

THE RECORD

Published by the National Tooling and Machining Association



INSIDE THIS ISSUE

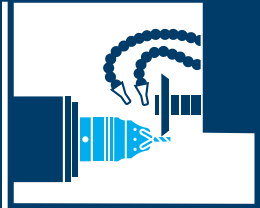
How to Modernize Apprenticeships
in Your Company Now - pp 18-19

A New Focus in Washington –
Apprenticeships - p 20

and so much more ...

DEVELOPING THE WORKFORCE

Equipped by
SCHUNK



+ from \varnothing **3 – 20** mm
flexibly clampable
Mechanic tool grinding
toolholder PIR|S|MO|3



+ Less than **3** μ
run-out accuracy
Tool grinding toolholder with
hydraulic expansion technology
T|E|N|D|O|WZS



+ Up to **80** bar
Coolant-proof or with
peripheral cooling
GZB-S intermediate sleeves



© 2020 SCHUNK GmbH & Co. KG

Superior Clamping and Gripping

SCHUNK

Everything for your
Grinding Machine

The broadest tool grinding toolholder program
with 14 standard machine interfaces.

schunk.com/equipped-by

Table of Contents

President's Update 4

IN THE NEWS

NTMA Welcomes Its Newest National Associate Member	7
Manufacture Your Legacy	7
New Member Highlights	8
Award Given to Acme Alliance From Reshoring Initiative	9
NTMA Connecticut Chapter Hosts Emerging Leaders Gathering	9
Denver Precision Products Celebrates 50 Years	9
HEIDENHAIN's New MRS Angular Encoder Modules	10
In Memoriam: Egon Richard Jaegglin	10
In Memoriam: Mark Allen Bockerstett	10
Support and Inspire the Future of Manufacturing	11
NTMA Northwestern PA Chapter Graduates Three Apprentices	12
Winning the Skills Gap Through Apprenticeships	13
Women in Manufacturing SUMMIT 2021 Recap	14
Teen Jump-Starts Engineering Career	15

FEATURES

How to Modernize Apprenticeships in Your Company Now	18-19
A New Focus in Washington – Apprenticeships	20
How to Improve Your Call to Actions	22-23
2021 Third Quarter Recap	24

MEMBER BENEFITS

What to Look For in an Energy Contract	26
--	----

THE RECORD

OPERATIONS & EDITORIAL

Roger Atkins, President
Doug DeRose, Co-Editor
John Stevens, Co-Editor

ADVERTISING INQUIRIES

To advertise in The Record, or for information on publishing your corporate newsletter or sales literature, contact Kelly LaMarca at (216) 264-2837 or via email at klamarca@ntma.org for advertising and editorial content.

DESIGN & LAYOUT

Bluebird Branding
www.bluebirdbranding.com

NTMA EXECUTIVE COMMITTEE

Alan Ortner, Chairman
Strais Tool Co., Inc. – Berlin, CT

Gillen Young, Vice Chairman
Custom Tool – Cookeville, TN

Eric Hagopian, Board Member
Pilot Precision Products – South Deerfield, MA

Bonnie Kuhn, Board Member
Kuhn Tool & Die Company – Meadville, PA

Mark Lashinske, Board Member
Modern Industries, Inc. – Phoenix, AZ

Tom Sothard, External Board Member
Debbie Holton, External Board Member



Upcoming NTMA National Events



Chapter Leadership Summit 2022

Sunday, January 30 – Tuesday, February 1, 2022
Savannah, GA



NTMA Spring Conference (West)

Monday, March 21 – Wednesday, March 23
Costa Mesa, CA



NTMA Summer Conference (East)

Monday, June 6 – Wednesday, June 8
Philadelphia, PA



Emerging Leaders Conference

Monday, August 29–Wednesday, August 31
Indianapolis, IN



Manufacturing Engage 2022

Tuesday, October 25 – Friday, October 28
Kansas City, MO

What's Your Story?

Send Us Your Story

Each issue of The Record will feature stories from members – and we want to hear from you. Send us stories of success, or those that fit the theme of the month's issue. The submission deadline is the first of the month prior to publication.

Contact Carrie Marsico at cmarsico@ntma.org

Upcoming Themes for The Record

December

The Year in Review

January

NTMA Member Value



PRESIDENT'S UPDATE

This month, we focus our attention on Apprenticeships:

Developing the Workforce. As we slowly journey towards a post-pandemic environment, one thing has become painfully clear: we have – and are going to continue to have – a major workforce shortage. I think the manufacturing community has viewed this potential shortage from the perspective of a “lack of marketing” for manufacturing opportunities.

While that is indeed true, the shortage is going to be exacerbated by two things:

- 1) *The potential workforce's changing outlook and commitment toward “work.”*
- 2) *The fact that there will not be enough workers in the workforce to replace those leaving the workforce due to age, health, and untimely deaths.*

You add up all the pieces of the workforce puzzle and I believe it spells trouble for our industry. As the old TV advertisement on changing your motor oil said, “You can pay me now or you can pay me later.” The point being: either way, you are going to pay me. This is where I believe manufacturing is today: you can pay/invest today or you can wait until later, but regardless, you are going to pay/invest for the future workforce. So, if true, how do the challenges mentioned above affect us in our individual manufacturing businesses? How does it affect the manufacturing community we are all connected to? And how does it affect US manufacturing at large? All of us have the same needs, yet as a precision manufacturing community, we have no united plan to develop a workforce – which means we will be forced to compete with each other for workers from a limited pool. That answer is not good for any of us.

There has to be a better way, but when it comes to workforce there are so many different options that it's hard to pick a direction or partner. So, we, as small-medium-sized companies, do what we always do and tell folks to get out of our way and we will do it

ourselves. While this is a noble cause, going it alone can be costly in time, money, and resources. Can it be done? Absolutely, but if successful, who does the success benefit? An individual company – or at best – a small group of companies? Can it be sustained?

I think we would be hard-pressed to truly find a program that has been sustained through the years. Thus, I believe that apprenticeships and building a workforce remain an ongoing struggle. We precision manufacturers lack consolidated national leadership and focus – all while the government handles the issue through multiple deserved and underserved recipients in the name of training. Yet little of the money ever makes it to support “us”, the precision manufacturers. That forces us to partner with those who receives the monies and are responsible for all training. As individual companies and as small groups in precision manufacturing, frankly, we most often get lost in the shuffle.

In no way am I saying or implying that NTMA, NTMA-U, or NTMA Apprenticeships are the answers to the workforce challenge for the “precision manufacturing” sector, but I do believe they are a part of that solution. My belief is that until we all join together and consolidate our time, efforts and resources, this workforce challenge will continue to be with us, even for the next 78 years of NTMA's existence.

This is why the “membership growth” of NTMA is so critical for the “precision manufacturing” sector. If indeed it is going to be up to us to develop a sustainable national precision manufacturing workforce, we are going to have to do it together. The way we do it together is to grow our organization three-to-five times (meaning each one of us recruiting 3-5 companies to join us in NTMA), so that we get a seat at the national table to help determine where training funds and apprenticeship programs go for the good of the entire US precision manufacturing sector. Anything less than that means hard work,

investments, resources and time all for the good of a select few. As US manufacturers, if we ever plan on being the manufacturing's solution for reshoring and supply chain issues we must: have more workers, be more efficient and be more productive. If we (and NTMA) can collectively work on the workforce issue, then as individual companies you can work with our industry partners on the efficiencies and productivity improvements you need to be more competitive. As small-to-medium sized businesses, we must realize the decision-making position we could hold nationally in US manufacturing if we would join together to develop a sustainable workforce model – one which we have never had. In no way am I asking that any member or non-member disengage from current workforce development relationships they have on the local or state level, or even at the national level. What I am saying is that if we advocate from a position of combined strength, it will benefit each of us and our industry.

So, if the first step is growing our organization, how and what do we do? It starts with each of us. We must immediately ask our industry friends and industry competitors to join us in an effort to grow and strengthen the US precision manufacturing sector. We are not eliminating our competition with each other; rather, strengthening it by strengthening our industry. NTMA members and non-members, I truly believe we are being called to leave a legacy within our industry. That legacy will be in assuring a workforce for the “future to come” when we are all gone. There is strength in numbers, the time is now, and the future depends on us. Let's make the workforce our rallying cry as NTMA did in 1943. I plead with you, let's start growing NTMA Membership numbers now – a key piece of our workforce legacy. Always remembering,
WE ARE STRONGER TOGETHER.

Roger Atkins, President – NTMA



CAN'T TRUST YOUR CAM?

**VERICUT IS THE ONLY
WAY TO VERIFY YOUR NC PROGRAMS**

- Eliminate manual prove-outs -
- Be sure machines are collision free -
- Increase machine capacity -

**SAVE TIME • SAVE MONEY
SAVE YOUR MACHINES**

www.cgtech.com

RIGHT THE FIRST TIME. EVERY TIME.

Image courtesy of McDowell Machine Tools



HEIDENHAIN



TNC 640 – High-End Control for Milling and Turning Operations

The TNC 640 from HEIDENHAIN: for the first time, milling and turning are combined in one TNC. Now users can switch as desired between milling and turning—within the same NC program. Switchover is independent of the machine kinematics. It automatically takes the respective operating mode into account and without any additional action.

HEIDENHAIN CORPORATION, 333 East State Parkway, Schaumburg IL, 60173 847-490-1191 www.heidenhain.us

Angle Encoders + Linear Encoders + Contouring Controls + Subsequent Electronics + Length Gauges + Rotary Encoders

NTMA Welcomes Its Newest National Associate Member: Sandvik Materials Technology

NTMA is proud to welcome Sandvik Materials Technology as its newest National Associate Member! With a unique expertise in materials development within advanced stainless steels and special alloys for a variety of high-demanding industries and applications, Sandvik Materials Technology has a broad customer offering in many segments. Its extensive insight into industrial processes and applications has resulted in proven capabilities to optimize customer productivity.

As a leading materials technology innovator and business partner, Sandvik works closely with their customers to jointly discover ways of addressing challenges to provide solutions that help make its processes safer, more energy-efficient and productive. Their extensive range of stainless bar and hollow bar for machining are aimed at helping our customers fulfill – and even exceed – their productivity and performance expectations.

Vinicius Martins, Sales Manager Tube Americas for Sandvik Materials Technology states, “I’m looking forward to interacting with NTMA members to help them find the right solution that can help them save time and money while also sharing our technical knowledge to get the best results for their specific applications.

“Machining components in stainless steels can be a challenge. There are lots of things to consider, such as tool consumption, machine utilization rates, and stoppages – whether planned or unplanned.

“Our main objective is to work closely with our customers to choose materials wisely so that they are the best fit for the components being made, enabling the customer to potentially save both time and money throughout the entire component machining process.”

Since its founding in 1862, Sandvik, the Sweden-based high-tech global engineering group, has worked closely with industrial customers to innovate new materials to meet these challenges. They recently extended their alloys to offer a broader range of high-performance options including:

- Sanicro® 825 (UNS N08825), a nickel-iron chromium alloy in round and hollow bar formats
- SAF 2205™+ a duplex (austenitic-ferritic) stainless steel for highly demanding applications

To learn more about our company or our innovative alloys visit www.materials.sandvik/en/

You can also join the Sandvik mailing list to connect and get more information.



MANUFACTURE YOUR LEGACY

“As a career-long member of NTMA, I’ve been a beneficiary of industry talent funded in part by the NTMF. My business(s) have benefitted from the foundation and it is my desire to pay forward to future generations of precision machinists through a legacy donation. Including NTMF in my estate planning was easy and feels great. I’m comforted knowing that future generations of machinists will be possible through my lifetime and legacy commitments to NTMF.”

Eric Hagopian, President/CEO
Pilot Precision Products

Do you want to make a significant impact on the metalworking community that will help to close the manufacturing skills gap and leave a legacy for generations to come?

You can do it today—with a legacy gift through your will.

- Costs you nothing during your lifetime.
- Preserves your savings and cash flow.
- Can be changed or revoked as needed.
- Allows you to be far more generous than you ever thought possible.
- Easy to arrange. A simple paragraph added to your will is all that it takes.

Make your year-end contributions today!

**Interested? Contact Bill Padnos, Executive Director
P: (216) 264-2828 E: bpadnos@ntma.org**



Eric Hagopian, President/CEO - Pilot Precision Products

New Member Highlights

F&S TOOL, INC.

Northwestern Pennsylvania Chapter



Founded in 1983, F&S Tool operates a 90,000 square foot facility located on the shores of Lake Erie in Erie, Pennsylvania, USA. F&S Tool specializes in high output, high efficiency hot runner injection molding applications typically with 2-6 million cycles expected per year. In addition to injection molding, F&S Tool is an expert in high volume compression molding applications with similar throughputs. F&S Tool offers the option to use our facility as an integration center that could include sending your machine, automation and auxiliaries for full molding cell performance certification with our in-house technical experts prior to shipment. As an alternative, F&S Tool offers the use of a range of injection molding machines for sampling, short or medium run production in one of our 20 machine bays with ISO 9001:2015 compliance.

2300 Powell Avenue, Erie, PA 16506

(814) 838-7991

www.fstoolinc.com

JOVAL MACHINE COMPANY, INC

Connecticut Chapter



JoVal Machine Company, Inc. specializes in custom heat shield solutions for the jet aircraft engine industry. We have foil shields, thermal blankets and fire shields for your insulation and heat shielding needs. Business partners, Gerald Chase and Henry Siede, started JoVal Machine Company in 1965. It began as a small part-time company operating out of the Chase family garage. We've developed strong working relationships with aerospace PRIMES and first-tier suppliers. We supply Parts Manufacturer Approval certified companies that are governed by stringent FAA guidelines. JoVal manufacturing standards consistently comply with ISO 9001 and AS9100 Quality Management System Requirements. Pratt and Whitney Aircraft is our principal aerospace client. We also manufacture custom products for other high-profile companies that value quality workmanship and high standards.

515 Main Street, Yalesville, CT 06492

Phone: (203) 284-0082

www.jovalmachine.com

SUPERIOR TOOL & MANUFACTURING COMPANY, INC.

Philadelphia Delaware Valley Chapter



Since 1959, Superior Tool & Manufacturing Company has been delivering machined parts and machinery that consistently stands up to the name Superior. Our staff of knowledgeable and experienced engineers and skilled machinists are ready to accept your challenge and answer the call. We use a wide array of state-of-the-art machine tools and technologies to produce your parts, the right way, the way you need them and when you want them. Experience in various materials such as steels, non-ferrous, stainless steels, castings, extrusions, etc., give our customer opportunities and confidence that proper attention to detail is given to their requirements.

42 Columbia Rd., Branchburg, NJ 08876

Toll Free: (800) 246-8959 |

Phone: (908) 526-9011 |

Fax: (908) 526-5058

www.superiortoolonline.com

MACH MACHINE, INC.

Western Massachusetts Chapter



Mach Machine, Inc., in Hudson, Massachusetts is a fully integrated engineering and manufacturing company with full CNC machining capabilities. We pride ourselves in fast order fulfillment of precision made parts produced to the highest standards in the industry. Mach Machine, Inc. is an AS9100D / ISO 9001:2015 certified and ITAR Registered Company. We continue to innovate and increase our automation to improve our processes and support our customers.

569 Main Street, Hudson, MA 01749

Phone: (978) 274-5700

Fax: (866) 763-2628

www.machmachine.com

EXCELLENT TOOL INC.

Northwestern Pennsylvania Chapter



Excellent Tool, Inc. is a family owned and operated company that was established in 1995 by David Durfee, Sr and his late wife Ellen. Their influence of values and hard work carry on to today. The shop is situated on the same property as Dave's home, many nights the lights would be on and the machines running to get an order out because it must be shipped on time. It's that hard work and dedication that has kept us running through the years. While the shop building may be small, initially intended to be a pony barn it has had several additions to accommodate the equipment needed.

18879 E. Cole Road, Meadville, PA 16335

Phone: (814) 337-7705

Fax: (814) 336-5018

www.excellenttool.net

The National Metalworking Award Given to Acme Alliance From Reshoring Initiative



By: Bruce Morey, Senior Technical Manager, SME

At FABTECH 2021 on Tuesday, September 14, 2021, Harry Moser, founder & president, Reshoring Initiative, presented the National Metalworking Award to the Northbrook, Illinois-based die caster, Acme Alliance.

The National Metalworking Award is in recognition of success reshoring – bringing manufacturing to the US from offshore. All forms of metal cutting, metalforming, additive and casting are eligible. Both OEMs and suppliers are eligible. The Award is sponsored by PMA, AMT, NTMA and the Reshoring Initiative.

Acme Alliance was chosen for several reasons, according to Moser. “They have had a record of reshoring products for their customers. In one case their reshoring fixed a quality problem and cut the customer’s inventory by 94%,” said Moser in a ceremony at FABTECH to present the award. Quality and inventory reduction are core reshoring benefits. In the case of Acme Alliance, Moser noted the company also has successful facilities in Brazil and China. Acme’s business model is a global standard with regional production supply; they

believe in producing and sourcing parts within whatever region of the world they are assembled and consumed, according to Moser. “One key to their success is a strong lean culture. Leanshoring is one key to reshoring,” said Moser.

Mauri Mendes, President of Acme Alliance-Lovejoy Industries said, “In our business model, we use our worldwide manufacturing footprint to produce and deliver products to the regions that they are assembled [and used] by our customers. We truly believe being close to our customers is the most important strategy. We are seeing many large organizations switching their strategy by reshoring their supply chain.”

This is the fifth annual award. Moser said prior winners included Mitchell Metal Products: formed cultivator handle sub-assembly, Liberty Tabletop, Trenton Forging, and Die-Tech & Engineering. FABTECH is the industry’s premier metal forming, fabricating, welding, and finishing event. It returned to Chicago’s McCormick Place September 13-16, 2021, where the Reshoring Award was presented.



The 2021 National Metalworking Reshoring Award winner Acme Alliance a leading die caster in Northbrook, IL. Receiving the award in this picture, is Matt Thavis, Director of Business Development, Acme Alliance, Mauri Mendes, President, Acme Alliance-Lovejoy Industries, JR Kinnett, General Manager, Acme Alliance from Harry Moser, Founder & President, Reshoring Initiative.

NTMA Connecticut Chapter Hosts Emerging Leaders Gathering

Jacob Litke of Skillcraft Machine Tool Company and Kurt Malec of United Gear & Machine Company were thrilled to host the first gathering of the NTMA Connecticut Chapter Emerging Leaders at the Thomas Hooker Brewing Co. in the Colt Armory, a building that was once center stage in Connecticut’s booming manufacturing industry. Attendees were thrilled to get the chance to begin their work and discuss how Connecticut can continue to innovate and be a leader in precision manufacturing for generations to come. NTMA looks forward to seeing what the next generation of leaders in precision metalworking can do!



Denver Precision Products Celebrates 50 Years

NTMA Rocky Mountain Chapter Member Denver Precision Products recently celebrated its 50th anniversary! Denver Precision Products has been a key member in the RMTMA, with a niche in turning parts. Offering 12’ bar loaders with 42mm spindle capacity, Denver Precision services multiple industries, and has continued to evolve with their customer’s needs. NTMA salutes Denver Precision Products on 50 years – we continue to salute the long-term success of manufacturing!



HEIDENHAIN's New MRS Angular Encoder Modules Better for Robot Arms

NTMA National Associate Member HEIDENHAIN's new MRS encoder module series for robot arms has been expanded and is now available with redesigned embedded bearings to better withstand outside tilting forces. This new compact and all-inclusive design also significantly simplifies the installation process.

The new MRS 2280 and 2281 encoder modules have been specifically designed for use in tilting and rotary axes with high tilting rigidity bearings, making them ideal for measuring arms and measuring robots. Overall, the MRS 2200 series provides options with an easily mountable ultra-compact design, system accuracy of $\pm 10''$, and tilt resistance of up to 52 Nm/mrad tilt resistance.

Such as with HEIDENHAIN's other angle encoder modules, each of the new MRP 2200 encoder modules consist of a high accuracy angle encoder and robust embedded bearings that form one compact module. Because the bearing and encoder components are already ideally aligned and adjusted, builders can forego having to make those typical complex adjustments reducing their installation efforts up to 70%.



About HEIDENHAIN

DR. JOHANNES HEIDENHAIN GmbH, headquartered in Traunreut, Germany, develops and supports motion control feedback solutions for the machine tool, semiconductor, electronics assembly and test, metrology, automation, medical, energy, biotechnology and other global markets. HEIDENHAIN employs approximately 6,000 people worldwide in its core business activities. The North American subsidiary

is HEIDENHAIN CORPORATION, headquartered in Schaumburg, IL, and San Jose, CA, and has been serving the US industry for over 50 years. Here nine company brands are represented.

More information at: www.heidenhain.us/about-us



In Memoriam: Egon Richard Jaeggin

Long-time NTMA Member Egon Richard Jaeggin passed away on September 22nd. Egon's impact in the manufacturing industry was immense and he will be very missed by the NTMA community. Egon was founder and president of Numerical Precision, Inc. (NPI) – running NPI since 1971 and seeing the company through tremendous success through his retirement in 2016. He also served on the NTMF board from 2008 to 2013. In 2016, NTMA awarded Egon with its Honor Reward, recognizing his continuing meritorious service and dedication to the industry the Association. Egon is survived by his wife Magdalena, his son Thomas, and his daughters Christine and Darlene. Many NTMA Members reached out regarding the impact that Egon had in the industry and NTMA, he leaves behind a strong legacy.

NTMA offers its condolences to the Jaeggin family and Numerical Precision, Inc. Donations may be made to the American Cancer Society, the American Legion, or a charity of your choice.



In Memoriam: Mark Allen Bockerstett

Long-time member and NTMA St. Louis Chapter supporter, Mark Allen Bockerstett, passed away on September 21st. Mark was a key leader in the NTMA St. Louis Chapter, and was a great friend to many in the industry for years. Mark's company, Modern Screw Products – of which he was a part for over 46 years - joined NTMA in March 2011. Mark joined the Board of Directors of the NTMA St. Louis Chapter in November 2014 and served a two-year term as Chapter President (2015-2017.)

He also began and coordinated the Chapter's super-popular Sporting Clays Competition until this year, when his cancer diagnosis and treatment required his full attention. Mark is survived by his wife Renee, his son Kevin, and his daughters Lauren and Christine. Said Renee, "He valued his time with NTMA, and he respected and enjoyed working with (everyone)." NTMA offers its condolences to the Bockerstett family, Modern Screw Products, and the St. Louis Chapter. Memorials can be made in Mark's name to the Catholic Charities of St. Louis.



Support and Inspire the Future of Manufacturing: Honor a Manufacturing Innovator, Advocate, or Educator in New Exhibit

The American Precision Museum recently launched an exciting new interactive digital exhibit called “The Manufacturing Ledger” that is accessible online and will soon be integrated into an engaging physical exhibit at the museum. “The Manufacturing Ledger” is a dynamic collection of stories and profiles about individuals whose career was spent in manufacturing – whether the person’s career was spent on the shop floor, engineering department, sales department, or in the corporate boardroom.

“The Manufacturing Ledger” embraces the “people” aspect of the manufacturing history, which will allow the American Precision Museum to tell the full narrative of manufacturing by providing a well-designed framework and functional platform to relay sponsored profiles and pictures of an infinite number of individuals. The museum welcomes anyone from a variety of manufacturing career categories to be included in the Ledger: Machine Tool Builder, Machine Tool Distributor/Importer, Manufacturer, Educator, and Industry Advocate (such as Associations, Media).

Interacting with the exhibit is easy and cross-referenced, allowing visitors to sort profiles by industry sector, job function, name, and company so visitors can find former co-workers and learn more about their career paths. There are also search functions to locate those who founded a company and those who invented a technology used in manufacturing. Visitors can also search by various lifetime achievement awards from participating associations, such as the AMT (Association for Manufacturing Technology), NTMA, PMPA (Precision Machined Products Association) and WiM (Women in Manufacturing) as well as members of the Machine Tool Hall of Fame.

Participating in The Manufacturing Ledger supports the American Precision Museum financially and physically. Contributing your story, or that of a family member, friend, colleague, mentor, or educator enriches the content of the exhibit itself, while financial donations sponsoring each profile helps fund the museum, which holds the largest collection of historically significant machine tools in the nation, housed in an 1846 armory building, designated a

National Historic Landmark. The museum’s goals are to preserve, present, and interpret its artifact collections and property; to inspire new generations of innovators; and to build communities that foster a strong manufacturing future.

“The American Precision Museum is home to remarkable manufacturing breakthroughs,” states Lee Morris, Chairman of Morris Group, Inc. “To produce precise, interchangeable rifle componentry, engineering innovators replaced manual filing and fitting with water-powered, metal cutting machine tools of their own design. It is doubtful that these engineers had any idea of the impact of their creativity. They were at the forefront of a manufacturing revolution, but their individual stories are mostly lost. The progress of every decade since, is the product of people thinking, creating,

and improving in response to perceived opportunity. The story is repeated time and again. It’s the people behind manufacturing innovations who are so compelling. Along with the machinery that they have created, we also need to collect, share, and preserve personal stories of the manufacturing innovators who have so strongly influenced the United States throughout the years.”

To begin the process of contributing your unique manufacturing story, or to honor someone you know who put their heart and soul into their career, go to “The Manufacturing Ledger” at ledger.americanprecision.org.

For further information, contact Steve Dalessio, (802) 674-5781, ledger@americanprecision.org at the American Precision Museum.



Screen Capture of “The Manufacturing Ledger’s” Search Tool, allowing visitors to sort by industry sector, lifetime achievement awards, or inventors and founders. Visitors can also search by name, company and job function.



Example Profile of an individual who earned a lifetime achievement award from the Association of Manufacturing Technologies and worked in several industry sectors categorized as being both a founder of a manufacturing company, as well as an inventor.

NTMA Northwestern PA Chapter Member Starn Tool Graduates Three Apprentices



It has been 20 years since Starn Tool & Manufacturing has graduated as an apprentice. That is not the case anymore though, as Starn celebrated the graduation of three apprentices last week: Shelby Anthony (Tool Maker), Kyle Gates (Tool Maker) and Trent Zolnai (CNC Machinist). “Apprenticeships are back just in time to help fill the gap of an aging workforce in the local manufacturing industry,” said Greg Wasko, Executive Vice President of Starn Tool & Manufacturing and Trustee of Northwestern PA NTMA.

The NWPA chapter and NTMA is the sponsor of two - state - approved group apprenticeship programs. This provides the opportunity for NTMA Member companies to train and certify Tool Maker or CNC Machinist apprentices through the Chapter’s programs without the need to maintain individual apprenticeship programs. It’s a simplified way to expedite apprenticeship training, and Starn did just that!

The Tool Maker and CNC Machinist programs require a minimum of 8,000 hours on-the-job training or equivalent NIMS (National Institute for Metalworking Skills) credentials; and a minimum of 576 related instruction hours. On-the-job training is conducted at NTMA Member companies that employ the apprentice, and the related instruction hours are completed through an online training program, NTMA-U.

The NWPA Chapter NTMA program standards were developed by the Chapter’s Executive Director, Tami Adams, in 2016, with input from member companies. There are Apprenticeship Advisory Committees in place to periodically review and recommend improvements for the programs. A Mold Design apprenticeship program has also been submitted to the Apprenticeship Council of Pennsylvania and is pending approval.

Starn spearheaded the competency-based programs, being the first company to graduate apprentices using NIMS credentials. The graduates were all required to obtain a minimum of 12 NIMS credentials and the equivalent of at least 576 related instructional hours. They worked in multiple departments and were trained by multiple employees throughout the Starn Family of Companies. These apprentices went above and beyond completing more than the bare minimum. Kyle completed a total of 15 NIMS credentials and 5 NTMA-U courses along with his prior education to become the second graduate in the Tool Maker program. Trent was the first CNC Machinist program graduate, completing a total of 12 NIMS credentials and 19 NTMA-U courses (742 instructional hours).

Shelby was the first female graduate of the Tool Maker program and completed a total of 13 NIMS credentials and 19 NTMA-U courses (742 instructional hours).

Trent and Shelby both started their careers at Starn Tool in 2017 following their junior year of high school. Attending the Crawford County Career and Technical Center Precision Machining program their Sophomore and Junior year and the Co-Op program their senior year; Trent and Shelby began full time following their high school graduation. Shelby is currently an important part of the CNC Mill Department and Trent holds a position in the Engineering Department. Kyle has also been a crucial part of the success of Starn Tool, starting part-time in 2016 in the CNC Lathe Department and currently holding the position of Quality Manager.

The NWPA NTMA Group Apprenticeship program has twelve active apprentices and has graduated a total of six: five Tool Makers and one CNC Machinist, since the inception of the program. Along with the three newly graduated apprentices, Starn Tool currently has two more active in the program, with intentions of continually enrolling more in the years to come. Starn is extremely proud of these apprentices and the work they put in and looks forward to watching them become leaders and mentors for the apprentices to come.

“The Starn Family of employees are very proud of their accomplishments,” said Greg. “They are an inspiring testimonial to the work ethic and determination of the new generation.”



Winning the Skills Gap Through Apprenticeships

By: Bill Padnos - Executive Director, AMPED & National Tooling & Machining Foundation

Across the US, the skills gap has become the cause of great anxiety at NTMA member shops. While almost all companies will be facing a severe shortage of skilled workers, machine shops are often too busy to invest the time needed to attract, recruit, and foster the talent they need to fill their open positions. In addition, as the rapid pace of technological change reshapes the global economy, the historic alignment between educational experiences and economic opportunity, credentials and careers, is being called into question. Individuals are boxed out of job opportunities by requirements for degrees they don't have, or on-the-job experience they can't get. Companies increasingly report – “the jobs are there, but the skills are not.”

However, the lack of workers and job access is only part of the issue – employers are also facing challenges with those currently in the workforce. The engagement and retention rates among employed workers are decreasing. Employers with high turnover are facing difficulty recruiting new talent in this market, and an even greater difficulty in retaining said workers once hired.

Fortunately, there is a solution: Apprenticeships. Slowly growing in acceptance due to society finally realizing the impact of the high cost of a traditional university bachelor's degree program, apprenticeships are a proven strategy for upskilling and training workers to fill skilled positions across many industries. However, this popularity is lagging in the manufacturing sector. In 2020, there were just 16,510 active registered apprentices in 1,682 total programs in manufacturing. At the same time, there are 188,452 apprentices in construction.

NTMA believes strongly in the importance of member companies taking the time to register their apprenticeship programs to work with state officials. This is why NTMA sought out Department of Labor approval for use of the NTMA-U curriculum for a registered machinist and tool and die apprenticeship program. While the actual on-the-job training is different at each member shop due to your individual machining capabilities, building the foundational fundamental skills for precision machinists through NTMA-U can be used in every shop across the country.



As you can see below, having a registered apprenticeship program will provide a return on your investment.

Reduce turnover costs. Research shows: 70 to 80% of people that start apprenticeship programs finish. And of those that complete the program, 91% are with the same company five years later.

Increase productivity. Apprentices report high levels of motivation, satisfaction, and loyalty. For every dollar spent on apprenticeship, US employers get \$1.47 back in increased productivity.

Make your workplace safer. A well-trained workforce may reduce worker compensation costs.

Plan for employee succession. Registered apprenticeships help you to successfully facilitate the transfer of knowledge from experienced employees to new recruits.

Take advantage of tax credits and financial incentives. NTMA has assembled a list of national, regional, and state-level funding sources to help companies offset the costs to develop and retain skilled workers. The talent is out there that can shape the look and feel of your shop. To reach this talent, companies should look toward facilitating apprenticeship programs. And, while seemingly daunting, launching or even innovating an apprenticeship program does not have to be so difficult. There are effective strategies that streamline the process of creating an apprentice program, allow organizations to reap the benefits of a strong talent pipeline, engaged employees, and higher retention, among others.

NTMA has the resources available to help you with your apprenticeship program:

- *We have the mechanical aptitude test to help you identify potential candidates for your program.*
- *We have the curriculum through NTMA-U that provides you with the related instruction.*
- *We have an extensive list of workforce training funds that you can access to help you off-set your expenses.*
- *We have strategic relationships with the National Coalition of Technology Centers and ACTE to help you find a partner for your apprenticeship program training if needed.*
- *We have the Pre-Apprenticeship program that enables you to reach out to students in order to start their education, saving you tens of thousands of dollars.*
- *We have the NRL program, engaging manufacturing's next generation through FULL CONTACT INNOVATION to get youth into your talent pipeline.*

Above all else, our workforce development team believes in the immortal words of Jerry Maguire – “HELP ME HELP YOU!” Let our team help your team find and build your future workforce.



OCTOBER 4-6, 2021

SUMMIT 2021

CLEVELAND, OH & VIRTUAL

Women in Manufacturing SUMMIT 2021 Recap: *Empowering Women in the Industry*

Women in Manufacturing's (WiM's) largest conference of the year took place on October 4 - 6, 2021, in Cleveland, OH, (and virtually) for three days filled with plant tours at leading manufacturing facilities, professional development sessions, roundtable discussions on important topics, and inspiring keynotes – all while engaging and interacting with peers through social and networking events.

The SUMMIT theme, "Manufacturing HEROes," embodied WiM members and workers across the

entire manufacturing industry who stepped up during the pandemic to continue manufacturing essential products, and who are leading us down the road to economic recovery. SUMMIT presentation topics focused on resiliency, courage, resourcefulness and adaptability.

NTMA is a proud partner of WiM! Women in Manufacturing is the only national trade association dedicated to providing year-round support to women who have chosen a career in our industry – working

to empower women workers and strengthen the manufacturing sector. Supporting over 5,200 members and 133 companies in 44 US states and beyond, their efforts in inspiring women to discover careers in manufacturing and develop the local manufacturing workforce across our country are second to none.

Membership in WiM is free for NTMA members. For more information on joining contact Carrie Marsico at: cmarsico@ntma.org





NATIONAL ASSOCIATE MEMBERS TEAM UP TO BENEFIT NRL

BIG KAISER and Blaser Swisslube announced 2021 year-end specials to benefit the National Robotics League

BIG KAISER offers best-in-class cutting tools, tool holders, workholding and applications support. From Nov. 1 to Dec. 30, 2021, the company will donate 2 percent of every order from an NTMA member company directly to the NRL program. Popular products include face mill holders, end mill holders, collet chucks, angle heads and tapping adaptors. Simply place your order through your local BIG KAISER distributor and use the promo code **NRL 2021** so that NTMA benefits from every dollar you invest. Find the product catalog and distributor locator at www.bigkaiser.com.

BIG KAISER

Blaser Swisslube is a family-owned company that develops high-quality cutting and grinding fluids that deliver productivity, economic efficiency and enhanced machining quality in all manufacturing industries. From Nov. 1 to Dec. 30, 2021, Blaser will donate 1 percent of orders from current NTMA customers to the NRL, plus 3 percent of any order from an NTMA member placing their first order for Blaser metalworking fluids. Reference the promotion code **NRL21** at the time of the order to maximize the contribution to the organization. Visit www.blaser.com to learn more, contact Blaser or find a local distributor.

Blaser.

SWISSLUBE



Teen Jump-Starts Engineering Career With Machinist Apprenticeship

By Catherine Ross, Director of Education, AMT Smartforce Development

Instead of cutting lawns or flipping burgers this summer, high school junior Brandon Heimann took a different path. He put in serious hours towards his future with a youth apprenticeship at JTD Enterprises, a machine shop in Chilton, Wisconsin.

Wisconsin is an apprenticeship trailblazer. This year marks the 110th anniversary of the state's registered apprenticeship system, but don't let the age fool you. Their emphasis on youth apprenticeship and equity across generations is fundamental and keeps the talent pipelines flowing.

"I'm scheduled to work 7 a.m. to 4 p.m. Monday through Thursday, but I'm available to work Fridays or more than 40 hours a week if Julie wants me to," says Brandon. Julie is Julie Hoban, owner of JTD Enterprises and a passionate champion of the manufacturing industry and apprenticeships.

"We want to show kids what we do at JTD so that they know what career opportunities are out there for them," says Julie. Knowing that Julie has an open-door policy when it comes to coordinating student tours, Brandon's technical education teacher at Chilton High School coordinated a visit to JTD.

"Walking through the shop, it was cool to see how each machine made a part, and the process of making parts that are in products we use every day," Brandon says. "The interest for me was there right away."

"It's exciting to see a student come in and immediately show interest. We could tell that Brandon would be a good fit," says Julie. She learned that Brandon was influenced by his aunt, who is an engineer, and that Brandon had set his sights on becoming a mechanical engineer. "I told him I will guarantee that he'll become a better engineer if he works for us," says Julie.

Husband and shop manager Tom Hoban says, "The best engineers were machinists first. Every guy in our shop will tell you that. They are less likely to over-



16-year-old Brandon preparing for an engineering career by working in a machine shop as a youth apprentice.

design a part and make it unnecessarily difficult or expensive to make. They know what goes into making that part at the manufacturing level."

YOUTH APPRENTICE

JTD hired Brandon through the Youth Apprenticeship program operated by the Wisconsin Department of Workforce Development. The program enables employers to – **hire high school juniors or seniors for a one or two-year apprenticeship. During the apprenticeship, the student continues toward high school graduation and takes courses related to the profession as a way of enhancing what is being learned on the job.**

On his first day at JTD Enterprises, Julie set up Brandon to meet employees throughout the shop (most were apprentices themselves) so he could understand some of the possible tasks and types of machinery. He began the day in the inspection area and learned the basics of measuring tools, then went on to a few stops on the production floor. He was exposed to CNCs, mills, lathes, welders, grinders, inspection and measurement equipment, assembly work, and a load/unload robot. "Brandon is more technologically savvy than older guys," says Julie. "I hope learning to operate the robot will be of interest

to him. I want him to be able to go to school and tell somebody, 'Hey, I got to run a robot today!'"

During his junior year in high school, Brandon will work part-time through Career Capstone, a CTE program sponsored by Chilton High School. By that point, his wage rate will have progressed to the mid-teens (the state of Wisconsin dictates that apprentices will make at least 55% of a journeyman's rate). The money is significantly better than his peers earn working in fast food or retail.

"Most of it goes into savings," says Brandon. He also plays baseball, so some of his earnings go toward meals when the team goes out to eat. And then there's that 16th birthday gift from his uncle. "I just put insurance and registration on my '89 Camaro. I do all the TLC management and stuff like that on the car, and there's a lot of work to be done." No matter what Brandon does with his money, he is getting a priceless education, especially when most high schools can't afford a full, modern machine shop.

"There's really nothing that should stop anyone from trying a youth apprenticeship," says Julie. "Students getting paid while they learn, and they're working toward a great career. If we can get more young people interested in the field, it's worth it to invest time and money into youth apprentices."



IMTS2022

INTERNATIONAL MANUFACTURING TECHNOLOGY SHOW
DIGITAL MANUFACTURING. IMPLEMENTED.

POWERED BY 

SEPTEMBER 12 - 17, 2022 • MCCORMICK PLACE • CHICAGO

REGISTRATION IS OPEN FOR IMTS 2022!
VISIT [IMTS.COM/REGISTER](https://www.imts.com/register)



CONNECT
WITH PEERS



EXPERIENCE
CUTTING-EDGE INNOVATIONS



SEE
NEW TECHNOLOGY

How to Modernize Apprenticeships in Your Company Now

By Montez King, Executive Director – NIMS



When governments and agencies think about apprenticeships in our country, they ultimately associate the quality of a program with the amount of time it takes to transfer skills and wage progression throughout training.

This traditional thinking leads us to believe:

- *If training does not include thousands of hours on the job, it's not a quality apprenticeship program.*
- *If training does not include hundreds of hours of related theory, it's not a quality apprenticeship program.*
- *If employees are not increasing their wages while in training, it's not a quality apprenticeship program.*

The common fallacy of these principles is they are not timeless constants. Holding true to these principles is the biggest barrier to modernizing apprenticeships. A modernized apprenticeship is one that is aligned with how the organization operates. The quality of the program is measured by how closely the training system is aligned to the organization's operational and production goals. Holding onto principles that impede this alignment due to traditional beliefs rather than a commitment to quality training will not produce a quality apprenticeship that provides return-on-investment (ROI) for the organization or the apprentice.

Happily, I'm here to report that there is an effective solution to modernizing apprenticeships that's being applied in companies across the United States. NIMS has created a Smart Training Solutions framework to revamp traditional apprenticeships. By working with many employers throughout the country, NIMS has identified seven Smart Training Principles, which are universal and timeless constants associated with high-performing training programs. These principles are further broken down into 56 training behaviors used to carry out on-the-job (OJT) training. While universal, these principles and behaviors are not designed to be a one-size-fits-all. Each organization can adopt and prioritize the behaviors that meet its needs. This enables employers to develop highly customized training programs. Each step within our process has a fork in the road for employers to end their journey with a positive ROI.

BELOW ARE THE EMPLOYER ENGAGEMENT STEPS:

Step 1: Familiarize - Read our training guidebook, Ultimate Guide to Enhancing your Training Program, to familiarize yourself with universal training principles and behaviors.

Step 2: Discover - Take our online self-evaluation to discover your training principles. Your results will reveal your principles and help you to discover gaps between your company's current and desired training. Outcome: Better understand the effectiveness of your OJT training system.

Step 3: Analyze - Participate in a one-day consultation session to evaluate the results of your self-evaluation and training behaviors and determine if enhancements are needed. Outcome: Receive a customized training playbook to use as your road map for enhancements.

Step 4: Enhance - NIMS will support the development and implementation of plays within your playbook. Outcome: Implement an enhanced training program.

Step 5: Recognize - NIMS will work with your organization to develop a plan to formally recognize all stakeholders. Outcome: Organization and its members are credentialed for achieving desired workforce performance.

How is this approach different? Governments and agencies often define and validate apprenticeship programs by how they carry out training. This is a significant fallacy within our conventional apprenticeship system.

Apprenticeship in its basic form is earning while learning. The concept of apprenticeship benefits an organization by allowing it to still profit from its employees' on-the-job production, while they are learning and upskilling. Employees benefit by earning a fair wage while learning an apprenticeable role. If this concept holds true within one's system of training, it is defined as an apprenticeship.

The overarching truth is how we carry out training does not define apprenticeship and is not the same from one organization to the next. When we recognize the true definition of apprenticeship, that's when we will understand the actual number



Montez King, Executive Director – NIMS

of apprenticeships and apprentices in our country. Modern apprenticeships are the future of our nation's training systems but recognition of most will be suppressed to bolster traditional systems.

Let's all work together to make apprenticeships as effective as they can be. Visit www.nims-skills.org to learn more.

More About NIMS

NIMS was founded in 1995 as a non-profit organization with the mission to provide world-class, industry-developed and validated, competency-based standards, credentials, and training frameworks that enable collaboration between educators, manufacturers, policy makers, and community-based organizations in a joint effort to increase the skills of the U.S. manufacturing workforce.





A New Focus in Washington – Apprenticeships

By Omar S. Nashashibi, Owner, The Franklin Partnership

If manufacturing was all the rage heading into the last two election cycles, politicians marching towards 2022 are doubling down and focusing more than ever on career pathways, skills training, and, yes, apprenticeships. The catch, however, is that the focus today and for the foreseeable future is on registered apprenticeship programs, and preferably those connected to industry-approved programs such as those led by NTMA and its partner organizations.

To gauge the interest of lawmakers from both parties on the issue of apprenticeships, a quick search of bills introduced on Capitol Hill quickly tells the tale. Members of both political parties in the U.S. House and Senate through October 1, 2021, offered fifty-six legislative proposals involving apprenticeships. That number, fifty-six through nine months of this 117th U.S. Congress, far outpaces previous interest. Each Congress is comprised of two years, with a first and second session. The entire two-year 116th Congress that ran from 2019-2020 only saw sixty-eight bills, the 115th Congress had fifty introduced. Going back to 1972, no U.S. Congress prior to 2017 saw more than thirty-three bills introduced with some two-year periods only having seven bills offered in the past decade.

Often lawmakers introduce bills simply for messaging purposes and to fluff their policy credentials but

today the level of seriousness with which members of Congress are taking apprenticeships as a family sustaining career option has not been seen in decades in the U.S. Enacting bills into laws takes time but the current U.S. House of Representatives in its first sixty days earlier this year passed a reauthorization of the National Apprenticeship Act of 1937. Yes, that is correct, the last time Congress updated the nation's apprenticeship law was in 1937, FDR was only in his second term in office.

The bipartisan vote is likely one of the few we will see in this polarized environment, but apprenticeships represent a rare area of agreement among the parties. After its early passage in the House, the Senate in March sought public input from stakeholders as they sought to address the legislation. NTMA and others provided formal comments and continue to work with the Senate Health, Education, Labor, and Pensions Committee as its members and staff move forward. While much of the progress slowed over the summer due to the focus on infrastructure and the Democrats' budget reconciliation bill, the Senate Committee in late September held an important hearing that is a precursor for moving legislation. The pending legislation seeks to expand registered, pre-, and youth apprenticeships, allow for competency-based models, and establish industry-recognized apprentice able occupation standards.

The Biden administration recently announced the reconstitution of the Department of Labor Advisory Committee on Apprenticeship and declared November 15-21, 2021 as National Apprenticeship Week. President Biden earlier this year called for an expansion of earn as you learn opportunities through apprenticeships. On Capitol Hill, the pending reconciliation bill allocates \$6 billion to expand the registered apprenticeship system with resources earmarked to support intermediary groups to which bring workers, employers, and educators together.

There is a notable change in Washington, D.C. among policymakers towards career pathways for our next generations. The seemingly exclusive focus in past years on four-year degrees is giving way to the needs of employers and the reality of today's economy and higher education system. Stakeholders are hopeful that one of the few areas on which both parties agree will remain non-partisan and this 117th U.S. Congress will finally update the National Apprenticeship Act of 1937.

Omar Nashashibi is a Founding Partner at The Franklin Partnership, LLC, a bi-partisan government relations firm retained by the National Tooling and Machining Association in Washington, D.C.

No one knows what your shop needs better than you.
Find the perfect machine.

TECHSPEX

The Machine Tool Search Engine

Start Searching
for Free Today.

Spindle: Milling

Direction: V or H

of Main Spindles:

Max. HP:

Top RPM:

Machine Type:

Machining Center

Drill/Tap

Boring Mill

Milling Machine

SOURCE: Hwacheon

IN PARTNERSHIP WITH:

Modern
Machine
Shop

techspex.com

How to Improve Your Call to Actions

By: Madiyn Movsesian – Marketing Intern, Felber PR & Marketing



TRAFFIC DOESN'T PAY THE BILLS, LEADS DO.

Call to Actions (CTAs) are how manufacturers engage visitors on their website. You see them all the time. Download our technical paper, click here on our eBook, schedule your consultation today. There's a saying amongst inbound marketers. "Traffic doesn't pay the bills, leads do." Visitors taking action on your website is the lead conversion sought after by manufacturers.

CTAs are vital for website conversion, and they need to be clear and enticing. For a CTA to be successful, there are a lot of factors that marketers need to pay attention to when building CTAs. Color scheme, timing, positioning, and wording are just a few of these critical elements. In order to find out what works best for your manufacturing company, try A/B testing your CTA's. A/B testing a CTA is when you show variations to viewers and examine the results. Testing colors and wording for example and then comparing

which CTAs get the best conversion. The variations may include different colors, changing the timing of the CTA, changing the wording, or putting the CTA in another location on the landing page. HubSpot is a great marketing tool that allows you to track everything from visits, click-through rate, and many other benefits when examining how a CTA performs.

When it comes to understanding color schemes, make sure your CTAs are bright and easy to spot on your website. Making your CTA noticeable is what will get visitors to convert. Timing is also a key aspect when it comes to CTAs. More often than not, when a CTA immediately pops up on your screen after opening a webpage, your prospect is more likely going to ignore it.

Choosing a specific time to show a CTA is key. Again, test, test, test. Many platforms, such as our favorite, HubSpot allows for options such as a delayed popup CTA or when the visitor has scrolled more than 50%

of a webpage. Positioning is another important part when it comes to CTAs. Choosing an effective place to put the CTA that will make a huge difference in conversions. CTAs can and should also be used on your blogs, emails and social media posts.

Lastly, choose your words carefully. Mark Walker-Ford, managing director at Red Website Design, talks about words to use for an effective CTA, “learn more,” “get started,” “register today,” “grab my copy,” and he also writes on words to avoid, “download,” “buy now,” “order today,” “submit,” using the right wording is another necessary facet.

Michael Brener, writer for the Marketing Insider Group, details a few takeaways to consider when creating CTAs:

- *“Keep your CTAs short when urging “quick” action.*
- *Personalization has been shown time and time again to increase conversion.*

- *Buttons convert better than text, links, or images.*
- *Make sure your landing pages back up your CTA in terms of content and offers.*
- *Never stop testing your CTAs.”*

Interested in learning more about this tactic and how to further engage your prospects and customers?

Contact Rob Felber (330) 963-3664, email RobFelber@felberpr.com or grab some time on his calendar and let's get you on the right path to lead conversion.



On site for you.

Every drum of metalworking fluid includes free services to guarantee optimal starting conditions and maximum performance. Our machining experts help you clean and fill your machines, train your employees, and monitor and maintain your coolant through regular visits on site.

Test us. It's worth it.
blaser.com/services



Our Liquid Tool. Your Success.

2021 Third Quarter Recap

By: Anna Rathbun, Chief Investment Officer, CBIZ

October was a month of gains, defying its spooky reputation of losses in the equity markets, however, we experienced disappointing jobs gains to start the month, a lower than expected Q3 GDP growth rate to end it, other ups, downs and in-betweens.

HIGHLIGHTS

- Equity markets rebounded around the world as the third quarter earnings season began in earnest, and investors focused on corporate fundamentals.
- While corporate fundamentals are exciting on a year-over-year basis, inflation continues to be on the radar for companies - the question remains as to how much increase in input cost could be passed down to consumers.
- On the international front, the MSCI EAFE Index rose modestly, and the MSCI Emerging Markets Index posted positive returns after a difficult Q3.
- In the fixed income markets, price swings continue to determine the direction of returns because income is so low in the public bond market.
- Increasing inflation expectations in the markets have applied upward pressure on nominal Treasury rates, mostly in the belly of the curve, resulting in the Treasury curve generally shifting upward for October.
- At this time, September's disappointing job numbers and Q3's annualized GDP growth print of 2% do not add confidence that the Federal



Reserve's hawkish view on the quantitative easing program will turn into a rate hike any time soon.

EXPERIENCE THE ECONOMY OF QUALITY

Invest in a world-class SPERONI Measuring System to reduce tooling changeover time, increase tool life and eliminate scrap due to worn cutting tools.



BIG KAISER

Tool Holders | Boring Tools



| Workholding | Tool Measuring | bigkaiser.com

A large, complex aerospace component is shown in a cutaway view, revealing its internal structure. The component is made of a highly reflective, metallic material, likely Ti6Al-4V. It features a central cylindrical section with a transparent, spherical window. The top and bottom sections are flared and have several circular openings. The component is set against a dark background with a small airplane flying in the upper left corner. The title "AEROSPACE TO THE CORE" is written in large, bold, yellow letters across the center of the image.

AEROSPACE TO THE CORE

HARVI™ ULTRA 8X

Ti6Al-4V structural aerospace component machining with consistent tool life of one hour or more. Helical milling innovation with 8 cutting edges per insert, removing 20 cubic inches of material per minute. HARVI™ Ultra 8X is aerospace to the core.

WHAT TO LOOK FOR IN AN ENERGY CONTRACT

START AND END DATE

Key Takeaway: Most agreements start and end on your meter read date. If the end of the month is noted as your start or end date, confirm that it is in fact your first meter read date after the month's end. It's important to not have contracts overlap OR to have a lapse in coverage.

COST COMPONENTS

Key Takeaway: This is a big one – take the time to review what cost components are being included or passed thru. Not sure? Talk to your energy consultant, we're happy to break this down for you.

CHANGE IN USAGE VOLUMES

Key Takeaway: What happens if you use more (or less) energy than anticipated? This could be monthly or annually. What's more, your contract may note baseline usage requirements. If so, be aware of that moving forward. The early days of Covid-19 and its associated closures is a great example of unexpected decreases in usage for many businesses.

Additional Takeaways:

- Bandwidth provisions for short-term variations – what percentage deviation is allowed?
- Material Adverse Change (MAC) language – for example, does a change to PLC tags constitute a material change? Is your MAC language based on usage (kWh) or demand (kW)?

EARLY TERMINATION FEES

Key Takeaway: In the event you need early termination of your contract, it's prudent to be aware of the potential fees, as well as how they are calculated and if there are any allowances that would avoid financial penalty.

END OF TERM LANGUAGE

Key Takeaway: Make note of what happens at the end of your contract term. Will you be returned to the utility? Is there an auto-renewal? Are you required to give notice? Just a few items to highlight for your team now versus at the end of the contract.

NTMA MEMBERS

Optimize Your Machine Tool Performance, Productivity and Profits with Royal Products!



For over 70 years, Royal Products has been helping manufacturers squeeze every last drop of performance out of their CNC machine tools. Our broad range of tooling, workholding, automation, and mist-control products help reduce setup times, increase throughput, improve part accuracy, and enable unmanned production. Optimize your production today with Royal Products.

Royal Quick-Grip™ CNC Collet Chucks



- Ten-second collet changes
- Ultra-precision accuracy – 0.0002" TIR or better
- Industry-leading gripping range – 0.062"
- Superior rigidity, gripping torque, and tool clearance

Royal I.D. Workholding Systems



- Internal gripping offers full machining access to the entire length of the workpiece O.D.
- Parallel expansion for optimum accuracy and gripping torque
- Custom systems available – up to 25" diameter

Royal Mist Collectors



- Low-cost, highly efficient mist and smoke collectors keep your shop clean and your workers healthy
- Over 150,000 units operating in over 50 countries worldwide
- Exclusive Royal Risk-Free Performance Guarantee

Royal Rota-Rack™ Parts Accumulator



- Safely collects a large volume of finished parts for hours of unmanned production on bar-fed CNC lathes
- Heavy-duty design handles up to 700 lbs. of parts
- Easy to setup and install – no interface with CNC control is required

For Additional Performance Solutions, visit www.royalproducts.com



8760 Fastems

Fastems



BEYOND A PALLET POOL

FPC **PLUG-AND-PLAY**

CNC AUTOMATION

HIGHER MC UTILIZATION · FAST PAYBACK · EXPANDS TO 3 MACHINES



Is this for me? Check fastems.com/fpc

Are You Participating in the Grainger Value Advantage Program?

If not, you are missing out on **additional savings!**

We can deliver 12 to 15%, or more, in total cost savings when you consolidate your MRO and Metalworking spend to Grainger.

HELPING DRIVE SAVINGS IN EACH OF THESE AREAS



CONSUMPTION

Increased inventory controls with SKU-level visibility to reduce consumption



STANDARDIZATION

Product standardization optimizes and right-sizes inventory to reduce carrying costs



PRODUCTIVITY

Simplified processes help reduce POs & invoices, and hours spent looking for product



PRICE

Higher discounts, from increased spend, reduces item costs

Source: Grainger Consulting Services

VALUE ADVANTAGE PROGRAM = CUSTOMIZED OFFER EXCLUSIVE TO MEMBERS INCLUDING:

- **Documented cost savings**
- **Drive productivity with Metalworking** – Improve work cell efficiency, maximize tool output, optimize product application, and minimize scrap and rework
- **Deeper savings** on the leading **tooling** and **abrasives** brands in the industry
- **17 categories** with additional discounts
- **Grainger pays all standard shipping**

Visit [Grainger.com/ntma](https://www.grainger.com/ntma) to take advantage of all your member benefits

*Standard ground freight is paid by Seller on all orders, unless otherwise stated, to Buyer's place of business anywhere in the contiguous United States. Other terms and conditions may apply for other than standard ground delivery ("Other Freight Services"), including expedited same day delivery, air freight, freight collect, sourced orders, export orders, hazardous materials, Buyer's carrier, shipments outside the contiguous U.S. or other special handling by the carrier. Charges incurred for Other Freight Services must be paid by Buyer.

©2021 W.W. Grainger, Inc. W-DCE1302



[GRAINGER.COM/NTMA](https://www.grainger.com/ntma)



NTMA Member Marketplace

Advertise Exclusively With the Nation's Largest Precision Machining Network!



Tim Stone
VP of Business Development

ANOPLATE CORPORATION - an ISO 9001/14001 Registered Firm

459 Pulaski Street
Syracuse, NY 13204-1134

Phone: 315-471-6143 x134
Email: tstone@anoplate.com

For more information: www.anoplate.com

Office Fax: 315-471-7132

Cell: 315-679-6265

O-D TOOL & CUTTER, INC. 

CNC GRINDING

KEVIN M. O'DONNELL

PRESIDENT

ISO 9001 CERTIFIED

Family Owned Since 1959

KEVIN@ODTOOL.COM
PH: 508.339.7507
FAX: 508.339.5667
CELL: 508.341.5576

PO Box 372
150 GILBERT STREET
MANFIELD, MA 02048
WWW.ODTOOL.COM

PILOT

Precision Products

Save with our CNC Broaching Kits

With a CNC Broaching Kit:

- Broach a range of keyway slots in your CNC cycle
- Never miss quoting a broaching job and completing it in-house
- Improve your cycle time by adding our live tool slotter

View our CNC catalog to get your kit today:

catalog.pilotprecision.com/CNC-Broaching-Kit

Save up to
20%
off of list pricing with
our CNC Broaching Kits



SAVE TIME



IMPROVE EFFICIENCY



SAVE MONEY

PilotPrecision.com




TOOLING CONCIERGE
by Pilot Precision Products

As your Tooling Concierge, we use our expertise to understand your complex machining applications and recommend the right tooling. At Pilot, we also leverage our technical knowledge and business relationships to connect you to the world's most respected brands of broaching tools, reamers, micro endmills & drills, and more.

15 Merrigan Way • South Deerfield, MA 01373 • T: 413-350-5200 • PilotPrecision.com

NTMA Member Marketplace

Advertise Exclusively With the Nation's Largest Precision Machining Network!



GREGORY A. KASZEI
President

14459 Foltz Parkway
Strongsville, Ohio 44149
Email: CARDINALMACHINE@aol.com

Phone: (440)238-7050
Fax: (440)238-7051

YOUR AD HERE!

Interested? Contact Kelly LaMarca for more information - klamarca@ntma.org

Thread Rolling
Knurling
Centerless & Cylindrical Grinding
Precision Machining



141 Prestige Park Rd.
East Hartford, CT 06108 USA

860.289.8209

www.horstengineering.com
www.threadrolling.com



Wire EDM Corporation

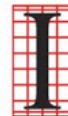
Michael Raasch
Business Development

N8 W22399 Johnson Dr.
Waukesha, WI 53186
(262) 549-9005 • 1-800-798-XACT (9228) • Cell Phone (262) 993-2366
Fax (262) 549-9115
Direct (262) 408-2479

web site - www.xactedm.com • email - mraasch@xactedm.com

YOUR AD HERE!

Interested? Contact Kelly LaMarca for more information - klamarca@ntma.org



INDUSTRIAL GRINDING INC

*Specialists In Precision Grinding
Ceramics - Flame Spray - Plasma Coatings
Spindle Repair - Large O.D.-I.D. Surface Grinding
AS9100D ISO 9001:2015*

2306 Ontario Avenue, Dayton, Ohio 45414

PH 937-277-6579 FAX 937-277-4536

www.industrialgrinding.com + sales@industrialgrinding.com

QUALITY > INTEGRITY > ON TIME DELIVERY



PRECISION PROFILES

PRECISION MACHINING SINCE 1994

CORE CAPABILITIES

- > Turbine Component Manufacturing
- > Precision grinding (up to 136" in length)
- > Multi-Axis Milling, Machining, & Turning
- > Saw Cutting (straight, angle, radius, angle + radius)
- > Wire EDM

*** EFFICIENT RESPONSE TIMES**

WE REGULARLY STOCK STAINLESS STEEL ALLOYS SUCH AS:
403, 405, 410, 415, & 422

ITAR REGISTERED

US/CA JCP CERTIFIED
(CAGE CODE Available Upon Request)

SAM REGISTERED

ISO 9001:2015 REGISTERED

SMALL BUSINESS
(<25 Employees)



**CENTERLESS GRINDING
& THREAD ROLLING**

Normand J. Goulet III

Vice President
Manufacturing Engineer

25 Rosenthal Street ■ East Hartford, CT 06108
phone: (860) 289-2987 ■ fax: (860) 289-3142
web: www.unitedcgtr.com ■ email: njgoulet@unitedcgtr.com

45727 STATE HIGHWAY 27, TITUSVILLE, PA 16354 > 814-827-9887 > precisionprofilesllc.com



NATIONAL TOOLING AND MACHINING ASSOCIATION

1357 Rockside Rd.
Cleveland, OH 44134

Manufacturing America's Future

my DMG MORI and NET service

DIGITAL SERVICE PROCESSES FOR FAST SUPPORT AND MORE TRANSPARENCY

STREAM
REMOTE
SUPPORT

DMG MORI

CUSTOMER PORTAL

YOUR DOCUMENTS

YOUR SERVICE REQUESTS

NET service

- + Reduce machine downtime on a remote basis
- + Multi-user conference allows cross-departmental collaboration
- + Transparency ensured by logging all service activities

YOUR ONLINE SERVICE MANAGER

- + More service: faster response times
- + More knowledge: documents available digitally
- + More availability: direct line to service experts
- + **my DMG MORI APP**: Mobile access to the free customer portal - via iOS and Android App



US.myDMGMORI.com

DMG MORI