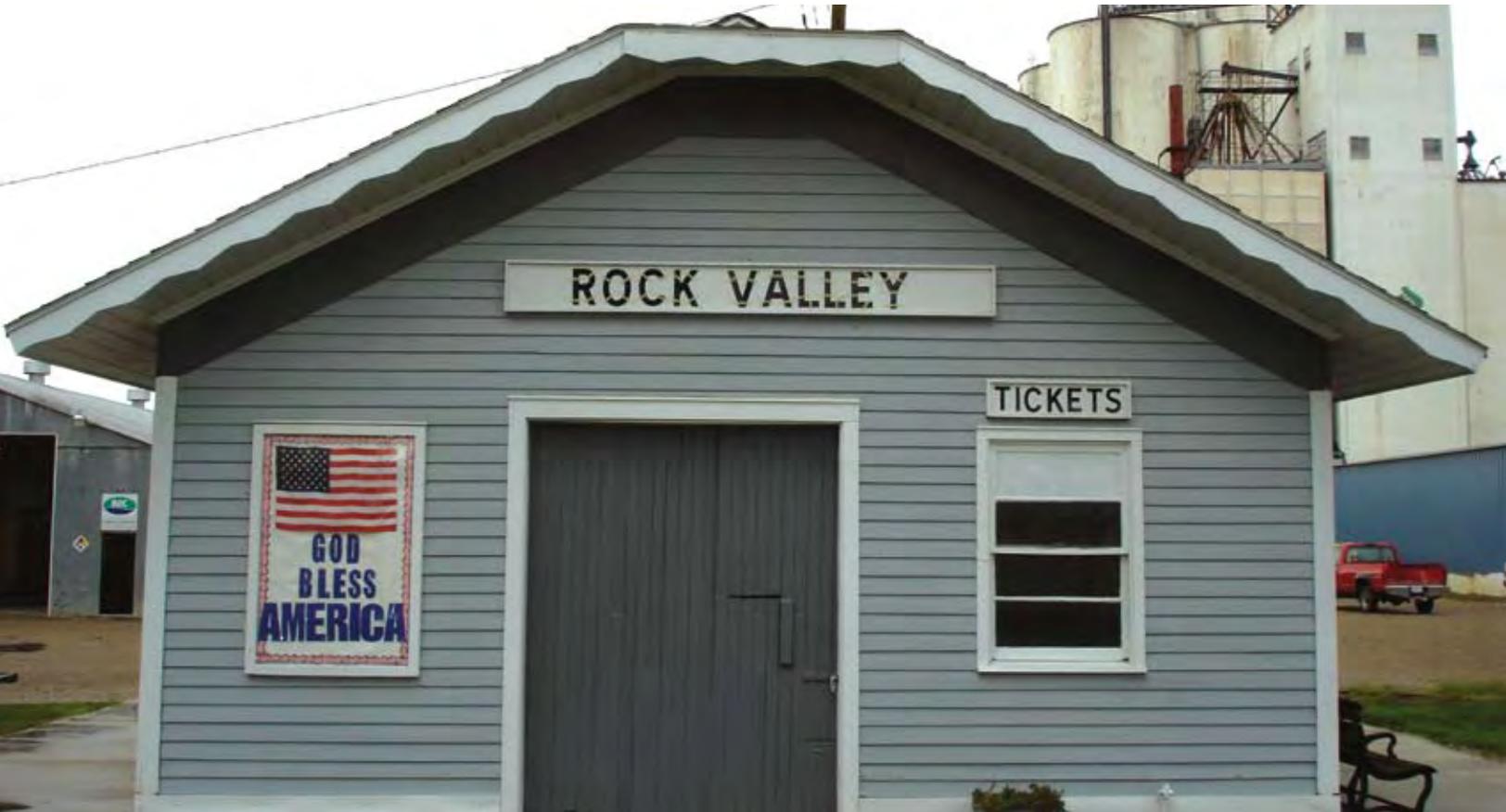


TODAY'S

Vol. 1 No. 8 october 2005

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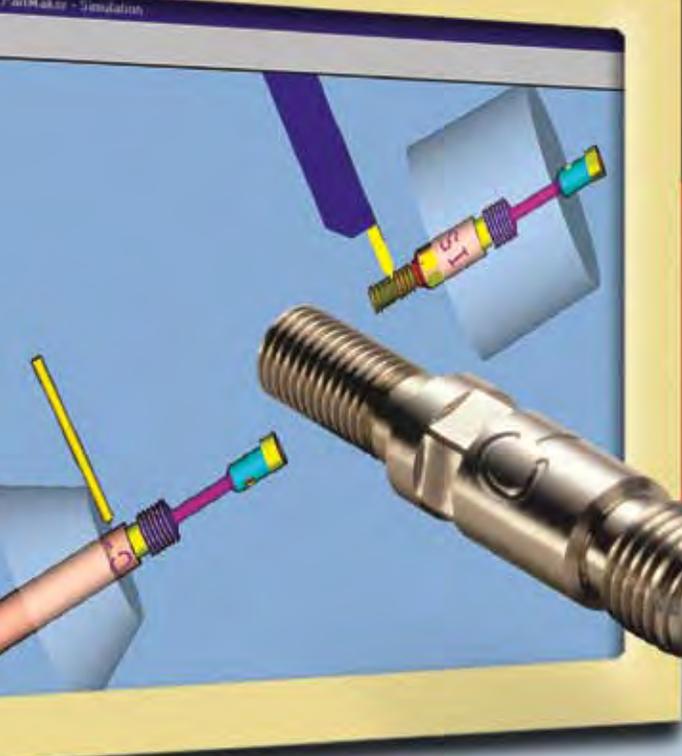
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# from the editor

## The Importance of Mistakes

I hope you didn't notice, but we made a big goof on the cover of our last magazine. The large TMW logo did not appear between the words "Today's Machining World."

The mistake was made by our usually flawless printer, Banta Publications, but we take responsibility because it is our magazine, like you would if your parts were bad because the steel was flawed.

Having made so many mistakes during my life, I have learned a few lessons about error etiquette. The first and best thing to do is to admit the mistake, preferably before it is discovered. Then apologize honestly, taking responsibility. Explanation may or may not be helpful, but if you do explain, don't turn it into a blame game.

Then fix the problem if it can be fixed. In the case of the missing logo, we will add an additional proofreading step to the future process. This error, however, happened post-proofing, and the September issue was already in the mail before we discovered the error, so remediation was not practical.

Being a baseball fanatic, I have often wondered about the role of the "closer," the relief pitcher who finishes games when his team is ahead. The mantra of most closers is that they must have "short memories." If they blow a game in the ninth inning, they must obliterate the failure from their memory if they are going to be successful closing the next game.

But is it really possible to forget the last screw up? Is it even a good idea to forget it, because there may be something important to learn from the blown save.

I'm moving on from last month's cover gaffe, but my memory is not short. A wise person once told me that life's experiences are never expunged. They accumulate in your mind and body, even when you are not conscious of them.

The logo mishap, our "blown save," is history. And history is important.

*"...life's experiences are never expunged. They accumulate in your mind and body, even when you are not conscious of them."*

**Lloyd Graff**  
Editor/Owner

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## Saying Hello

What a refreshing magazine you have. Nothing at all like the other trade magazines that all seem the same somehow, with their company-written testimonials. I try to take a few minutes each day to read and try to save a little until the next issue gets here. Jessica DuLong's article "It Happened Here" (June/July 2005) is a sad story. I can't imagine it happening to our shop, but I suppose it could. Thanks again for an excellent magazine.

**Bruce Colbert**  
The Ridge Tool Company  
Elyria, OH

## Saying Goodbye

My email box is empty—the final silent sign that a door has slammed shut on a past life. Which past life, you ask? Metalworking and all the accessories that bolt on to that industrial category called "manufacturing." That fascinating mechanical world of making widgets by driving man and machine longer, stronger, faster. My 30-year career in what was once a vibrant industry is now in the memory bank. "When" opens my conversations now if the subject even comes up in my new life. Were there other signs? Sure, lots of them. I often told myself that I was still relevant and had knowledge and insight to offer. I just ignored the signs.

But evidence has been stacking up against my argument that I had value and could still make contributions. Leaving corporate life certainly contributed to my waning enthusiasm.

Going into private consulting was good for a while, but intensity did drop. Expense account paid trips all over the world carrying titles of responsibility in the industry provides a certain amount of "glue" that disappears after you go solo.

The big elephant in the room is that manufacturing metal components is being outsourced all over the world. Globalization has isolated my contributions to an ever-shrinking dot on the map. Now you need "global supply chain management skills" instead of "selling to your local industrial distributor." Speaking a few languages is a must. I'm still working on English. If local manufacturers can claim that global competition has ruined their business, why can't I?

Everyone has to face the "age thing" sometime. When you note that most of the executives were born after you started your career in manufacturing, the gap has spread to a chasm in what seems to be a blink of the eye. Coaching and advising becomes much like raising teenage children—you try to give them the best of your experience, but they don't want to hear it! You just have to let go. Adult supervision is not welcome.

Another nail in the coffin is technology. Just like time, it has moved on. Mechanical is now electronic. Hard wired is wireless. Management of peers and events is no longer hands-on, but a software program with faceless remote inputs. You can't even claim to be a "shortsleeve manager" because very few wear shirtsleeves except perhaps to cover up their tattoos – both genders included.

Enough nostalgia. I'm starting to sound like my grandfather, which of course I am! My new life is exciting. I still work 12 hours a day, just in a different way. My focus is to be creative as applied to my passions of teaching, writing, and cooking. My mechanical talent, developed in the shop, is devoted to remodeling investment properties. I consult with a different type of client and I am writing books instead of technobabble and corporatespeak. I will be taking instruction in cooking from a master chef next month in Napa Valley's Culinary Institute of America. Actually being an engineer is a huge help in becoming a chef. Probably there is a book in that thought.

Finally, I live in an area of the country that is featured in a couple of TV programs—"The OC" and "Laguna Beach." I never had a chance to be on TV trying to figure out how to machine titanium. All I have to do now is walk on the beach! As kids say today – "sweet."

**Dennis Myers,**  
ex-manufacturing guy

**Something on your mind?  
We'd love to hear it.**

Send your comments to:  
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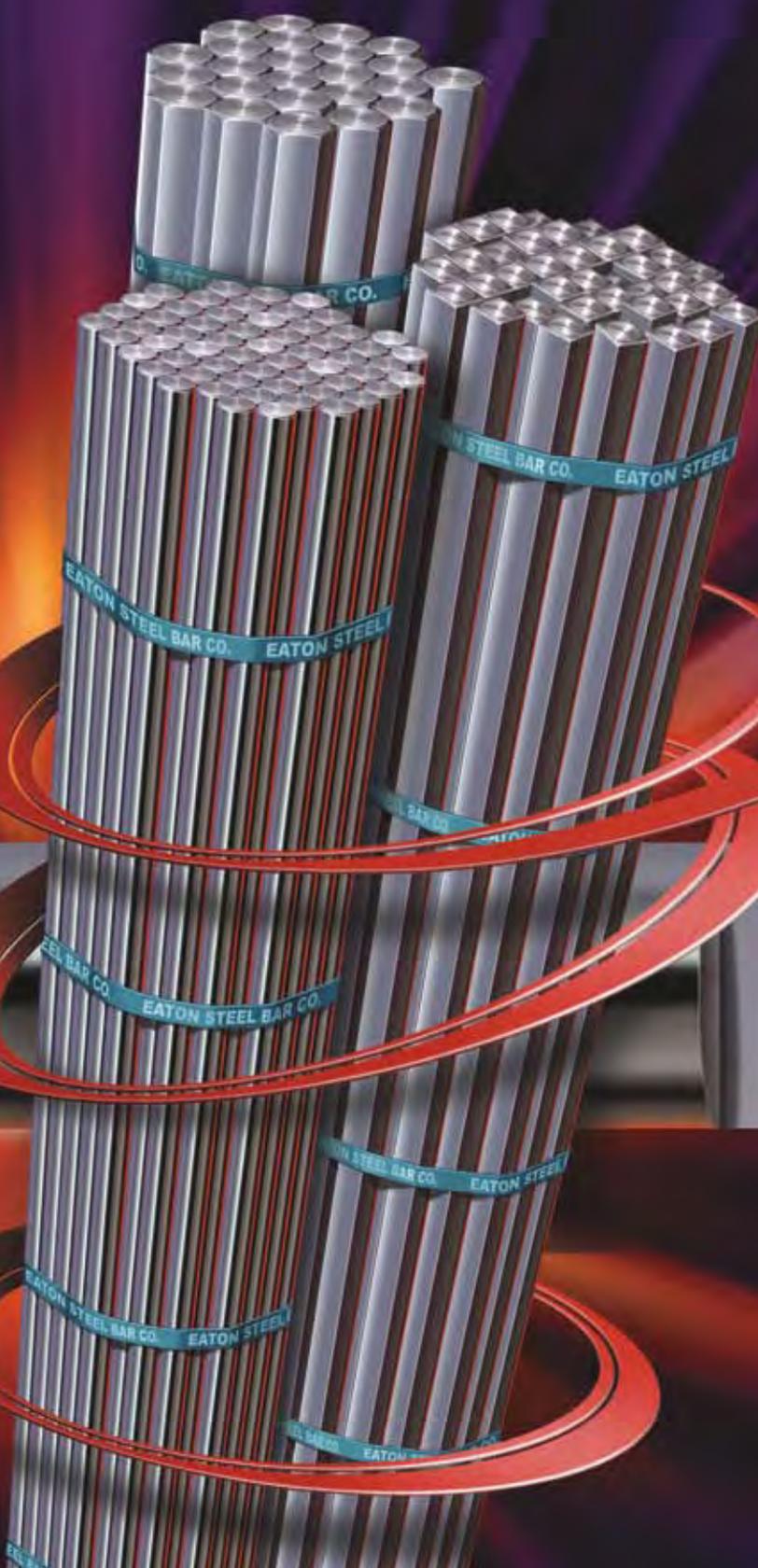
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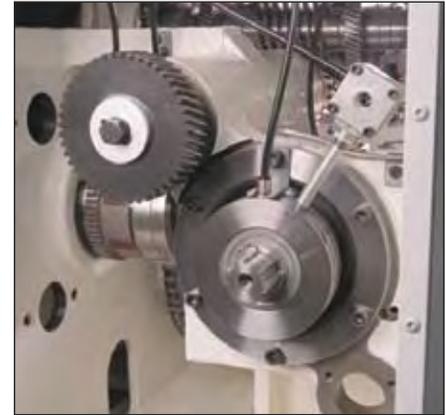


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## Industry News & Whispers

BY LLOYD GRAFF

**W**e are witnessing a crucial paradigm shift that will have enormous impact on the machining business as we have known it during our lifetimes.

The gas guzzler is dying. The pure gasoline-powered internal combustion engine-driven car is on the wane. Metals are going to be replaced by plastics and composites. Inexpensive computer chips will be the brains of the auto. We will be seeing the disappearance of the clutch, differentials, starters, alternators, probably the steering columns, and even the transmissions. Cars will probably be driven by an X-Box, manipulated by fingers and thumbs.

This is coming a lot faster than you may think. I think we will see a 100-mile per gallon hybrid on the market by 2012. It will be a city car, probably with a top speed of 60 mph, with a rechargeable hybrid engine. The tinkerers are already getting 75 mpg on a Prius.

If you have a business model based on selling car components that will soon be obsolete, now is the time to rethink your business.

I have never bought into the idea that

there was a shortage of fossil fuels. But it appears that we will see oil prices stay over \$40 per barrel for quite a while because of Chinese demand. Gas prices will stay high because of limited refining capacity. We are now at the tipping point for hybrids, and we are not going back, because the consumers, not artificial C.A.F.E. standards, are going to accelerate the trend.

I am not advocating that you abandon your automotive-related business,



**“I have never bought into the idea that there was a shortage of fossil fuels. But it appears that we will see oil prices stay over \$40 per barrel for quite a while because of Chinese demand.”**

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but keep in mind that much of it will be going away in the next several years. Start looking around for alternative things to make. Remember, you are not slaves to your present equipment. It is there to serve your needs. Just because you have an Acme or a Minster press does not mean you have to feed it.

Just a few examples to consider as you examine your automotive mix: One bone screw can sell for as much as \$1800. One well-designed golf putter can sell for \$180. One well-manufactured brass fitting brings 18 cents.



In the wreckage of the American automotive business, the outlines of the next phase of financial manipulation are starting to become visible. Kirk Kerkorian, the Armenian octogenarian sharpie, who has made billions on canny investments from Chrysler to Vegas, is expanding his stake in GM to 9.9%. Wilbur Ross, who engineered the rollup of decimated steel companies when everybody else was too scared to step up, is buying the debt of bankrupt Tier One, Collins and Aikman, and eyeing the remains of Visteon. Ross loves messes, so Tier One has him drooling.

At this writing, Delphi is at the tipping point between breathing and bankruptcy. The stock is at \$2.50, bouncing up or down 10% each day, depending on the aroma of the news. It is a stock speculator's dream, and the hedge funds are playing it like Frisbee.

Bankruptcy may be a useful tool for the financiers, but it is a minefield for Tier One vendors. Accounts receivable are problematical from bankrupt accounts, and generally cannot be borrowed against. We could see a nasty ripple of bankruptcies from smaller suppliers if there is a Delphi bankruptcy.

I have heard that Delphi has been making arrangements with their suppliers, expediting payment of bills, because they want to mend fences ahead of the October 17<sup>th</sup> drop dead date for a deal with creditors, GM and the UAW. Delphi is paying an average of \$120,000 a year per employee if all the perks are added up.

A guy like Wilbur Ross sees this and figures that he could

bring in his band of tough guys and shape things up in automotive land. He knows that the business is out there if he can cut costs enough. This is very similar to the steel industry a couple of years ago.

General Motors is a little different. Kerkorian doesn't want to run GM. His approach is probably similar to his Chrysler foray. He wants a place on the Board of Directors to prod change. If he can force management change in the face of a potential financial collapse, the stock could bounce up. The other scenario is a buyout, either by a Wall Street investment consortium, Toyota, or even Ford or Daimler. GM cannot continue on its present course for long. With \$3 a gallon gas, they just announced their new line of monster gasoline-burning SUVs. Management is faced with "rock and a hard place" decisions on Delphi. Kerkorian will wait, but he will be an irritant for change. GM's days as an independent company are numbered unless there is a radical shift soon.



As we head towards Halloween, the stock market is telling us that the economy is starting to look scary. Alan Greenspan, lame duck Fed Chairman, keeps cinching up interest rates. He evidently doesn't want to leave office branded as soft on inflation, so he has decided to pump the air out of the housing market. This is killing the second-home market and condo speculation in Florida, which isn't such a bad thing, but it will eventually crimp the robust home market, which will be bad for you and me, who want to sell things to Whirlpool and Kohler.

Then we have \$2.80 gasoline, and GM and Daimler pitching their new lines of SUV walruses. The hurricanes bring more Government debt, which probably means higher interest rates. Not good for business, unless you make dozers or Bobcats.

Consumer confidence is sinking, as is Bush's popularity. Natural gas is almost double the price of last winter, as we enter heating season. The Iraq war grinds on.

As the stock market wallows, we must remember that falling stock prices have predicted eight of the last three recessions, so we need not get too depressed. Unemployment is low. Gulf rebuilding will mean a lot of business for the tree pullers



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and oil rig builders. American automotive is getting to the tipping point where something good might actually happen soon. The medical device and orthopedic reconstruction business is going crazy. Gene Haas is doing \$550 million, selling 10,000 machines this year. It is certainly no time to hang crepe, but the tides are less helpful than a year ago.

Enjoy your pumpkin pie.



Wal-Mart stock is down 20% over the last two years, while Target and Costco are up over 20% year to year. Same store sales comparisons for Wal-Mart are weak. High gasoline prices are whacking their demographic. The boys in Bentonville know they have a problem, and they are addressing it.

Wal-Mart now has a fashion outpost in New York City. They have a plan to be more proactive in moving styles that are selling well into the stores more quickly. They are thinning out the racks and making the shelves 18 inches lower in apparel areas. They are pushing plasma TVs for under two

grand. They seem to be getting the message that, even for Wal-Mart, it isn't just about price.

On the publishing front, the staid *Wall Street Journal* put out their first-ever Weekend edition on September 17<sup>th</sup>, and the *New York Times* initiated their revamped *Sunday Magazine* on September 18<sup>th</sup>. *The Journal* has a weekend format similar to its highly successful Friday approach, with articles about sports, food and wine. *The Times* mag now has serial fiction, a comic strip, and a humor section.

What we are seeing here are three huge corporations with under-performing businesses and lousy stock prices trade in some losing hands. These are three companies that do a lot of things well, but they know that if they keep doing what they've been doing, things are probably going to get even worse.

On a tiny personal scale at Graff-Pinkert, our old core multi-spindle screw machine business continues to deteriorate, though our Wickman value-added business still holds its own.

So what do you do if you are a machining company



whose core customers are gasping like much of Tier One automotive?

I wish there were easy answers, but there are answers, and they are different for every firm. One answer is to keep playing the game you are familiar with, but get better at it. Cut costs, train better, do more “lean cuisine,” move to a cheaper rural setting, squeeze the turnip another notch. This is a rational approach. I respect this strategy.

But I think that Wal-Mart, Dow-Jones and *The New York Times* are telling us that in a climate shift like we are in now (aren't we always in one) you have to really shake things up. Wal-Mart won't become a boutique and the *Journal* isn't going to mimic ESPN, but both are going to commit significant resources to connect with their changing world.

You and I are being forced to look for new products, new customers, new partners and I'm talking right now, pronto, before breakfast, or we're going to be “toast”. Even though I talk a good game, I admit I find this shift damn upsetting. Can't we all just get along?



A few insights into the marketplace: Duckwall Co. recently had a little auction in the middle of a Kansas wheat field. They sold a Hardinge T-65 CNC lathe without barfeed, new in 2000, for \$69,000, a Hardinge T-51, 1997 for \$55,000, and a 20mm Swiss CNC Hardinge, new in 1998, for \$73,000. I think this was a very strong price for a Tsugami clone that hasn't been sold by Hardinge for four years.

The National Acme multi-spindle market continues to be swamped by oversupply, but the used Hydromat market is robust.

One interesting commentary on current business is the price of Smog Hog mist collectors on eBay. We recently sold three of them for over \$1000 each. This is the kind of item that people have trouble justifying as a new purchase, but there is a latent demand for them when they come up at auction.



*Today's Machining World* recently completed a study on the buying preferences of our audience focusing on the CNC Swiss and automatic bar loader market. We queried, by mail,

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1500 readers on a random basis, and received a startlingly high 28% response rate. We are currently offering the data for sale.

These are a few of the findings: 35% of the respondents own CNC Swiss machines. Citizen, Star and Tornos, in that order, are the brands most commonly owned. Lowest cost was named by 16% of the respondents as one of the two most important factors when choosing a brand of CNC Swiss machine to purchase.

On bar loaders, LNS and Lemca are almost neck and neck on current ownership, with FMB a distant third. For more information on the study, call Dan Pels at 312-342-6557.



Sometimes an expression migrates from one language into another, like the Yiddish word "maven," which has taken the meaning of "expert" in English, or the Italian "paisano," meaning comrade. Other times the idiom may come from sports or the theatre. We may talk about a company that has "bench strength" or a product that "has legs."

A term that is gaining in the vernacular of business today is *pin action*. Jim Cramer uses the term with appropriate sound effects on his entertaining stock-picking show on CNBC called *Mad Money*. The expression comes from bowling. When a ball has good spin and movement on it, and hits the pins in the "pocket," the mixing of the falling pins is *pin action*. For Cramer, an example of *pin action* might be a drug



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study that could show a cholesterol drug having an effect on lowering blood sugar. More than one pharmaceutical firm might benefit from the finding, thus we have *pin action* in the group.

I think we see *pin action* sometimes at auction sales. If there are several machines of the same description and the first one brings a high price, we are likely to see some *pin action* on the whole group.

We try to promote *pin action* in this magazine when we get an advertiser in a new category. With proper marketing, it tends to get things “shaking” amongst competitors.

I love the connotation of *pin action* in social contexts. My

son Noah says that if you have a new girlfriend it promotes interest, or *pin action*, from other women, who then view you as more desirable. My son-in-law Scott, who works in Silicon Valley, says that a start-up company that gets a buyout offer from one firm usually ends up with multiple offers. *Pin action*.

I think that one way to look at your business development is to make a conscious effort to promote *pin action*. Doing the giant container mural and then publicizing it with a showing is a Graff-Pinkert exercise in *pin action*. If you can show your skill in doing a tough machining job for a new customer, you should try to make it an entrée to future business. If you play this astutely, new *pin action* could be right up your alley.

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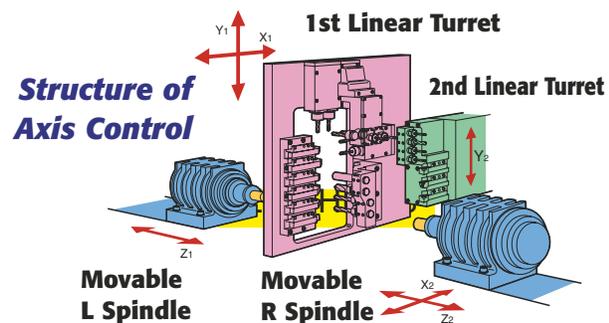
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## Courtroom 302

By Jerry Levine

Steve Bogira's Courtroom 302 is a look at the daily grind of Chicago's Cook County Criminal Courthouse – one of the nation's most controversial dispensers of criminal justice. Bogira spent a year in one of the courtrooms and chronicled its people and events. The book had particular meaning for me because my son, Jeffrey, was a Cook County prosecutor for several years at this Courthouse. We have talked countless hours about the criminal justice system.

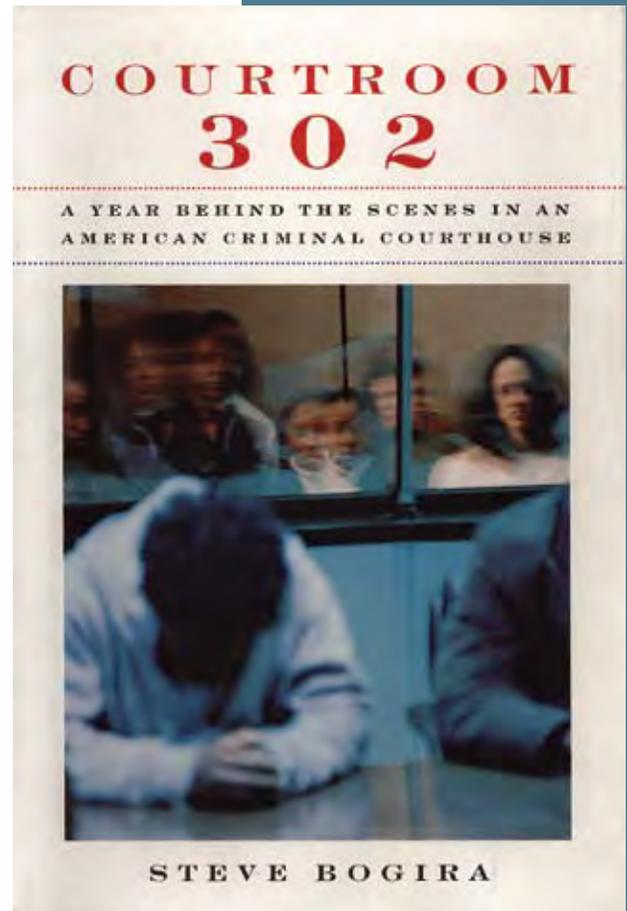
Bogira is a reporter for the *Chicago Reader*, a left-leaning, free newspaper. I believe Bogira initiated this project intending to indict Chicago's system – to portray the judges and defense attorneys as incompetent, the prosecutors as overzealous, and the defendants as “poor but honest” people being railroaded by an unfair and racially biased system. What he found was a system that functioned fairly well with overworked but competent judges and attorneys.

Judge Locallo, the judge in Courtroom 302, was conscientious and sensitive,

but not without human foibles. The defendants generally turned out to be unsympathetic characters.

Courtroom 302 had a huge caseload. Most cases concluded with plea-bargains, an agreed arrangement between lawyers and judge. Bogira decries plea bargains, implying that the defendants get short shrift if they don't get their day in court. Bogira claims that the activity of the courthouse is a daily miscarriage of justice because the war on drugs has choked the system. The system doesn't, and cannot, address what he sees as the root of crime, poverty.

From my observation, the major factors causing crime in the inner city are a bad social environment and weak family structure. A social environment that puts a low value on children generates individuals with a lack of direction, and little



*“What he (Bogira) found was a system that functioned fairly well with overworked but competent judges and attorneys.”*



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were growing up, was arrested for threatening her neighbors, and was brought to court by her own mother for child neglect.

The gritty portrait that Bogira paints of Courtroom 302 is sharply at odds with the popular image of the legal process. For generations raised watching “Law and Order” or “Judge Judy” and seeing most cases go to trial, reality is a disappointment. Of the roughly 30,000 cases that move through Courthouse 302 each year, only 1 in 100 ends in a jury trial, and only about 1 in 10 involves any trial at all. Almost 90% of defendants plead guilty, simply because it’s the best deal for them. It’s a deal worked out by the Judge, Prosecutor and Defense Attorney, all intent on processing justice as fast as they can. In exchange for their plea, defendants get a lighter sentence, often on a lesser charge. If a defendant has a good community record and appears redeemable, the sentence tends to be probation with community service and/or drug rehab. “The guilty plea,” Bogira says, “is central to the system working. It allows ‘the factory’ to keep moving—which allows us to feel we are addressing our crime problem. It’s a great enabler.”

Bogira’s conclusions seem based on an unspoken assumption that the criminal court system is designed for the benefit of the defendant. That’s wrong. The main objective of the criminal justice system is to protect the general population by removing the really harmful people from society. Bogira seems unable to grasp the distinction between different crimes. This is why the judges, prosecutors and defense

formation of conscience. Conditions in dysfunctional families, including abuse, neglect and parental violence generate more criminal behavior than merely being “poor.” Bogira emphasizes this point by writing about an impoverished single mother

whose 17-year old son commits a senseless murder. Yet Bogira neglects to note that she had this boy at age 14, had three more children before the age of 20, used cocaine when she was pregnant, was in and out of prison for drug dealing while the children

attorneys plea-bargain almost all drug cases – so they can focus on the cases society should really care about – rapes and murders.

Bogira attempts to balance his admiration for, and cynicism about, the criminal justice system and those who work in it. I'm sure all involved share some of his cynicism. Yet Bogira takes great pains to discuss how thorough and compassionate Judge Locallo can be when required. He points out that the Public Defenders and Prosecutors are paid a low fixed salary, which does not change regardless of how many cases they process. He doesn't mention, but should, that many Public Defenders truly believe in the Constitutional right of the accused to a solid defense. Those lawyers try to help the good kids who get caught up in the system. Likewise, most prosecutors are not driven by "winning" death sentences. They are trying to protect society by getting the "bad guys" off the street, and hoping to bring closure to the pain suffered by the victims and their families.

Courtroom 302 seldom tells the stories of victims and their families. In the 400-page book, only one page recounts the story of a mother of a murderer briefly apologizing to the mother of the victim. Bogira then moves on, as if this ten-word apology somehow atones for the murder. I believe Bogira's predetermined mindset was to glorify the defendants. He tried to rationalize their behavior by claiming it resulted from poverty. The examples in the book don't prove this thesis – most of the defendants, aside from those involved with drugs,

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were not poor.

Despite my disagreement with the author's views, I still recommend

reading the book. It is an excellent portrayal of real life in the criminal justice world. Read it, however, with a critical eye. **TMW**

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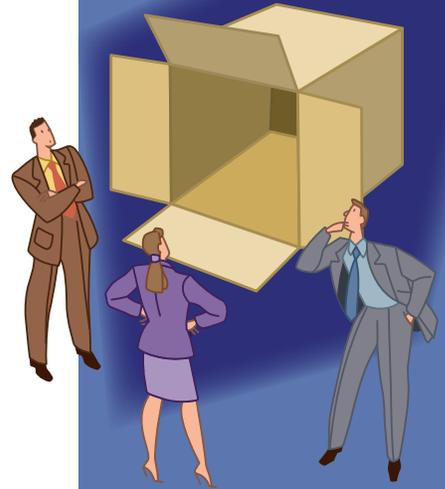
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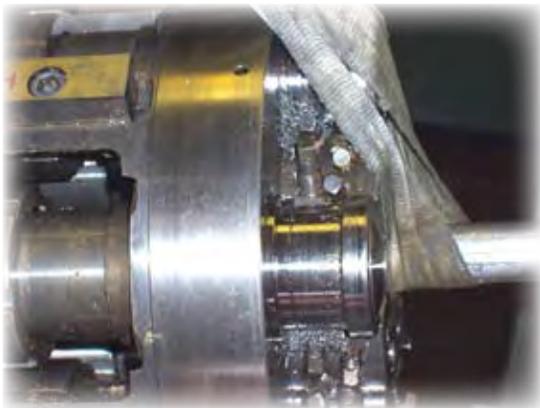
**ISCAR** has introduced a new solid carbide endmill family of tools, designed to combine two tools into one. The FINISHRED'S Fast Metal Removal (FMR) design makes it possible to machine both roughing and finishing applications in the same process. By combining these, downtime required for changing tools and setup is eliminated. The FINISHRED endmill features four flutes with 45-degree helix. There are two serrated flutes designed for roughing, and two continuous flutes designed for finishing. This combination results in a cutter capable of running at rough machining parameters, but produces a finished quality surface finish.

The FINISHRED produces both short and long chips simultaneously. By producing this type of chip mixture, the chips evacuate easier from the cutting zone, reducing vibration and allowing a much more efficient cut. The EFS-B44 (metric) is available from 6mm to 25 mm; EFSI-B44 (inch) is available .250" to 1". The endmill is suitable for all types of steel in addition to titanium, inconel and high-temperature alloys. For more information, please contact Iscar at 817-258-3200, or visit the company online at [www.iscar.com](http://www.iscar.com).



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**DAVENPORT** has announced that The New Davenport Proprietary Coated Head shows zero wear after producing one million parts in a test run on a customer's machines. The same extended wear-life is now available on Standard 8-SA Heads with standard spindles. Using a proprietary metallic hard-coating material on the bearing diameter bands, the 8-SA Head has less friction and less wear. This is a way to extend the life and accuracy of the Davenport Model B and Servo B screw machines. After repeated testing, the hard-coated heads show no visible or measurable signs of wear.



Both bearing diameter bands are covered by a proprietary metallic hard-coating material. No burnishing of high spots was evident at any point in the bores. Hard-coated heads retain oil better and reduce friction during index by over 65%.

For more information, call Davenport at 1-800-344-5748 or visit the company online at [www.davenportmachine.com](http://www.davenportmachine.com).

**HYDROMAT** has introduced a new tool designed to enhance the operation of their complete line of rotary transfer machines. The Harmonic 200 Toolholder Balancer will make any Hydromat balanceable toolholder dynamically stable by reducing or offsetting imbalance. This is accomplished by strategically adding two eccentric rings for counterbalance and removing any imperfections.

This compact, full-function unit goes from box-to-bench in minutes, with no special foundation necessary. The touch screen controls and laser pointer assists the operator in removing 95 percent of imbalance in the tool and toolholder. The Harmonic 200 toolholder balancing system will also refine the overall machining process of a Hydromat machine.

For more information, call Hydromat at 314-432-4644 or visit the company online at [www.hydromat.com](http://www.hydromat.com).



**MASTER CHEMICAL CORPORATION** has released new low V.O.C. (volatile organic compound), nitrate-free, water based rust inhibitors to fill out its line of corrosion inhibitors.

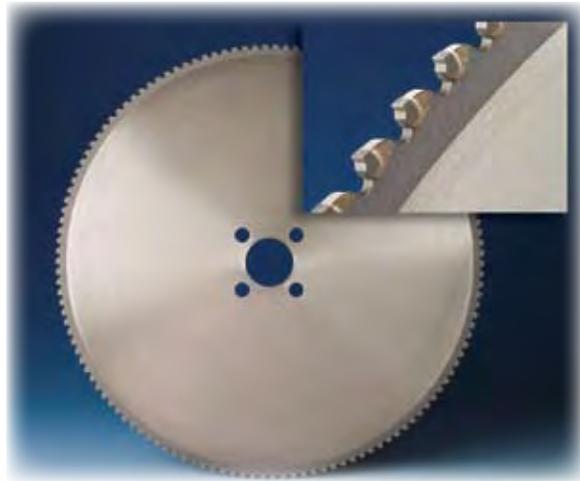


TRIM® NOCOR™ RPs and built-in synthetic RP cleaners have no solvent fumes or odors. Additionally they are not flammable and are easily washed off with mild detergents or cleaners. New TRIM NOCOR products include TRIM® NOCOR™ E6, which is an emulsion rust inhibitor for steel, cast iron, and yellow metals is effective at 4% to 12% and provides three to six months of indoor protection. NOCOR E6 contains no Boron or Barium. TRIM® NOCOR™ S1 is a very low foam synthetic water-soluble ferrous corrosion inhibitor that leaves a thin transparent film which will not interfere with machining, gauging or assembly. It is mainly used for short term RP for ferrous parts and also for grinding and light machining of cast iron.

The first of the four new cleaners with built-in synthetic RPs is TRIM® CLEAN 2430, which is multi-metal safe with good RP on ferrous parts. TRIM® CLEAN 3011 is a concentrated multi-purpose fluid that will remove light oils, water soluble cutting fluids and grinding fluid residue and will leave behind a thin rust inhibiting film. TRIM® CLEAN 2229NP provides great short term RP for ferrous metals. It boasts a non-phosphate formula for better environmental compliance. TRIM® CLEAN 2115AL is a multi-purpose fluid for very high-pressure washers, short term RP, and grinding.

For further information please call Master Chemical at 419-874-7902 or visit the company online at [www.masterchemical.com](http://www.masterchemical.com).

**TRU-CUT SAW, INC.** is now offering its "Aggressor" line of thin kerf, carbide tipped saw blades for cutting tube, pipe and solid ferrous materials in flying cutoff and re-cutting applications. Aggressor blades cut fast – up to 1200 SFM. Test data on a 350mm x 2.8mm x 100 tooth blade running at 250 RPM achieved a 3.7 sec. cut time and was able to cut six square meters of 52100 bearing steel. A special C-shaped hooked chip breaker on the face of carbide or cermet inserts allows faster chip removal and more aggressive cutting speeds.



For further information, please call Tru-Cut Saw at 330-225-4090 or visit the company online at [www.tructsaw.com](http://www.tructsaw.com).

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For more information contact Prab at 269-382-8200, or visit the company online at [www.prab.com](http://www.prab.com).

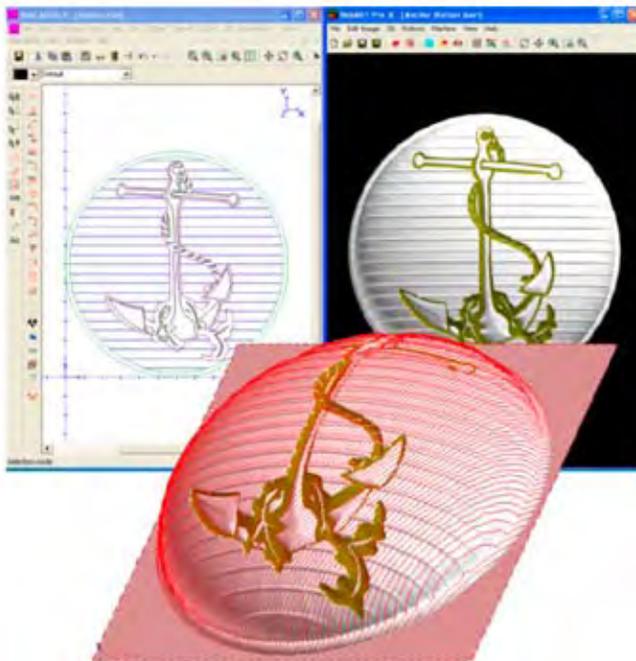
**GENERAL INSPECTION, LLC** has introduced their The GI-360-EV inspection/sorting system, which inspects for dimensions and flaws all around the part with lasers; uses eddy current for heat treat, seams, cracks, and plating detection and vision for head and recess defects.



Socket head screws were fed from a vibratory feeder and were metered individually at ten parts per second. Accept parts were returned to the feeder by a conveyor belt, taking only 5 minutes to sort the 3000 samples, including the five defects that were rejected 100% of the time. The defects included missing threads, bent part, short part, deformed head and a seam defect (crack).

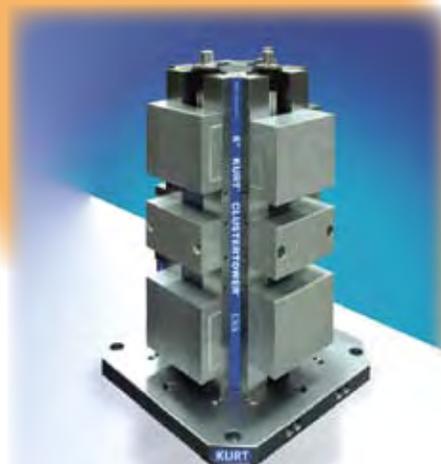
Vans are available to bring systems to manufacturing plants for demonstrations on customer-supplied samples. Call Greg Nygaard at 248 625-0529 to make arrangements.

**BOBCAD-CAM** has announced the release of their NEW BobART PRO-X art CAD-CAM system, allowing you to turn pictures or CAD drawings into 2D toolpath or embossed models for direct machining within their Version 20



2D & 3D CAD-CAM software. BobART PRO-X gives the operator the flexibility to automatically convert a color, grayscale or black and white picture into a full relief model and then create the right machine toolpath strategy that they need. Added mirroring options allow you to create negative relief models fast. BobART PRO-X allows you to perform advanced raster to vector operations to create 2D profile toolpath for carving or profile milling directly from pictures. Once the toolpath is machined in the CAM end of the BobCAD-CAM V20 software, you can simulate and verify the cutting process before actually sending the program to your machine.

Please contact BobCAD-CAM at 877-262-2231 or visit the company online at [www.bobcad.com](http://www.bobcad.com).



**KURT** has introduced HDL ClusterTowers™, which provide repeatable clamping to 0.001 inch. These towers hold multiple parts in eight clamping stations for maximizing machine cycle times. They are available with a full range of holding options, are very quick to load and provide versatile high-density workholding.

Kurt HDL ClusterTowers are designed for use on mid-size and larger machining centers including horizontal and vertical machining centers with a fourth axis. These tower systems maximize multiple part workholding for best spindle utilization, reducing tool change time while reducing machine travel from part to part.

Kurt HDL ClusterTowers have quick-change jaws to save setup time. With a half-turn of a hex key, the stationary jaw lifts off the vise module of the tower. The jaw resets and self-aligns quickly without special tools. Spring pre-load design insures fast, easy loading of parts. ClusterTowers are constructed of 80,000 PSI ductile iron bodies. For more information, contact Kurt at 1-800-328-25 or visit the company online at [www.kurtworkholding.com](http://www.kurtworkholding.com).

## The jaw used hardened pistons, acting independently, and a patented hydraulic action to equalize holding pressure on all of the parts..

**HYDRAMAX TECHNOLOGIES** of Portland, Oregon has introduced a new line of hydraulically compensating vise jaws for Kurt type vises. The model Hydra 4-ST can hold 4 parts at once in a single six inch vise or eight parts in a double vise. With 1-1/2" diameter pistons, the Hydra 4-ST is designed to hold a larger size of "small parts."

The jaw uses hardened pistons, acting independently, and a patented hydraulic action to equalize holding pressure on all of the parts. A common channel connects the pistons and allows equal force to push against each part. Since the parts are held with the same force, all part movement is eliminated. Broken cutters, damaged parts and fixtures are also eliminated.

The self-contained unit attaches in seconds to the sliding member of the vise using the patent pending "FastBack" and requires no external hydraulic lines.



For more information, call Hydromax at 888-493-7262, or visit the company online at [www.hydramax.com](http://www.hydramax.com).

EZ-LIFT lifting magnets are now available from **EARTH-CHAIN USA**, Indianapolis, IN. EZ-LIFT magnets are rated to lift up to 4,400 lbs. and need no electricity to operate because they are made from “rare earth” neodymium iron boron.

According to the manufacturer, lifting magnets are safer and faster to use than sling & strap systems because the “rare earth” magnet will not slip or break. They are easier to load and unload because operator simply centers the magnet on the metal to be lifted and throws the lever to engage the magnet. EZ-Lift magnets are only for use with ferrous-based metals like iron and steel. They are available in 5 different sizes to safely lift up to 4,400 lbs. All Earth-Chain products are backed by a 100% satisfaction guarantee.



For more information, call 877-354-3837, email [info@earth-chain.usa.com](mailto:info@earth-chain.usa.com) or visit the company online at [www.earth-chainusa.com](http://www.earth-chainusa.com).

**MIYANO** has introduced the BX-26S gang tool lathe with two spindles, offering complete part machining of x barwork (1" diameter and under) in a single setup. Two gang slides and a 3D linear turret further contribute to the BX26S' precision and faster cycle times.

The BX-26S' 3D linear turret and traverse-type identical left and right spindles, both with 5 HP, ensure stable cutting from end to end, and make the BX-26S ideal for long shaft work. High speed turning of 8,000 RPM maximum is possible by built in spindle motors and high-rigidity linear guides. The built in motors with the same collet capacity also allow faster cycle times due to overlapping operations. The elimination of a guide bushing speeds up operation time with less maintenance, increased accuracy and higher rigidity.



8 revolving tools allow Op.10 and Op. 20 machining in one set-up without handling. Tool-to-tool change time is fast; chip-to-chip is 1 second. The compact BX-26S (87" x 52") also offers revolving tool (8 tools max at 4,000 RPM max), L-spindle brake, cut-off confirmation (by spindle torque), parts catcher & parts conveyor, high pressure coolant (160 psi), right spindle inner coolant and all axis rapid traverse (944 IPM) and an optional hinge type chip conveyor (right side discharge).

For more information, contact Miyano Machinery USA Inc., at 630-766-4141, or visit the company online at [www.miyano-usa.com](http://www.miyano-usa.com).



# HOT SPOTS

**Each issue, *Today's Machining World* searches for hot new information going on in our industry. This issue explores simulation-based technical courses, online ordering, revamped websites and an economic think tank.**

**OXYGEN EDUCATION**, a web-based company offering simulation-based technical courseware, has partnered with Index and Traub machines, creating online classes to learn and utilize these Swiss CNC machines. Their courses are designed with an intense machine simulation look and feel, allowing students to learn within a "virtual reality" classroom. Classes are competency driven, with training broken down into 16 chapters; students must complete each chapter before passing to the next level. Student are provided with 24-hour access for navigation ease; the website itself is user-friendly. Oxygen Education provides training for other companies as well, including Fuji and DaimlerChrysler. For more information, please visit [www.oxygeneducation.com](http://www.oxygeneducation.com).

**CNC SOFTWARE** has rebuilt their website [www.mastercam.com](http://www.mastercam.com) for the release of Mastercam X. The new website offers users detailed information on the newly released Mastercam X CAD/Cam software. The enhanced site provides a more streamlined layout for finding and accessing information. The updated site also has a section dedicated entirely for instructors and students. It contains information on curriculum, provides projects for download, gives information on student competitions, details on certification and more.

**DAVENPORT MACHINE** offers new online ordering at [www.davenportmachine.com](http://www.davenportmachine.com). Davenport's NEW online ordering allows access to a listing of the most frequently used Davenport replacement parts. Customers can order directly through the site, or print out a printer-friendly version of a quote or order for their purchasing department. Customers can also check the status of their orders or account. To register, visit [www.davenportmachine.com](http://www.davenportmachine.com) and click on the green online ordering tab. A user name and password will be assigned within 24 hours.

**BATES TECHNOLOGIES** has acquired Micromatic Textron honing tool and abrasive product line, and all intellectual properties, including Microsize® and Microhone®. Bates/ Micromatic Textron newest development is the Microhone tool, which works in the automatic tool changer of a CNC machining center. The existing through-the-spindle coolant system activates the honing abrasives, enabling users to produce surfaces with fine finishes and details. For more information on Bates Technologies, please visit [www.batestech.com](http://www.batestech.com).

**THE ECONOMIC POLICY INSTITUTE** is a nonprofit, nonpartisan think tank seeking to broaden the public debate about strategies to achieve a prosperous and fair economy. The Institute stresses real world analysis and a concern for the living standards of working people, and it makes its findings accessible to the general public, the media, and policy makers. Check it out: [www.epi.org](http://www.epi.org).

**For more Hot Spots visit  
[www.todaysmachiningworld.com](http://www.todaysmachiningworld.com).**

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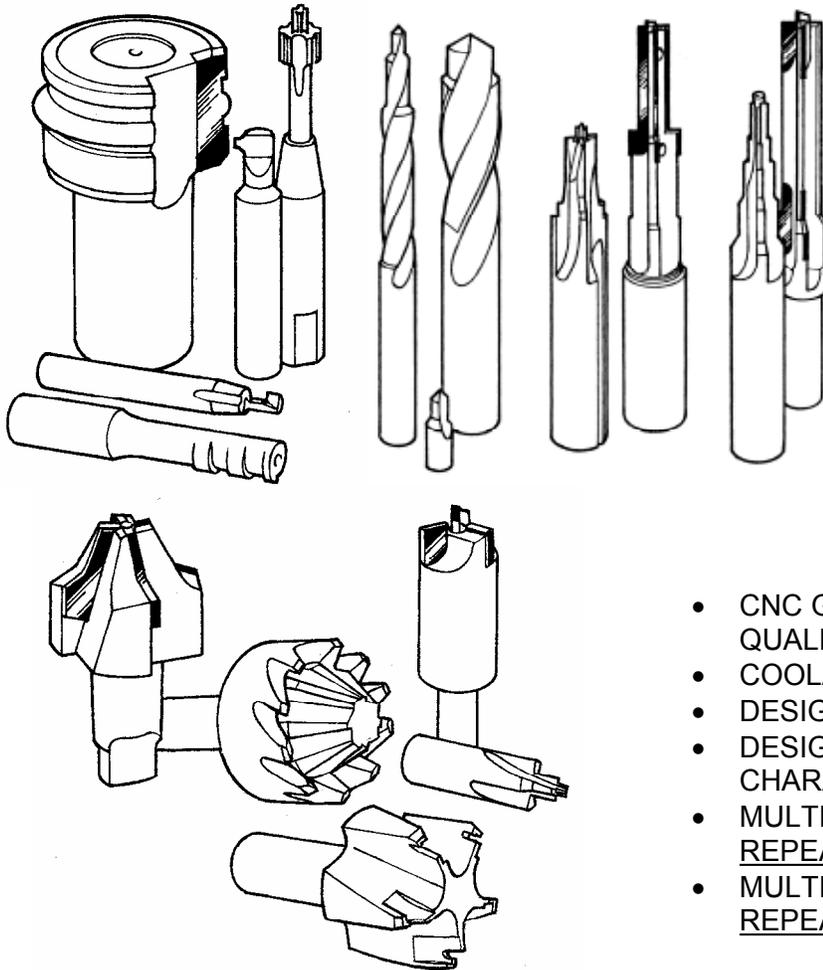
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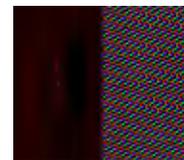
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*l. to r.: Cathy Heller, Manuel Buenrostro, Martin Whitfield, Greg Buenrostro*

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# VERTICAL MACHINING

## PRODUCT FEATURE:

# CENTERS

**E**ach month, *Today's Machining World* works to help you understand how the precision parts marketplace works, what's available in the industry, and how you can use available resources, as well as knowledge, to run a more efficient and effective shop. In every issue, we'll feature a product category, and focus on certain items used in the marketplace.

Vertical Machining Centers, used for primary and secondary operations, are an increasingly important component for precision turning shops. From their competitive cycle times, high tolerances and ease of use, VMC's are finding their niche in a job shop, and are increasingly becoming a key component to success.

Vertical Machining Centers, like most other machine types, are available with a multitude of attachments and features. Varying pricing structures are a reflection of the choices available. The following are a list of Vertical Machining Centers available from companies who supplied information. Websites provided by these companies provide substantial additional information about particular machines, their specifications, their prices, training and customer support. If you are shopping for a Vertical Machining Center, or are interested in their capacity, we encourage you to log on to a website, call the company directly, or find a dealer in your area to talk to.



**FADAL MACHINING CENTERS** has introduced the VMC 4020 with Moldmaking Package, including GE Fanuc Series18i MB5 controller, box way construction, COOL Power™ refrigerated cooling system and standard 10,000 RPM spindle with automatic Hi Lo that allows hogging and roughing of large molds on the same machine.

The Series18i MB controller featured in Fadal's moldmaking package includes such functionality specifically for moldmaking as Artificial Intelligence (AI) Contour Control, Machine Condition Selector and two moldmaking selections for accommodating varying amounts of horsepower. AI Contour Control automatically sets acc/dec ramps, feedrates and feed forward parameters by using look-ahead and adapting the part program to the machine tool's performance capabilities. Machine Condition Selector provides R1-10 value selection for velocity and for accuracy.

The Series18i MB controller eliminates bottlenecks and reduces machine tool cycle time with a fast processor and 2-MB memory. With support for NURBS curve interpolation, the Series18i MB controller delivers high-speed, high-precision machining for parts, molds and dies. The exclusive COOL Power refrigerated cooling system minimizes thermal growth along the ball screw to maintain positioning accuracy during extended machining of large and complex molds.

For more information, contact Fadal Machining Centers at 818-407-1400 or visit [www.fadal.com](http://www.fadal.com).

**METHODS MACHINE TOOLS** offers the E Series RoboDrill, a 30-taper machine offering fast drilling and tapping, high-speed milling, precision boring, and high-speed deburring. The RoboDrill E is capable of rigid tapping to 8000 rpm, peck tapping for blind holes, and high-speed reverse tapping (up to twenty times faster than infeed). The RoboDrill E comes standard with a 14- or 21-station tool changer and is available with a choice of 5/7.5 HP 10,000 rpm or 2/5 HP 24,000 rpm spindles. RoboDrill offers feedrates to 1181 ipm, rapid traverses to 2125 ipm, accelerations to 1.5 G or more, and 0.9-second tool changes (tool-to-tool).

With precision-enhancing thermal compensation and HRV control, the RoboDrill boasts positioning accuracy of 0.0002" and repeatability of  $\pm 0.000080$ ". The Fanuc 31i-A5 CNC has an optional 1000 block "look-ahead" and a 0.4 ms block processing speed.

RoboDrill E Series machines are available in three sizes with working cubes up to 27.5" x 15.7" x 12.9". Model -T14iES is a 300 V size machine with only 40" width and 14 tools. The Model -T21iE is a 500 V size machine with 21 tools, and the Model -T21iEL is a 700 V size machine for larger work. Options include a fourth or fifth axis, coolant through spindle, a spindle-measuring probe, and a laser tool setter.

For more information, contact Methods Machine Tools, Inc. at 978-443-5388, or visit [www.methodsmachine.com](http://www.methodsmachine.com).



**HARDINGE, INC.**, has introduced two vertical machining centers under the Hardinge-Bridgeport label.

The VMC480P<sup>3</sup> offers the milling and drilling capabilities of a 40-taper VMC within a very compact footprint. It was designed and built with Finite Element Analysis (FEA) techniques, to provide for longer tool life and higher heavy cutting ability. The VMC480P<sup>3</sup> comes equipped with a 10,000 RPM spindle and very rapid traverse rates (1,417 ipm x, y and z). The spindle carrier, column and base are manufactured from cast iron, contributing to the overall rigidity and machining capability.

The VMC760XP<sup>3</sup> is built from heavily ribbed cast iron, which provides excellent stiffness and overall rigidity. Wide-spaced guideways with minimal overhang, dual-ball linear guides, and oversized 45mm ballscrews also contribute to machine stiffness and distribution of cutting forces. The standard 30- or optional 48-position tool changer is mounted on a separate shoulder. The 40-taper spindle operates at standard speeds up to 12,000 rpm, with a 25-hp motor.

For more information, please contact Hardinge Inc., at 800-843-8801 or email [info@hardinge.com](mailto:info@hardinge.com).



Introduced by **MORI SEIKI**, the NVD4000 DCG™ (Driven at the Center of Gravity) contains features to speed up program processing, make machine movement smoother and provide even higher levels of precision.

In machines using DCG, the net driving force acts through the center of each axis. The NVD4000 DCG contains five ballscrews – two on the y-axis, two on the z-axis, and one on the x-axis –reducing vibration without sacrificing speed for accuracy. An input increment of 0.1 microns offers the ultimate in resolution. All three axes contain direct scale feedback, and dynamic thermal displacement control is provided for the spindle. A DataServer stores large part programs and quickly transfers them to the NC control during cutting.

The NVD4000 DCG's ATC tool-changing time of 2.8 seconds chip-to-chip, 1.0 seconds tool-to-tool, quickly serves the 27.6 in. x 17.7 in. worktable. The machine's 40-taper spindle is 12,000 rpm (20,000 rpm optional) and 25 hp (10-min. rating) capable. A center-trough design evacuates chips providing the most efficient chip removal capability in a vertical machining center, even when cutting dry.

For more information, call Mori Seiki at 972-929-8321 or visit [www.moriseiki.com](http://www.moriseiki.com).



**ROMI MACHINE TOOLS, LTD**, has introduced the D Series of vertical machining centers (VMCs). There is a work envelope of 50"(X) x 24"(Y) x 25.2"(Z), table work surface of 52" x 22 within a compact 11' x 9' footprint. Rapid traverse rates of 1,181 imp (X- Y- and Z-axis) mean accelerated machine cycle times and reduced non-cut time. There is an automatic tool changer with bi-directional selection mode, 22-tool capacity, and a 5.5-second station-to-station index time.

The D 1250 cast mono-block bed design supports the column and table, providing vibration dampening. A new belt-driven heavy-duty cartridge-style headstock features a high-torque 20 hp GE AC high-precision spindle motor with variable high-speed drive. 40 taper spindle options are 6-6,000 RPM or a 10,000 RPM spindle with combination bearings using ceramic balls to minimize heat.

Romi Machine Guidance i software in the 21i simplifies the transition from manual programming to G code programming. As the operator's skill level rises and/or part geometry complexity increases, the operator can easily move through various levels of part programming generation. The 21i CNC has built-in machining cycles for slots, grooving, pocketing thread milling, drilling, boring, threading, contouring, and helical interpolation.

For more information, contact Romi Machine Tools, Ltd. At 859-647-7566 or visit [www.romiusa.com](http://www.romiusa.com).

**DAEWOO's** DMV 3016L vertical machining center has a one-piece bed with heavily ribbed box-type column, preserving stability under rigorous cutting conditions. The fine-grain Meehanite construction dampens vibrations and helps dissipate heat, while extra-wide spacing of the linear guideways provides saddle support, regardless of load distribution. The 36.2" x 16.9" table is fully supported in all positions, with no overhang.

A 40-taper, cartridge-type spindle is powered by a 20 Hp (15 min) spindle motor, and rotates at speeds up to 12,000 rpm. Power is transferred through a cogged drive belt, eliminating slippage and vibration while promoting thermal stability. An encoder attached to the spindle enables synchronized high-speed rigid tapping with a standard collet chuck. Tapping depths are accurately controlled and the need for special tap holders is eliminated.

High torque servos on the DMV 3016L couple directly to the ball screws to eliminate backlash and servo drag. Ball screws on the X, Y, and Z axes are center mounted, double pre-tensioned and supported on both ends by high precision angular thrust bearings. A portable, manual pulse generator directs axis movement in increments of 0.0001", 0.0010" or 0.0100", making fixture or part alignment quick and easy.

Call your local Daewoo dealer for a demonstration or visit [www.daewoomt.com](http://www.daewoomt.com).



**CHEVALIER MACHINERY's** QP2040L VMC comes with all the wirings, hoses and fittings to accommodate future upgrades such as 4<sup>th</sup> axis, spindle oil cooler and coolant-thru-spindle. Machine footprint is 112" x 81" x 101". The QP series is equipped with the new FANUC Oi-M conversational control with AI preview function, digital servo, spindle drives and motors and graphic display. Features include ethernet jack for networking, 24 tools arm type ATC, 10,000rpm 20HP spindle with coolant circulation, high-speed rigid tapping, remote MPG and easy pull-out chip drawers. A ring type coolant nozzle in the air-purged spindle provides a constant curtain of coolant to prevent thermal buildup between tool and workpiece. The machine has premium linear guideways on three axes and direct drive on the Z axis. Slanted inside front walls, sloping way covers and a standard chip flushing system wash chips down into the chip drawers. With 48" x 20" table size, 1181/1181/708 rapids and 40" x 20.5" x 20" XYZ travels, the QP Series can handle workpieces up to 1100lbs. while generating 3014lbs maximum thrust force in the X axis. The cutting feedrate peaks at 394ipm. The QP series features massive all-Meehanite cast iron construction with extensively ribbed frame and wide stance machine base to increase rigidity and dampen vibration. Net machine weight is 13,160lbs. A bi-directional, random access tool changer features a floating type tool discharge system, which eliminates the stress generated by the tool release cylinders. Tool change time is 2.5 sec tool to tool and 5.5 sec chip to chip. Ultra-precise positioning and repeatability are assured with its pre-tensioned class C3 1.57" ballscrews with .472" pitch and servo motors directly coupled to the ballscrews. High precision linear guides on all axes further increase rigidity and stiffness while reducing friction.

For more information, contact Chevalier Machinery at 800-243-8253, or email [ivanspielfogel@chevalierusa.com](mailto:ivanspielfogel@chevalierusa.com).



**KITAMURA** has introduced the Mycenter-3XiF Vertical Machining Center, which offers precision with  $\pm 0.000078''$  positioning accuracy and  $\pm 0.000039''$  repeatability. The Kitamura Mycenter-3XiF uses super-finish, ground-hardened Solid Box Ways on all axes. Kitamura provides a full 5-year warranty on box ways.

Kitamura's 4-speed geared spindle allows deep cuts on tough materials with up to 116 ft·lbs of torque and high-speed for exceptional fine finishing. The Mycenter-3XiF has a 18 horsepower AC spindle motor that provides 15,000rpm (10,000rpm and 20,000rpm optional), and a Dual Contact spindle design that offers the benefits of greater machining rigidity, improved surface finish, higher cutting accuracy and extended cutting-tool life. Rapid feed on the X and Y axes is 1,969 IPM and 1,417 IPM on the Z axis. Also available is high-speed cutting that has a feed rate of 1,969 IPM on the X and Y axes.

Simultaneous 3-Axis X, Y & Z strokes: 30" x 17.9" x 18.1". Utilizing a table traverse design, the Mycenter-3XiF can execute simultaneous full travels throughout all 3 axes with a 2/3 reduction in workpiece/spindle interference as compared to machines with traveling column designs.

Features include a 90-degree swing operation panel, wide opening sliding side doors; higher fence style splash guards; advanced chip-disposal; and a fully enclosed ceiling.

For more information contact Kitamura Machinery of U.S.A., Inc. at 847-520-7755 or visit [www.kitamura-machinery.com](http://www.kitamura-machinery.com).

**DOOSAN MACHINERY AMERICA** offers a new Doosan Model Revo 4020 vertical machining center. The machine features a highly rigid structure with a boxed column and single cast bed that provide stable precision over a long operating life. A 10,000 rpm spindle is standard and achieves high speed milling, drilling and rigid tapping with high cutting accuracy.

Specifications include: Table size: 48 x 24 in; Table load capacity: 2204 lbs.; Spindle HP: 20/25; Spindle speed: 10,000 rpm; Spindle taper: CAT 40; Travels, in. (X,Y,Z): 40.2 x 20.1 x 20.1; Rapid traverse (X,Y,Z): 1574 x 1574 x 1417 ipm; Feedrate, max.: 390 ipm; Magazine: 30 tools; Tool change time, tool-to-tool: 1.2 sec.; Fanuc OiMB CNC control system.

Rigid tapping, coolant system, total splash guard, cycle finish buzzer, lamp and electric torque limit are standard. Options include a chip conveyor, rotary table 4<sup>th</sup> axis, shower coolant, oil mist and auto door.

For more information, contact Doosan Machinery America, Inc., at 586-268-7120, or visit [www.mecatec.com](http://www.mecatec.com).





The **CLAUSING STORM** range of heavy-duty VMC's delivers six models to choose from: VMC500 with a 20"x16"x18" X-Y-Z travel, VMC610 with a 24"x18"x20" X-Y-Z travel, VMC850 with a 33.5"x 20"x22" X-Y-Z travel, VMC1020 with a 40"x20"x22" X-Y-Z travel, VMC1300 with a 51"x25.5"x28" X-Y-Z travel and VMC1600 with a 63"x31"x27" X-Y-Z travel. Storm VMC's are built with a heavy-duty cast iron base and saddle. Servo motors are directly coupled to pre-tensioned, double nut, laser calibrated, 1.57" precision ground ballscrews with double angular bearings, delivering the precision and force required for all machining condition. The VMC's are available with either linear or square ways.

The Storms VMC's drive spindle motor generates spindle speeds of 8,000, 10,000 or 12,000 rpm or a high torque option of 6000 rpm. Coolant flows thru 6 adjustable ports wrapped around spindle to deliver coolant directly to the cut, at 8 gal/min., activated by M code or manually.

The Storm VMC's have the latest Clausing ANILAM 6000M digital CNC control. Users have the option of writing programs via the integrated 6000M CAM feature or imported directly from any external CAM system by RS-232 port, floppy disk or network. The 6000M has an extensive set of canned cycles which can be used to make the programming of routine machining jobs fast and easy. The Fanuc Oi MC VMC CNC control is available on request.

For more information, please contact Clausing/Colchester at 800-323-0972, or visit [www.colchester-cnc.com](http://www.colchester-cnc.com).

The new **HURCO** VTXU is ideal for 5-axis positioning work on complex, multi-sided parts where reductions in setup time and overall part accuracy are crucial. The 5-sided conversational programming requires only one part setup and the machine is compatible with most 5-axis CAM programs. The traveling column provides the speed, precision and power required for advanced machining processes with superior surface finish. At just 86-inches wide by 110-inches in depth, the VTXU is equal in size or smaller than most mid-sized to large vertical machining centers.

For more information, please call Hurco Companies, Inc. at 317-298-2622, or visit the company website at [www.hurco.com](http://www.hurco.com).





The latest twin spindle VMC in **CHIRON AMERICA**'s line-up is the DZ15WM IWW featuring an 800mm trunnion bridge plate with a swing circle of 450mm. Other recently introduced twins include the DZ 15 KW MAGNUM IWW high speed vertical machining center with an envelope of 15.75" x 15.75" x 16.75" (400 x 400 x 425mm) in the X, Y, and Z axes as well as the CHIRON tool changer with 2 x 12 tools (SK 40/HSK 63). The twin-spindle DZ 15K W Magnum IWW has an X, Y, and Z envelope of 27.58" x 15.75" x 14.18" (700 x 400 x 360mm) and 2 x 24 HSK-A 63 tools in the chain magazine.

The standard chain magazine allows the use of as many as 48 tools (up to 60 mm diameter) in the smallest amount of space. Using digital direct drives, a complete tool change cycle takes only 0.9 seconds. Within this time, both spindles are stopped, both tools exchanged, and accelerated back to maximum rotation. This results in a chip-to-chip time of 2.4 seconds.

Just like the base single spindle models, the twin-spindle-machining centers are equipped with a workpiece changing table for parallel loading and off-loading. The workpiece changer is integrated into the machine base and is equipped with self learning speed control.

For more information about this product, contact CHIRON at (704) 587-9526 or visit [www.CHIRONamerica.com](http://www.CHIRONamerica.com).

Named the "Vertex 550-5X," this machine from **MITSUBI SEIKI** has a new casting design and a new, unique gear drive system for the A and C rotary axes, which provides high speed radial performance (A – 30 rpm; C- 50 rpm), and overall drive system stiffness. Further, the trunnion tilt axis, A, now has an ample dual side support construction bolstering rigidity even more. On the Vertex, the linear axes move the spindle only, and the motion of the workpiece is by the rotary axes only.

Specifications of the Vertex 550-5X include a compact footprint of about 7 feet wide by 11 feet long (2,000 mm x 3,300 mm). The X, Y, Z-axes work envelope is 21.6 inches x 23.6 inches x 17.7 inches (550 mm x 600 mm x 450 mm). All three move quickly at 1,890 ipm. With the A and C rotary and tilt axes, the Vertex 550-5X provides a total of 5 integrated axes of motion for virtually one setup machining of complex workpieces requiring maximum rigidity and accuracy. Prismatic parts in the aerospace, automotive, medical, dental, and mold and die industries are ideal to be produced on this machine. The machine has a 15,000-rpm spindle (25,000 rpm is optional). The machine also features a new control, the Fanuc 31i that is the fastest control available with enhanced features for precision high-speed 5-axis applications.

The Vertex 550-5X's geometric accuracy is carefully monitored in the tightest a temperature-controlled factory environment in the world. The machine features a bed design that allows large part capacities with a small floor space requirement. The linear guides way mounting surfaces, both linear and rotary, are hand-scraped, achieving tolerances, which would be impossible to achieve on surfaces that are machined and ground.

For more information, contact Mitsui Seiki USA, Inc., (201) 337-1300.





The multiple spindle drilling head is a tool holder used to carry out radial drilling machining. It is mounted on the central block of the lathe and uses 4 drilling tips.



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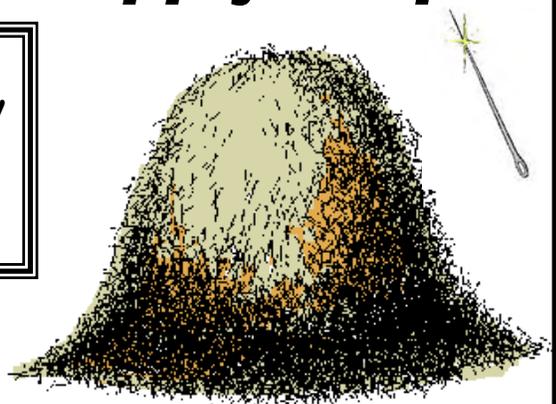


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# Rock Valley Revisited

by Lloyd Graff

The heavy smell of manure envelops the town of Rock Valley, Iowa, a hamlet of 3000 people, more than half of them directly involved in precision machining.

Rock Valley thrives while other farming towns in the corn and soybean belt of the upper Midwest wither. As crop prices stay low, small farms fall uncompetitive, and growing towns like Sioux Falls, South Dakota pull the young people into the big financial firms and health facilities, while Minneapolis lures others with the Vikings, Twins, 3M and Medtronic.

Rock Valley, Iowa is a little enclave of mostly people of Dutch ancestry, where many of the folks have last names starting with Van. There are thirteen churches in the town, the private Christian schools have more students than the public schools, and cars are left unlocked with keys in the ignition. John Kerry didn't even visit while campaigning in the Iowa primary, because essentially, there are no Democrats in the town. The mayor teaches Government in the public high school, there is one police car in town, no Wal-Mart, McDonalds or Starbucks, and most folks eat dinner with their children at 5:30 in the afternoon.

Rock Valley is unlike other successful Iowa towns nearby: Le Mars, which is dominated by the Wells Dairy, which makes ice cream for Häagen Daz and sells its own Blue Bunny brand; and Ida Grove, which is dominated by one family which makes Gomaco concrete paving equipment for the world. Rock Valley is a town of small companies in



metalworking. They probably turn more barstock per capita in Rock Valley than in any other town in the country.

I had been doing business with folks from Rock Valley for my entire career, yet I had never visited. I had been intrigued by the town because I had made so many sales to a community I could barely locate in my Rand McNally. Small towns are a mystery to me because I grew up in Chicago, and steeped myself in the provincialism of the big city.

In early September, Rex Magagnotti, Noah Graff and I flew to Omaha on Southwest Airlines, and shlepped three hours in a rented Hyundai to Rock Valley to find out why they buy so many machines there.

We met Jim VanderVelde at the Dollar Store in a new strip mall on the outskirts of town. Jim is the head of Economic Development for Rock Valley. He has a doctorate, knows everybody, and can arrange an interview on a dime. We came to learn that he is one of the people who make Rock Valley so successful.

Jim gave us the background story on the founder of the businesses of Rock Valley, Charles Kooima. Kooima started a job shop in Grand Rapids, then moved back to his hometown of Rock Valley in the late 1940s. His machine shop grew in fits and starts, and he ultimately sold out to the Van Zantens, John and Cornie, who worked with him. The Van Zantens built Kooima into a sizable machining firm before selling out in 1983 to Hayes-Albion Corporation, a Tier One automotive supplier.

The Kooimas and Van Zantens have a connection in one way or another with the many successor businesses in the town. The grandson of Charles Kooima runs a big laser cutting operation. John Van Zanten took an interest in a small local bank, The Peoples Bank, and helped propel its growth from \$20 million to \$175 million. Through the bank and Jim VanderVelde's government connections, Van Zanten and associates have provided seed money for many of the machining experts who learned the business at Kooima and its later incarnations.



*Rock Valley's Development Director Jim VanderVelde*

## Building a History

Midwest Pro Engineering is the latest machining company to start up in Rock Valley. It is directly across the street from the old Kooima shop, now known as Total Component Solutions, a company with over \$20 million in sales.

Owners Evan Van Ginkel, Paul Van Ginkel and Duane Eppinga are skilled programmers and CNC lathe operators. They felt thwarted at TCS and wanted to try the job shop business on their own terms. A local cement contractor owned a shop and a machining center, but didn't have the inclination to use it right now. The trio rented the building, put up 15% equity, borrowed money from the Peoples Bank, 80% guaranteed by the SBA, pulled in a development grant from the county through VanderVelde, and bought three brand new Daewoo CNC lathes.

They went to local shops looking for low volume jobs, and Paul Van Ginkel hit the road to build relationships and bring in more work. They now have twenty accounts, which keep them

busy 16 hours a day. Their wives all work in the business too, and they are now hiring a new employee. The hire is a former student of Paul's. Paul taught Industrial Arts at the Netherlands Christian High School of Rock Valley for eleven years.

The guys at Midwest Pro have their heat-treating done at Rock Industries, a firm started 12 years ago, much the same way theirs began. Rock started in an old building in downtown Rock Valley with some cheap New Britains and BSA Acmes. They are now in a 60,000 square foot plant, and do the town's heat-treating as well as screw machine jobs. John Van Zanten and Peoples Bank helped them get started, and financed the expansion.

The building that Rock started in is now the home of Quality Machine Products, another small screw machine house. Before Rock and Quality had the building, Valley Machine occupied the premises, running New Britains, Acmes and Wickmans until they built their new facility. Valley Machining, which is 60 feet from Midwest Pro, now employs 100 people. Van Zanten helped them get going too, when the originators left Kooima.

## In the Market

Rock Valley is a town of independent Dutchmen who work together. It is almost Rock Valley Incorporated, except for having a lot of different owners. People are constantly borrowing tools and gauges from one another. Their steel often comes in on the same truck, but they say that they seldom compete for the same jobs. What they do compete for are employees. The job market is the toughest part of doing business in Rock Valley. There is virtually no unemployment. Everybody is advertising for help, hoping to coax a salesman or a farmer to try the machining life. Jim VanderVelde is organizing another Job Fair. He figures local firms could hire 40 machinists or welders if they could find them.

## Community Ties

In the American economy, when there is a labor shortage, something usually happens to fill the void. Wages rise to a level that overcomes the impediments, or, in Rock Valley's case, Hispanic workers, who were attracted to the area to work in the local meatpacking plants, switch to metalworking. The public school system, which used to have only white, primarily ethnic Dutch kids, is now 9% Hispanic. The Hispanic kids are on the school football team playing football, and act as interpreters for their parents. The first Mexican grocery store is preparing to open in downtown



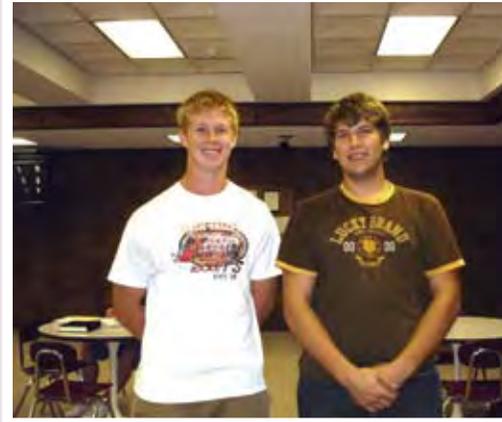
*l. to r.: Paul Van Ginkel, Evan Van Ginkel and Duane Eppinga.*



*Heat treating furnace at Rock Industries.*

# ROCK VALLEY HIGH SCHOOL AND BEYOND

by Noah Graff



*l. to r.: Nick Slobe and Tim Wickers*

I talked to two seniors at Rock Valley Jr/Sr High School, Tim Wickers and Nick Slobe, to get a young Rock Valleyan's perspective of their town. While I was waiting in the main office for the students to arrive, the school's principal, Dave Meylink, and some of the office staff told me that Nick is quarterback of the football team, his dad is a history teacher at the school, and his mom is the school's librarian. Tim, they said, is a musician, and his dad is a dairy herdsman. Someone said to me, "Tim's one of the Wickers boys. Good kid, though definitely on the other side of the spectrum from Nick. It'll be good for you to talk to both of them." I was reminded of what everyone in town had been constantly telling us; everybody knows everybody in Rock Valley.

I talked to Tim first. He and his friends are into motorcycles. On a typical night they hang out by the main drag in the Felco parking lot, the primary hangout spot for high schoolers in Rock Valley. After Tim graduates, he wants to go to WyoTech in Wyoming to study to be an automotive mechanic. If he doesn't go there he will probably go to Southeast Tech in Sioux City, Iowa. He says he doesn't plan on living in Rock Valley after he gets his degree because there just isn't much to do there. Tim said he knows Nick Slobe, but I sensed that the two weren't in the same circle. But both of them hang out at the Felco parking lot, as all students from Rock Valley High School do. Students from three local Christian schools park in another lot across the street.

Then, I talked to Nick. He wants to play baseball in college and would like to go to either the University of Nebraska, or McAlister in Minnesota. He's interested in becoming an engineer or designing golf courses. Nick also does not plan on living in Rock Valley after college. Like Tim, he explained that there just isn't much to do there. He says that a lot of kids claim they won't live in Rock Valley after college, but he's pretty sure that many of them will come back in the end. He said that the only thing that could attract him to work in a manufacturing business is if he was an owner of a company.

After the interviews, the principal gave me several names of students who went straight from high school to working in manufacturing. He also said that two thirds of Rock Valley public high school students go on to some type of secondary education. Some of them later find work as skilled laborers in Rock Valley. Yet talking to Tim and Nick showed me that high school seniors in Rock Valley think similarly to those in bigger places. They want to explore the world, have new experiences. Working as a machinist in a town of three thousand, where one has always lived, seems boring and unglamorous. I had the same feelings growing up in suburbia.

Rock Valley. The Hispanic newcomers are building a community within the community. It appears that attracting Mexican workers may be the only way that Rock Valley can continue to grow, because the local kids often long for the excitement of the Military or the lure of a new lifestyle. Though coolant is the lifeblood of Rock Valley's economy, cutting metal does not seem to be the career of choice for the brightest kids in the town. (see sidebar)

What does hold people in Rock Valley is the sense of community, commitment to family, a feeling of utter safety and familiarity, and church-centered life. On Sundays, extended families get together. It is common to see ten cars with friends and siblings clustered around the family homestead. Big families are the norm in Rock Valley.

The tightness of the town is its strength, but also the catalyst for some to leave. The locals call it "being under the microscope," and some can't take it. Tony Rau, one of four owner/managers at employee-owned Valley Machine, grew up in Rock Valley, left for the Marine Corps, spent time in Los Angeles with his divorced father, and then returned to the area. He lives out of town in South Dakota because he needs his space, and prefers to be outside the lens of the microscope.



*Sign of the times; Rock Valley's first Mexican grocery store.*

Mel Patel, owner of the Super 8 Motel, the only lodging in town, is selling it and leaving for Kansas City. I inferred that the Rock Valley life for an Indian motel owner from New Jersey wore on his psyche.

## Missions Accomplished

The most unique aspect of Rock Valley is the intertwining of business, church and charity in a tight braid.

John Van Zanten, banker, investor, farmer, machine guy and charitable entrepreneur, embodies the Rock Valley ethic. He helped start the Hope Haven Mission, which devotes its \$18 million budget to good works around the world. Some of the money that funds Hope Haven comes from Double HH Manufacturing (it used to be called Hope Haven), which Loy Vant Hul runs. It is a non-profit machining firm, doing over \$6 million in sales on a proprietary line of hitch pins, plus job-shop work. Many of the employees of Double HH have what some people would call disabilities. At Double HH they are just called good workers.

Mark Siemonsma recently came on board to run the Mission, leaving his old business of operating auto parts stores. One of the biggest projects he oversees is the wheelchair rebuilding enterprise. Old and weary wheelchairs roll in from around the country and are completely rebuilt and recovered with naugahyde in Hope Haven's volunteer-run shops. They are distributed free, from Romania to Vietnam in 97 countries. For destitute children, the wheelchair can be the difference between lucky recipients having a meaningful life, or subsisting in a dingy corner.

Another part of the expanding Rock Valley world of entrepreneurial charity is turning a prison into a CNC machining plant. At a correctional facility in Sioux Falls, John's son, Terry, operates Metalcraft, a fully operational shop. Employees – the prisoners – learn machining and welding procedures. They are paid a wage they would get on the outside, and learn a skill that will be in demand when they get out of jail.

## Rock Solid

When we left Rock Valley, we decided to take a detour through the cornfields to Le Mars, which bills itself as the "Ice Cream Capital of the World." Rock Valley cuts metal beautifully, but don't go there for the food. Let's hope Rock Valley continues to change, but never changes.

I'll be back to see. **TMW**



John Van Zanten and the Hope Haven Mission.

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**Contact: Jim VanderVelde  
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**Rock Valley, Iowa**

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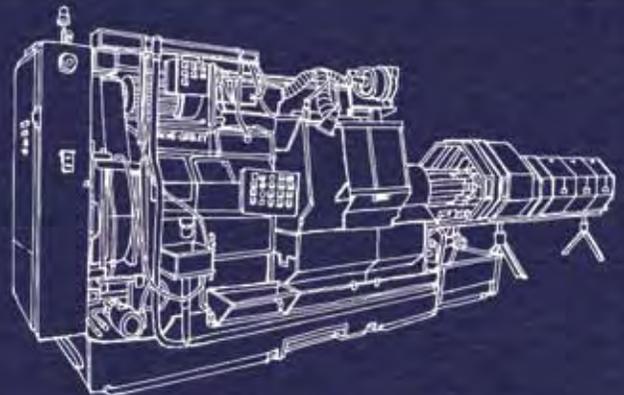
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1" 8 spindle, 1979  
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1-3/4" 6 spindle, 1965-1979, (3)  
1-3/4" 8 spindle thdg., 1969  
2-1/4" 6 spindle, 1973-79  
3-1/4" 6 spindle, 1979  
5-5/8" 6 spindle, 1979  
6-5/8" 6 spindle, 1979

## ACMES

9/16" RA6, 1952, Gov't Surplus  
1" RA6, 1952  
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### CNC Machines

Miyano ANC 35S, 1989

### Davenport

3/4" Model B, 1989-1993  
3/4" 5-sp. Model B,  
pickoff, thdg, 1980-1965-  
1993 (8)  
3/4" Chucker, 1965

### New Britain

Model 52 1-1/4", 1979  
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# Angels of the Bayou

A first-hand account of the devastation of Hurricane Katrina

By Rex Magagnotti



A day after Hurricane Katrina hit the gulf shore, our church, The Valparaiso Nazarene Church in Valparaiso, Indiana, held an emergency meeting to decide what we, as a community, could do to help the victims.



Water being unloaded by volunteers.

Our executive Pastor, Shawn Evans, was selected to lead the efforts. Shawn has years of experience leading our yearly mission trips. Shawn starts planning the following year's mission trip the minute the previous year's trip draws to a close.

Shawn's goal for this hurried trip was modest; raise enough money to rent a Penske truck and fill it with donated items to distribute to the victims, and get ten to twelve volunteers to help in a clean-up operation.

Shawn will be the first to tell you, "I lost control after the first day," and "God had bigger plans." After word got out that we were planning a trip, the church's phones rang off the hook. We fielded over 1000 phone calls in a week.

Shawn contacted his father Bob Evans, a pastor at the Tuscaloosa Nazarene Church in Tuscaloosa, Alabama, to ask for help with the logistics of creating a work site.

Meanwhile, more and more donations came; first trickling, then pouring into our church. Donations of goods came from as far away as Canada. One man in Detroit drove through the night to donate fifteen new electric generators. People who were struggling themselves came to our church to drop off a pack of water or a \$5 donation.



Above: Crew installing a tarp (photo by Rex Magagnotti); Rex Magagnotti is front, left.  
Bottom: The sign posted on uninhabitable homes.

By the time we left, our bus was filled with fifty-six volunteers and three donated tractor trailers, complete with drivers, filled with food, water, diapers, clothes, bedding, generators, chain saws, ladders and various other building and medical supplies. We had more than \$27,000 in monetary donations to supply the relief aid.

We started loading on Sunday, September 11<sup>th</sup> at 8:00 p.m. The symbolism of that date wasn't lost on any of us.

We stood in line, got our tetanus, diphtheria and pertussis shots, were prayed for, kissed our spouses and children goodbye, then boarded the bus to find our seats. We were told that the trip would take 18 hours. Thankfully, it only took a little over 16.

## THE REALITY

We began to see the destructive force of the hurricane 75 miles north of Mobile, Alabama, 90 miles from the coast. Houses were covered with blue tarps, and entire swaths of trees were uprooted. We wondered how much worse the destruction must be at the coast. In two hours, we had that answer.

Our bus met the tractor-trailers at our base camp, the First Church of the Nazarene, in Mobile, Alabama. This would be our home away from home for seven days, as Youth Pastor Bonnye Campbell and a volunteer staff of men and women did their best to see that we were housed and well fed during our stay. Thankfully, the Mobile YMCA extended their hours so that our group of 56 people could get a hot shower after working all day in the 95-degree oppressive Alabama heat.

We split up into six teams. Two teams were sent out to lead, then load two of the tractor-trailers and scout for areas of need. Our destination was the town of Bayou La Batre, Alabama, the home of fictional character "Bubba" from the movie "Forest Gump." Bayou La Batre is a town of 2400, known for its shrimp and oyster harvesting boats and canneries. At the time of the 2000 census, the median household income was \$24,539. Per capita income was \$9,928. This is a hard-working fishing town.

## MONDAY, SEPTEMBER 12, 2005

We arrive at our base camp in Mobile at 1:30 p.m. We quickly change into work clothes and take two teams of nine people to the Bayview Nazarene Church in Bayou La Batre, Alabama.

I doubt if I will ever forget the first sights or smells we are greeted with. The smell was like a combination of sewage mixed with rotting fish and cat urine. As we crossed over a draw bridge, we saw shrimp boats, over 100 feet long, had been lifted and thrown on shore as if they were toys, listing on their sides.

We stopped and talked to a State Farm Insurance claims representative. He tells Shawn that if a house was wind damaged, most people have insurance. However, if the building was damaged by the storm surge, and the people did not have a flood insurance rider (99% of the people there did not) the

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*Hurricane victims waiting patiently in line for food inside the church. Shoes and clothing are offered outside.*

damage was not covered. In parts of town, the surge was 30-feet deep; in other parts, it was only 2-feet. Virtually the entire town of Bayou La Batre has some flood damage.

The State Farm Rep tells Shawn that he has been in town since the hurricane, and is depressed. He has a very real fear for his life. He has already been threatened more than once.

We arrive by a serpentine route, as the tractor-trailers behind us cannot navigate the narrow streets easily. The streets are narrower because they are strewn with trash, tree limbs, drywall, appliances and soaked furniture.

We begin the task of off-loading the supplies into the Bayview Nazarene Church. A woman from across the street motions me to come to her. She looks to be in her 60s, and I can't fully understand what she is trying to say. I can make out the word "food" but not much more. I try to tell her to come over and pick out what she needs, and I will carry it over to her. She doesn't seem to understand. Eventually, her next-door neighbor comes to her aid and tells me she is deaf. I ask the neighbor to explain to her that I will help her if she just points to the items that she wants. Her neighbor tells me that, though no one on the street has eaten in days, she knows this woman will not leave her house because her son is inside, and he is dying of cancer.

I go over to the pantry and pack a box with items I think she might need. I really don't remember what I packed. It was hard to read the labels through my tears.

We finish off-loading the final truck by 7:30 p.m., and drive back to Mobile. At 8:00 our two teams eat in the church basement, then shower at the YMCA. Someone in another group has taken the time to blow up our sleeping mattresses in our absence, though no one will take credit for doing so.

## TUESDAY, SEPTEMBER 13<sup>TH</sup>

I awake at 4:45 a.m. and can't get back to sleep. I go to the church basement to try to get my thoughts on paper. I am surprised to see another man from another church sitting at a table with a cup of coffee. He motions to the coffee pot, and I grab a cup and join him. His group will be joining us today.

We soon load up all our tools and go, all six teams, to the work site. We pass a Red Cross Center 5-miles outside of town. I find out later that they are also set up at the Civic Center in town, so at least some will be where the action is.

We spend the day removing tons of debris from six homes. There are refrigerators, washers & dryers, mounds of trash and tree limbs littering peoples' yards. We are told to kick tree limbs before removing them, because the area is filled with poisonous snakes.

Initially, the people we are helping need some convincing that we are really here to help. So far, looting has been kept to a minimum, but these people look at outsiders with suspicion. The town has a large Vietnamese population. Many settled here after the fall of Saigon. They work in the shrimp and fishing businesses. There is tension between the White and Asian population; Whites feel the Asians took some of their jobs.

One Vietnamese man comes over and asks, "Are you a mean man?" Someone says, "No, we are good men; please let us help you."

After we completed cleaning his house, the man became our unofficial interpreter for other Vietnamese families. He walks over to a house that we had previously tried to help; we had knocked to no avail. We assumed no one was home. He knocks on the side of the house with a secret code, and the door opens. He explains that the Vietnamese people don't trust the government, and are afraid we are FEMA workers coming to evict them.

Meanwhile, our food and supply team, headed by Diane Sprik, is stunned by what it is seeing. People who have not

eaten in days are making their way into our camp. One woman tells us she has not eaten in one week.

Britt Shipley's role at Aid Handout has instantly been reassigned to official cook. Britt, our church's Mission Director and Shawn drive north of town, buy a grill, and start feeding the masses. Britt cooks 1000 hot dogs in one day. We had expected to find water-damaged homes, rotting garbage and beached ships, but we did not expect to find people without water or food. Our mission's objective changes from a clean-up operation to a critical care mission.

The enormity of the need starts to sink in. 90,000 square miles of the gulf has been destroyed. Small towns seem to be the most neglected. I wonder why that story is not getting out. We find people sitting in front of what used to be their homes, too stunned to even react. When we ask them what we can do to help, they frequently send us to help another neighbor worse off. One man tells me he has a tent and water, but knows of a family that has neither.

I'm feeling depressed. We are told you can eat an elephant only one bite at a time. It's the second full day of our mission, and my insides are already torn up.

## WEDNESDAY, SEPTEMBER 14<sup>TH</sup>

Today, two teams of nine people helped 63-year old Joyce clear the interior of her home. We wear masks coated with Vicks Vapor Rub in an attempt to protect us from the mold



and the overpowering stench. We ask Joyce to make a final walk-through to see if anything was salvageable. She found a string of pearls in the sludge her husband had given to her during a trip to Mexico, and two crosses from her grandmother. After 40 years in her home, this is what she can save.

I talk with Gregg Gearhart, a fellow church member and photographer sent by Valparaiso Indiana's *Vidette Times*. Gregg is visibly shaken after taking a photo of Kayla, an obviously dehydrated two-year old girl. Kayla is seen holding a stuffed monkey she has picked from a box of toys. Later, Gregg finds out this monkey has been donated by his daughter.

### THURSDAY, SEPTEMBER 15<sup>TH</sup>

Today is my first day on the roofing crew. I've been given the advice, "Never walk up to a house without your hammer in your hand." Turns out a guy from the last crew had a Rottweiler attack him. He fended him off with a hammer.

Lamar Sign Company donated the tarps we are using to temporarily cover peoples' roofs. They are old advertising tarps used on billboards. We know we cannot unroll them on the ground, as the yards are too filled with sludge and debris. They are incredibly heavy, and nearly impossible to turn over once on the roof. Some people end up with Jewel Food Stores and Von Tobel Lumber ads on their roofs. The residents don't care; they are too grateful.

After lunch we came across a destroyed fishing net business, next to the owner's home. He and his wife are feebly attempting to move a net-drying hut to make room for a FEMA trailer. We unload, move the hut, cut up a downed tree and send for another team to clean out his home. He wants badly to explain how the fishing nets are used; we listen intently, peeking at our watches. We know we have a list of at least three more people to help today, but he is saying goodbye to a life-long profession, and we don't leave until he is finished doing so. He offers to pay us for our help, and we decline. He offers to make a donation to our church; again, we decline. Frustrated, he asks what he can do. I tell him that the next time he hears that Northern Indiana has been hit with 30-feet of snow, to buy a shovel and head north. He laughs, and I suspect it's the first time in a while.

### FRIDAY, SEPTEMBER 16<sup>TH</sup>

The forecasters are predicting rain this evening. We decide to push ourselves to do a record number of roofs. By days end we have finished nine. The most memorable is a Baptist church that is loading pallets of water. Two large areas of shingles are gone from their roof. When we unveil the tarp we pulled on to his rooftop, it is an Absolut Vodka ad. Tell



*Hurricane victim inspects his damaged fishing nets. Photo by Rex Magagnotti.*

me God doesn't have a sense of humor. We flip this tarp to its blank side, though the maneuver 30-feet in the air is risky; the tarp feels like a sail when it hovers in the air.

As we gather our tools, I hear a man ask, "Sister, who were those people on our roof?" We hear her respond, "We prayed and prayed that the Lord would send someone to help us, and here they are."

While doing a small patch job on a roof, I am asked by a woman named Suzy from across the street if we can help her. I tell her that we are the roofing team, but we can send for a cleaning crew. I ask for a pen and paper to write down her address; she returns some minutes later with a letter. I start to read it, but can't finish it. She is in horrible physical shape, and she is begging for aid. Dan Koepke, our roofing crew foreman, calls for help, and we are promised that they will do their best to get to her.

### SATURDAY, SEPTEMBER 17<sup>TH</sup>

We awake to a breakfast of scrambled eggs and coffee. Our host church has brought each of us a copy of the *Mobile Register* newspaper. The front-page story is about the "angels" who have come from Indiana to help the residents of Bayou La Batre. Suzy, who had asked us for help yesterday, has her picture on the front page. The moniker of "angel" doesn't fit to me. I know exactly who I am, and I am no angel. But I am proud to say that I had the privilege to serve with a group of 55 others who performed their duties with love and selfless compassion. But I guess I can understand how a reporter might make that comparison.

We finish doing a small tarp repair job and complete our last assigned home. We have two hours before we need to break up camp. We pass a large ranch house in need of roof repair. Dan asks the owner of the house if we can help. The owner's name is Ricky. Ricky had been a shrimp boat captain until seven months ago, when he almost severed his arm in a fishing accident. It took the Coast Guard ten hours to rescue Ricky after he had his left arm crushed in a winch. Ricky tells Dan that it is a miracle that we came, because he is unable to carry a tarp and climb a ladder with the use of only one arm. We finish his roof and drive back to camp.

Once in camp, Pastor Shawn says he got a report about a disabled shrimp boat captain who could really use our help. He is sad that we are leaving without being able to help him. We tell him not to worry; Ricky Johnson's roof is covered. Perhaps we were God's arm in the Bayou for one week in September. **TMW**

If you would be interested in helping, please contact Bonnie Cambell at Mobile First Nazarene Church at 251-666-0044, or email [pastor\\_bonnye@mobilefirstnaz.org](mailto:pastor_bonnye@mobilefirstnaz.org). To see other stories of our mission trip, visit [www.valponaz.org](http://www.valponaz.org).



Volunteer cradles an infant.



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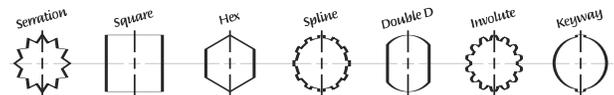
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# One on One with Olaf

**TMW recently spent some time chatting about life with Olaf Tessarzyk, President of Index Corporation in Noblesville, IN.**

**by Noah Graff**



**NOAH GRAFF:**

Olaf, What is the biggest challenge you've had since you came to Index?

**OLAF TESSARZYK:**

Having the right amount of training in every aspect, to educate our team and our customers about the capability of our equipment.

**Noah:**

What is the biggest difference between doing business in Germany and doing business in the United States?

**Olaf:**

It's two fold. On the customer side – there are greater engineering capabilities in Europe due to the intense education programs in machining there. The other big difference is that in Europe business is a lot more autocratic. It's much quicker over here.

**Noah:**

Do you think that German engineering is the best in the world?

**Olaf:**

I think it's certainly very good. I don't know if I can judge if it's the best because I think I'm biased.

**Noah:**

Do you think that having superior engineering translates to higher sales?

**Olaf:**

For our kind of products, yes, it's a requirement.

**Noah:**

Do you believe Americans are too highly focused on price?

**Olaf:**

Yes and no. I think you have the same spread in the United

States as you have in other parts of the world. The only difference is that long term in the United States means three years at most. Long term in Europe means ten years. That's quite a difference.

**Noah:**

What percentage of your customers is automotive?

**Olaf:**

In North America Index has focused itself on small to medium size shops. If we do 30% automotive direct, that's a lot. Our market is job shops. Tier Threes downward. Although we also serve automotive, our philosophy always has been—don't devote too much business to one particular industry, because it doesn't make you strong. That's why we have automotive. We like automotive but our biggest focus always has been the job shops.

**Noah:**

What do you think is the future of your Tier One automotive customers?

**Olaf:**

I think the Tier Ones will migrate into what the OEMs are. They will become assembly or sub-assembly manufacturers, and the real machining will go sooner or later to the Tier Twos because the Tier Ones will deliver sub-assemblies that will be merged into the end product at the OEM.

**Noah:**

If you could have coffee with anybody living or dead who would that be, and why?

**Olaf:**

My grandfather. He taught me a lot. He taught me to run a screw machine. And he was very forgiving when I made a mistake.

**Noah:**

If you could be any kind of machine, what would you be and why?

**Olaf:**

A helicopter, because it can go up down, reverse, forward. You always

have the bird's eye view. You never get stuck in the detail.

**Noah:**

What kind of car do you drive?

**Olaf:**

(Laugh) Currently, I have a Volkswagen Touareg SUV. It has good customer support. That's the biggest reason why I bought this car. Because they are there

when I need them. They pick me up and I don't have to do anything.

**Noah:**

If you could drive any car for one day, what would that be?

**Olaf:**

The GT 2 Porsche.

*Thanks, Olaf.*



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# Next



This month TMW introduces a new feature in which we ask smart people a question about the future of the machining industry.

## THIS MONTH'S QUESTION:

In five years will Chinese manufacturers produce products of equal or superior quality to those of American manufacturers?

*The rapid rise of U.S. imports of Chinese machining products signals that Chinese output in these sectors is already satisfying the needs and standards of American customers. Moreover, there is every reason to expect that China-based producers will steadily move up the value chain. China views development of the scientific and engineering talent as a high national priority needed to make this transition. It has instituted numerous industrial and trade policies to attract advanced manufacturing investment from abroad. Also, it has benefited greatly from American trade policies that have actively encouraged not only the outsourcing of production, but the transfer of increasingly sophisticated manufacturing technologies. Both history and current U.S. and Chinese economic policies strongly indicate that the Chinese challenge will greatly intensify for the foreseeable future.*

Alan Tonelson  
Research Fellow, U.S. Business and Industry Council  
Washington, D.C.

• • •

*I think the time frame is more like ten years from now before the Chinese will routinely produce parts of quality equal to the U.S. I see no reason why their quality should ever be superior. Some do it now, but it's the exception to the rule, and that varies from industry to industry.*

*The Chinese are quick learners, just like the Japanese were, so the speed of their progress will be a function of how fast U.S., German, Japanese, etc. companies teach them.*

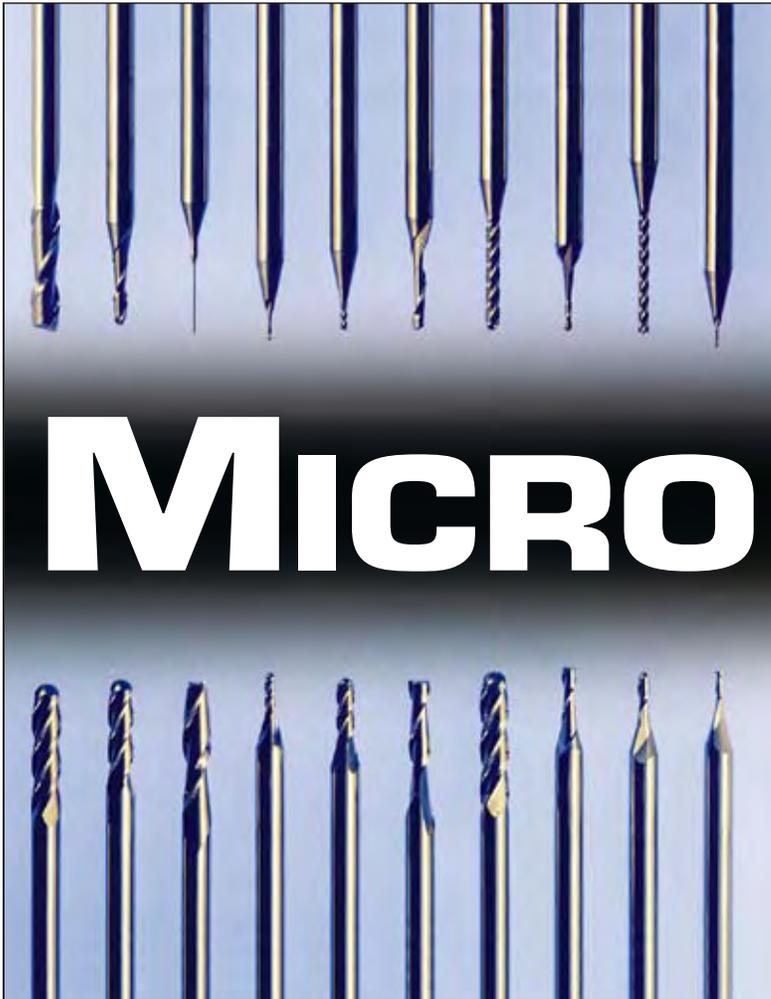
Spencer Nimberger  
President of PGI International  
Houston, TX

*Chinese producers are already producing some manufactured components as efficiently as American producers. There's a continuum of sophistication, ranging from commodified labor intensive goods (t-shirts) to custom-designed, skill and capital intensive goods (medical instruments). Chinese producers will climb across this spectrum steadily, gaining competitiveness across a wider range of products. Luckily, however, this spectrum is ever widening, and, American producers will still have a large niche of manufactured goods which they produce more efficiently than anybody else five years, ten years, and even throughout my lifetime. This doesn't mean American workers have nothing to fear from global integration; downward wage pressures will increase. But, there's no reason to sound the death knell of American manufacturing.*

L. Josh Bivens, Ph.D.  
Economic Policy Institute  
Washington, D.C.

*The 160 billion dollar trade deficit with China indicates that the Chinese are formidable opponents. They're already doing many precision and auto components that meet our standards. The hydraulic fitting business is largely coming from Chinese and other foreign sources. In my opinion they could manufacture 80-90% of the parts we currently use. Large companies like Ford and GM are forcing suppliers to set-up in third world low wage countries transferring technology. The five years is now.*

Jeffrey A. Begg,  
President of Marshall Excelsior Co.  
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*Inside the offices of Arthur Machinery, Elk Grove Village, IL.*

**HOW IT WORKS:**

# How To Buy A Vertical Machining Center

by Jill Sevelow

In pursuit of this “How it Works” piece, entitled “How to buy a vertical machining center,” I found myself stuck at the very beginning of the process, and had to admit: I didn’t know how to do it. So, I decided to visit Arthur Machinery, a 20-year old machinery dealer specializing in precision CNC and manual machine tools in Elk Grove Village, IL. I sat down with four salesmen: Mark MacVicar, Rudy Marotti, David Scheck and John Schneider, all seasoned veterans of the VMC world.

The first thing Mark MacVicar said he would tell a customer is to “look at 80% of what you’re looking to do, try and buy a machine that’s going to do that. Let’s make the part you’re looking at, but recognize what else can you cover.”

They all agreed that material was a principal driver of what to buy. If you’re running steel, you’re going to need horsepower, so these salesmen would hone in on a machine with torque, probably with limited RPMs. If you were running aluminum, they would recommend going with a higher spindle speed, with faster feed rates.

The customer may want to get everything available, but for the first machine for their job, they do not think someone should necessarily buy a bigger machine than they might need. They recommend what fits the 80% rule, run that, get comfortable with it, and then add equipment.

Rudy Marotti says, “We could start out real simple. The first time around maybe they’d buy a small mill, make a fixture, get up and going. Once that has been successful, they will come back and make a larger investment and buy something with



*John Schneider and David Scheck.*



*Mark MacVicar and Rudy Marotti.*

**Photos by Jill Sevelow**

## HOW IT WORKS/TMW

a pallet changer. It's not always time effective to have someone unload 30 pieces, then load another 30. Another consideration might be adding a rotary table to the machine."

For a first time buyer with a turning shop who has multi spindles and CNC Swiss but needs to do some second op work on some stainless steel parts, there's a pretty uniform price structure to show you what bang you can get for your buck. For a base price of \$30,000, you could start with a mini mill.

The next step up – at \$35,000, you'll have 16-inch X travel, ten tool changer and 6,000 RPMs. For \$35,000 in a 5-year old used vertical machining center, you could get 40x20 size, larger capacity, larger table size, but a used machine.

One can spend \$40,000 without a pallet changer and have a limited amount of tools. One could spend \$65,000 and get a pallet changer and twice as many tools. For \$60,000, Arthur can offer three machines – a tool room mill, a mini mill or a Haas VF-1. These three machines are basically slower, a little faster and fastest. It will come down to how many parts you are looking to put through the machine, and how fast you want to be.

Low to mid \$50s, you will get 30 inches of X travel. You are going to have at least 20 tools. You're probably going to have 75 RPM, 7500 RPMs.

In the used world, for \$55,000 you could buy two machines, but more than likely you're going to get two different styles of used machines with different characteristics. There will be some that will be very similar but they will be subtly different as far as travels



*Top: A mini mill can get you started.*

*Middle: A rotary table is a consideration in purchasing a VMC.*

*Bottom: A customer has the option of purchasing a used VMC.*

and table accommodations, but fixturing might not match up, there may be different controllers, and they could even have different style tools. There is an advantage to buying two spindles; an operator can typically handle two machines simultaneously.

\$75,000 would get you twice the spindle speed and it would probably get you a pallet changer. Depending on configuration, your travels would be larger than the \$30,000 machine but might be comparable to the \$50,000 machine. You're not getting any bigger machine, but you're getting the ability to increase your throughput if it matches the type of parts that you're looking to do.

Basically, the more money you spend, the higher RPMs, and the more rapid travel speed. You can get a pallet changer, side mount tool changer, fourth axis rotary capability, possibly by the rotary table itself. Spending closer to \$100,000 is going to increase your throughput. The more money you spend, the faster you are going to be able to run. That's what it is going to come down to.

Beyond money, the dealer should provide you with all of your support: They should help you identify the correct machine for the application. Your dealer should look at it as a partnership; that they are educating you on where technology is going, what they have to offer, not only from the machine tool standpoint, but parts, installation, support, training and service as well.

Schneider says, "If you sell a guy his first CNC and he's a screw machine shop and he buys a used machine, he is relying on that thing to make a part. If that used machine breaks down he is going to call somebody, and he is going to pay for that guy to come there, and he is going to wait. If you buy a new machine, you're not worrying about it breaking down. If it does break down you have somebody to call that is going to send a guy out there right away. A used piece means you're taking on all the responsibility. And that could be detrimental to a company. If you buy a new piece you're investing in a dealer's organization to keep you up and running."

And then I asked the inevitable: How long will it last? Marotti responded, "What's going to happen is technology is going to pass it up. You're going to become slow."

Would they recommend that somebody start shopping on the web? Absolutely.

You can go to [machinetool.com](http://machinetool.com) or [www.techspex.com](http://www.techspex.com), where you can look, spread out all the specifications and compare. But they felt it would be difficult for a first-time buyer to apply what they are viewing to their own application. And therein lies the beauty of the dealer.

It's important to align yourself with somebody who has resources. There should always be phone support when you call. You want someone who's going to be able to watch your back and make sure that they have the power to move the world if they have to in order to satisfy your requirements.

Scheck concludes, "If you give him everything right, he isn't going to look anywhere else. He is going to come back to you because he trusts you, you took care of him, you got him financing. You got him the right machine. You got delivery. When he needed a question answered you were there. If you don't do those things, there are 99 other people he talk to." **TMW**

## STRAIGHT SAVINGS.

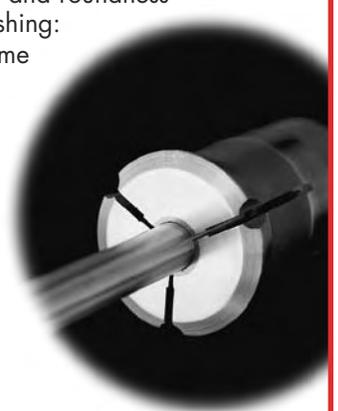
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Today's Machining World's "Shop Doc" column taps into our vast contact base of machining experts to help you find solutions to your problems. We invite our readers to contribute suggestions and comments on the Shop Doc's advice. If you consider yourself a Shop Doc., or know a potential Shop Doc., please let us know. You should also check out the TMW online forum at [www.todaysmachiningworld.com](http://www.todaysmachiningworld.com).

# TMW shop doc

with Noah Graff

## DEAR SHOP DOC:

We are an aerospace company in California running Aluminum 6061-T6, generating 100,000 pounds of chip waste per month. We work in eight to twelve hour shifts, seven days a week. We use 10-weight hydraulic oil with sulfur added, paying \$4.50 per gallon. Right now we are disposing of our chips in bins, and selling them wet to a scrap metal dealer for .40 per pound. The chip waste is machined in "6's and 9's," curls for the most part. We have 500-square feet of floor space available for handling the scrap (not heated).

How can we consolidate our chips to get the highest resale value for them? Would we maximize the value of our scrap by using a briquetting system? Or is simply spinning the chips a better option? We also want to know the best method for recovering coolant for both economic and environmental reasons.

## CHIPS

## DEAR CHIPS:

I contacted three manufacturers: Meaden Precision Machined Products of Burr Ridge, IL, Manth Brownell of Kirkville, NY, and Curtis Screw of Buffalo, NY, to see how they disposed of their aluminum chips. All three use centrifuges to spin the oil out of the chips, rather than using briquetting systems, which compact chips into solid pucks, which are easier to store, leave little residual oil, and can sometimes bring considerably more money than loose chips. I tried to find out why these three manufacturers dispose of their chip waste the way they do, and if there is a better way.

Wes Skinner of Manth Brownell said he receives, from a scrap dealer, about fifty cents per pound for a mixture of aluminum 6061 and 6262. According to *American Metal Market*, aluminum scrap sells for 55-56 cents per pound; Skinner says he receives a bit less than the market price because there is still about 2% of the oil remaining in the chips after he spins them. He also recovers oil after the chips are spun, which can save significant money.

I also contacted an aluminum broker/ingot producer in California, who wanted to remain anonymous (all aluminum brokers I talked to wanted to remain anonymous), to find out if they prefer pucks to chips. He refused to quote me a price on aluminum scrap, like every aluminum broker refused, but he told me that his company does not pay a premium for pucks because it is difficult to know if the metal is pure.

Then I called PuckMaster, a company that manufactures briquetting equipment, and Prab Inc., a company that makes both centrifuging machines for drying chips and briquetting equipment. Tim Sernett, National Sales Manager at PuckMaster, said that in puck form (produced from the PuckMaster system) aluminum 6061-T6 is presently worth about \$0.72 to \$0.75 per pound delivered to a primary mill, which

will not accept aluminum in chip form, wet or dry. According to Tim, primary aluminum mills typically buy scrap only from a select group of brokers, so usually a manufacturer's only option is to sell its scrap to a scrap dealer, but PuckMaster says that it offers a brokerage service, via contract to market, and sells this material in puck form to primary mills or to direct export to eliminate the middleman scrap dealer network. Tim calculated that CHIPS could be making \$0.25-\$0.32 per pound more than he is collecting presently, by selling directly to the primary mill (Tim subtracted between \$0.03 to \$0.07 for the cost of shipping to the mill, and a brokerage fee). This would mean that the revenue for CHIPS, producing 100,000 pounds of aluminum per month, receiving \$0.40 per pound presently, could be \$320,000.00 more if the maximum \$0.72 per pound was redeemed. However, it is important to realize that if CHIPS produces 100,000 pounds of aluminum chips per month not spun, a significant fraction of that weight comes from residual oil.

Another advantage of PuckMaster briquetting systems is their PLC display, which shows how many pucks have been produced. This helps insure that manufacturers get paid for the true amount of metal that they have recycled.

Also, PuckMaster and other briquetting systems reclaim a significant amount of coolant, which would otherwise have been lost. According to Tim, PuckMaster will remove approximately 18 gallons of cutting fluid per 1000 pounds of aluminum chips processed. Therefore, processing 1,200,000 pounds of aluminum per year will recover 21,600 gallons of coolant, which will be claimed for reuse every year. At a cost of \$4.50 per gallon for coolant, CHIPS would recover \$97,200 per year in coolant, which could be recycled and reused. This will be a significant increase from CHIPS' current methods of oil conservation.

Bob Meyers, vice president of sales and marketing from Prab Inc., a company that produces both centrifuges and briquetting systems, has a different perspective. He said that the market for disposing aluminum chips and briquettes can be very regional, and that the most likely destinations for manufacturers to capitalize on their aluminum scrap in California are scrap dealers, who themselves briquette wet, clean chips for bulk shipment to Asia. He said that the value of chip to dealer is pretty much the same if it is brought in wrung or briquetted. Bob calculated that if CHIPS is getting \$0.40 per pound for wet chips (10%-15% moisture by weight), he should get approximately \$0.50 per pound if the chips are wrung (resulting in 2% or less residual moisture) since he will not be penalized for the moisture. Bob concurred with PuckMaster that any real premium price would be at the large volume broker level who is handling a specific, clean, mag- separated, alloy briquette ready for bulk export shipment. He said that in the case of CHIPS, a Prab Inc. chip processing system (shredder, wringer etc.) could be provided for about \$110,000.00 vs. a Prab Inc. briquetter system (including pre-conditioning of the turnings and solids) for around \$160,000.00.

So CHIPS, You're cheating yourself out of money, and you don't have to. Now that you have some knowledge, call Prab Inc. and PuckMaster and get the chips rolling (or maybe the puck). And tell 'em Shop Doc sent ya.

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# TMMW show us your ride

## All in the Family

by Tony Rau, Sales Manager, Valley Machining, Rock Valley, IA

**M**y boys and I all have our own motorcycles. Zachary, my five-year old, has a little Yamaha PW50, a two stroke fifty CC bike. Brandon, my seven-year old, has a four stroke Honda XR50, which is very low maintenance and very durable. Waylon, my eleven-year old, has a 4 stroke XR70 Honda. I have a Yamaha Y2 125. Mom won't let them race, but we have a little competition amongst ourselves on some local tracks. We also have a small track at our acreage.

I can adjust how fast the bikes can go, so I can let them ride only as fast as their skill levels allow. They have all the protective gear—elbow guards, knee guards, motocross boots, helmets and chest protectors, so they can take a good spill and just get back up.

I wouldn't mind seeing them do some pee wee motocross, but as they get older the speeds increase to the point where it gets a bit dangerous. I would like to see them do some hare scrambles. A hare scramble is a long but technical trail ride that consists of a five-mile closed loop course. It can be a combination of water crossings, going through sand, climbing hills, and a really rough course of rocks and pasture. You see how many laps you can complete in an hour. There's also two and three-hour classes for the totally insane. It's pretty brutal. There's not a place where you can sit for more than a few seconds.

The bikes are all off-road machines. They're not street legal by any means. But they give us the ability to ride the pastureland at Grandpa and Grandma's.



“ Mom won't let them race, but we have a little competition amongst ourselves on some local tracks.. ”

*Have you got a favorite ride? Looking for antique cars, skateboards, motorcycles or anything else that gets you around. E-mail your story and photo to [jill@screwmachineworld.com](mailto:jill@screwmachineworld.com).*



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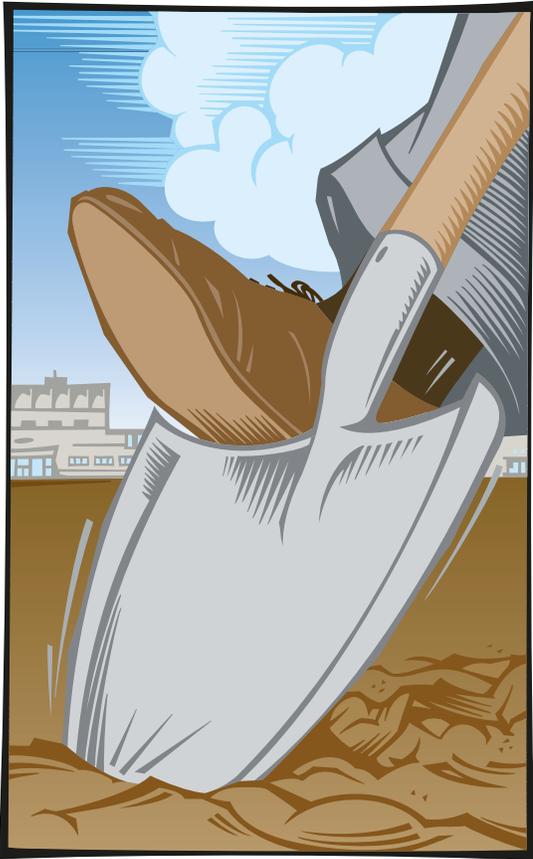
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3	8	5	7	1	9	4	2	6
1	4	6	5	8	2	7	9	3
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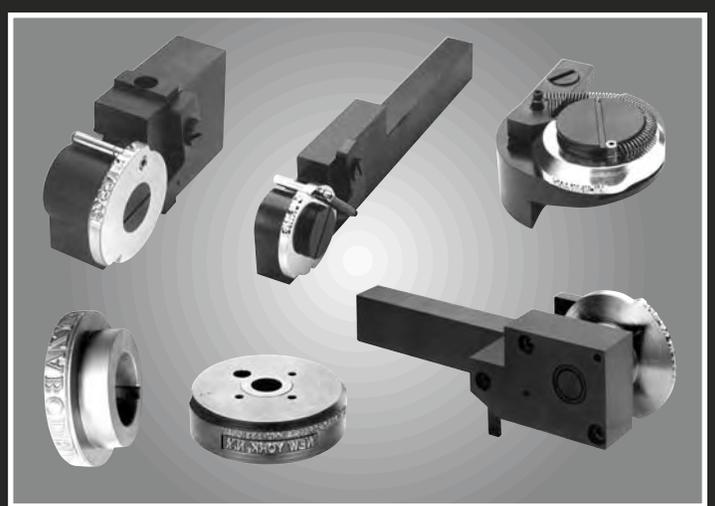
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## TOO MUCH THINK

BY LLOYD GRAFF

**T**ed Williams, the last .400 hitter in Major League Baseball, said, "I don't think too good if I think too much."

I feel that the "Splendid Splinter" meant that when you are at the plate waiting for a pitch, you can't think about your stroke or your stance or the pitcher's delivery. Too many ideas; too much data to process. At most, maybe you can process one possibility, fastball or change-up, inner or outer half of the plate, knees or shoulder high. So many variables in an at-bat, in a swing. Need to keep it simple to have a chance against a splitter or a curve.

This quote from the Great Williams is probably true in business. Don't try to outthink your problems. Simplify and synthesize your issues. Let your reflexes or your unconscious dictate. Assess the results. Adjust.

Let's look at an issue that is troubling many of the readers of this magazine. They have built their businesses by making precision parts for the American auto industry. The demands of the car producers get more technical each year, while their buying behavior gets nastier. A Delphi or Visteon or GM treats them badly, hovers near bankruptcy, pays tardily, shops their prices in China.

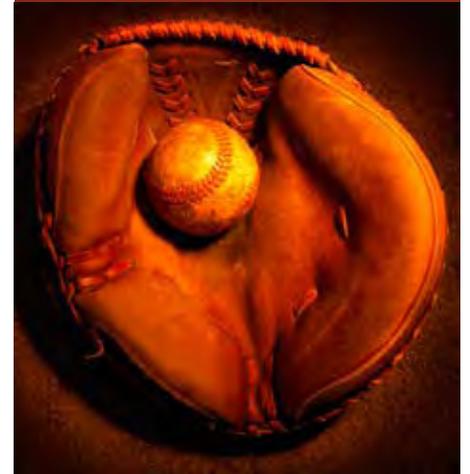
I believe Ted Williams would say, don't think so much. If the pitcher is throwing at your head, step out of the batter's box. Don't play his game.

From my own experience with relationships, personal and professional, Williams is right on. "I don't think too good if I think too much." Don't be trapped by past behavior and thoughts. Don't over-analyze. Step back, relax, allow yourself to be dumb, and just let your unconscious self, your talent, call the shots. Make things very simple.

Ask the simple questions. Is this working? Would I be happier or more successful doing something else? What do I do really well? If it was 2008 and I was looking back over the past three years, what would have had to happen for me to feel good about myself, personally and professionally?

When I thought of starting this magazine five years ago, I asked some of these questions. I didn't cook up an elaborate business plan with a bunch of projections. I asked myself, is this something I would love to do? Can I do it well? Is anybody else doing a magazine better than I can do it? Can I do a magazine that I'd like to read? My unconscious, my gut, answered "yes"

**"Ask the simple questions. Is this working? Would I be happier or more successful doing something else? What do I do really well?"**



to all of those simple questions.

And my intellect, my probing, questioning mind doubted and fretted and bitched. And still does.

"Teddy Ballgame" (Ted Williams) was often tough and surly, I've read. But at the plate he was happy and totally focused. The batter's box was his place in the world. He was happiest and most successful when he didn't think too much. See ball, hit ball, run to first. Poets don't hit .400.

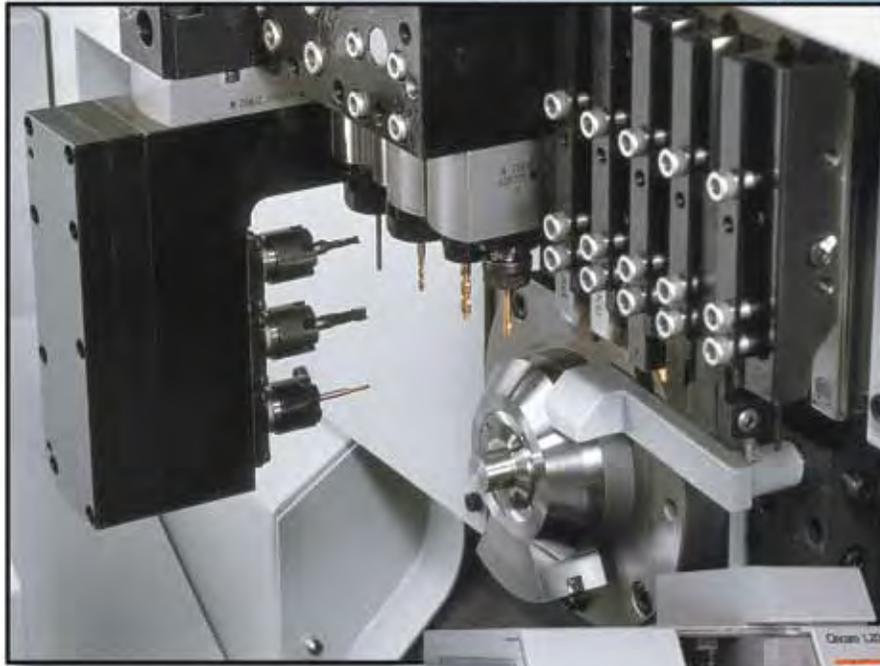


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