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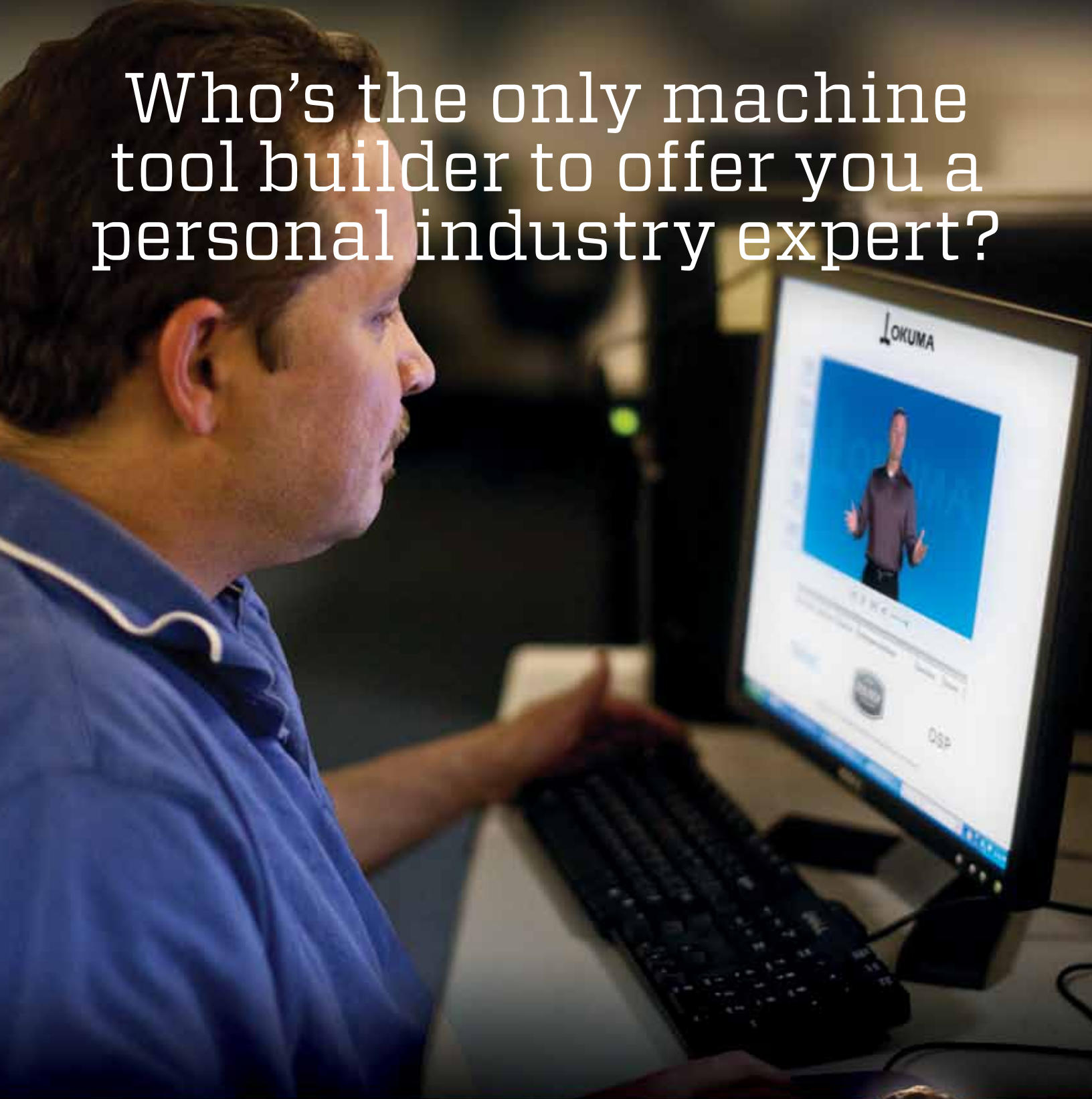
June 2011 Volume 7 Issue 5



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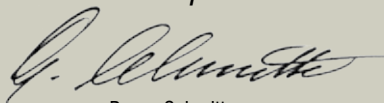
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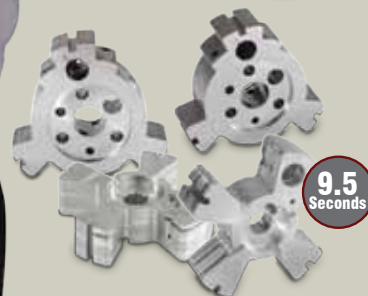


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editor's note

The Zest is Back

Why go completely online with *Today's Machining World*? A big piece of the puzzle is Sam Smith. Sam Smith used to be the primary beat reporter following pro basketball for the *Chicago Tribune*. He wrote a well-received book called *The Jordan Rules* about Michael Jordan and his effect on the NBA.

A few years ago, Sam felt marginalized at the bankrupt, cost-cutting newspaper and left the *Trib*. Smith had always mocked bloggers as pretend journalists who worked out of their basements, but when he was looking for a new life as a writer the Chicago Bulls offered him a job as the team's featured blogger.

Smith took the job with the ground rules that he would write the blog like an independent sports writer, even though the Bulls were paying him. An inherent conflict of interest, but not that different than a machinery dealer writing about the industry he does business in.

Sam Smith's column about the Chicago Bulls is one of the most consistently brilliant pieces of writing I now follow. Without the *Tribune's* constraints, Smith can express himself editorially and write at any length he deems appropriate. For somebody whose professional life has been shaped by a love of great sports prose, Sam's example of putting himself in a position to *just write great stuff* pointed me in the direction of dropping the print business and all of its trappings and expenses to, as Noah says, "Sam Smith it."

I thought I wanted to do a magazine to make money and have influence, but what I really wanted was to write great stuff and have it read.

The Sam Smith model, along with Seth Godin's blog and books, showed me that I no longer needed *TMW's* ink and paper to reach an audience.

The magazine has served its purpose. It enabled me to build an audience and hone my skills. It also afforded Noah a launching pad for his career. It gave me a chance to work with great people like Emily Aniakou, Todd Toborg, Jill Sevelow, Rob Bock and Dan Pels.

I already feel like my writing has gained a zest to it that may have leaked out in recent years. Hopefully you'll feel it too. Keep reading, my friends—online.

Lloyd Graff
Editor/Owner



Noah Graff has been working at *Today's Machining World* since 2005 (Crazy!). He is the Features Editor and "Web Guy" of the magazine. He is looking forward to becoming a used machinery dealer in June, the first of a Third Generation of Graffs to join Graff-Pinkert (the other family business). He is presently wondering which occupation will be easier to explain to strangers at a bar, "journalist at TMW" or "used machinery dealer." This month's quote: He can who thinks he can, and he can't who thinks they can't. This is an inexorable, indisputable law."
Pablo Picasso



Emily Aniakou, Managing Editor, joined *Today's Machining World* three years ago, just three months after returning from Benin, West Africa, as a Peace Corps volunteer. Before that she was on staff for three years at a meditation center, and before that, she volunteered at an orphanage in Bangladesh for a year. Emily became obsessed with playing the French horn at age 10, but her passion fizzled while pursuing her Bachelor's degree at a rough-and-tough New York classical music conservatory, the Eastman School of Music. She toys with the thought of picking up the instrument again as a hobby, but still suffers from flashbacks of endless hours spent pursuing perfection in cell-like practice rooms, tedious never-ending scales, and a sense that the more she practiced, the more the reason she loved to make music escaped her.



Lloyd Graff is a true lover of sports. A highlight of his sporting career was a tryout with the Chicago Cubs. Great photo opportunity, but it ended without a contract offer. Aside from baseball his favorite sport is table tennis. He met his wife, Risa, with a ping pong paddle in the pocket of his corduroy sport jacket. "Conversational ping pong" was a way of connecting with his children when all other approaches failed. Sadly, six eye surgeries for retina detachments have limited his ability to cover the backhand side.



Todd Toborg has been TMW's creative director for the last two years. He is proud to have been part of a great team that continually put out a terrific product. Although he is sad this is *Today's Machining World's* last issue, he will continue to help out with any creative needs *Today's Machining World* may have. Or perhaps, just come by for some witty sports banter. So until then, he will stay in his creative shop downtown and work on the other magazines he continues to design.
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Two responses to Lloyd Graff's "Swarf" piece in the May issue—"Wisconsin's Uncivil War"

Lloyd, you really should be working for the MSM, otherwise known as the "drive by media." Last time I looked, Wisconsin and Ohio both had elected majorities that passed these laws. But you insist on using the verbs "pushed" and "forced" that really do not reflect majority rule. Using your descriptive vocabulary were we "forced" or "pushed" into [electing] President Obama? Keep up the view from the left Lloyd, it's a hoot.

Kelly Hagberg

I used to think that unions had outlived their usefulness, but now they seem to be the last bulwark against the move to redistribute wealth away from those who create it to an aristocratic class who feel they have entitlement to as much wealth as they can accumulate. Why worry about a union worker who makes a few thousand more than he "deserves" for doing something useful, when a hedge fund manager ends up with a billion dollars in his pocket by devastating a company that took years to build up?

Anonymous

About the End

Thank you Lloyd for all the past printed issues of your fine magazine! It saddens me to see it end but I do understand. I can remember being dragged "kicking and screaming" onto the World Wide Web back in the '90s, and look where we are now. While I don't like taking this next step with you into the digital age, I suppose we must. But let me tell you this. I savored the day your magazine would arrive and I could take it to bed that night for an evening read, cover to cover. I'll miss those evenings. Thanks again Lloyd and you truly did/do a great job! It was all very first class, and I thought that represented you and your company well.

Gus

Nothing Like Print

As I completely understand the financial decision to stop the presses, I am very sorry to see your fine publication go online only. Yes, the same product can be viewed online, but to our generation, there is still nothing like leafing through the publication over a fine Cab. You and your magazine have inspired me in too many ways to mention. I will continue to follow you online and hope that your Bulls will take it to the evil Heat. Is it a coincidence that LeBron left the Cavs right after my book review? I think not.

Larry Clayman

Your #1 Online Fan

I have to say I'm really going to miss the printed page; however, I've already begun to read the articles online more and more often. A few times at home, and more than a few while on the road, I really do enjoy Lloyd's commentary and wisdom beyond my years. The *TMW* community feeds on the honesty here, and the dissent is often just as good as the argument. I look forward to being your #1 online fan.

Peter Bagwell



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

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The La Brea Tar Pits of Machines

I haven't gone to an old-fashioned open outcry auction at an automotive factory in quite awhile. For sheer drama and boredom the Hilco Industrial four day 7000 lot sale this week was a throwback to the days when men were men and spark plugs were made on screw machines.

The sale was at GM's old Willow Run transmission plant—6 million square feet under one roof—that used to be a farm owned by Henry Ford in Ypsilanti, Michigan, near Ann Arbor. Today the biggest non-government, non-university employer in the area is Domino's Pizza, which is currently spending millions to advertise its fried chicken.

During World War II, Willow Run turned out a B-24 bomber every 45 minutes. GM used to employ six guys full-time to fix the roof, the electric bill was \$500,000 a month, and the parking lot could fit a dozen U of M Big Houses. This joint was BIG. It took 10 minutes to travel end to end by electric golf cart. By the end of September when the last Knaack toolbox is gone, this mammoth structure will no longer bleed Lava Soap.

For me it was a kick to hear Robert Levy, the Alex Trebek of the auction stand, warble his "do I hear" doo-wap, selling everything from surface plates to Vidmar cabinets. Robert is 53 now with almost 30 years away from his jewelry making days in London when he indulged in his artistic side more than his deal making acumen. Robert is a virtuoso on the stand, which became apparent when the pretenders stumbled trying to sell grinders with a "privilege." The "privilege" is a clever ploy to extract more money from the bidders by offering to sell the option to buy multiples of similar items to the high bidder—capitalizing on the fear that the successful bidder might take every piece.

I love the animal instinct that bubbles up in an open outcry sale. The silence of the Web gives way to the belligerence of testosterone bulging egotists who like to posture at sales.

The auctioneer plays on the competitive juices, weighing the facial tells of each bidder, with the added excitement of Internet bidders who are waiting anxiously online.

An auction event like Willow Run has been a year in the making. It was actually the last of three sales to finally quiet the machines that once turned out the components of those Chevy Impala transmissions that used to fall apart after 40,000 miles. That was when cars were cars and Chevrolet was apple pie.

My brother Jim and I schlepped to Ypsilanti because it was sort of the La Brea Tar Pits of screw machines. GM had amassed almost 200 multi-spindle automatics, mostly Acmes, from 9/16" capacity to 6" RB6 and everything in the middle. Oh, the heavy metal music they must have made. The floor must have rocked when those spindles were turning.

On the two days Jim and I attended, there were more bidders online (about 300) than there were in the audience, though most of the items were bought by attendees. There were many attendees from what we used to call "Third World countries," who now have more money to spend than Americans. A large number of Indians were present, but they seemed to be mostly chatting and playing cards amongst themselves. India is developing a serious automotive business these days with Tata Motors buying Jaguar for some unfathomable reason, self-flagellation I suppose.

Auctions like this bring out odd valuations, like a Ridged pipe threader selling for more than a 1-1/4" RA6 Acme screw machine, or an EA Cincinnati Centerless fetching \$10,000 while the perennial stalwart 220-8 went for \$6,000. A 1000-ton press didn't get a bid because the rigging costs surpassed the value of the machine. Ultimately, the real "vulture" capitalists, the scrappies, will hack away at it and tote it in pieces to the furnaces.

I found the whole thing a scene. It was Schumpeter's creative destruction in action. Old Detroit is dismantled. New Detroit rises in Saltillo and San Antonio. Detroit—it's the home of Little Caesars and Domino's. Add a little extra sauce.



Above: Lloyd Graff with auctioneer Robert Levy

On May 12th, an interesting auction took place at Smart Parts near Pittsburgh. Smart Parts used to make paintball guns, until the recession and a big miscalculation about a Wal-Mart order for its equipment put them on the road to bankruptcy. The management of Smart Parts had been on top of the world as paintball caught fire. Wal-Mart wanted to get in on the fun and Smart Parts ordered two (CNC) Hydromat Epic machines in 2007 to meet the forecast demand. They paid well over \$2 million for the two machines—then the bottom fell out and sayonara. At the sale the two machines brought \$920,000 and \$550,000, including buyer's premium.

Hilco Industrial auctioned off the machinery. They sold seven Star Ecas 32mm machines, as new as 2006, for prices ranging from \$255,000 for the newest to \$145,000 for a 2003 machine. The one Star SR20II brought \$140,000 including buyer's premium.

The sale highlighted the rising cost and scarcity of 32mm Swiss-type lathes. An E32 Citizen from the '90s brought \$80,000 and another brought \$40,000, very high for older style machines.

The Smart Parts sale was the right machinery at the right time. On the same day, multi-spindle screw machines were auctioned off at Whirlpool in Benton Harbor, Michigan. RAN6 and 2 RB6 Acmes fetched under \$5000 each, and New Britain Model 62 machines in the 1980s with pickoff attachments sold for \$15,000 each. Two Hydromat Inline machines, of which very few were ever made, sold for \$120,000 each, and a 10-station Pro20 brought \$50,000.

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Answers to the seven questions I asked before PMTS

1. Is there a slowdown?

My impression is that business for the builders is generally good and getting better. High gas prices do not seem to be deterring the high level of buying. The Swiss lathe importers—Citizen, Star and Tsugami—are crazy busy. For equipment like Hydromats and multi-spindles, which are heavily focused on automotive, there is a bit of hesitancy.

2. Can the Japanese companies get inventory?

Not enough. Toyota is hurting along with the others. Hyundai is out to claim 10 points of market share. In machinery, the importers tend to order far ahead. Certain sizes are scarce, like 32mm machines. Tsugami claims to be unaffected. If it is a 1200 machine year for Swisses here, deliveries will be strung-out in some models.

3. Are high prices because of the weak dollar hurting sales?

Yes. I talked to the Tajariols, Andrea and Michi, who own ZPS. The \$1.45 euro is hurting North American sales. The 32mm 8-spindle Euroturn, the crown prince of the mechanical screw machine line, used to sell for \$450,000 in 2003. Today it's \$750,000 with bar loader and attachments. It causes sticker

shock.

4. Does anybody go to shows except exhibitors and kids in flat brim hats?

Yes, the locals. PMTS this year was a Midwestern—especially Ohio—crowd. Most people drove from a 250-mile radius. But there are a lot of good buyers left in the Big Ten. The kids in flat brims were there and I regret the pejorative tone to the original question. The hats may look stupid to the old guys but the kids aren't dumb. I think the tide is turning about "everybody needing to go to college." College is starting to look like a bad economic buy for a lot of kids and parents now, so we may be getting a more serious group of flat brims into the machining community. Unfortunately, virtually no people of color or women showed up at the show.

5. Is the Swiss market headed more toward the fewer-frill machines like the "A" Citizen? Yes. The price differential between an "A" model Citizen and an "L" model is \$100k. Because of the weak dollar, an "A" costs what an "L" used to cost, and it is a very capable machine.

6. Will the Big Three Swiss companies dominate the Swiss market without a real challenge by an outlier? Yes. There was not much buzz about the smaller brands. Tornos is now an afterthought here. Index wants medical, ZPS left the Manurhin in France, Hanwha needs to spend more money on marketing. Eurotech has an entry but they are using stealth marketing. Nomura no mas.

7. Are the automotive suppliers starting to buy?

Yes, but hesitantly. Business is good now, but 2010 was the year to repair the finances and 2011 is the year to begin buying. Hydromat, Schutte, Index and the Swisses are starting to see the serious inquiries, so the orders should come. But the earthquake and \$4 gas seem to be slowing the actual POs.

A brilliant quarter for Ford. The company is coining money. Mike Jackson CEO of AutoNation, predicts the firm will sell 100,000 cars this year. Domestic car production is running at 13 million units. But autoland is still running scared.

Jackson says the mix he is selling is shifting gradually away from SUVs and minivans to cars.

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Toyota, Honda and Nissan say they will not be back to normal production until November, though the situation is worst in Japan.

Suppliers are busy but skittish about buying more equipment because of the earthquake/gasoline combination reducing production. The fear is that by the time the earthquake issues stabilize, \$5 gas could be biting.

Personally, I expect gas prices to go the other way. Jackson sees us ramping up to 16 million units. Let's hope he's right. Pickup trucks for business are still selling despite the continuing construction depression. Meanwhile, Buick sold 3 million units since 1999 in China.

It strikes me that Americans are still trying to recover from Post Traumatic Stress Disorder from the 2008-2009 deep recession. Banks are still looking backward at the housing shock and are afraid to loan to good risks, even based on 2001 values. A large percentage of buyers today are cash buyers, often from foreign countries, or first-time buyers who don't have to sell a house to buy one. Banks are also being closely scrutinized by examiners who have the usual government employee bias—avoid mistakes so everybody covers their behind twice, thus gumming up the lending process.

The press has a strong negative bias. I monitor the editorial choices of several newspapers and Yahoo! Finance almost daily, and the choice of material disseminated is stridently negative. I'm in the news business and I know the choices of articles printed vary enormously. By emphasizing construction's misery or commodity speculation or Wall Street corruption every day, the press confirms lingering post traumatic stress.

The negative effects of the Japan earthquake will continue from a worldwide economic perspective for much of 2011, but the macro effect of disasters flip over to the positive of rebuilding at some point. Yet I am beginning to see automotive suppliers flinch because assembly is momentarily curtailed by parts shortages. Demand continues to be robust, but some people still get stuck in the nine million-car syndrome of 2009 instead of the probable 14-16 million unit domestic demand likely by 2013. Call it the Michigan strain of PTSD.

I am no stranger to the phenomenon of Post Traumatic Stress Disorder—I still suffer déjà vu every time I go to the doctor. But the people who always profit from shifting market conditions are those who can be comfortable with being uncomfortable from bad memories.

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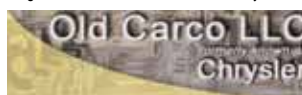
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Reflections on my time at TMW

By Noah Graff

I started at *Today's Machining World* back in 2005 when Lloyd Graff, dad/editor/owner, offered me a job as the magazine's videographer. I was a film major in college and it seemed like a cool idea—make videos that correlated with the magazine's editorial content and stream them online. Unfortunately, the TMW Web site at the time had the look and functionality of something out of 1997, and the broadband Web video craze was still about two years away.

I needed to find more to do with my time at work so I started several new features in the magazine; "One on One," "Shop Doc," and "Next." I also started copyediting, even though I had

grown up with a mild language learning disability and from first grade though college I had been scared to turn in a composition unless someone else proofread it. But to my pleasant surprise, I was pretty good at ripping apart the work of other people. During the last three or four years I helped overhaul the TMW Web site twice, and started blogging and doing email blasts. In 2009, when the magazine got lean and let our entire sales staff go, I got involved in sales.

My job has become more interesting and fulfilling over the years, and I have become indispensable to the magazine's survival. But sitting at a desk and staring at a screen all-day has taken



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its toll, and although the job has plenty of perks, the pay at an unprofitable magazine is just so-so.

Circumstances seem to be working out well lately, as my desire for a big change in my professional life has coincided with my boss's urge to stop publishing *TMW*. Soon I'll be selling used machine tools in the *other* family business, which until recently I never thought I'd do. I'm getting more and more psyched for the new job every day. I'll get to make deals, travel, meet lots of people, and just do something different with my time. And, I still get to self-indulgently share my thoughts with thousands of people on todaysmachiningworld.com and work

with my dad, one of the most likable and interesting people I know.

Since I started at *TMW* I've been very self-conscious, even embarrassed about working for my dad. It took years, but eventually I stopped working *for* my dad and started working *with* my dad.

It's the beginning of a new chapter in my life and in the life of *Today's Machining World*. We plan on our articles getting even better, and if you have an iPad, you can still read our stuff in the bathroom. So keep reading my friends. 

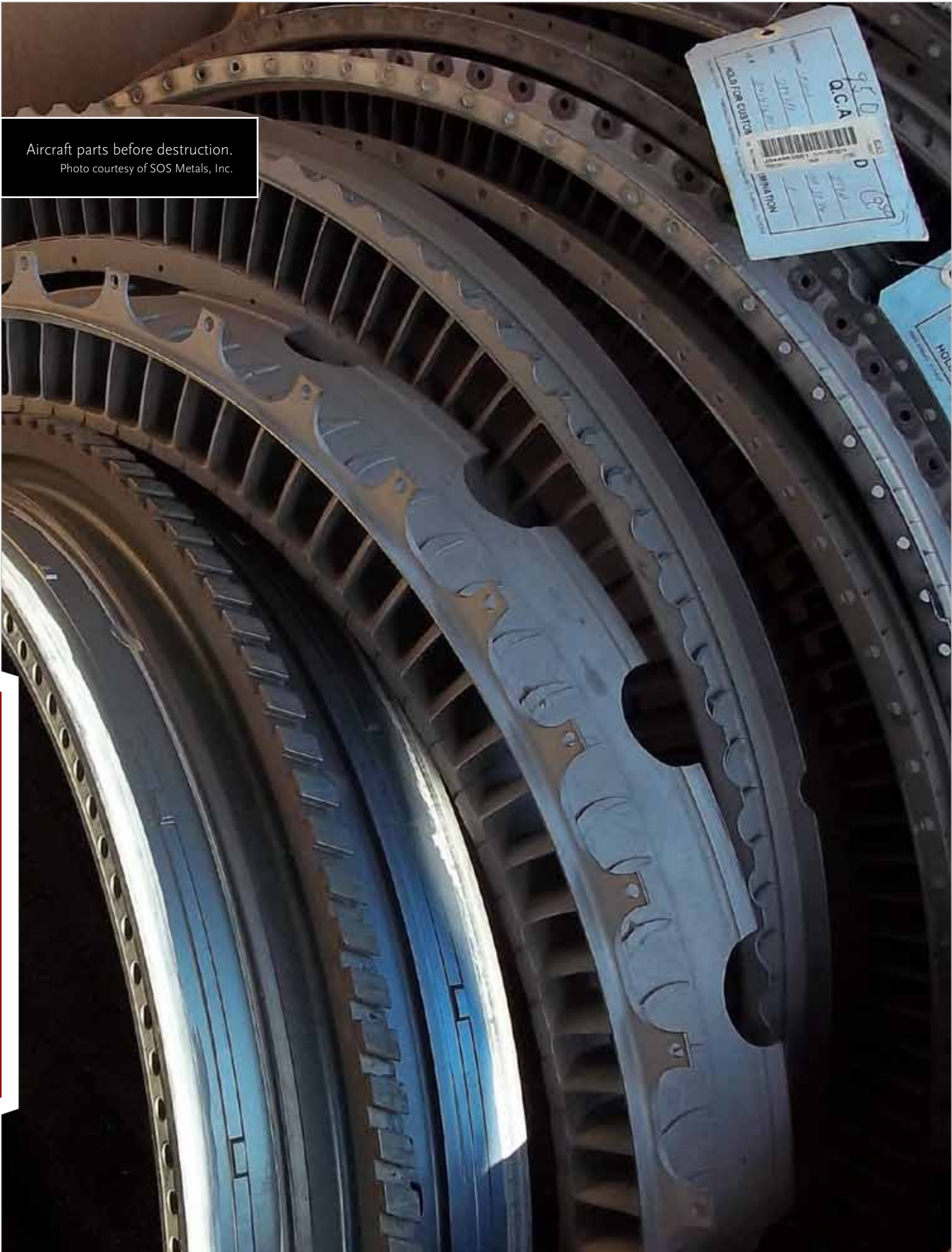
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Aircraft parts before destruction.
Photo courtesy of SOS Metals, Inc.

certified destruction

Certified DESTRUCTION

Keeping bad, worn or obsolete parts out of the supply chain.

Out-of-spec or obsolete parts may look just like their current and in-spec brethren. In many applications, using nonconforming parts wouldn't really be a problem. However, in other applications—aircraft, automobiles, medical devices, for example—installing a bad part could create a safety hazard, potentially causing injury or even death.

Where life and limb are at stake, regulators and manufacturers require any such parts to be rendered unusable. Otherwise, those parts could find their way into the supply chain and end up harming someone.

In other cases, perfectly good items may need to be made unusable, such as military equipment or a company's excess inventory.

Destruction by design

Some recycling companies, such as SOS Metals, Inc., headquartered in Gardena, Cal., offer formal procedures for making parts, assemblies, and equipment permanently unusable. Termed in the industry as certified destruction, this process takes care of the scrap, obsolete parts, etc. that need to be kept out of the supply chain. A similar process handles military equipment that needs to be made unusable. SOS Metals has contracts with many airlines and aircraft original equipment manufacturers (OEMs) to perform the *certified destruction* of parts and assemblies, as well as the necessary approvals for handling destruction of military items, said Andrew Ballow, the company's vice president of business development.

Because a certified destruction company has been qualified by its customers (airlines and OEM manufacturers, for example), procedures are in place to make parts traceable and, Ballow said, "if anything should happen, the liability would be on us."

Demilitarization

Items relating to national defense must be prevented from being useful in the wrong hands. "Accountability and control of significant military equipment (SME) is essential to maintaining the United States military's superiority," said Lt. Col. Melinda F. Morgan, spokesperson for the Office of the Secretary of Defense, Washington, D.C., in an email interview. These are national security resources and the process for processing and disposal of SME is vital to the U.S. military.

"Most items in the Department of Defense supply system are assigned a demilitarization (Demil) code, A through Q. In many situations, items with a Demil code other than A will require some type of destruction action, usually through mutilation or demilitarization. "Demilitarization can best be described as the act of destroying the military offensive or defensive advantages inherent in certain types of equipment or material," Morgan said. The purpose is to prevent the future use of the equipment, material and components for their original intended military purpose.

Items such as battle-loss armored vehicles, tank tracks, crashed aircraft, communication equipment, and weapon system components may require demilitarization in the field.

Aviation safety

"*Certified destruction* is not a term the FAA (Federal Aviation Administration) uses," said Les Dorr, spokesperson for the FAA, Washington, D.C., in an email interview. "Instead, we use scrap and salvageable, as they apply to non-conforming aircraft products and articles produced by manufacturers under their approved quality systems." These parts approval holders must have procedures to provide for identification, documentation, evaluation, segregation and disposition of any nonconforming products they manufacture.

how it works



Left: Alligator shear.

Photo courtesy of SOS Metals, Inc.

Below: A hammer mill.

Photo courtesy of SOS Metals, Inc.



Further, they must have procedures in place to ensure scrap items are rendered unusable.

In general, specific methods of making scrap unusable are not specified in regulations, but contracts require manufacturers to have procedures in place for carrying out the necessary handling and processing of scrap. Documents do offer guidance in identifying, segregating and controlling rejected products and articles to preclude their use in a finished product.

Also, a manufacturer must have procedures for identifying, storing, protecting, retrieving and retaining quality records, Dorr said, and must retain these records for at least five years for products and articles manufactured under their approval, and at least 10 years for critical components.

Chain of Custody

The process of certified destruction requires secure handling of the material to be processed. "A customer has the material—parts and assemblies—stored in a secure area at their facility, usually under lock and key in a caged area marked 'Scrap material do not enter,'" Ballow said. "Only a few people have access."

Sometimes there can be a lot of stored material—companies, like people, tend to hold on to things. When they can't use it, they store it. After two airlines merged some years ago, SOS Metals' Ballow said, a whole warehouse full of

obsolete parts was discovered. "We took out nine truckloads from there," he said.

Documentation all along the way is part of the secure handling process. "When we back a truck in—our truck or a common carrier—we'll load the material into the truck and get a manifest—12 pallets, or 15 boxes, or whatever it might be. The truck will be locked and sealed with a truck seal. The truck seal number will be written on the paperwork that goes back to our customer.

"There's a possibility along the way that the highway patrol or a weigh station wants to see [the contents of the truck]. They're obligated to write something that says they opened it. Crossing a border, customs may open it, but they'll reseal with a customs seal, so you know it wasn't opened by anyone else.

"When the truck arrives at one of our facilities, when it backs in, we take a picture of the truck, the license plate and the intact truck seal, to show it arrives intact.

"We take the material immediately to a locked, caged area—triple security because we have fencing around the whole facility, then the building and the locked cage. It's monitored 24/7 by cameras and motion detectors.

"When we're ready to process the material, we bring it out and sort it before destruction."

Right: Identifying recycled materials.
Photo courtesy of SOS Metals, Inc.

Means of destruction

"Our processes depend on the parts," Ballow said. "We would use a plasma cutter on some of the bigger parts. We'd use a chop saw—it's kind of like a radial arm saw, you just pull it down and chop the part in half. We also use alligator shears—shears that have a mouth like an alligator. Instead of teeth, it's got blades. You put a part on there, you press the switch with your foot and cut the part in half."

"For smaller parts—if someone ships us a bunch of aircraft hardware, or we dismantle an engine—we have nuts, bolts, screws, rivets that have to be destroyed," Ballow said. "If you did it piece by piece, it would take forever, so we have something called a hammer mill."

"A hammer mill has a conveyor that picks up the material and drops it into the top of the mill. Inside there is grinding media, like steel teeth, that does damage to anything you put in there. It will crack it or mutilate it. It will crack the head off a bolt. A thread? You can't use that thread anymore."

"We dump [the parts] into the hammer mill. It grinds, and chunks, and bends, and breaks, and destroys the threads and heads, so the parts cannot be used or sold as new."



For all items, when SOS Metals cuts, breaks, or otherwise damages them, "that's the primary destruction," Ballow said. "But the ultimate destruction is that we sell only to people who melt metal. So, after we have it all chopped up, sorted, cleaned, packaged and ready to go, we sell it to a melting house that melts it into a new ingot. The secondary destruction is actually melting the metal."

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Left: Sign identifying a customer's destruction process.

Photo courtesy of SOS Metals, Inc.

In the shop

Most of the material SOS Metals handles from machine shops is made up of turnings and chips that come out of the machines, Ballow said. "But sometimes maybe 10 percent of what we pick up would be parts that have been rejected or superseded, obsolete inventory, excess inventory, bad machining, bad heat treat—there are a million reasons" for those parts to be recycled.

Shops generally put these scrap parts in a separate box. Safety- or defense-related parts, such as aircraft components, are not only separated, but also stored securely.

In your shop, you're accustomed to making parts, bringing them to life. But there's an end to their story, and for critical safety or defense components, they must finish their useful lives by being made unusable. 

Viewing the process

Customers have the option of coming to the facility and watching the destruction, Ballow said, but very few do. SOS Metals takes pictures or video during the process. Also, a customer can watch real-time video of the process over the Internet. "We say, OK, we'll be doing your parts at 10:00 on Friday. Here's the Web site. Simply go to your computer and bring it up. We have two or three cameras, and we can hold up a sign to show the customer name and lot number. They can record it if they want."

Documenting the destruction is an important part of the process of destroying bad, worn or obsolete parts, Ballow said, "because of the importance of making sure that they never get back into the supply chain."

For more information:

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book review

BY JERRY LEVINE

The Social Animal

David Brooks has spent 30 years studying the brain and how it functions both physically and emotionally. His current best seller, *The Social Animal*, presents a huge volume of brain related scientific study in the form of an allegory, featuring two imaginary characters, Harold and Erica.

As these two individuals move through life, Brooks analyzes their brains and their behavior from birth to death, and analyzes our own intellectual, social and moral behavior. Along the way he looks for the meaning of life and what constitutes happiness. (Good luck with that!)

The book focuses on the power of the unconscious. While we live in the conscious world, Brooks contends that most of the action of our minds is happening at an unconscious level. This unconscious is what truly shapes how we see the world, which then shapes our destiny. Brooks defines the unconscious as emotion, intuition, bias, genetic predisposition, character traits and social norms. Reason is not severed from emotion; rather emotion is the foundation of reason. Emotion is required to place value on things and is absolutely necessary for effective decision-making.

Towards the end of the book, Brooks discusses spirituality and marvels at the brain—the three pounds of meat that creates emotion. Brooks is in awe of the process and refers to it as a sort of divine creation. The mind is endlessly complicated—100 billion neurons constantly connecting and reconnecting. We can see a bit of the action with high tech imagery, but it is still hard to translate the images into human behavior.

The Social Animal is subtitled, “The Hidden Sources of Love, Character, and Achievement.” Brooks claims that falling in love is guided by both conscious and unconscious evaluations. Initially, we establish a conscious relationship. Later, unconscious forces take over. For example, women put a value on male height. A 5 foot 6 inch male may get many online dates, but interest wanes when “shorty” appears in person. Research shows that it takes about \$172,000 in additional annual income for a male to make up for being 6 inches shorter than the ideal height for a man. However, as the relationship develops, a merging of the two minds occurs at an unconscious level. Lovers become totally connected and dissolve into one another, just as a naturalist becomes dissolved in nature or a believer becomes one with God’s love.

Brooks also looks at how the unconscious controls achievement. He notes that children from structured, organized homes had better discipline that led to success later in life.

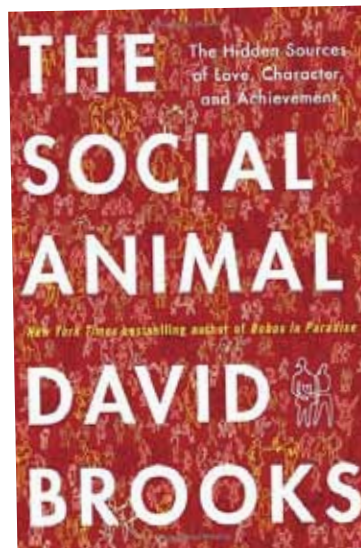
A famous experiment conducted around 1970 demonstrated that the ability of 4-year-olds to postpone gratification by leaving a marshmallow uneaten in front of them for a set amount of time, was a good predictor of success in life. The kids who could wait a full 15 minutes, 13 years later had SAT scores 210 points higher than kids who could only wait 30 seconds. Twenty years later they had higher college completion rates, and 30 years later had significantly higher incomes. Kids who couldn’t wait at all had higher rates of incarceration and problems with drug and alcohol addiction.

What mattered more was that lifetime achievers had a better ability to detect patterns and attune to others. They were more open minded and better able to weigh the strength of beliefs against the strength of evidence.

Achievement comes from unconscious emotions, often a sense of vulnerability—a hunger to establish oneself. The most successful people have the most passion to accomplish their goals. The idea brings to mind Malcolm Gladwell’s theory in his book, *Outliers: The Story of Success*, that it takes “10,000 hours of practice” to become the highest achievers.

Brooks contends that we have free will and have the ability to change who we are. We can do that by changing our environment (choosing a different school for example). Or, we can change a specific behavior, which will rewire the way we think and act (like joining Alcoholics Anonymous). Additionally, we can change the people who surround us (by associating with less negative, more uplifting people).

Though it seems difficult, Brooks says we need to educate our emotions, mainly through social interaction. We are social animals. We build our character out of relationships and bond with one another. Deep connections are the main source of happiness. ⑪



Comments? You can email Jerry Levine at jerroldlevine@yahoo.com

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1-3/8" 6-spindle, 1978 (4)
1-3/4" 6-spindle, 1974, 1987
1-3/4" 6-spindle 1984
2-1/4" 6-spindle, 1962, 1973-79 (3)
2 5/8" 6-spindle Wickman, 1978

ACME

7/16" RA6, 1975 & 1964
3/4" RA8, 1970
1-1/4" RA6 1978-61 (9) - some
w/threading pickoff
1-1/4" RA6, dbl. thrdg. p.o. 1987
1-5/8" RB8 CNC slides 3 pos.
1-1/4" RB8, 1981, thdg., pickoff (2)
1-5/8" RBN8, 1968
1-5/8" RB8 thdg., pickup '68-'72
2" RB6, 1967 & 1980
2" RB8, 1966
3-1/2" RB6, 1970
2 5/8" RB6, 1980, pickoff
1 1/4" RB8, locked spindle, '68 (2)

HYDROMATS & ROTARY TRANSFER

HW 25-12, 1993
HW 25-12, 1989-93
HB45-16, 1997, bar and chuck (2)
Pro-20, 1998
HB 45-12, 1991 (3)
HB 45-12 chucker, 1996
HB 4516, 1993

SCHUTTE & GILDEMEISTER

SF51, 1985-79 (3)

SWISS

Star SR20R, 2002
Tornos Deco 20 mm, 2000
Ganesh Cyclone 32 w/ LNS express, 2006
Citizen FL32, 2000

CNC Lathes

Mori-Seiki ZL150, 2002
Murata, MW120, 2004

NEW BRITAIN

Model 52 1 1/4" 6-spindle, 1979,
1967 (2)

ESCOMATICS

D9 (2), 1995
D6SR (2)
D-2, D-4, 1975

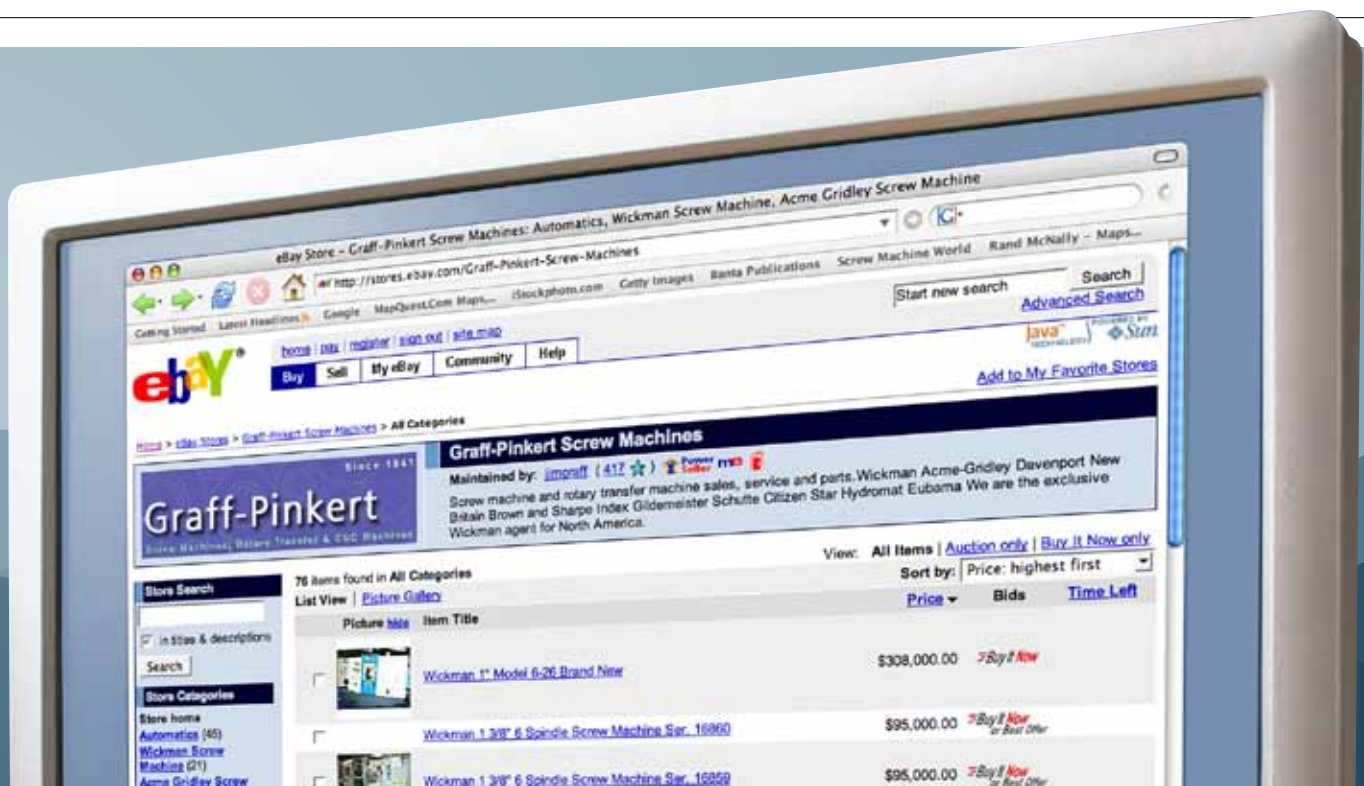
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America's Youth Reconsiders MANUFACTURING

BY JESSICA DULONG

A highway route marker: "Detroit 75 North." Smokestacks from a power plant puffing out steam. A blasted-out brick building, only one wall still standing. A mammoth bronze fist. Then, gliding onto the scene, a slick, black, luxury sedan. Over an ominous, orchestral groan that melts into an insistent, swelling backbeat, a gravelly voice connects the dots between the images flashing on the screen, recounting the story of Detroit's decline and offering the city's fall as evidence of its inevitable revival. This may be "a town that's been to hell and back," the voice explains, but "it's the hottest fires that make the hardest steel. Add to that hard work and conviction, and the knowhow that runs generations deep in every last one of us. This is who we are."

Dubbed "Imported from Detroit," this Chrysler commercial, the longest spot in Super Bowl history, is as much a tribute to the American auto industry—and by extension U.S. manufacturing overall—as an ad for the carmaker itself. The commercial communicates the message that "Chrysler is back. The auto industry is back. The economy is back. The country is back," marketing professor Mike Bernacchi told the *Detroit News*. While Detroiters took hometown pride in the two-minute ad, the message has resonated all across this recession-ravaged nation. The commercial is just one high-profile example of a growing cultural shift toward rekindled respect for making things and skilled, hands-on work.

The spot clearly hit a nerve. A YouTube video of the ad, which featured Detroit-native rap star Eminem, was viewed more 1.2 million times within the first 24 hours the *Detroit News* reported, and Web traffic to the Chrysler 200 site increased by more than 1,600 percent. Meanwhile, April sales of the 200 (which replaced the Sebring) are up, with 8,274 Chrysler 200s sold, compared with 4,053 Sebring purchases during the same month last year.

Some of the buzz the ad has generated no doubt reflects the appeal of a message recognizing the importance of domestic manufacturing—not only to a sustainable U.S. economy, but to the cultural fabric of the nation. "There is a booming, home-grown 'make it here' pride emerging among U.S. manufacturers," explains Steven Capozzola of the Alliance for American Manufacturing (AAM), and "Madison Avenue has also begun to focus on the trend."

Public opinion sways trends

Advertisers, it seems, are catching up with public opinion. In a national, bipartisan poll that AAM published last April, Americans from across the political spectrum expressed concern over the loss of American manufacturing jobs. Two-thirds of all respondents said manufacturing was central to our economic strength, and 57 percent believed manufacturing was more central than the high-tech, knowledge or financial-service sectors. Meanwhile, a total of 63 percent said they felt that "working people who make things were being forgotten."

Of course advertisers aren't the only ones taking notice. In February, seven years after the debut of John Ratzenberger's Travel Channel show *Made in America*, ABC World News with Diane Sawyer launched a *Made in America* series, encouraging consumers to purchase domestically made products as a way to create new jobs. In a dramatic demonstration, the show removed all foreign-made items from the Usry family's Dallas home (leaving behind only a vase, a candle and some pottery) and replaced them with U.S.-made goods. Throughout the series, correspondents touted a statistic intended to spur individual consumers to action: "Spending just \$64 a year will create 200,000 U.S. jobs."

But when Ratzenberger appeared for an interview on the show, he brought along a dose of realism: "Statistically we can [create jobs], but practically it's going to be a lot more difficult because we canceled shop courses years ago." Referring to the skills gap that he says is poised to create an "industrial tsunami," Ratzenberger argues that encouraging young people in the art of tinkering, invention and innovation is the first step toward training the next generation of "essential workers" who can create and repair the country's infrastructure, and produce the goods we need.

Front page news, finally

Manufacturers have long been aware of the fact that as Baby Boomers retire, there are too few young people with sufficient skill and interest to fill their shoes. For years industry leaders have been sounding the alarm, but only recently has word begun reaching a more mainstream audience. Last July, the fact that U.S. manufacturers continue to struggle to fill job openings because they can't find qualified applicants made



Above: Craft Night at NYC Resistor

Photos courtesy of Sean Williams

Below: Bob Stack from A2 Mech Shop

Photos courtesy of A2 Mech Shop

front-page news in *The New York Times*. But the article failed to address one root cause of the skills gap: the fact that recent generations of Americans have lost respect for making things and hands-on work as viable careers. Just last month a *Wall Street Journal* story, *Help Wanted on the Factory Floor*, offered a glimpse into the skills gap's cultural aspects. The piece cited manufacturers' concern that "parents and guidance counselors discourage bright kids from even considering careers in manufacturing" despite the fact that jobs operating and repairing "sophisticated computer-controlled factory equipment ... often pay \$50,000 to \$80,000 a year, plus benefits."

To bridge this distance, manufacturers have been devising new ways to heighten awareness of manufacturing's "coolness" factor. Just one regional example of this approach is

BotsIQ, a program spearheaded by the Pittsburgh Chapter of the National Tooling and Machining Association in which high-school students learn to build fighting robots that compete in gladiator-style matches. Similar robot-building projects as well as camps, competitions and other programs are offered across the country. Given the explosive growth of the do-it-yourself (DIY) and maker movements, manufacturers are wise to align themselves with a trend that is changing the cultural landscape. Leading the DIY charge is *Make* magazine, which features how-to instructions for building projects that range from the wacky to the practical. Published quarterly since February 2005, the print magazine has grown to more than 100,000 subscribers, while the webzine generates more than seven million page-views each month. Since 2006, makers and their appreciators have gathered in person to share DIY projects at Maker Faire events held in the Bay Area, Detroit and New York City, drawing as many as 85,000 people at a single event.

New developments in DIY

But these days maker-minded folks don't have to wait for a fair to revel in the DIY spirit. Across the nation growing numbers of workshops now offer access to machine, woodworking, textile and computer modeling tools for use by hobbyists and independent entrepreneurs with maker dreams. NYC Resistor in Brooklyn, A2 Mech Shop in Ann Arbor, Michigan, and TechShop

in San Francisco are among the more than 130 "hackerspaces" in the country, according to hackerspaces.org, where people share equipment and camaraderie in an effort to realize their inventions and designs. At A2 Mech Shop, explained member Bob Stack, "We have a synergy here where people and their ideas come together. It's a sum of the parts that make the whole much greater than it would be." This spirit of collaborative fabrication has rallied a growing fan base, suggesting a wave of new energy toward the ideals of innovation and the techniques of production. At its core, the maker movement is rooted in a belief that, as poet Frank Bidart wrote, "We are creatures who need to make things." What better inspiration could there be for pursuing manufacturing?





Left: Metal Spinning at the TechShop

Photo courtesy of TechShop

Financial reality

In addition to the growing recognition of the “coolness” factor that’s been spurred by the maker movement, further motivation for some young people to enter manufacturing may come from a changing economic climate that’s debunking the myth of a liberal-arts education granting an automatic path to success. To fully grasp the decay of this longstanding notion, consider first the recent *Time* magazine headline that read, “Survey: 85 percent of New College Grads Move Back in with Mom and Dad.” Next note the unemployment rate among 20- to 24-year-olds: nearly 15 percent in April. Then call to mind the recent *New York Times* article: “Armies of Expensive Lawyers, Replaced by Cheaper Software” about how computers are “claiming work once done by people in high-paying professions.” Now imagine what message such stories send to young people.

Education’s role reconsidered


For the first time in generations, a four-year degree is no longer expected to guarantee financial success, nor is white-collar work considered recession-proof. As the more traditional paths lose luster, manufacturers hope that more young people with a penchant for math, machinery, and manipulating materials will branch out toward jobs in their industries. And some youth advocates and teachers, recognizing the implications of new economic realities, are more than happy to sprinkle a breadcrumb trail to lead the way.

For three decades Carol Christen, author of *What Color Is Your Parachute? For Teens*, has been helping young people transition from school into work. Her goal is to help young people answer two basic questions—“What are you good at?” and “Is there any demand for that?” Given the recession, she’s even

more careful to encourage young people not to exclude hands-on jobs, which these days are in such great demand. Christen has seen first-hand the perception some guidance counselors, parents, and young people have that “tech training is just for academic underperformers.” Meanwhile, she complains,

“Parents are bragging about how much they’re in debt because of their students.” According to a recent Project On Student Debt report, 2009 college graduates carried an average of \$24,000 in student-loan debt. Meanwhile, in 2009, unemployment among recent college graduates reached the highest annual rate on record. Christen says the blind push for all students to pursue a liberal-arts education leads many students to enter college with no specific career goals in mind, and to graduate with too few marketable skills. She’s determined to help young people avoid this funneling phenomenon by opening their eyes to the diversity of options in the world of work.

High-school English teacher Ilana Garon is another proponent of helping students set realistic education and career goals. She says the conversations she’s heard in the teachers’ lounge have changed since she started teaching in the Bronx, New York, in 2003. In light of new economic realities, Garon finds that she and her fellow teachers now question whether “the market will support as many liberal-arts graduates as we seem to be intent on producing.” She’d prefer a system that would “make different types of trade tracks viable options” for young people, increasing awareness of the “wide variety of trade options for people to pursue.” But in her experience, total ignorance about careers in industries like machining and manufacturing is the norm among both her colleagues and her students, and tracking down trades-training information and resources is no easy task. In addition to her school-day efforts with students, Garon is working to create change by publishing essays about the need for more widespread support of technical and trades training. With her forthcoming book, *Why Do Only White People Get Abducted By Aliens?: Teaching Lessons from the Bronx*, she hopes to share what she’s learned from her classroom experiences.

As educators and activists like Christen and Garon open more young eyes to the viability of technical careers, as the DIY movement spreads the idea that making stuff is cool, and as advertisers and mainstream media outlets paint a new picture of manufacturing’s role in the nation, these combined forces will doubtless soften the stigma that has long stymied recent generations’ transitions from school into work, while simultaneously offering new opportunities for employers in critical growth areas. It’s early yet, but the tide is shifting toward a changed American consciousness. 

Today's Machining World's "Shop Doc" column taps into our contact base of machining experts to help you find solutions to your problems. Shop Doc will continue online on the Shop Doc Blog at www.todaysmachiningworld.com.

Dear Shop Doc,

We are turning a part made from PEEK (polyetheretherketone plastic) and need an 8 Ra surface finish on the part. We have tried carbide and a PCD insert. We can achieve around a 10 Ra finish but that is about the best we can do. Since it is a medical implant we can't use coolant or abrasives. What process will enable the required surface finish?

Too rough

Dear Too rough,

You are on the right track using a PCD (polycrystalline diamond) for machining PEEK. The high hardness, abrasion resistance, and heat tolerance of diamond makes it an ideal tool material for machining medical grade PEEK.

However, in order to achieve very low surface finishes in soft materials like PEEK, or even metals like aluminum, you need a tool with a nearly flawless edge. Polycrystalline literally means "many crystals." A PCD insert has a tip composed of small diamond crystals held together with a metallic binder. The random orientation of the crystals along with the metallic binder (usually containing cobalt) helps give the very hard diamond some toughness to resist fracture.

If you were to look at a micrograph of the cutting edge, you would see the diamond crystals do not provide a continuous, smooth cutting edge. In turning, each little crystal in the matrix will leave its "mark" on the turned surface. The solution is to use a monocrystalline diamond tool, which is a single piece of diamond crystal with a lapped cutting edge.

In addition to the better tool, you will need to address as many of the other variables that affect surface roughness as possible. Ideally your lathe would have a dynamically balanced integral motor spindle with ultra high precision ceramic bearings. The closer the lathe you run it on is to the ideal, the better off you'll be. Choose the proper feed rate for the nose radius (see sidebar). Keep tool and work overhang to a minimum. Make sure your finish pass depth of cut is at least 60 percent or more of the nose radius.

Formula for Estimating Surface Roughness:

$$Ra = \frac{f^2 * 1,000,000}{(24 * r)}$$

Ra = Surface Roughness in micro-inches

f = Feed rate in inches per revolution

r = Tool nose radius

If you are turning from bar, consider running short lengths of material and be sure to use a spindle liner that closely matches the bar diameter in order to minimize bar whip. Installing a close fitting bushing into the back of the collet can also help damp bar vibration.

Cool the work with a cold gun (vortex tube). Make sure you prevent chips from wrapping around the work. You can rig up a Shop Vac or use a compressed air gun mounted below the cutting area to draw the stringy chips away from the work.

Dan Murphy
REM Sales LLC

Dan Murphy is a regional sales manager for REM Sales LLC., a U.S. Tsugami distributor. He can be reached at dmurphy@remsales.com.

Have a technical issue you'd like addressed? Please visit the Shop Doc Blog at www.todaysmachiningworld.com.

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The new VF-12 vertical machining center from Haas Automation, Inc., easily accommodates the large-volume machining found in the aerospace, automotive and mold and die industries. The Haas VF-12 VMC features travels of 150" x 32" x 30" (xyz) and has a 150" x 28" T-slot table. It is available in

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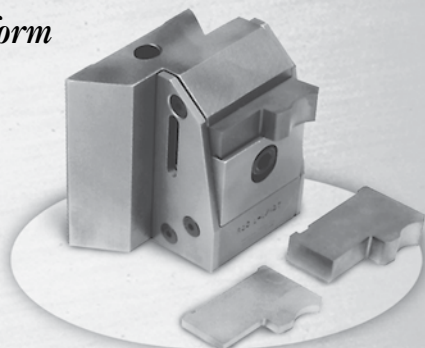
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product focus



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product focus

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► Tsugami/REM Sales

Rem Sales, LLC of Windsor, Connecticut, recently introduced the new Tsugami B0 385 38mm 7-axis, double-spindle Swiss Turn. The B0 385 7-axis Swiss Turn is the largest gang-style precision lathe in its class and very competitively priced, according to Scott Anthony, National Sales Manager of Rem Sales. With a super rigid frame, integral double spindle and capacity to hold up to 3/4-inch square shank turning tools, the B0 385 performs heavy duty cutting with high precision and accuracy.

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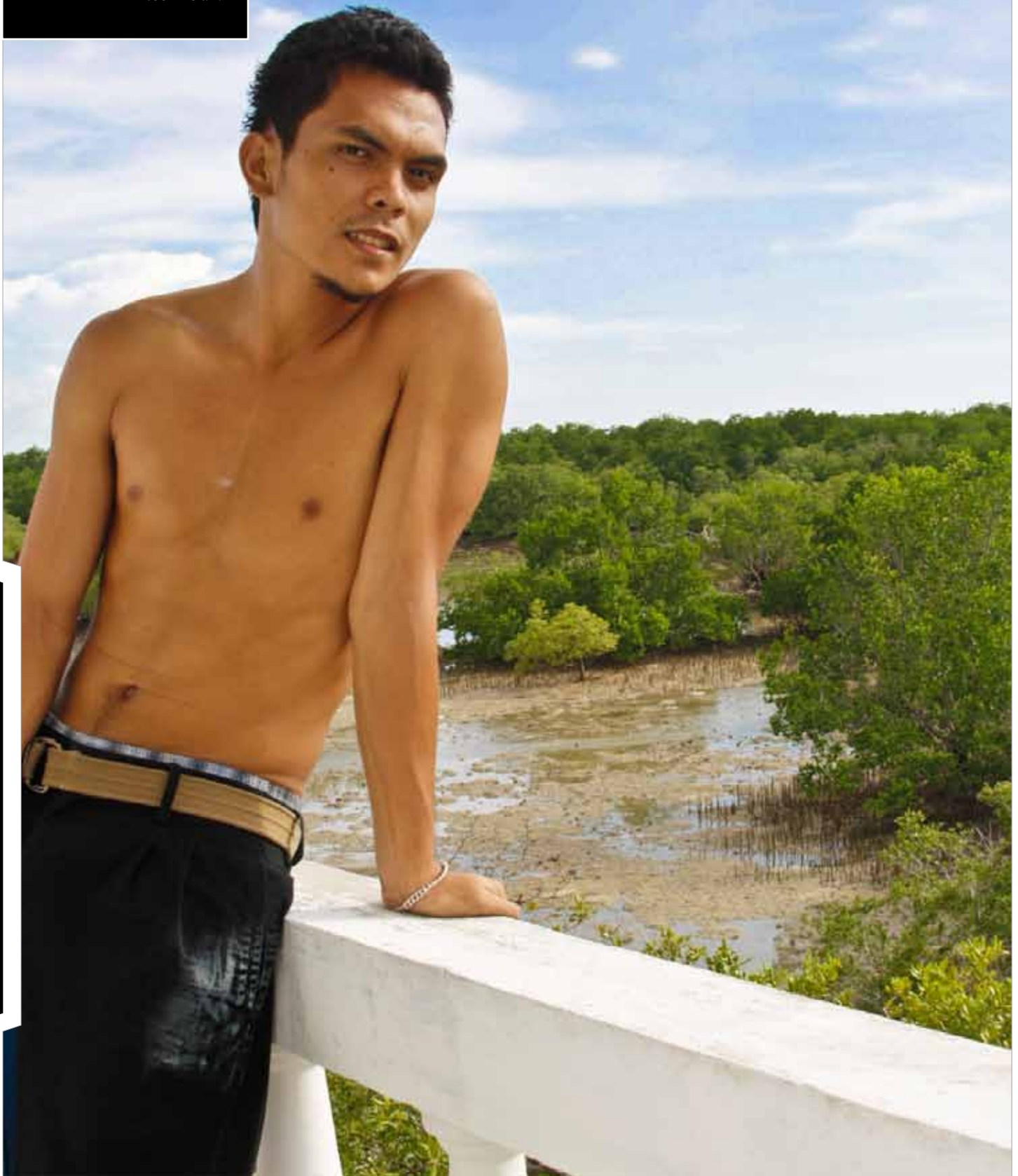
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Edsal Ceniza,
Today's Machining World's
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technician.





one on one

INTERVIEWED BY NOAH GRAFF

Edsal Ceniza is the computer science whiz who has maintained the back end of the *Today's Machining World* Web site for the past year. He works freelance from his home in the Philippines for \$4 an hour and communicates with the *TMW* staff exclusively via email and instant messenger. He also does work for a client in the U.K. and has several other local entrepreneurial ventures in his hometown of Mandaue City.

Do many people in the Philippines go to college?

EC: Yes, if they have the funds to do it, but a large percentage of people only finish high school. Lately, most students take only one or two years of college and then apply for call center jobs because you only need two years of college and no degree. You can earn a lot in the call centers. I worked in one for three years, but I eventually realized I needed to finish my degree in computer science—I'm on my fourth year in June.

Has the influx of outsourcing jobs raised the general standard of living in the Philippines?

EC: I'm not sure about the statistics, but I think it has raised the income of most families. Those who were considered poor may be considered average now. Normal jobs pay less compared to outsourced jobs like call centers. But in my past call center jobs, I only earned roughly \$400 to \$500 a month. Freelancing, I earn more than that, if I work.

How many different jobs and businesses do you have?

EC: I have two foreign clients—*Today's Machining World* and a company in the U.K. I have one local client and I accept short-term projects. I'm starting a new business too; a photo booth people rent for parties and events. I also sell sunglasses, which I order from the U.S. using PayPal.

Tell me about some of the Web sites you've created.

EC: My first blog was for my personal ramblings. It's called blog.tambayanbox.org. "Tambayan" is the Philippine vernacular for "rendezvous." Then I started simplyblackandwhite.net, which talks about the Web and all its rules, and then I started armedandloaded.com, which talks about gadgets, technology, and games. My new one is a travel blog I maintain with my girlfriend, called thewanderingcouple.com. I also have some small sites about basketball, thekingbronjames.blogspot.com and blakegriffindunkfest.blogspot.com.

I know you're a huge NBA basketball fan. How do you watch the games from there?

EC: The games are on cable—Basketball TV. ESPN broadcasts two or three games usually, and if I'm lucky, maybe four. But I mostly wait until *NBA Live* to watch the highlights of the games, which normally comes on from 10:00 p.m. to 11:00 p.m. Sometimes I'm watching it while I'm [working] with you.

Do most Filipinos speak English? How many languages do you speak?

EC: Most speak English. It's a second language here. It's a subject in school from elementary school to college. Besides English, I speak Filipino, which is a hybrid of most of the dialects in the Philippines, and I speak Bisaya, the dialect of Cebu, [my home province]. The Philippines has a lot of dialects.

What are the biggest challenges you face when working with overseas clients?

EC: The first problem is the language barrier. I consider myself a good English speaker, but what a client may want may not be what you are thinking. The second problem is the time difference. I'm normally online if I don't have classes, from 10:00 a.m. my time to maybe 5:00 p.m. In the U.K., they are normally awake from 4:00 p.m. to 1:00 a.m. my time, so I need to work a night shift.

Do you have friends who do similar work?

EC: Yeah, I have colleagues that have gone freelance and they are earning well. Actually, a former teammate from a call center is doing SEO (Search Engine Optimization), and he was able to buy a car with all his earnings from doing freelance. Now he is managing his own team and I think he has five to 10 people under him.



If you're only reading "Swarf" in the magazine you're missing out! Every week, thousands of people log on to our Web site to read and comment on new articles on current and interesting topics. Below are some recent comments from our "Swarfblog" readers at www.todaysmachiningworld.com.

Reflection on Osama Bin Ladin's Death

Following the assassination of Osama Bin Ladin, Lloyd asked readers if they thought the U.S. government really wanted him dead the last 10 years.

matt May 3, 2011 at 9:45 a.m.

What kind of question is that? I don't care which way you lean politically, to infer that anybody would want him "kept" alive is in my opinion absurd. I don't care for President Obama politically, but when he was presented with the right information he acted accordingly (in this case at least). Hats off to our military and everybody who had a hand in this. Hopefully some American made helicopters, guns, bullets, communication equipment, etc., were used to nail this idiot.

Richard S. May 3, 2011 at 11:49 a.m.

America needs an enemy to be great, always has and always will, I suppose. Osama was being hidden by people who said they were also looking for him. Once we figured that out, we could act decisively. That being said, I'm not naive of politics by either party, and yes, the timing of it coinciding so neatly with the start of a re-election campaign is suspicious.

Questions Going into PMTS

Prior to PMTS, Lloyd asked readers a number of questions including: "Does anybody go to shows anymore besides the exhibitors and students with flat brims on their baseball caps?"

Patrick Wade April 19, 2011 at 2:32 p.m.

The kids with the "flat brim" hats are our future Swiss machine operators—our teachers are doing a bang up job of educating our future skilled work force. Teachers make more money than skilled machinists, and a lot of small- to medium-sized shop owners, and this is what we get! Kids with "flat brims" (and flatline brains to match) only have to work a few months out of the year. You might see these kids at the show for "Student Day" because the teachers are on spring break. See you later, I have to get back to work and

stop daydreaming, about the good old days when there was a skilled work force.

Bill Camloh April 20, 2011 at 6:21 a.m.

I was working at the Shimada booth yesterday and a young guy with a flat-brimmed baseball cap came up to check out the machine. I wasn't up on the latest hat style, and never noticed the "flat" brim before you mentioned it. Anyway, it was that flat brim that made me approach him and engage in conversation. This kid was highly enthusiastic about the industry. He started running 2-axis lathes and then was challenged with multi-axis Swiss machines, and his next big challenge is multi-spindle machines. He surprised me with his passion and eagerness to learn. It was a refreshing discussion. If this is the next generation of machinists, we're in for a good run!

Religion of Baseball

In honor of this baseball season's Opening Day Lloyd asked readers to share their fondest baseball memories.

Todd Miller March 30, 2011 at 10:11 a.m.

My fondest baseball memories involve my grandfather, father and sons. My grandfather took me to my first game ever in 1967 at Tiger Stadium in Detroit. I remember, as a six-year-old, being overwhelmed by the size of the stadium and the greenness of the grass, as well as by the smells of cigar smoke and stale beer. With my father, it was being at Game five of the 1984 World Series to watch the Tigers win their first championship in 16 years, and with my three boys, it was taking them to the inaugural game at Pittsburgh's PNC Park 10 years ago to show them their new "baseball home." Despite 18 consecutive losing seasons and no memories of post-season glory, they became and remain die-hard Pirates fans because the intimate ballpark, patterned after Wrigley Field and old Forbes Field, is a great place to watch a game, regardless of how the home team plays.



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Small lot work?

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Jim makes models



Matt gets new products to market



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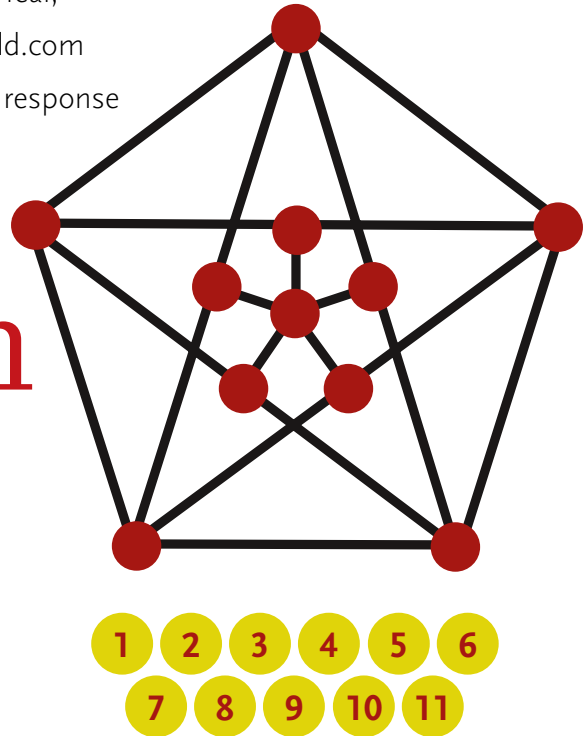
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think tank

Even though this is our last printed “Think Tank,” have no fear, it will continue online! Visit the www.todaysmachiningworld.com “Puzzle of the Week” section to get your fill and post your response to this issue’s puzzle.

Hamiltonian Circuit

A Hamiltonian Circuit is a continuous path that passes once through each point of a graph. Can you find the Hamiltonian Circuit for the 11-point graph illustrated here?



Puzzle found in the May issue.

SOLUTION TO “Green Bird in the Cage”

Stare at the red bird for a minute and then look at the center of the birdcage. You will see an illusory afterimage—a green bird—in the cage. There are three types of color receptors in the eye—one each for red, green and blue. The red of the bird in the picture causes the red receptors to adapt, temporarily decreasing their sensitivity to red. Since the figure does not reflect much green or blue light, receptors for those colors become considerably more sensitive. When you shift your gaze to the gray area, the effect of adaptation makes your green and blue receptors overly sensitive—and the red receptors dulled—and therefore you see the gray area temporarily as green. In short, afterimages are a signal that our visual receptors have become fatigued from seeing too much of the same color.



Whose receptors were sleepy?

Greg Tetrick of Cass Screw Machine Products in Minneapolis, Minn.; **Roger Stillman** of Metric & Multistandard Components Corp. in Hawthorne, N.Y.



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Tool posts, tool holders for dovetail and flat form tools, with radial and axial adjustment.



TOOLHOLDERS

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Counterrotating spindle assembly with inner coolant system.



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One on One: Jim Chiodo of the Holland-Zeeland Patriot Tea Party

Jim, what's your role in the Tea Party? JC: I prefer to consider myself an organizer, somebody that helps other people speak up. We have no roles or titles or [...]

Swarfblog

- One on One: Jim Chiodo of the Holland-Zeeland Patriot Tea Party
- When to Admit to a Screw Up
- Afterthought: Cyclical Times
- Wisconsin's Uncivil War
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- How I Survived the Recession
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0:00 / 2:36

From The Experts



Shop Doc – Compensate for Brush Wear

Mark Bos

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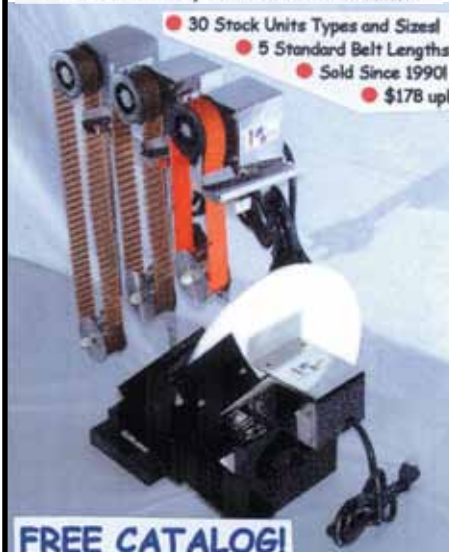


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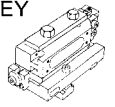
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afterthought

For those readers who may be sad that this is the last “Afterthought,” we’re happy to announce that the column will be continuing at www.todaysmachiningworld.com. To receive the columns in your email, visit the Web site and subscribe to the email list today.

Back to the Future

I recently received an email from a childhood friend, Lee Erman, alerting me to a planning meeting for our 50th high school reunion in 2012. Lee was a math whiz and did his graduate work in artificial intelligence and computer science at Carnegie Mellon during the field’s infancy in the 1970s. He moved to California 40 some years ago and now lives in Silicon Valley, where he is a member of my daughter’s synagogue.

Lee is no longer a scientist. He took a class in massage therapy 20 years ago and gradually came to the conclusion what he really wanted was a “hands-on” kind of life. Today Lee is a full-time massage therapist working at hospitals and specializing in hospice clients.

Lee followed his calling, and I did too when I started *Screw Machine World* 11 years ago. I understood, even as a kid, that I had a gift for collecting and connecting information and ideas and interpreting what I found in a fun way with language. I know this may sound egotistical, but what the heck—this is the last print magazine.

I think that if you have a talent—a gift—you should pursue it. I took a quarterly seminar with Dan Sullivan, called “Strategic Coach” in the ’90s for five years. Dan advocated in session after session that we had to understand our “unique ability” and structure our work lives to take advantage of what we believed to be our special talent.

I knew that my “unique ability” was to interpret and communicate, but I didn’t do anything with it other than write the occasional “magalog”—*The Graff-Pinkert Times*.

When Gardner Publishing decided to attack a vulnerable *Automatic Machining* in 2000, I decided to do the magazine

I had always wanted to read on the topic I knew the most about—the machining business in America. For the last decade this unorthodox magazine has been my passion.

During this run I’ve lost a big piece of my eyesight, been diagnosed and treated for prostate cancer, and spent 12 days on a ventilator before and after quadruple bypass surgery—and met every deadline. My son, Noah, has worked with me for six years and grown into a wonderful writer, editor and confidante.

I feel like I’ve followed my calling and used my gift.

This is the last print edition of *TMW*, but definitely not the end of *TMW* and Lloyd Graff’s writing. Our unique stew of articles and constantly fresh material will appear online at todaysmachiningworld.com and can be emailed to you twice-weekly by joining our email list.

I’m convinced my writing will be juicier than ever without having to worry about all the ancillary stuff like postage and printing bills and circulation details and tons of self-serving

advertorials that flacks shower on us to print for their clients who never spend a dime with us.

When I started the magazine I envisioned it as an Internet “Zine,” which was quite avante garde in 2000.

Now I get to go back to the future and follow my calling on the Web. Please continue to join us.

Lloyd Graff

“I’m convinced my writing will be juicier than ever without having to worry about all the ancillary stuff like postage and printing bills and circulation details”

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