity to recognize Mr. Lambert for his inspirational leadership and unwavering support of and contributions to NCDMM and NAMII. Throughout the last four years, it has been a privilege and pleasure to collaborate with Mr. Lambert. I personally want to thank Brett and wish him all the best as he begins the next chapter of his career.



DMG / MORI SEIKI USA PROMOTES DOUG PIERCE TO CHIEF LEARNING OFFICER

PIERCE TO OVERSEE CONTINUED GROWTH AND DEVELOPMENT OF DMG / MORI SEIKI UNIVERSITY



DMG / MORI SEIKI USA is pleased to announce Doug Pierce as the new Chief Learning Officer of DMG / MORI SEIKI USA. In his new position, Pierce will oversee all functions of the online university (Education On Demand), instructor-led classes, and the apprentice programs of DMG / MORI SEIKI University (DMSU). Formerly, Pierce served as the Manager of Educational Operations.

"This opportunity is very exciting," says Pierce. "What excites me most is the chance to build on a terrific foundation established at the University by Rod Jones and the rest of the staff here at DMSU."

Pierce will lead the expansion of student engagement at DMSU, building on the University's recent growth. DMSU was responsible for delivering 170,000 hours of global training last year—more than the previous five years combined—and that number is growing this year. Pierce attributes the growth to supply and demand.

"We are seeing a demand for employee,

distributor and machine-customer training, so we increased the availability and efficiency of the university systems—specifically with online curriculum offerings," says Pierce.

DMSU offers a variety of courses, ranging from the basics of machining to more specialized courses in machine programming/operation. Courses are interactive and engaging, providing students with real, hands-on experience. In the spring of this year, DMSU received accreditation from the National Institute for Metal Working Skills (NIMS). This achievement is another testament to the company's commitment to providing the highest quality training in the industry.

DMSU offers "Student Days" for middle school, high school and college students with an interest in the machine tool industry. Students, parents, and educators are invited to tour the facility and learn about the manufacturing industry and the many career opportunities available.

Another valued member of the DMSU team, Rod Jones, has assumed a new role. As the Senior Advisor of Business Development, Jones will use his years of experience in sales management and consulting to develop DMG / MORI SEIKI USA's strategic sales and marketing support process. Jones will also act as a consultant for DMSU.

"I hope for DMSU to grow into a game-changing, accredited, educational powerhouse," says Jones. "The dream of creating a learning-based organization internally and externally is now a reality. Doug Pierce's leadership will sharpen DMSU's focus on serving customers and exploring the delivery of unique training solutions. My six years with the DMSU team has been an unforgettable experience. The team's passion is the secret to DMSU's success."





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BIG Kaiser now offers BIG Daishowa's high precision Mega ER Grip with the KAISER modular KAB connection, allowing custom collet chuck configurations with standard components.

The Mega ER Grip was designed to outperform all other ER systems in the four most critical areas of tool holder performance: clamping force, concentricity, rigidity and balance at high spindle speeds. These factors, combined with the system's reliable and stable runout accuracy, amount to significant long-term savings. A major design feature increases the contact length of the internal taper of the chuck body, reducing the undesired overhang of the collet for significant performance increas-

es.

All components of the Mega ER Grip system are manufactured with BIG Daishowa's high-precision production technology; high rigidity body, precision



notch-free nut and AA grade ER collet. BIG's ER collets are made in accordance with DIN6499 and ISO15488 standards and feature the best runout accuracy in the world, hitting a guaranteed .00012" (3

microns) at 5xD. Additionally, by utilizing the Mega ER Perfect Seal, coolant can be securely delivered through-tool or directed to the cutter periphery.

Now, with the addition of the modular

KAB connection, KAISER modular tooling system users have a high precision collet chuck option to use with existing KAISER KAB accessories, like shanks and extensions/reductions. Furthermore, users can make this high precision ER collet chuck as long or as short as they want since the

original integral design only averaged a maximum gauge length between six and seven inches.

"This is great for job shops looking to avoid dedicated, one-size-fits all tool holders – it allows flexibility to build a custom tool with standard components," says Jack Burley, VP of sales and engineering, BIG Kaiser. "The KAB connection is an extremely rigid modular connection with very accurate ground mating surfaces and the KAB pin for torque transmission."

The Mega ER Grip with is offered in KAISER KAB4, KAB5 and KAB6 connections and can be adapted to any shank and gauge length with the KAISER modular connection. The clamping diameter available is Ø.075"-Ø.787" with the usage of ER16-32 collets.

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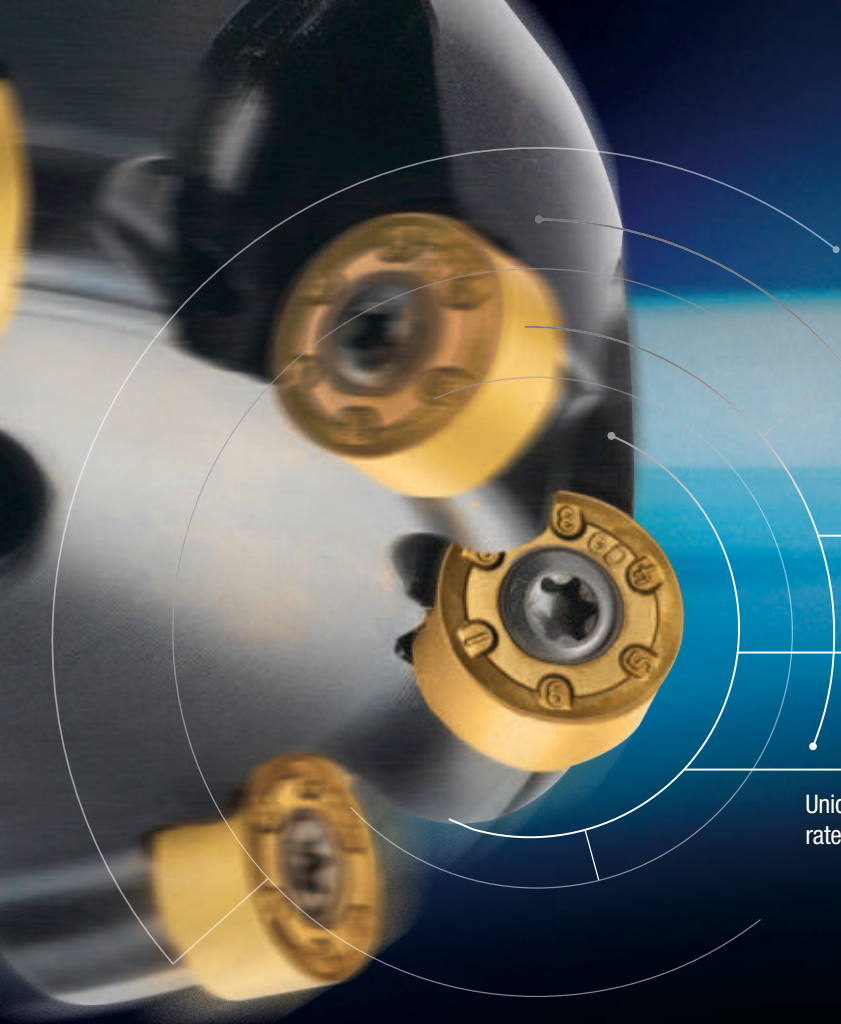
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STUDY: BOLD MEASURES NEEDED TO IMPROVE TOOLING INDUSTRY

BY KEITH GUSHARDMEADVILLE TRIBUNE

Tooling industry professionals and a local professor who studies the business agree countering a growing skill shortage in northwest Pennsylvania's tooling and machining industry requires bold measures.

"One single strategy is not enough to solve it," Stephen Onyeiwu, an associate professor of economics at Allegheny College, said recently.

A survey of 40 tool shops in the region revealed skill shortages are not only pervasive but also threaten the performance of area tool shops. The survey was done



Stephen Onyeiwu
Associate Professor
of Economics at
Allegheny College

between June and August this year by Onyeiwu, who studies the local industry, and Keith Maxwell, an Allegheny College senior majoring in economics.

A few years ago when manufacturing experienced a slowdown, skill shortages were not apparent, according to the study. In fact, the industry was characterized by massive layoffs of skilled workers, many of whom sought employment in other sectors of the economy.

The study reports a total of 183 employees were laid off by a sample of 28 firms surveyed in Crawford and Erie counties in mid-2009. About 752 jobs were lost in the tooling and machining industry in Crawford County alone in 2009, representing an average layoff of about 7.24 per firm. Back in 2001, more than 1,000 jobs were lost in the industry, while 25 firms went out of business in Crawford County.

The U.S. manufacturing sector has recovered somewhat from the economic crisis of 2008-09, but the recovery remains very fragile, the study found. Manufacturing output is estimated to have increased by 20 percent over the past three years, though jobs in the sector rose by just 4 percent in the same three-year period.

But, technologically, the tooling industry isn't the same as it was 30 years ago,

according to Ken Kuhn, owner of Kuhn Tool and Die of Meadville.

"Today, there are more specialists, not those who know every machine," Kuhn said. "Technology has evolved with machines being more sophisticated so we're doing more with less people. But, manufacturing isn't going away. There's always going to be a need for toolmakers."

Kuhn agrees there is a growing shortage of skilled workers in the industry, but it's not a localized problem.

"It's nationwide and it's globalwide," said Kuhn, who also is the current president of the local chapter of the National Tooling and Machining Association, a trade group. "The most common topics discussed are where to get people and how to train them."

The local tooling industry does face the prospect of the skilled labor shortage growing if people aren't attracted to the profession. The study found 80 percent of the 40 shops interviewed had trouble finding skilled workers because they just aren't in the labor pool.

"The shop owners have said 'Whatever it is we do, we need more kids,'" Onyeiwu said.

A perception that the industry is unstable will have to be overcome.

"We've had major hits in employment in a short period," Chad Kearns, an owner of Quality Tool and Die of Meadville, said of two major economic downturns in about 12 years. "It's a stressful job and takes time to learn. There's going to be trouble because nobody wants to do it."

Kuhn said the tooling and machining industry has been working hard to support training centers such as the Crawford County Career and Technical Center and the Precision Manufacturing Institute. It also has instituted programs such as RoboBOTS, a high school-level robot building competition to spark student interest in manufacturing careers.

"The last four to five years we've stepped up our PR (public relations) efforts," Kuhn said. "We've talked with guidance counselors and school superintendents to show them what we can do as an industry."

COUNTERING THE POTENTIAL SHORTAGE

To counter the potential skilled labor

shortage, Onyeiwu's study recommends a multiple point approach.

Recommendations from the study are an aggressive enrollment drive to get students into training centers such as vocational-technical schools and Precision Manufacturing Institute; providing subsidies and scholarships for students who attend those training centers; a reintroduction of apprentice programs at area tooling shops; collaboration between the training centers and local tooling shops; and a need for a coalition of shops, educators, economic development people and government officials to work to address the problem.

The study notes the NTMA is holding events such as job shadowing, career fairs and encouraging the formation of manufacturing clubs in order to spark interest in tooling and machining. It also recently commissioned a study on how to revitalize the industry.

The study found formal apprenticeship programs within shops have all but disappeared. There was a formal four-year program with 8,000 hours of on-the-job training as well as classroom work. That has wound down to only two of the 40 shops surveyed offering apprentice programs. Shops that had apprentice programs were losing those who graduated, creating a "free-riding" situation where some shops expected others to bear the burden of training — "free-riding" on the other shops' investments of time and money. The end result is shops don't want to undertake apprenticeship training anymore.

Kuhn said the NTMA is studying the apprenticeship issue on a national level to revamp it toward the technology used today in the industry. The NTMA has adapted some courses to online training via computer.

"The NTMA also is developing programs so students earn an associate's degree," Kuhn said.

While there are a number of recently trained young people with general knowledge of tooling and machining, they don't have the practical skills the tool shops need, the study found.

The study recommends students at

CONTINUED ON — P46

PMI or vocational schools be assigned to local tool shops for half of their training period. About six shops, representing different segments of the industry, can be designated as places where trainees from both institutions can gain practical experience. The number of experienced toolmakers can be increased if PMI and technical schools collaborate more closely with the tool shops.

Kearns thinks that's a good idea.

"I went to the vo-tech and I learned more in a shop in three months than I did in two years at the vo-tech," Kearns said. "I learned hands-on by doing things in the shop. I'm a firm believer that that is a quicker method."

The study recommends manufacturers' associations in the state, including the NTMA, lobby Pennsylvania's Legislature to introduce a scholarship program for tooling and machining students. It also proposes the establishment of a "Tooling and Machining Endowed Fund" for supporting students enrolled at the Vo-Tech and PMI.

The support could be in various forms, including payment of a "training wage" or a lump-sum scholarship for each trainee that enables them to receive a stipend, as well as purchase books and tools, according to the study.

The study notes everyone in the community — from schools to industry to government and economic development needs to come together to change the current negative perception of tooling and machining as a "dead-end" career path.

The study recommends it should be emphasized that tool and die is a respectable career, enabling residents to become prosperous, purchase good homes and raise families. These feats are usually accomplished without the huge debt load that many college graduates are saddled with upon graduation.

DID YOU KNOW?

Crawford County has a higher dependence on manufacturing than other areas of the country. About 22 percent of all jobs in the county are in manufacturing, while the figure is only about 10 percent statewide and 11 percent nationally. Most Crawford County manufacturing jobs are related to the tooling and machining industry, with local firms supplying tools and parts to larger manufacturing plants.



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EMO EXECUTIVE TECHNOLOGY TOUR OVERVIEW

Overall the feedback from the attendees was very positive. I need your help with getting a survey out to get everyone's input. The highlights:

- EMO 2013 was held at the Hannover Messe, Hannover, Germany from September 16 to 21. 16 of the 24 buildings were used to house exhibitors.

- Over 2,100 exhibitors from 43 different countries were on hand in Hannover to showcase their innovations to industrial users from around the world under the event's keynote slogan of 'Intelligence in Production'.

- Over the six days of EMO, the Hannover event attracted a total of just under 145,000 trade visitors from over 100 different nations. "Foreign visitors numbered more than 50,000, or one in three."

- Attendance for EMO was up from 2011 with an expected 140,000-150,000 visitors. It was reported by the organizers that attendance was up 10% year over year thru Tuesday. Exhibitor's booths were very busy and more exhibitors attended. DMG Mori's booth had 95 machines and as in 2011 occupied all of Hall 2 at a rumored expense of \$8-10 million.

- Formal kick off of the Technology Tour included a welcome breakfast reception by the EMO organizers with an overview of the show, assistance offered to "Meet and Greet" exhibitors and their executives as well as VIP passes.

- Attendees visited 17 EMO exhibitors in 3 ½ days with introductions to executive management and pre-arranged booth tours conducted.

- Attendees not only saw new technologies but were exposed to tech-



Donald Lloyd, Mark Vaughn, Grady Cope, and Herb Homeyer wearing the 3-d glasses at Sandvick Booth at EMO Show in Hannover Germany.

nologies their competition are using in Europe and Asia.

- Group dinners were used throughout the week to debrief and share information gathered from exhibitors.

- Key technologies showcased included machine tools, cutting tools and metrology suppliers. Some of the newer technologies were showcased by suppliers NTMA members did not know.

- Focus of booth tours was new technologies with an emphasis on members' businesses, industry segments they serve and ways to improve productivity and lower costs.

- 6 members plus a prospective member (US Synthetic and a consultant for them) attended the tour. 4 of the members had never been to Europe. John Razzano, Roger Sustar joined the tour on Wed. while Joe O'Dell and Todd Ellard joined some of the booth visit.

- Attended Walter's invitation only event that showcased their new technologies.

- Attendees arrived early to visit the Porsche Museum in Stuttgart and attend the IAA Frankfurt Auto Show. Got them adjusted to the European time zone, had some fun and welcome additions to the tour and permitted everyone to be ready for EMO.

- Industry 4.0 connects embedded system production technologies and smart production processes to pave the way to a new technological age which will radically transform industry and production value chains and business models (e.g. "Smart Factory"). The presentation was very informative and confirmed the high productivity of German companies and their workforce. A copy of the presentation will be available to the group.

- Attended the DMG Mori Seiki press conference where it was announced that effective October 1, the new company name will be DMG Mori.

- Because of the efficient use of attendee's time, a focus on new technologies, opportunities identified and contacts made at EMO, it was suggested that NTMA consider having pre-arranged booth tours at IMTS.

- The next EMO will be held from 5 to 10 October 2015 in Milan, under the motto "Let's build the future."

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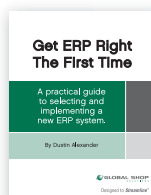
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