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# Today's Machining World

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July 2006 volume 2 issue 7

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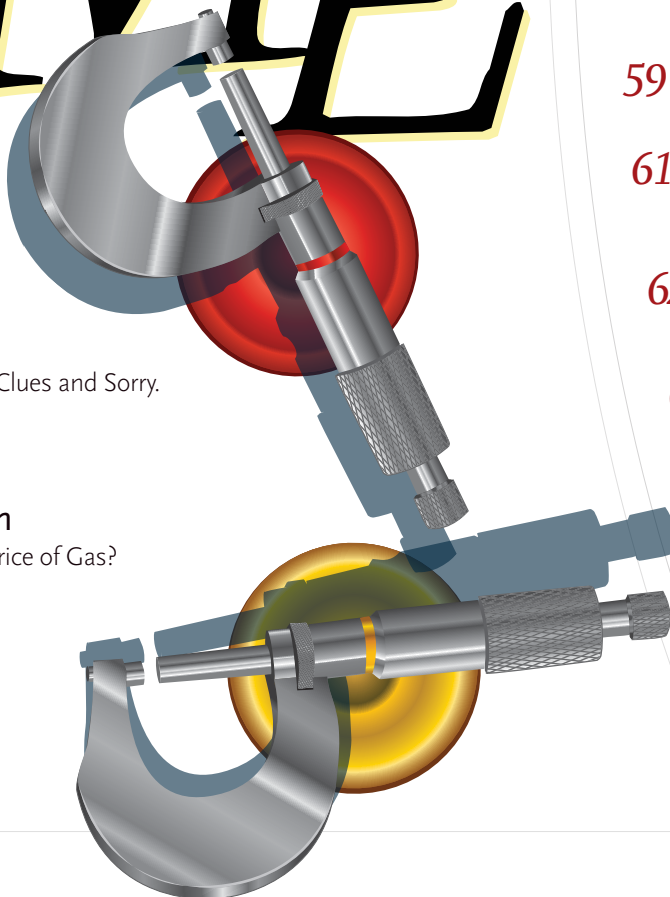
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## editor's note

### Fervor Pitch

I had a disturbing talk recently with a woman who does PR blurbs for several machine tool companies. We conversed for a while, and I asked her if she liked the redesign of the magazine.

She told me that she didn't remember getting *Today's Machining World*. I knew she received it. Then I described some of the memorable covers of 2006 and the powerful stories we featured. She was getting more perplexed as I went on, describing our mission in passionate language.

Finally, she jogged her memory and recalled the "Women in Machining" cover and article. She said that she gets a lot of magazines and can't possibly read them. She wondered why we didn't put machines on the cover like everybody else "because that's what they're interested in, isn't it?"

I was deflated after talking to her because it exposed the charade of business-to-business publishing in dramatic terms. Most magazines are filled with copy that nobody cares about, even the manufacturers who were featured.

It is reminiscent of the old Communist empire when the workers' mantra was "we pretend to work, and the government pretends to govern." Who cares.

Pick up most of the trade rags in this field. The paper is tissue. The pedestrian covers are ads or advertiser provided art. The articles are advertorials – ads crudely disguised as editorial. The magazines are generally dismissive of the readers they allegedly inform.

It galls me.

But in the "who cares" world of industrial magazines – we care deeply. If *TMW* ever loses its fervor to be a great piece of work, you should do what the PR lady does. File it and forget it.

Lloyd Graff  
Editor/Owner

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## War Torn

I recently happened upon your Afterthought column titled “War Torn” in the April 2006 issue and I read and re-read it several times. In 1968, I too was a college graduate, subsequently drafted, also numbed by fear at the prospect of injury or death in combat. The column brought back many memories of an ugly time in our country’s history and my personal one, and I admit to a rising irritation while reading your comments. Several resonate with my experiences, and I feel that a response is necessary.

I was interested in the shallow nature of your aversion to combat. You became a draft dodger not for ideological reasons, which abounded at the time; not for religious reasons, which were frequently advanced as a reason to avoid combat; not for deep personal conviction that would qualify you for treatment as a conscientious objector; but only from an abundance of fear, as if no one else facing combat in Vietnam had as much as you.

Your grief at the deaths in Vietnam of your friends and classmates strikes me as veiled smugness. As you cried for them at The Wall, I wonder if they would have resented your presence there. Too bad those poor bastards had no influential friends, were not as smart, or as cowardly, or as injury-averse as you, or they too might still be alive.

You state that you are a supporter of the war in Iraq. I’m interested in how you support a war as a draft dodger. Do you enthusiastically favor sending other young men and women into harms way to fight the war you support, as long as there is no danger to you and yours?



Why though, I asked myself, after this much time would a person use a feeble reason (the article by Robert Strauss) and an unrelated audience to admit to being a draft dodger. Maybe the admission is cathartic, or perhaps they enjoy a certain pride in their actions. If catharsis, I hope trumpeting your cowardice to your readers gives immediate and complete healing. If it is pride in beating the system through the use of friends in high places so that some other individual, possibly me, had to go in your place, I’m embarrassed that your “little twinge of guilt” isn’t much, much larger.

I served for thirteen months during 1968-1969. Like you, I am grateful for not having been killed or maimed in Vietnam. And I’m grateful my sons are not in Iraq. But I’m also glad that I was not paralyzed by fear, and I remain convinced that despite the outcome in Vietnam, I did the right thing, not the expedient, self-serving thing. If presented with a similar choice, I hope my sons would do the same.

Bud Hoffman  
Lakeshore Automatic Products, Inc.  
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**Bud:** I respect your Vietnam experience. I am neither proud nor guilty about mine. It is an experience that continues to be with me after all these years. I think that every guy our age has Vietnam baggage of some kind, and I used the Afterthought as a vehicle to illuminate my feelings. Your letter is powerful. I hope others will share as eloquently as you did.

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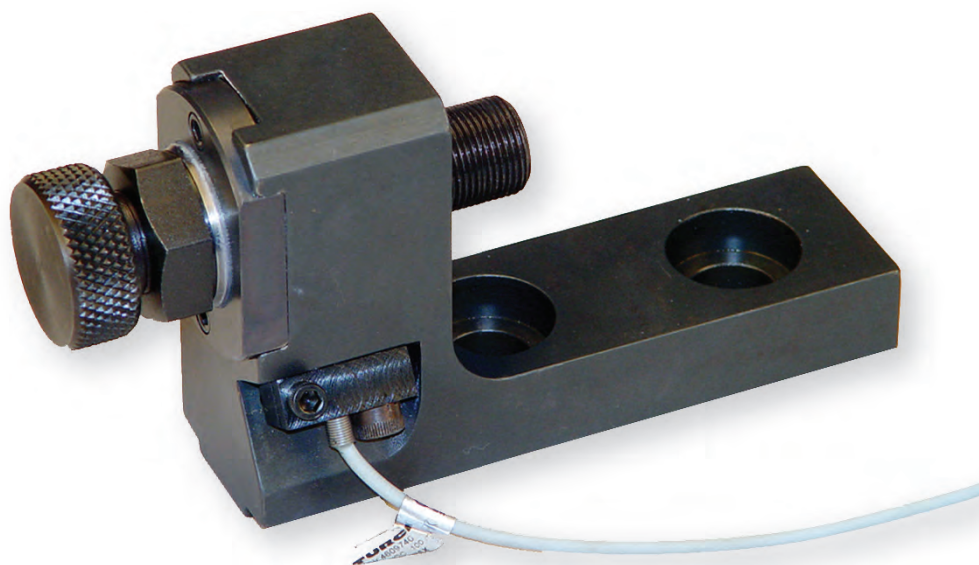
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# Down Under

I think we've been too provincial in this magazine, so starting with this issue, we will regularly discuss what's going on in precision machining around the planet. I called Shane Infante, the boss at *Australian Manufacturing* magazine, to see what's up, down under.

He portrayed business as "steady" but then described a scenario that sounded a lot like here. Australian automotive, which has been the core of its metalworking industry, is flagging. Asian competition is nibbling at Ford and Holden, which have traditionally dominated the local market. Toyota and Mitsubishi also manufacture in Australia – where they drive on the wrong side of the road, incidentally.

Aerospace is also an important segment, and it is struggling in the world market. He says that the niche markets, with low-volume and high value-added, are growing, particularly medical. Smaller, innovative businesses are propelling this sector. Mining and natural resources exploration is booming in the Western part of the country. He says Brisbane is especially hot.

Developing new machinists is a challenge in

Australia. The country is relatively open to immigration, and a large number of skilled people have come from South Africa. They are also recruiting some people from India and the U.K.

New Zealand's metalworking industry is connected to Australia's by proximity. Jim Graff was in the country recently on business. He reports that higher volume manufacturing is either moving to Australia or being abandoned because of cheaper sourcing offshore. Niche markets, served by CNC machining, are still viable in Auckland. New Zealand is losing population despite a big influx of immigrants from Hong Kong in the late 90's. Jim says that walking down the streets of Auckland, he saw mainly Chinese people in the shops.

Both countries are environmentally sensitive and have business developing on the alternative energy front.

**Alex Konscek is home** again. He is living in the California-style home he dreamed of building for twenty years. He says it feels good to him to speak his language, to hang out with the friends and family he left 32 years ago. Home is on a grassy hill fifteen miles from Budapest, Hungary.

Alex left Communist Hungary folded up in the tiny trunk of a European Ford with his wife Elizabeth and 3-year old son Laszlo. He snuck across the border of Yugoslavia into Italy to live the dream of freedom in 1974.

I interviewed Alex, a business friend of twenty years, just before he left his American life in Houston to live his enduring dream of smelling the roses in Hungary. That was 16 months ago.

I talked to Alex again in June of 2006 on the phone from Budapest and he sounded happy. He had suffered through the loss of the shipping container, which had most of his belongings. The box had been sent to Germany from Houston, where it got lost like a dead letter. It took him two months of living out of a suitcase to connect with his container.

Alex had been a plant supervisor at PGI Corporation in Houston, a machining firm that grew into an oil and gas components maker. Alex was very good at keeping the plant running efficiently. He loved America and his swimming pool. He liked Houston, except when it got too sticky. His son lived there and his wife managed a medical center.

But at 55 years old, a fixture at PGI, comfortable financially, loved by his boss Spence Nimberger, he and Elizabeth left it all for that plot of land near Budapest.

I was shocked when Alex told me he was leaving his beloved America. Laszlo, his son, was staying in Houston. The allure of the old country was overwhelming.

Alex is now loving his house, which he built to last 200 years. The location is close enough to family and friends to enable an active social life, and far enough away that visitors have to call ahead if they want to visit. He hasn't done much traveling yet, but now that the house is pretty much finished he'll do more.

He had thought he might start a mini-storage business, but that is on hold. Life is sweet, even if the Hungarians are just getting the hang of life without Communism.

I'm happy for Alex, but I miss picking up the phone to talk Acmes and Conomatics and listen to a Hungarian rhapsody about a beautiful Texas sunset.

**Ron Gettelfinger of the** UAW and Rick Wagoner of GM have survived to fight another day. Gettelfinger won a new four-year term at the recent union convention in Las Vegas, and Wagoner campaigned to keep his job at the April corporate Board Meeting. Neither man is popular with the troops, but both of them held on because the alternative looked worse.

Now comes the hard part. Eventually Delphi's core issues

## h1&gt;swarf

must be addressed. Even though Delphi is in Chapter 11, Steve Miller and his creditors are pivotal players in a long drama, now at intermission. All of the parties are aggrieved – the Union's members feel they are being chopped and starved, GM feels they are paying Delphi too much on 5,000 contracts, and Delphi feels GM has been a bad Dad.

What we have seen is that the key players are skilled politicians. They are survivors. But do they have the courage and the political capital to forge the solutions, which can pull their organizations close enough not just for an exhausted settlement, but for a real chance for a future.

There is more hope today than eight months ago, but I remain a skeptic.

**A big client of our** machinery business, with 96 National Acmes making fittings, just sold out to a private equity firm in Minnesota. Another good client making automotive hardware cashed out to investors last year. Both firms are hard core multi-spindle screw machine outfits in the Rust Belt that survived the China onslaught successfully.

We also have received the announcements that Harsco's Sherwood Selpac division in Lockport, New York, is shutting down its screw machines, as is Newell-Rubbermaid's Bernzomatic plant in upstate New York.

From my observation, big companies in the U.S. do not believe they can compete in the high volume screw machine business here. The surprising counter to that is that there is a lot of private investor money willing to bet that high volume, high precision work is viable smack dab in the middle of high cost labor markets like Chicago, Cleveland and Buffalo.

**What are the** markets telling us today? Copper has corrected from speculative nuttiness to just "mighty expensive." Gas is \$3 in Chicago, \$2.75 in Charlotte. Home prices are being shaved by the new builders as inventories inflate. The stock market has acid reflux. Used cars are hot and SUVs are cold. The Democrats will probably take the House but not the Senate in November. Tuition prices keep rising much faster than inflation, yet applications for the freshman class go through the roof. Starbucks prospers with \$4 Frappachinos and WalMart can't catch cold. eBay spends \$2 billion for Skype voice over internet protocol software which they give away. Put it all together and it spells – duh?

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In a conflicted economy buffeted by a Persian rug peddler in Tehran and an untested Uncle Ben at the Fed, I am conservative today. We see the big companies buying their own stock rather than building new factories. Maybe they know something. If you can't figure out which way to go, hunker down for awhile.

**Congratulations are** in order to Boston Centerless for being named a 2006 Silver Medal recipient of the "Northeast Shingo Prize for Excellence in Manufacturing." The Shingo Prize is recognized as a premier manufacturing award and recognition program in North America. The prize is given to companies that achieve world-class manufacturing status through the implementation and practice of lean manufacturing principles. Over ten years ago, Boston Centerless embarked on a continuous improvement program in order to promote lean manufacturing concepts and eliminate waste throughout the organization. Boston Centerless is the first metal working contract manufacturer to win the Shingo Prize in North America.

**A fascinating business** drama is being played out these days in the barren plains of eastern Washington and Oregon. Google, Yahoo and Microsoft are all investing

hundreds of millions of dollars on enormous computer farms in Wenatchee and Quincy, Washington, and The Dalles, Oregon. Why there? Cheap power and relative proximity to Seattle and Silicon Valley.

The abundant power is thanks to the massive infrastructure investments for Alcoa to make aluminum several decades ago. Inexpensive electricity now enables the computer search giants to cool their thousands of interconnected computers on the cheap. Alcoa is long gone, a victim of low demand and tough Russian competition. The area also benefits from the enormous investment in fiber optic capacity in the Northwest during the late 90s telecom buildout craziness.

People are never smart enough to modulate investment to mesh with demand, so we always end up with boom and bust cycles. Usually, the capital investments pay off, but often, not for the visionaries who convince the lenders that vast riches lie just beyond the hills which are visible. The fiber optic network has been compared to the Transcontinental Railroad built more than 100 years earlier. The benefits of opening up the West took years to be seen, but the payoff to the country, and the Stanford, Huntington and Crocker families was incredible in the long run.

I have to smile when I read about Yahoo and Microsoft build-

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# swarf

ing in Quincy and Wenatchee, Washington. I made a special trip to the area a few years ago just to taste the apples for which the region has always been synonymous. I was looking for beautiful, obscure varieties like Gravensteins and Melrose, but dusty Wenatchee was about growing Delicious and Granny Smiths by the billions. The preoccupation in the town was the price by the bushel in the face of Chinese apple cultivation competition. I did drive into some orchards to taste the apples off the tree. They were nice but not as flavorful as my Michigan or New York memories.

Search engines, cheap power, apple growers, Mexican pickers, fiber optic diggers, refugees from Alcoa – a new apple sauce is being mixed east of the Cascade Mountains.

**José Contreras** has won fifteen straight games for the Chicago White Sox and is arguably the best pitcher in Major

League Baseball today. But when he came to the White Sox last season from the Yankees, he was a mess.

In Chicago he was reunited with fellow Cuban defector Orlando Hernandez – “El Duqué” – a declining pitcher, but a great student of the game. El Duqué watched Contreras struggle with his command in start after start and noticed that his stuff was nowhere near what it had been in Cuba. Contreras had changed his motion and was pitching consistently from straight over the top, similar to the superb Roger Clemens, but not the way he had achieved success in Cuba.

Hernandez approached Contreras after a disastrous outing and chastised him for trying to pitch like an American. “Pitch like a Cuban,” he admonished. José looked at some old video and saw that he had better stuff and greater command when he varied his arm angle and threw between sidearm and three quarters. He started “pitching like a Cuban,” found his confidence and is now virtually unhittable.

José Contreras knows what to do know. The challenge for all of us is to find our sweet spot, our unique ability. It’s the place where our confidence resides. We may find it as children, or we may experiment for much of a lifetime to discover it. I am not a White Sox fan, but to watch Contreras pitch today is to watch a master.



Front: Paul, John Back: Bill, Ed

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Talking about one Cuban brings me to another Cuban, perhaps the most remarkable businessman in America, Mark Cuban.

Cuban is usually characterized in the media as the crazy owner of the Dallas Mavericks team in the NBA. He is a maverick, but this guy is absolutely brilliant, and following his moves gives me insight into the path of business success.

Cuban made his first fortune developing an Internet content business in the early 90s, and then selling it out just before the bubble burst for close to \$3 billion. Cuban understood the promise of the Web, but he also knew that he would make infinitely more money selling the business to an incredibly rich and stupid buyer than running it himself.

Cuban took the money and did something brilliantly crazy. He bought the Dallas NBA team that was languishing. Cuban is a basketball nut. He absolutely loves the game. He became the face of the Mavericks, going to every game, yelling at the officials hugging the players, working out with the team, and involving himself in every aspect of the franchise. He quickly turned the team around, started selling out every game and literally became the new energetic face of an NBA that had been deteriorating into tattooed thugdom.

Cuban saw that entertainment was going to be a huge growth industry in the first decade of this century. With his wealth and amazing energy and self-confidence, he decided to do movies and TV.

With his partner Todd Wagner he recently produced the Edward R. Murrow ode, "Good Night and Good Luck," a hit which may gross \$80 million with video, and he produced "Akeelah and the Bee," in collaboration with Starbucks. Both were low budget movies with excellent casts and strong stories.

Cuban has put together a string of theatres around the country to show his movies and build an audience outside of mainstream venues.

He has also bought HD television channels, where he can show his movies. Cuban sees potential in documentaries, which will go on HD. He is hiring Dan Rather to develop programming for TV, which will give him a high profile star to capitalize on.

Cuban has made himself into a brand and a celebrity with his antics with the Mavericks and his "feud with the NBA." I would never underestimate this guy who always, "pitches like a Cuban."

# swarf

I read a provocative piece in the *Harvard Business Review* about the counter-intuitive notion of deliberately making mistakes in order to challenge your current working assumptions.

My first thought was, "Why would I go out of my way to goof up when I was so good at it already without trying?" The concept is to jump out of your comfort zone to find out if some weird idea might work.

I tried this approach on my softball team. The conventional thinking is to put your best hitter third or fourth to drive in runs. I've tried putting my best hitter first. Another stupid idea was to bat my hitters in alphabetical order, usually out of sheer desperation when we were on a losing streak. This was not successful, but it was suggestive of putting some good hitters mixed in with bad hitters so we would not have totally dead innings with three bad hitters batting consecutively.

I wonder if the deliberate mistake idea would be useful in machining? If you totally violated the conventional machining speeds, you would probably break a lot of tools, but perhaps you would also discern something valuable about either what to do or what not to do.

Another interesting error to try might be to bid extremely high on a series of new jobs and extremely low and see what happens. Or have a deliberate "power failure" in the office, which would knock out all computers and telephones. Would the company productivity go up if you had a "no power" day every week or two?

You have probably heard by now that Gene Haas, the owner of Haas Automation (see January's interview) is in a major legal hassle with the Federal Government over taxes.

I have no idea whether the case against Haas has any validity, but it is a serious matter for the company, which has been so closely identified with the man whose name is on every machine tool it sells.

Haas needs to quickly address the worries of its dealers. Haas competitors will certainly pounce on any perceived weakness in the firm. IMTS looms as a hugely significant event now for both Gene Haas and the company. He must be visible and engaged, or he risks damage by the rumor mongers at the Chicago show this September.




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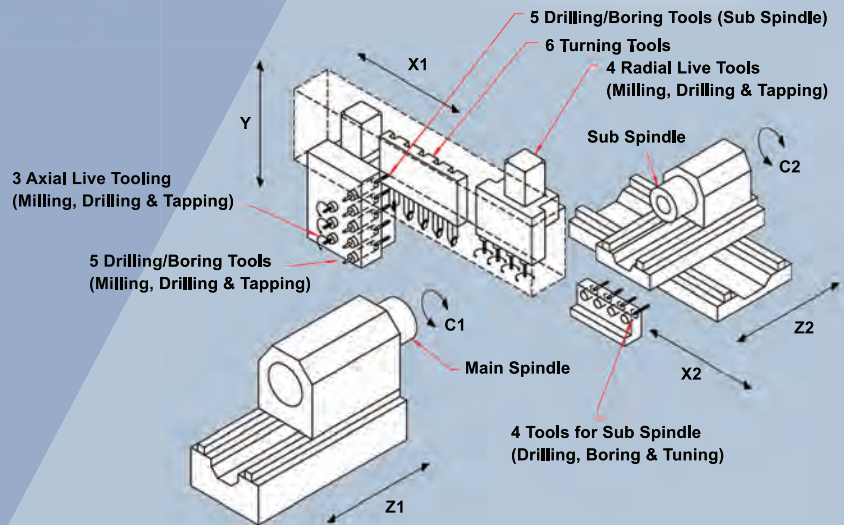
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# New Employee?

I am a bookkeeper with a small company. My boss, one of three brothers who own the business, is married with three kids. Last month, he asked me to place a considerably younger woman, whom I have never seen in our shop, on the payroll. A work associate told me the woman is my boss's mistress. I processed an expense account report for a tradeshow trip, and I noticed dinner receipts for two and hotel bills showing double occupancy. I knew his wife was home with the kids during the show because I saw her that week at the hockey complex where our kids play. His two brothers are absentee owners (both get paychecks) whom I don't think would approve of their brother's actions. Should I confront my boss? Should I tell his brothers? The amount is not huge, but it's better than my paycheck. The work associate says my boss is an adulterer who is using the company's money to fund his own indiscretions, and I ought to report it to his brothers.

**RUSSELL SAYS:**

Family businesses are often piggy banks for the owners who use them to fund all sorts of activities, including some which are marginally related, if at all, to the operation of the business.

While you have your suspicions, you have no clear evidence of illegal conduct (tax fraud, money laundering), and there are a variety of innocent explanations for your boss's conduct. Perhaps Ms. X is a leading expert on quality systems, and the restaurant tab reflects a working dinner in preparation for a sales pitch the next day. Maybe the hotel bill shows double occupancy because his wife, who planned to come, stayed behind to take the hockey player to district finals, which no one expected the team to make. If Ms. X attended the conference, you might ask where her hotel receipt is. But, she may say she stayed with her old business school roommate, who happens to live in the town where the conference was held.

While there is no question the circumstances are suspicious, you don't have the facts. "Pulling the trigger" at this point may only embarrass you, jeopardize your job, and unnecessarily disrupt what may be happy marriage. On the other hand, the brothers are surely entitled to know of the waste of their corporate assets. The only problem is, you don't know if your boss is looting the corporate kitty or if this

is a legitimate expenditure. All you know is that you put her on the payroll, and you don't see her at the office. Even if she is paid to be candy for your boss, perhaps his brothers are fine with it. After all, they are drawing salaries instead of dividends even though they don't show up for work, because there are substantial tax advantages for doing so. Let them look at the balance sheet at their next meeting. If they have questions for you, answer them with the facts, not your suspicions.

You are there to keep the books, not to serve as his moral compass or the eyes and ears of his absentee brothers. Unless you know that this activity is fraudulent, and you are being asked to participate in illegal conduct such as the preparation of fraudulent tax returns, you are best off minding your own business.

*Russell Ethridge is an attorney in private practice in southeast Michigan. The material provided in this article is for information purposes only and does not constitute legal advice.*

# fresh stuff



## Axis to the Maxis

Mazak has introduced the Variaxis 730 5-axis vertical machining center, a combination of a high-precision table with 150 degrees of tilting range and a 5-axis vertical machining center. The Variaxis 730-5X achieved cycle-time reductions of 24% in cutting tests on identical workpieces. Other characteristics include maximum spindle speed of 10,000 rpm, 40 hp maximum spindle power, 387 ft-lbs. maximum torque, and 1575 ipm rapid traverse rate in X, Y, and Z axes. The table size on a single-pallet machine is 24.8 in. x 19.7 in.

The Variaxis 730-5X is environmentally friendly to operate. Air consumption is reduced by 50% during machine operation, its lubrication system reduces waste oil by 57%, and coolant life is extended an extra 50%.

The Variaxis 730-5X uses programming with the Mazatrol Fusion 640M CNC. Cutting conditions are automatically determined by the Mazatrol, and edited cutting conditions are stored in CNC memory.

For more information, visit the Mazak website at [www.mazakusa.com](http://www.mazakusa.com).



## Dual Action

The new HHLV-1 from Haas is a hybrid precision toolroom lathe that has a full CNC control, but can also be operated manually. The distance between centers is 18", and the cross-slide travel is 8". The machine has a part swing of 14" over the guide rail, with 6" over the cross slide. Spindle speeds are infinitely variable from 0-3,000 rpm, and the 5C collet nose accepts a variety of workholding options. The HHLV-1 has a compact 77" x 32.5" footprint.

The machine comes standard with the Haas Intuitive Programming System, a conversational operating system that guides the operator through basic CNC operations. In manual mode, the standard hand wheels and precise digital readout ensure high accuracy and ease of operation.

For more information, visit the Haas website at [www.haascnc.com](http://www.haascnc.com).



fresh stuff

## Dur-Able

Mori Seiki's has unveiled the new DuraTurn CNC lathes and DuraVertical vertical machining centers. The

DuraTurn line was developed with an extremely rigid body to minimize the effects of vibration and increase accuracy. With four models of varying size, DuraTurn machines allow for a maximum turning length ranging from 13.2" to 20.9". Chuck sizes of 6", 8" and 10" are available. All DuraTurn machines contain 12 tool stations and a maximum rapid traverse rate of 944.9 ipm across both the X- and Z-axes. Spindle speeds range from 3,000 rpm to 6,000 rpm.

Three models of DuraVertical are available, with work envelopes ranging from 35.4" x 23.6" to 53.1" x 23.6". Each of the machines features a No. 40 taper spindle with a maximum speed of 10,000 rpm. Rapid traverse rates of 1,417.3 ipm are possible on the X- and Y-axes, with a maximum rate of 787.4 on the Z-axis.

For more about Mori Seiki, call 847-593-5400 or visit the company website at [www.moriseiki.com](http://www.moriseiki.com).



## Maus in the House

Maus SpA of Italy and the Maus Multitasking Machine (MTM) are now offering a vertical turning machine for end wheel component, as well as gear ring, bevel gear and bearing manufacturers. It is offered as a stand-alone machining center or as a built-in system with transfer lines and ancillary robotic devices.

These centers incorporate secondary machining operations such as milling, drilling, masking and measuring. Typical parts run on the three MTM models available range from 200mm to 1000mm diameters (7.87" to 40" dia.). All MTM models are controlled by the Siemens SINUMERIK 840D, a PC-based CNC that allows multiple axes, spindles, robotic handling, transfer lines, inspection devices, safety sensors and machine stops to be monitored and controlled from one human machine interface terminal.

For more information, please contact REICHCOMPANIES at 205-655-2121 or visit the company website at [www.maus.it](http://www.maus.it)



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- Multi-Task Machining
- Tombstone Machining
- Wire-EDM

## Rebel With a Cause



Edge Technologies has introduced the New Rebel 120 Bar Loader for CNC lathe automation. The new Rebel 120 an 8-120mm diameter capacity range for feeding round, square and hexagonal bar stock into CNC lathe spindles. High speed machining is possible with the use of a properly sized lathe spindle liner. Spindle liner changeover is accomplished very quickly by the open architecture design of the top cover and special “swing out” style pusher carriage.

The loading storage capacity is 1000 mm (40") deep. The inclination of the storage table can be adjusted to give the loader a “soft-load” effect for large diameter bars. Bars are loaded from the rear of the bar feeder. Bar stock with lengths of 250mm (10") - 1520mm (60") can be loaded. The maximum bar length is determined by the spindle length of the lathe and the chucking package. The operator enters the bar diameter and part length, the Rebel automatically adjusts the parameters for loading, feedout, and bar change.

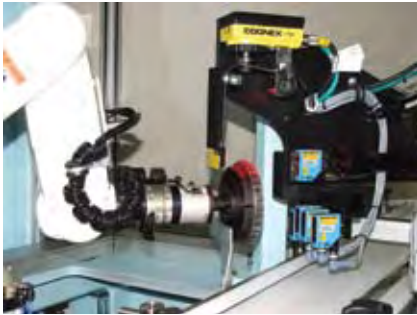
For more information visit [www.edgetechnologies.com](http://www.edgetechnologies.com).

## Inspector Gadget

Belden Machine Corporation has introduced a vision cell equipped with an articulating robot arm that pulls product off a conveyor feed line, presents it to a single or multiple camera viewing station, then returns the part to the assembly process or rejects it into containers segregated by error factors. It is capable of examining up to 150 component features in only five seconds. During the inspection pro-

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cess, various product features are inspected, including overall dimension, component presence, relative position, even pressure and markings.

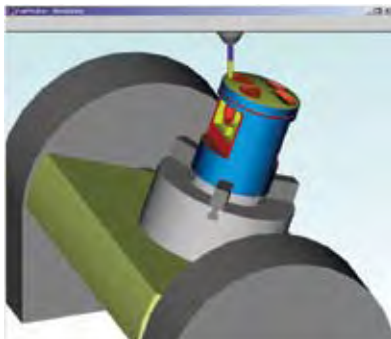


A 5- or 6-axis robot features an automatic tool changer for various parts, each programmed into the onboard PLC/HMI console. The Belden vision cell performs automatic validation cycles, based on the preset values programmed. Program cycles can be reviewed on the touch screen in real time. The cell has onboard Ethernet connectivity for uploading data to a host process controller.

The Belden cell features a fabricated steel machine frame and camera mounts, an extruded aluminum safety enclosure with locking guard door and robotic safety circuit. The cell can accommodate scalable payload capacities of 0-2.5kg, 2.5-5.0kg or 5.0-10.0kg.

For more information, please contact Belden Machine Corporation at 708-344-4600 or visit the company website at [www.beldenmachine.com](http://www.beldenmachine.com).

## Updated



The newest version of PartMaker® CAD/CAM software, Version 7.8, features the PartMaker Production Milling Module, which automates the programming of multi-axis milling operations including multi-piece setups, tombstone fixtures and 4th and 5th Axis rotary attachments.

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PartMaker users can now easily simulate the machining of multiple parts on a table, with each part assigned its own work offset and work coordinates. The user can simulate the optimization of machining across multi-piece setups by either completing machining on a single work piece or using common tools across all fixtures before making a tool change. The new "Show Finished Part" feature allows the user to see a completed machined part where various faces of that part are being machined in separate fixtures. Fixtures can now be dynamically positioned in 3D on a machining table or tombstone.

This latest version of PartMaker SMW for Milling supports 4-axis milling for setups that support continuous rotary milling. It also allows surface machining in reference to inclined 5-axis planes.

For more information, please contact PartMaker Software/IMCS Inc. at 215-643-5077 or visit the company website at [www.partmaker.com](http://www.partmaker.com).

## Lens Crafter



New QUICK IMAGE® QI-2017RL and QI-3017RL Series 2-D vision measuring systems from Mitutoyo America Corporation employ a bilateral telecentric lens train capable of focusing on multiple surface levels at the same time. The result is reduced focusing effort, translating into error suppression and increased speed for higher measuring throughput.

With its extremely wide field of view (32mm x 24mm) and great depth of field, the Mitutoyo QI-2017/3017 systems can, in one view, completely capture images of workpieces with varying thickness and levels. These systems are able to simultaneously image features found on items such as tool edges, connectors, PCBs, cylinder forms and other solids with difficult level transitions which conventional vision systems find difficult to

Today's Machining World

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measure. The QUICK IMAGE QI-2017/3017 high-precision, mega-pixel CCD color camera captures elevations and contours with great accuracy and clarity for viewing, inspection or analysis on a desktop PC or laptop. Large XY travel ranges of 200x170 mm (QI-2017) and 300x170 mm (QI-3017), high maximum work-piece load and high-efficiency optics enable the QI-2017/3017 to be productive across a wide range of low- to high-volume inspection applications.

QI-2017/3017 comes standard with QIPAK® software enabling pattern matching inspection via a CAD user template. QIPAK makes it easy to achieve repeatable, programmable measuring sequences, high evaluation speed and automatic report generation.

For more information, please contact Mitutoyo America Corporation at 630-978-5385 or visit the company website at [www.mitutoyo.com](http://www.mitutoyo.com).

## Pencil Grip



Sandvik Coromant's has introduced their new CoroGrip pencil collets. The collets are capable of reaching into deep cavities and pockets, and machining challenging areas without compromising part accuracy, part repeatability or stability, making them particularly useful for the die and mold industry.

Sandvik Coromant's broad selection of CoroGrip pencil collets are available for endmills with a shank diameter of 6, 8, 10 and 12 mm.

Sandvik Coromant has also introduced its CoroGrip precision power chucks, which provide outstanding clamping forces and a level of high stability, making them ideal for high-speed machining. Together with CoroMill Plura endmills, CoroGrip power chucks are the perfect combination for minimum run-out and the highest level of precision.

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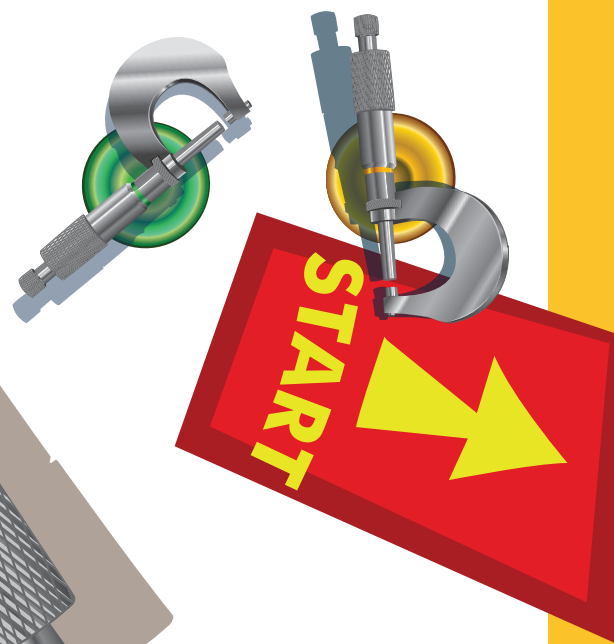
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# THE HIRING GAME



Resume  
Lying:

*Risks, Clues*

*By Robert Strauss*

Earlier this year, David J. Edmondson, the CEO of RadioShack, was fired after a newspaper investigation showed his resume was padded with two degrees in psychology and theology, degrees he never received from a university, and the university he claimed he attended was not even accredited.

*OK, you say, but these are high profile jobs and isolated cases. This would hardly happen in the fraternal machine shop world.*

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# Hiring Game

# And Sorry

"I find on resumes, if someone rubbed up against it, they put it on the resume as a skill, even if they are not really experienced in the area," said Tom Medvec, founder of Medvec Resources Group, a job placement firm in Valley City, Ohio, specializing in machine tool personnel. He said it with an uncomfortable tone, halfway between a grunt and a forced laugh. "I think over the years, it has just gotten progressively worse. I think manufacturing may be worse in this than football coaches."

The numbers from recent surveys may well bear Medvec's suppositions out.

ResumeDoctor.com, a Burlington, Vermont, company that helps job seekers, particularly at the mid-level, to write new resumes, wanted to discover how many of their clients were telling them the truth about their pasts.

"What we found was shocking," said Brad Fredericks, the company's co-founder. "We took 1,000 resumes at random and discovered that 42.7 percent of them had significant inaccuracies. Forty-two-point-seven percent. That was unbelievable to us."

Fredericks said that the embellishments, or outright lies, came primarily in three areas: job title, dates they held the job, and various things in education.

"What is most amazing is that these three things are easily verifiable. If someone is lying about these things, they are probably lying about a lot else," he said.

One large Midwestern machine shop executive, who did not want his name used to keep his employee-seeking methods safe, said he now rarely looks at resumes because he has stopped believing what is written on them. Instead, he said he has devilishly resorted to the bane of unprepared students everywhere – the pop quiz.

"Before they walk into the shop, I give them a little questionnaire," he said. "I ask things like what particular attachments have you used on this or that machine? I ask them technical terms. I ask them something little about a machine, something only someone who has worked on one will know."

"It is amazing that some people still answer questions so stupidly," he said. "You ask them what they worked on, and they will say, 'Well, it was a big machine.'"

"Look, for the most part, people are honest," he said. "But sometimes, people just seem to think they can lie their way into a job. I put someone like that on a machine, and my whole operation can go south."

Matt Fitzgibbons, the human resource manager for Manth Brownell, a quality turned parts company in Kirkville, New York, 10 miles east of Syracuse, said he has been "cautious" of late, looking at resumes, particularly in the fudging of dates of employment.

"The economy here in upstate New York has been a bit rough in the last six years, so I see resumes that are more



vague in when they worked. A '2004' could mean they really worked last in late 2003 and then started back in 2005 because some company closed, or whatever," he said. "It's hard to fool me though, since I know which companies folded when. It's a shame, but some people feel they have to do that."

*"I find on resumes, if someone rubbed up against it, they put it on the resume as a skill even if they are not really experienced in the area."*



Further, Fitzgibbons said, fewer former employers are willing to give references than before. He said they are wary of potential lawsuits from ex-employees, and all that makes his resume-checking job harder.

"On the other hand, I have noticed more honesty in some areas," he said. "Machinists know we would know if they can't work a certain type of machine. Some will actually say they haven't worked on that machine but think they could do it. Sometimes, we do give people like that a chance, especially if their past work record is good. We have to be willing to do a little training to get a good employee."

Another screw machine executive for a company nearby, in Rochester, New York, said his belief in the truth of resumes is so shaken, he has devised a three-step interview process. It is cumbersome, but he believes he has to do it these days.

"We take the resumes we like, mail them a letter and ask them to call us to schedule an interview," said the executive, who asked not to be identified, fearing his method might lose him potential good employees. "You wouldn't believe it, but at least 30 percent of the people never respond to that. It may be an indication of cheating, I don't know. From that, in the phone call, we do a quick skimming of a few questions. Then we do the more formal interview."

A lot for a machinist? In the past, maybe, said the executive.

"A few years back, employees might have been like so much meat. You sometimes hired two when you only needed one, just in case someone didn't work out," he said. "But we have all learned to be slimmer now in this economy. Each employee these days is vital, so you have to be more careful, just when resumes are possibly being more doctored."

What is strange about the O'Leary, Zarrella and Edmondson examples is that they would have gotten their jobs without the lies they put on their resumes. Their track records of work performance at earlier jobs is what got them to be finalists for the positions in the first place.

On the other hand, according to Lance Solak, founder of LSI Manufacturing Solutions, a job placement service in Brunswick, Ohio, for the machine tool industry, you can't say you worked on some machine when you did not these days. The business is getting too specialized.

"Five years ago, our business was completely different. Most everyone used the same machines, and they were not difficult to use," said Solak, who has been working in human resources for the machine tool trade since 1982. "Then the lesser tolerance business started going out of the country, to maybe China or Mexico. Bit by bit, people had to learn CNC Swiss machines, which are just more complicated. It is like a stick shift versus an automatic.

"So suddenly someone is out of a job where he had worked for 20 years, and knows he has to be working on a different kind of machine," said Solak. "What would you do? Maybe you would lie too if it meant putting bread on the table."

*"Many resumes are sent electronically these days, it seems there is a kind of looser ethics about what appears on a computer screen."*



Yet Solak and others are baffled by the amount of lying that goes on in resumes for plant management and upper level jobs in manufacturing. Unlike machine operating jobs, which because of the CNC Swiss revolution are relatively numerous, operations and other management and executive jobs are competitive. Still, said Solak, it is often pretty easy to root out resume misbehavior.

"They leave something off, and maybe we can't find it, but if they put something in, well, that is easy," he said.

"When someone says, 'I have extensive experience in this,' I can tell when it is BS. I know the companies in the business, and you had better be listing the right ones. It is pretty easy after all these years of doing this for me to check you out."

In fact, there are a lot more people being checked out than there used to be. A 2005 survey conducted by the Society for Human Resource Management said that almost half of human resource specialists had significantly increased the time they spent checking out resumes in the two years prior. Further, the survey said 52 percent had started contracting out a lot of their background checking to firms like Solak and Medvec, professionals with long experience at, as Solak said, "BS" detection.

"I had one a few weeks ago that became a little embarrassing," said Medvec. "There was a guy who was applying for a quality manager's job in the South, but he could not even validate a PPATH. He got down there, and it turned out the engineer could do the validations better than he could. I have found now that people, even when you speak to them and look them in the eye, will embellish what they have done or what they know. It is amazing how they think they can get away with it."

Dr. Richard White, the director of career services at Rutgers, the State University of New Jersey, said he believes the upsurge in lying on resumes is a direct outgrowth of the Internet age.

"Many resumes are sent electronically these days," said Dr. White. "It seems there is a kind of looser ethics about what appears on a computer screen. We work very hard to prepare people for the realities of the work place, where any kind of misrepresentation can be damaging to a career.

"It does not make a lot of sense," he said. "At some point, you are going to be caught, so why not just keep it above board."

Dr. White said Rutgers did a random survey and found that 20 percent of students submitting resumes to the career services office lied about their grade point averages, something easily detectible. Some of them rounded up to the nearest tenth, which is, to be sure, not all that bad in the scheme of things, but many, he said, just added a whole point.

"If they had a 2.6, they made it a 3.6," he said. "It is as if they were going to pass it off as a typo if they got found out.

"I just think people are more loose about information than in what we called the good old days," Dr. White said. "It used to be that you had to submit a paper resume every time you applied for a job. I think that it must have been that that was a tangible act, something you had to repeat physically and mentally, so you felt yourself more accountable each time. Now it is pushing a button, sending a bunch of type on a computer screen off somewhere. It is like it just isn't real."



*"In the mid-1980s, machinists did not use recruiters, so they didn't have resumes. They filled out applications and waited to be called."*



For the machine operator, too, this is a different era. In those similar good old days, if a machine operator wanted a new job, he or she usually just went down the road to a shop or manufacturer and maybe filled out an application or just talked to someone. Now, more and more, manufacturing employers are asking for formal resumes.

"Certainly, when I started, in the mid-1980s, machinists did not use recruiters," said Medvec. "So they didn't have resumes. They filled out applications and waited to be called. Now, with recruiting more prevalent in the skilled trades and all the job-dot-coms, suddenly these guys need resumes. They don't know how to do them. Then they worry that they aren't good enough, so there is more and more lying going on. It is sad, but it is true."

The way out is either a long one of education or a short one of cutting back. Dan Walters, a plant manager for American QC Systems, a service subsidiary of American Torch Tip in Bradenton, Florida, said he looks forward to a future where machinery is so sophisticated, the skill of the operator will be in choosing the right part, not honing the tool.

"We've actually tried to minimize the amount of workers we need who have to know sophisticated things," said Walters. "We've been hiring a lot more unskilled workers, especially on second and third shifts. We've been going to different kinds of machines. It has sometimes taken us years to develop the right ones with the right parts, but that way, we don't have to worry about false resumes and things like that."

Part of the false-resume syndrome may be, strangely enough, the fear that American manufacturing is going through a rough patch. Headlines scream out about tens of thousands of jobs being lost in places like Delphi and General Motors, yet machine shops routinely have tool-making jobs available.

There is a disconnect there, though, said Medvec and Solak, the head hunters. First of all, the jobs the people are leaving at Delphi and General Motors are often 25-year jobs with huge benefits, something smaller shops can't, or hardly want to match. Second, many of those workers have been doing the same thing for many years, so they may not have the training to work the new machines at another employer. Third, there can be a geographic malaise. Someone losing a job in Ohio may not want to pick up and move to Kansas or Indiana or New Jersey for another job.

"The big thing, too, is that things are going so well in some shops that there is no time for training," said Solak. "If I've got to run at full capacity now, I can't afford my superstar machinist to spend a few days teaching someone to use the CNC Swiss."

So the machinist lies about his qualifications and hopes he can figure things out when he gets on line. In a strange way, there needs to be a small shop slowdown, so that more people get through training on the more precision machines, according to Medvec.

"It will happen eventually, just a catch-up," he said. "Then people won't have to lie, I guess."

"It may well be all out of fear," he said. "Fear that there will be no jobs. Fear that a hole in employment will not get you the job. Fear that if you were at a company too long or too short – that isn't good. Maybe it is the fear of the Internet, too."

Before it was just Joe down the street competing with you for a job, and maybe you would both get one, and everything would be fine. Now, it is the guy in Iowa on the Internet looking for your job too.

"The guy on the machine, the guy who is his supervisor, the guy even in the CEO chair, all could be lying. That is why more companies are coming to us," said Medvec. "I don't want to make it sound like lying on resumes is good for my business, but my reputation is on the line when I see that lie on the application, so I will do my best to make sure the employer doesn't have to deal with it."



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# The Crude Truth

The Crude Truth



WHAT'S UP WITH THE PRICE OF GAS?

BY JERRY LEVINE

I worked for 35 years in all aspects of the oil industry, including 20 years debating energy and environmental policy in Washington, so now people ask me why the price of gasoline is so high. The simple answer is that supply and demand are very tight. But, there's so much more.

These are some of the factors which control the price of gasoline: the cost of crude oil, available refining capacity, higher marketing profits and taxes when prices are high; the springtime switch over to make reformulated gasoline (RFG), MTBE lawsuits, ethanol mandates; and the devaluation of the dollar.

As of early June, the Department of Energy (DOE) says the average pump price of gasoline is up 77 cents/gal from last year. There are three pieces to this rise. Crude oil prices are up 40 cents/gal; refinery prices are up 24 cents/gal; and marketing margins and taxes are up a total of 13 cents/gal.

Crude is up mainly due to increased demand. Production is up slightly, but demand has caught up with supply, and there is very little spare capacity left in the system. The good news is there is much undeveloped crude oil capacity available, but it takes some time to develop. There is also a fair amount of political uncertainty – more than in the past – that has put a security premium on the price of crude. Uncertainty and lower production rack many countries – Iraq, Iran, Nigeria, Russia, Venezuela and Bolivia to name a few. It's hard to get a precise number, but I've seen premiums of \$2 to \$7 per barrel quoted. Fear of increasing prices causes some hoarding throughout the system, from the large oil companies all the way down to individual consumers. There is no data on individuals, but the DOE data shows that inventory in primary storage is up.

The U.S. currently has tightness in refining capacity. There are short-term and long-term reasons. Short-term is mainly Hurricane Katrina related; not all the Gulf Coast capacity is back on line yet. Over the long-term,

“Fear of increasing prices causes some hoarding throughout the system, from the large oil companies all the way down to individual consumers.”

capacity growth has stagnated. Most people don't realize that up until the past two years, refining has not been a very strong business, and little capital has gone into expansion. On average, refining probably generated about a 5% ROI (return on investment). Over the past 20 years most major companies have been divesting refining capacity and putting their capital into crude oil production. The capital that has been invested in refining (and it runs into the billions of dollars) has been to change fuel formulation, mainly for environmental reasons. This includes various stages of reformulated gasoline (RFG), sulfur reduction of gasoline and diesel fuel, and accommodation of the ethanol mandate. None of these changes make more fuel. In fact, they cause slight capacity reductions. On the plus side, refining is currently very profitable, and many expansions are

in the works, which will add significant capacity over the next 5 years.

Pump prices are also up because of increased marketing margins and sales taxes. While I don't have any firm data other than DOE average prices, my gut tells me that marketers increase margins when prices are high and cut them when prices are low (like any well run business). Additionally many places, like my home Chicago, have a percentage sales tax on gasoline. This adds about 4 cents/gal here.

One often overlooked reason for the pump price increase is the springtime switchover to RFG (reformulated gasoline), which adds about 15 to 20 cents/gal in the March/April timeframe. Prices will fall back again in September, but no one complains then. RFG is required by the “Daschle Amendment” to the Clean Air Act. This bit of late night special interest chicanery forced the use of the MTBE additive in gasoline. MTBE was later found to contaminate the drinking water in many places around the country, which the plaintiff lawyers see as a new potential windfall. After 10 years of use the government recently dropped the

MTBE requirement, and oil companies are abandoning it rapidly. Part of the companies' defense to the drinking water contamination charges is, "The devil (aka, the government) made me do it." Now they cannot appear to use MTBE for any other reason without harming their defense. However in Washington, nothing ever comes for free. The trade-off for dropping the MTBE requirement is a new and greatly enlarged ethanol mandate. Ethanol is in short supply and its price has doubled, as has Archer Daniels Midland's stock (the major ethanol producer in the U.S.). Significant ethanol capacity is being added and prices should ease in the next few years.

Finally, the dollar has weakened in the past few years, as reflected in the increase in gold and other precious metal prices. Oil is denominated in dollars worldwide, and as the dollar has slipped, oil, like gold, has risen accordingly.

With all this gloom and doom, what can be done about it? I wish I could be optimistic, which is my nature. But, unfortunately, so much of the solution is tied up in our political process, dominated by special interest lobbies. So I doubt a coherent, long-term energy policy can be developed. The energy bill that passed last summer was an example of how bad things can be. This country crucially needs to increase energy production and reduce consumption, but in last year's energy bill there were no meaningful measures to do either. There were a number of special interest handouts, but no real substance in bringing supply and demand into a better balance.

Increasing vehicle mileage standards was totally ignored, as was a gas tax. Recently, small increases in SUV mileage have been required, but various rule-beaters exist and are being expanded, which makes even these minimal changes meaningless. One example is the flex-fuel capability that GM is touting. A flex-fuel vehicle can run on straight gasoline, E-85 (a mixture of 85% ethanol, 15%

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gasoline), or any combination of the two. GM has been advertising these vehicles heavily. That's because the EPA credits the flex-fuel vehicle as achieving about 100 miles per gallon. If the vehicle gets 15 mpg on E-85, the EPA divides the miles driven (15) by just the gasoline portion of the fuel (0.15 gal), and this gives 100 mpg. Of course, since there is essentially no E-85 sold anywhere in the country, these vehicles always run on gasoline and get 15 mpg. It costs GM a couple of hundred dollars per vehicle to provide flex-fuel capacity, but potentially saves the company hundreds of millions of dollars in fines for not meeting CAFE (Corporate Average Fuel Economy) standards.

Oil is a commodity, and prices often are quite volatile. Whenever prices spike up appreciably, there are calls at both federal and state levels for hearings and investigations into conspiracies and price gouging. Over the years

I probably participated in 20 of these "show trials." However, every investigation, including the recently concluded Federal Trade Commission (FTC) investigation, failed to show any evidence of any form of conspiracy. The Congress knows it, but the politicians crave the camera time, talking tough. My favorite investigation was one carried out by the Department of Justice (DOJ) under President Carter. At that time, gasoline was under strict government controls, where the Department of Energy set the price and supply of gasoline at every one of the 175,000 service stations in the country. The DOJ determined that it was the DOE's rules that turned a manageable shortfall into a national crisis. And better yet, the DOE ran their own investigation and reached the same conclusion.

That didn't stop DOE bureaucrats from instituting rules and decisions that were stupid at best and mean-spirited at worst. Anything they envisioned that might hurt the big oil companies had to be good. They put out a decision that, in the name of energy security, forced the major oil companies to give about \$40 million to a small, politically-connected

oil company, Little America, which promptly bought the Sun Valley Ski Resort. This was about 6 months after the DOE had forced the majors to give Little America \$40 million with which they built a large hotel in Downtown Salt Lake City. Over about a five-year period, the DOE forced the majors to give Little America about \$750 million. Interestingly, another part of the rules called "cost pass-through" allowed this cost to be tacked onto the pump price of gasoline. In the end, "Joe Citizen" paid for Little America to get into the ski resort and hotel business, all in the name of energy security. And this is only one of hundreds of stories.

There are some real short-term and longer-term solutions to our energy problems, but some may not be popular. Conservation can provide the quickest impact. A significant gas tax, say \$1.00/gal growing by 50 cents/gal every year until it reaches \$3.00/gal would quickly dampen demand. The gas tax could be made revenue neutral by decreasing other taxes, but that is a major can of worms. A "gas guzzler" tax of many thousand dollars can be assessed to low mileage cars and rebated to ones with high mileage. However, any tax increase—even one with offsetting reductions—is anathema to politicians. Recently, they wanted to give everyone a \$100 rebate, and GM wants to give every new SUV buyer subsidized gasoline. Increasing CAFE standards significantly is an excellent medium-term strategy. The standards haven't changed for about 20 years, and real world results fall far short of EPA certifications. The passenger car mileage requirement is an average for a company's entire fleet of 27.5 mpg. I doubt more than 10% of the cars on the road achieve that average.

Oil and gas production projects need to start now. They take several years to come on line. In addition to opening the Arctic National Wildlife Refuge, a natural gas line needs to be built from the existing Prudhoe Bay facilities in Alaska to the lower 48 states. Along the way, it can supply Canadian tar sand production with gas. Reserves in the Canadian tar

sands exceed all the proven worldwide reserves of conventional crude. Current production is near 1 million barrels/day. It could grow to many times that, but more gas will be needed to fuel the recovery of the oil from the sands. With oil over \$40 a barrel, tar sands are economic. Increasing supplies from a stable country next door may cause the world price of oil to drop into the \$40-50 a barrel range and stay there a long time.

Delivering large volumes of natural gas into the lower 48 states may also cause gas prices to fall. This creates a "Catch 22" for the oil companies. No one wants to invest billions into a gas line if it hurts the overall business and makes the pipeline investment uneconomic. Government and industry cooperation is needed to guarantee a return on investment. Unfortunately, there is no politician, even the friendliest to the industry, who would propose anything that looked like a subsidy to "Big Oil," especially with today's record profit levels. But without some guarantee, nothing will happen.

Finally, even though there was so much rhetoric in Washington over drilling subsidies, much of it was meaningless because most prospective drilling areas are off-limits. Except for Texas, Louisiana, Mississippi and Alabama, all the rest of the Gulf of Mexico and the entire east and west coasts are excluded. Interestingly, Cuba and Venezuela are planning to drill off Florida in areas where U.S. companies are forbidden. We must summon the political will to explore and produce oil and gas both offshore and in the Rockies.

As I am writing this, I can visualize most readers objecting to many of my solutions. But we need to sacrifice and compromise if we want to become more sustainable in energy. I used to say, "This country has the best politicians that money can buy, and they are still not worth anything." But really we, by demanding our cake and eating it too for so long, have done it to ourselves.



"No one wants to invest billions into a gas line if it hurts the overall business and makes the pipeline investment uneconomic. Government and industry cooperation is needed to guarantee a return on investment."



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BY NOAH GRAFF

next

*With at least 43 million uninsured people in the United States and rising costs of health insurance premiums for businesses and individuals, the need to reform the U.S. health-care system is escalating. The state of Massachusetts recently passed unprecedented healthcare legislation, which many believe can be a model for creating affordable healthcare throughout the United States.*

## Within 10 years, will there be universal healthcare in the United States?

I believe the public will demand that we have universal health insurance coverage in the near term, and heaven help us if we do not achieve it by 2015. Comprehensive healthcare reform is needed, which includes covering all Americans, slowing down the rate of escalation in healthcare spending through cost management, and improving the quality of care. Getting to universal coverage can be achieved through the expansion of public programs like Medicare and the State Children's Health Insurance Program, creating new programs that address subsets of the uninsured population, or establishing a universal, publicly financed system – or through a combination of these strategies.

Joel Miller

Senior Vice President for Operations  
National Coalition on Health Care, Washington, DC

I believe in ten years, we will have some sort of “universal affordability” as well as improved accessibility for all those who need healthcare. However, we live in a capitalistic society, and the practical, political, historical timelines tell us that the private market will continue to play a critical role in providing health insurance for a majority of Americans. Picture this: Universal healthcare, free for every American, with the government managing the administration, paying claims (with whose money?) and running a lean, mean, efficient machine – the government?? I don't think so. In fact, the thought scares the hell out of me!

Mitchell S. Palmer, RHU

Vice-President, Life/Health  
Boyle, Flagg & Seaman, Inc. Insurance, Tinley Park, IL

## the facts:


The true precursor to modern health insurance began in 1929 in Dallas, Texas. **Justin Kimball created Blue Cross as a way for local teachers to pay a hospital 50 cents each month**, so that when they later went to that hospital to have children, they wouldn't be charged.

Annual healthcare spending in the U.S. has been increasing two to five times the rate of inflation since 2000. **It is estimated that nearly 60 million people will have no health insurance coverage**, and the U.S. will spend over \$4 trillion by 2015.

**Healthcare spending reached \$1.9 trillion in 2004** - about 4.3 times the amount spent on national defense.

[www.howstuffworks.com/health-insurance.htm](http://www.howstuffworks.com/health-insurance.htm)

[www.nchc.org](http://www.nchc.org)



I believe that the time is finally drawing near when the United States will join the rest of the industrial world in guaranteeing access to decent healthcare for all its citizens. Rising costs and declining employer sponsored coverage will create increasing economic insecurity in the middle class. The current infatuation with “consumer driven healthcare” will not change this insecurity since, to the extent that it reduces premiums, it just shifts the risk onto the individual. State legislatures will respond with various approaches to universal or near universal health care; and eventually, Congress will follow suit.

Michael Miller

Policy Director, Community Catalyst, Boston MA

Universal access is a question begging definition. Everyone agrees we need to work toward that goal, but there is little agreement about what is meant by “universal” and even less agreement about what the access is to. Does “universal access” mean immediate availability of the caregiver of choice at a cost affordable to anyone? Does it mean access to ANY consultation, treatment, diagnostic or drug desired by the individual, no matter the efficacy or even safety of that course? So the question becomes: what parameters, and who decides? I argue the government has a role in paying for those who can’t pay for themselves, but it should not take over the private market that continues to drive quality and innovations. The private side’s role is to ensure that all healthcare spending - including the government’s - is maximized in terms of safety, quality and innovation.

Bob Kieckhefer

President of Public Affairs, Health care Service Corporation, Chicago, IL

The percentage of working-age Americans with moderate to middle incomes who lacked health insurance for at least part of the year rose to **41 percent in 2005, an increase from the 28 percent in 2001 without coverage.**

America’s health care bill of about **\$5,267 per capita is nearly two and a half times the industrialized world’s median of \$2,193.**

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1-3/4" 8-spindle, 1970  
2-1/4" 6-spindle, 1973-79  
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# Bob Kieckhefer

is vice president of public affairs for Healthcare Service Corporation, which operates BlueCross and BlueShield plans in Illinois, Texas, New Mexico and Oklahoma. His duties include media, government and community relations.

## Why is BlueCross BlueShield different from United Health or other healthcare providers?

BlueCross BlueShield grew up as a locally owned, locally managed, locally run company, and as an association of those companies. Humana, United Health, Aetna are national companies, which are focused nationally.

## Is BlueCross BlueShield for-profit or non-profit?

Our company is a non-investor owned mutual, which means we do not have stock, we do not have stockholders. The company is essentially owned by our policy holders. There are BlueCross and BlueShield plans that are for-profit. We do not think that is the right way to go about delivering healthcare.

## Why are healthcare premiums constantly rising?

For a lot of reasons. There are new medical techniques, new drugs. People are using more healthcare as the population ages. The cost of health insurance reflects primarily the cost of healthcare itself. Nearly 90 cents that comes in the door at Healthcare Service Corporation goes right back out to pay for healthcare.

## What does the term “universal healthcare” mean to you?

To me, universal healthcare means that all people have access to appropriate levels of care, with relative ease. That leaves a couple of other terms to be defined then. What is “appropriate care?” What is “relative ease?” Some people say that means everybody has access to any care they want, any time they want. And obviously, that’s not going to be obtainable.

## What’s the first issue that must be addressed to fix the U.S. healthcare system?

In my mind, we as a society need to make the conscious decision about how much we’re willing to pay for healthcare. We’ve never really had a discussion about what’s an appropriate level of spending for healthcare in our economy. And then after that,

I think we need to get down to who is going to make decisions about specifics on how we deal with the population who cannot afford to pay for healthcare.

## Do you think healthcare should be publicly funded?

I think that if you look at the areas in which government funds things and you look at healthcare, you can see that there is a need for government to step up to the plate for healthcare like it does in other areas, to provide the safety net for those in this country who cannot afford to pay for healthcare. Does that mean we should have a government system for providing it? No, I don’t think so.

## For healthcare to become affordable, will the quality have to go down?

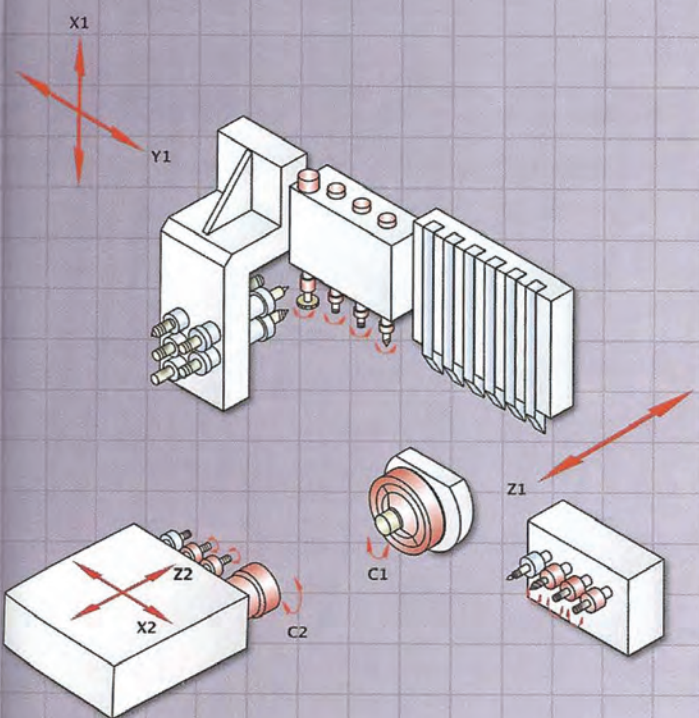
No, I don’t think so. I think if we can find ways to maximize the value of the healthcare dollar that is spent; if we can make a decision as a country how much we’re willing to spend on healthcare and willing to manage that spending effectively, the quality doesn’t have to go down.

## What is the worst case scenario for the future of this country’s healthcare system?

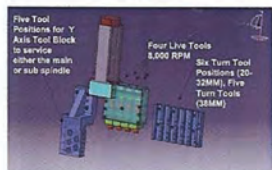
The worst case I could see is that we don’t come together and rationally plan for the future. Because if we don’t, costs are going to continue to go up and force us to make decisions that we shouldn’t have to make.

## What are you most optimistic about for the future?

I’m most optimistic about the present because I think that for those who are able to access it, the healthcare system that we have now is really wonderful. I think the fact that we’ve been able to develop this system argues that if we have the political will and the will as a society, we can make this [system] accessible to [all] the people of this country. It’s there. We just need to figure out how to make it available. We’ve done things no other society has done. That is very encouraging.



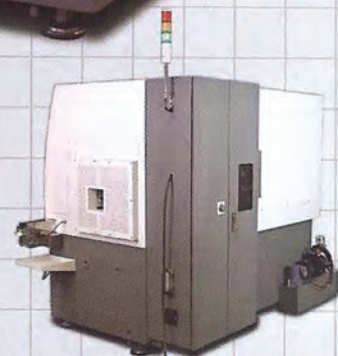
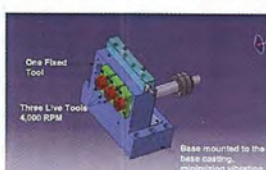
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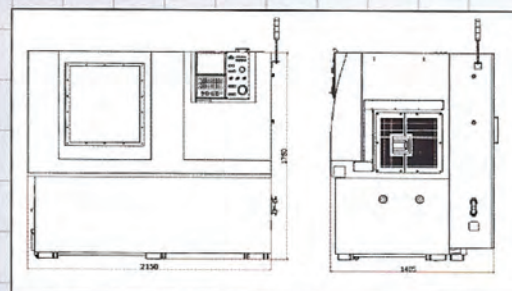
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how it works

BY BARBARA DONOHUE

# Best

## Hiring Practices:

Finding the employees  
you need.

Finding and hiring good people has always been a challenge. With so many skilled machinists aging toward retirement and fewer youngsters interested in entering the machining trade, it will only get more difficult. "Manufacturers are waking up to the idea that there are no skilled craftsmen [walking in off] the street. Many are now in their 50s and 60s," points out Ken Barton, apprenticeship administra-

tor for the Rockford (IL) Tooling & Machining Association (RTMA).

There are plenty of people out there, but they don't all have the makings of a machinist. How do you select new hires that have the "stuff" to make it in this business? Or, better, where can you find people who already have some training or experience?

## The right stuff for cutting metal

Besides the usual job application, interview and reference checks, you need to know if a job candidate is capable of learning how to deal with machines and metalworking. There are many tests of various kinds—personality inventories, attitude surveys, tests for mechanical aptitude, manual dexterity, cognitive abilities and many more characteristics, qualities, skills and knowledge. These are available from test publishers and from consultants who offer to put together a testing program for any need.

Fortunately, among this bewildering array of tests are a few that aim specifically at predicting performance or assessing skills necessary in the machining business.

## NTMA Employee Selection System

One way to make sure you have the staff you need is to “grow your own.” Many shops like to bring in entry-level employees who will have the capacity to learn and grow into increasingly responsible and skilled jobs. How do you know if the person has the mechanical aptitude, the reasoning ability and the good work ethic needed to be successful? Nobody can tell for sure, but the National Tooling and Machining Association (NTMA, [www.ntma.org](http://www.ntma.org)) has put together a battery of four pencil-and-paper tests that give an indication of a person’s ability to learn mechanically oriented tasks and to succeed in the manufacturing environment.

## Assessing and testing and trig. Oh, my!

After I’d spent many hours interviewing people about these tests of mechanical aptitude and math, Chad Schron at Tooling University offered to let me try out their online basic assessment test on math, print-reading and inspection. I said, “Sure.” And he sent me a user ID. Fifty-four multiple-choice questions. No time limit. No problem.

At 10:00 I click onto the [www.toolingu.com](http://www.toolingu.com) web site. Fortunately, I take the time to read the “before you begin” instructions. The first challenge: some questions will use trigonometric functions. Well, the last time I used trig functions was about five calculators ago, so I need to find trig tables. The very largest handbook on my shelf has them. Twenty-two pages of them. By degrees and by minutes.

I start up the Windows calculator, grab some scrap paper and sharpen my pencil. Ready.

Diving in

Click “start test.”

Here we go. Adding fractions. I can do that. Let’s see, least common denominator. I do the calculation and come up with a very odd result, 23/24. I must have that wrong. But I scroll down to the answer choices, and much to my surprise, there it is. The cursor turns into a graphic

of a yellow pencil as I mouse toward my chosen answer. Click.

This one looks like a strange trigonometry problem. But no, it’s our old friend Pythagoras. The square of the hypotenuse equals the sum of the squares of the other two sides. Click.

Ah, algebra. I used to love these simultaneous equations. “Find x,” the instructions say. OK, solve the first equation for “y” then plug that value into the second equation. Add. Multiply. Subtract. Divide.  $2x$  plus  $3y$ ... Here’s my answer, 2.42. Cool. Easy. But scroll down to the answers and, oh, dear, they’re all whole numbers. No decimals. Try it again. A different number with two decimal places. Hmmmm. I think I’ll skip that question.

Using the appropriate trig ratio, solve for the angle on this right triangle. Let’s see. It gives the long side and the one next to the angle. So that’s adjacent over the hypotenuse. Is that the sine or cosine? I forget. Muttering the mnemonic I learned in high school, “Tommy’s old aunt sat on her coffin and hollered,” I remember. That would be cosine. Look it up the value in the book’s twenty-two pages of tables. Click on the corresponding angle...

Convert centimeters to mil-

limeters. Distinguish precision from accuracy. Define calibration. Average some numbers. Easy. Click, click, click. Click.

Moment of truth. Or guess.

Yikes, geometric dimensioning and tolerancing. It was hard when I learned it in engineering school, and I haven’t used it since my first job. Oh well, here it goes. Click.

Thread specs? Hoo, boy, it’s been a long time since I looked at this. But I’m pretty sure that one particular part of the designation indicates the fit, so I’ll choose the third answer because that’s the only one that includes fit. Click.

Here is a drawing of a bolt and the question is: What kind of thread specification is this? Pictorial? Simplified? I have no idea; I don’t recall ever hearing those names. Best guess. Click.

Well, after 50 minutes, I get to the end. I’ve filled up five sheets of scrap paper with scrawly numbers and drawings. The test gives me the option of going back and changing my answers. I go back to those pesky simultaneous equations. Third time is the charm, right? Wrong. Same old two-decimal-places as before. Time for brute force. I select one of the nice, whole numbers from the multiple

choices. Plug it into the equations. Voilà, it works. Click.

Not feeling very bright, but at least I am done. Click on “submit test.”

The next day I receive my results from Mr. Schron. He says I did very well, 48 out of 54 correct, for a score of 88.89 percent. I was hoping for 90.

The test results are also given for two subsets of questions: those relating to inspection (I answered 21 of 25 correctly) and those relating to “shop essentials,” which must be the math and maybe print reading, on which I got 27 of 29. The report recommends a selection of five beginning and intermediate classes to improve and extend my skills.

Would this test be valuable for evaluating prospective employees? It’s not an aptitude test. It checks what people know and what they can do with math. I think it might be useful to verify that an applicant has had some experience in the shop; it seems a high score would indicate they know a little bit about reading prints, a little bit about inspection, and quite a bit of basic math.

# how it works

Intended for pre-employment screening, these tests provide a “predictive test of aptitude for learning machining and other technology,” says Dick Walker, director of education at the National Tooling & Machining Association, Ft. Washington, MD. “Part of the issue is on the intake end if you’ve got X number of slots. Who do you choose?” he says.

The NTMA selection tests rate mathematical ability, mechanical aptitude, verbal skills and also provide a psychological profile, says Walker. The set of tests, taken together, is designed to measure a person’s potential for success. Walker says that the NTMA has offered the tests for about 25 years, and companies have used them with thousands of job applicants.

A complete testing package, \$55 from NTMA, includes the four test booklets, 25 answer sheets and an instruction manual for administering the tests.

You administer the tests to a prospective employee and then send the answer sheet to NTMA for scoring. Purchase of the test package and the scoring service are available to both NTMA member companies and non-members. Scoring is \$25 for each applicant, with results mailed; for an additional fee they can be faxed.

The raw score on each test is converted to a scaled score of 1 – 9. So the score on the 4-test battery ranges from 4 to 36. “Add up the scores, and [anyone with a score of] 16 and above should be successful,” Walker says, though a very low score on the math test might indicate a potential problem. All four tests used together give a good picture of the applicant’s aptitude and attitude, he says.

## Assessment testing from Tooling U.

For more advanced and experienced applicants, you may want to determine their skill and knowledge using assessment tests specifically aimed at the machining industry. Tooling University, Cleveland, OH, offers online classes for workers in the industry. It also had a series of assessment tests that companies use to determine the training needs of their staff. When asked whether an assessment test might be used in the hiring process, Chad Schron, Tooling U.’s vice president of technology operations, says that a company might use a test to determine if an experienced applicant is knowledgeable in a certain area.

A basic assessment test covers shop math, blueprint reading, and geometric dimensioning and tolerancing (see sidebar). It is available online and costs \$27.50 per administration. Tooling U. has a range of assessment tests and classes available and can also provide customized testing and classes if needed.

## Invent your own

Experts in the psychology and technology of aptitude testing would cringe at the very idea, but if you can’t find the kind of testing that does what you need, you might need to invent your own.

For the Machine Operator Skills Training program (see below), none of the available mechanical aptitude tests seemed to do the job, according to Ted Bauer, machining project coordinator, Massachusetts Manufacturing Extension Partnership, Worcester, MA.

The pilot program, funded by a grant from the Department of Labor, recruits its students from a wide spectrum of people who want job training. The paper and pencil tests weren’t sufficient to demonstrate real-time mechanical reasoning and manipulation, and commercially available hands-on tests were overkill. So, says Bauer, “We invented our own mechanical aptitude test.”

It consists of a variety of nuts and bolts and a selection of hand tools. The test is to undo the fasteners from holes on one side of a board and refasten them on the other. There are more tools than needed, and some of the holes are too small for some of the bolts. It’s a timed test. Most people complete the task in under four minutes, Bauer says. Some take less than three. Someone who takes more than five minutes might have problems with the training program.

“Put something in their hands and observe them,” counsels Bauer.

In addition to taking the mechanical tests, prospective students take standard reading comprehension and math tests.

How do companies use testing and other techniques to find people who will fit in, do the job, learn, grow and become the machinists and metalworkers they need? Every shop, large, small or in-between, has its own way of evaluating job candidates and finding employees who can take on new responsibilities.

## Agency screens job candidates

A large provider of fluid system products and services to many different industries, Swagelok Manufacturing Company, Solon, OH, uses commercially available tests to screen prospective applicants, according to Tim Dodd, director of China operations.

“Everyone [is tested], whether a skilled CNC operator or

# how it works



Above: A sampling of NTMA test booklets.

someone who has had no exposure to manufacturing... We use a temporary employment agency to do screening and bring people in on a temp-to-perm basis," he says.

The agency tests aptitudes and abilities, including "mental alertness, general knowledge... cognitive abilities, mechanical aptitude," says Dodd. Applicants also complete a personality profile. With the results in hand, the company can match people with positions. "We have a matrix [on which] we plot out where we want people to be for different jobs. Are you better suited for machining, a quality type of role or assembly?"

## Three months to try each other out

"Usually, if we bring someone in, we can tell pretty quickly if they know what they're doing," says Abbie Moran, general manager of Robert J. Moran, Inc., a small contract machine shop in Littleton, MA. During the interviews for machinists, "we show them a blueprint and ask them how they would approach it."

Moran's company makes use of a three-month tryout period. "We feel each other out, to see if you like us and we like you. We say, 'It's for you as well as for us.'" If the new employee works out for those three months, he or she comes fully on board, with benefits. Then, how far employees go is up to them. "Some people just want to be operators, and some strive for more," says Moran. "They write their own ticket on how much effort they want to put in and the progress they make on the job."

## Testing for promotion

At C & J Industries in Meadville, PA, human resources director Sandy Hurban uses the NTMA tests for people who are already in place and may be promoted. "Also for apprenticeship, if we bring someone up," she says.

The company is primarily an injection molding house, and 20 of the 250 employees work in machining.

Sometimes, C&J uses only the mechanical aptitude test. People for the apprenticeship program take all 4 tests. "Apprentices usually come from the voc/tech schools, and we [also] put promising people from the floor into the apprenticeship program," Hurban says. She administers the tests, sends the answer sheets to NTMA and receives grades back in a week, or sooner by fax, if she needs them quickly.

C&J has used the NTMA tests for a long time, but "testing is only one indicator," Hurban cautions. "You want someone who has the will to work and who wants to learn. And that's what is really hard to find right now."

## Confidence in their capability

Joyce Richey's job title is staff accountant, but she is also the person who administers the NTMA tests to prospective employees at Schmiede Corporation in Tullahoma, TN. This 115 employee company does CNC machining, grinding and EDM, Richey says.

In general, the company requires the tests of less experienced applicants who have only two or three years of work experience or have come from a machine shop course at school. "It seems to help," she says. The company started to use the NTMA testing about six years ago, and Richey has administered the tests to 144 applicants since then.

"The supervisors like it," she says. "If you don't know a person... that test gives them a little insight before they talk to them."

Applicants must score 20 or above on the tests before they can go on to an interview, Richey says. At

Schmiede, the cutoff score is 20, rather than 16, which the NTMA suggests. "Most folks score above 20," she says. Schmiede also uses the tests to help select employees who might do well filling supervisor or lead positions that open up. "If they show an interest we give them a test," she says.

Remember apprenticeships? They're still one of the best ways to develop exactly the kind of expertise you want and need.

### Grow your own skilled machinists

The Rockford, IL, chapter of the NTMA, arranges for a local community college to administer the NTMA Employee Selection tests to individuals interested in entering an ap-

prentice program at a local company, according to Ken Barton, apprenticeship administrator for the RTMA. When the scores come back, the names of those who meet or surpass the national cutoff score (16) are sent to local companies that have apprenticeship programs.

Barton says that the RTMA apprenticeship program was started in 1957, and since then, thousands of apprentices have trained in it. Many of them now run businesses of their own. Apprentice tool and die makers receive 10,000 hours or 5 years of on-the-job training. Precision machinist and CNC operator apprentices train on the job for 8,000 hours or 4 years. Under the Rockford program, the apprentices are also required to take related classroom training.

A few years ago, the need for skilled machinists seemed to have dropped down to where there were only two apprentices who started one year. Last year, there were 25, and Barton expects 25 this year, as well.

### Fast-track training for machine operators

Because of the need for skilled staff at machine shops all across the country, the Federal Department of Labor has initiated a pilot program to train machine operators. The pilot Machine Operator Skills Training (MOST) is being run in the six New England states.

According to machining project coordinator Ted Bauer, participants are recruited from "One-Stop Career Centers," in areas where the trainings are scheduled. Many are unemployed and seeking training for a new career. After careful screening, which includes interviews and tests of reading comprehension, math and mechanical aptitude (see "Invent your own," above), the participants intensively study machining principles and practice for two weeks, they then go to companies for two months on-the-job training. In the few months the program has been in existence, most of the participants have been hired by the companies where they received their on-the-job training.

In the next couple of decades, we'll need droves of younger up-and-comers to replace the master machinists who are reaching retirement age. Where will these new machinists come from? Lots of different places. They'll be home grown through apprenticeship, brought up through the ranks, taught in vocational/technical high schools or community colleges, trained in other publicly-funded programs. They're out there somewhere. The trick is to find them and then give them the opportunity to become the best.



# NIMS Certification What is it?

The National Institute for Metalworking Skills (NIMS) is the nation's only ANSI (American National Standards Institute)-accredited developer of precision manufacturing skill standards and competency assessments. NIMS certifies the level of individuals' skills in different types of metalworking, including machining, stamping and CNC setup/programming. Certification is based on industry-developed standards. NIMS also accredits training programs in high schools, community colleges, companies and other venues.

Certification requires both theory and practice, explains Stephen Mandes, executive director of NIMS, Fairfax, VA. The individual must demonstrate a particular set of skills in practice, by turning a part perfectly, for example, and also must demonstrate on an exam that he or she understands the theory behind the particular process. Over 10,000 credentials have been issued, Mandes says,

and the credentialing rate is increasing 20 percent annually.

One of the innovative features of NIMS is a new approach to apprenticeship, launched three years ago, that is based on competencies rather than time. Instead of an apprentice receiving journeyman status after a set length of time or number of work hours, under the NIMS competency-based apprenticeship system, an individual receives credentials after demonstrating practical skill and a certain level of understanding of the applicable metalworking processes.

As it becomes more widespread, NIMS certification should prove useful to companies hiring machinists, as the prospective employee's credentials should offer a clear indication of his or her competence in different metalworking processes.

For more information, see [www.nims-skills.org](http://www.nims-skills.org).

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# product focus

THE FOLLOWING ARE COMPANIES WHO  
HAVE "FED" US INFORMATION ON THEIR  
BAR FEEDERS:

Each 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, and knowledge, to run a more efficient and effective shop. In every issue, we'll feature a product category and focus on equipment key to remaining competitive in our marketplace.

Bar feeding simply involves feeding material into a machine, yet its impact on a company's total production is enormous. Luca Lanzetta, Director of Sales at Pietro Cucchi America says, "Bar loaders are the natural upgrade for any multi and single spindle automatic machine. They allow the operator to be more productive running multiple machines and be focused on quality work. Bar loaders improve the plant ergonomics by reducing injuries from handling heavy bar stock, thus reducing the noise typical of the traditional stock reels. Machines equipped with automatic bar loaders run unattended at a higher efficiency rate. They are a necessary piece of equipment for manufacturing plants competing on a global scale."

## Edge Technologies

Edge Technologies-a Division of Hydromat, Inc. presents the newly designed FMB Turbo 3-36 and the Turbo 3-26. Both feature GE Fanuc SPS controls and Swiss-type synchronization devices. Hydrodynamic quick-change guide channels allow for quiet operation at high RPM.

The FMB Turbo 3-26 and Turbo 3-36 are designed for feeding round, square and hexagonal bar material into CNC lathes. Quick change polyurethane guide channels allow for quiet operation at high RPM. These feeders are compatible with all types of sliding or fixed CNC and cam operated lathes with spindle bores up to 36mm.

Edge Technologies also offers The Minuteman, which features a 3-20mm diameter capacity. The Minuteman is equipped with hydrodynamic quick-change polyurethane guide channels. The channel is flooded with oil to create a hydrodynamic effect, resulting in higher RPM with reduced noise and vibration. Dual anti-vibration devices stabilize the bar stock at two critical points between the guide channel and lathe

spindle. The synchronization device for Swiss style lathes employs an electro-magnetic coupling, mechanically linking the lathes headstock's z-axis travel to the bar feeder's pusher.

For more information, please contact Edge Technologies - A Division of Hydromat, Inc. at 314-692-8388 or visit the company website at [www.edgetechnologies.com](http://www.edgetechnologies.com).





## IEMCA

The TRILOGY 32 from IEMCA is a manual loading bar feeder that feeds a 12 foot bar from 3mm to 32mm in diameter. Unlike the old style tube feeders, the TRILOGY 32 is loaded from the top, saving valuable floor space needed for loading a tube feeder, and eliminating the puddle of oil found on the floor where the bar is loaded into a tube feeder.

A unique 3 guide channel indexing system permits fast bar diameter changeover through pre-selected ranges. The TRILOGY 32 features a brushless servo motor with "Servo-Sync" to make bar movement integral with the movement of a sliding headstock and fine torque tuning capability, which is very important when running small diameter bar.

For more information, please contact IEMCA, a division of BUCCI Industries USA, Inc. at 704-583-8341 or visit the company website at [www.bucci-industries.com](http://www.bucci-industries.com).

## Pietro Cucchi America

Pietro Cucchi, is now introducing "ONE," a single-spindle line of automatic bar feeders for CNC lathes with fixed and moving headstock. The ONE features a hydrodynamic bar guide system with a spring bushing device inside the lathe's spindle. The One allows for control of the feed-out within 0.2 mm of accuracy. It synchronizes the bar pusher with the lathe's moving headstock without mechanical links. The One is now available in a magazine rack configuration for bar stock up to 13' in length and from 1/4" to 2" in diameter.

The Multi-Spindle "INTEGRATED" line, with a hydraulic pusher system, features bar remnant retraction and feed-out in multiple positions. Standard configuration and compact styles are available for bar length up to 20' in length and from 3/16" to 3-1/2" in diameter. The Integrated is available for any multi-spindle cam screw machine as well as the latest Index, Schutte, Gildemeister and Euroturn CNC multis. The multi-spindle line has been expanded with the "BASIC," a less sophisticated and economical bar loader system.

For more information, please contact Pietro Cucchi America, Inc. at 847-718-1818 or visit the company website at [www.pietrocucchi-us.com](http://www.pietrocucchi-us.com).



# product focus

## Acro Feed

Acro-Feed Industries, Inc. is now providing rebuilding and remanufacturing services for automatic screw machine bar feeders/loaders. Dennis Haller, president of Acro-Feed, says, "We have found that one of the capital equipment options that makes the most sense to many manufacturers today, is some sort of restoration program that enhances the basic feeder/loader performance and reliability while improving quality and safety. We can provide a unit that operates like new, with many of today's advanced technology features but is 60% of the cost of a new machine."



Acro-Feed Industries, Inc. has been a designer and builder of automatic bar and shaped bar feeding systems for screw machines as well as automatic part loaders and unloaders, bar load assists and automatic bundle feeders for over 50 years. The business has also expanded to include the manufacture of automatic and semi-automatic tube and pipe bending machines and replacement parts, rugged acoustical stock tubes, and a full complement of energy control and power lockout (ECPL) tags and custom safety signage.

For more information, please contact Acro Feed 248-705-8272 or visit the company website at [www.acrofeed.com](http://www.acrofeed.com).

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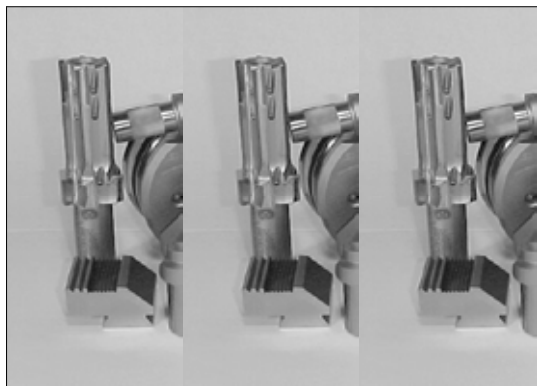
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## product focus

### Marubeni Citizen-Cincom



Marubeni Citizen-Cincom, Inc. is pleased to offer the Citizen CAV bar loader (engineered for use exclusively with Cincom Swiss-type turning centers). The CAV is perfectly configured to the speeds, torque, power and axis movements of the Cincom machine. Since the CAV and the Cincom share the same CNC controller and electrical system, bar feeder movements can be viewed and controlled from the lathe's CNC.

The Cincom bar feeder is equipped to handle round, square and hexagonal stock with diameters from .078" to 1 1/4" and lengths to 13'. Cincom's bar and spindle stabilizing mechanism aligns the bar's center of rotation with the center of the spindle. Even with full-length, 13' bars, the lathe can operate noise-free and vibration-free at speeds to 12,000 rpm.

An auxiliary device pre-positions the bar. Forward and back motion is controlled by a servo that's connected directly to the lathe's CNC. The bar positions to tenths accuracy with no following error. Insertion and braking response times are instantaneous.

For more information about Marubeni Citizen-Cincom please go to [www.marucit.com](http://www.marucit.com).



## Tornos



Tornos' SBF-216 magazine style bar feeder reduces channel guide changeover times down to 15 minutes, according to the company. With Tornos' quick-change system, operators simply index the guide "block" to the proper size capacity and the changeover is complete. The quick-change system on the Robobar SBF-216 accommodates bar sizes ranging from 2mm to 16mm. As such, this model Robobar is suitable for Tornos' smaller DECO 2000 series of single spindle automatics, specifically the DECO 2000 10a and 13a models.

The new Robobar features an effective bar gripper mechanism between the bar feeder and the sliding headstock, which adjusts automatically to whatever bar size is being used. All the Robobar setups are now integrated right into the machine control, the PNC-DECO streamlining programming time and machine/loader operation. All Robobars can accommodate up to 150 bars, depending on bar size. With a Tornos-built magazine feeder, customers have the added convenience and expertise of installation and service from a single source supplier.

For more information, contact Tornos U.S. Corporation at 203-775-4319 or visit the company website at [www.tornos.ch](http://www.tornos.ch).



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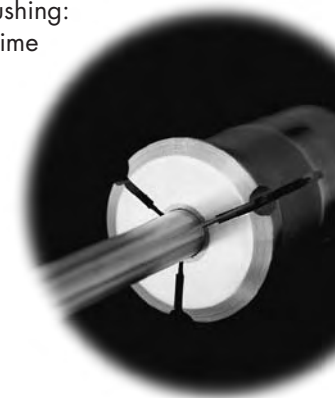


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# product focus

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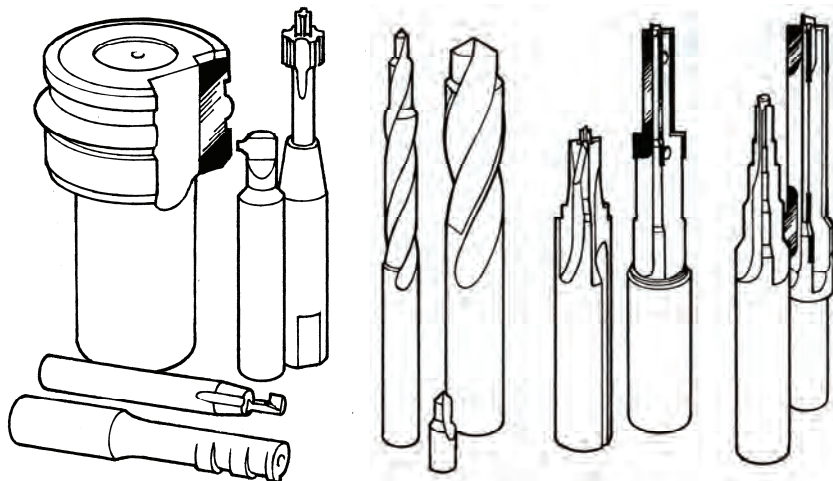
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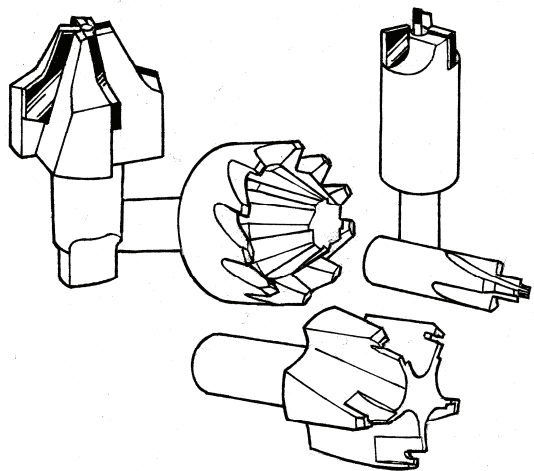
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August  
23<sup>th</sup> & 24<sup>th</sup>

Stamping  
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Rochester,  
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1859

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successful oil well  
is drilled in the  
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Drake

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The U.S.  
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created

August  
8<sup>th</sup>  
1785

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Sir Sean  
Connery

August 25



Congress  
enacts first  
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tax

Aug  
2<sup>nd</sup>  
1861

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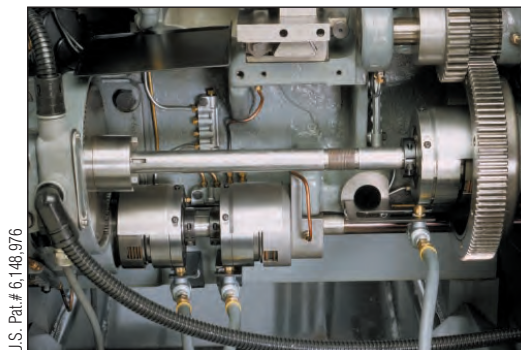
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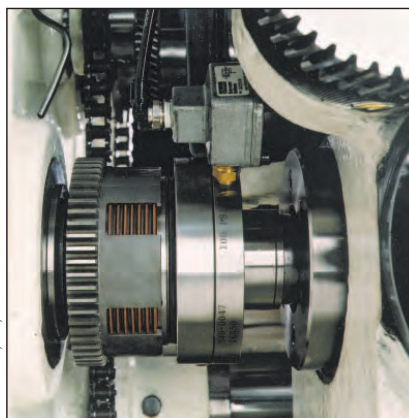


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For Model B Davenport



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# your ride

## Wings of Gold

My wife Julia and I welcomed our newest family member to our home this past February. The snow storm approaching that day made us a little nervous, but the 20+ inches in our driveway the next day confirmed that our timing was great. This event would give us time to learn all the buttons and functions on our 2006 Deep Red ABS Honda Gold Wing. Of course, our neighbors thought we had lost our minds, but if you want to get the best value for your dollar, buy a motorcycle in the middle of the winter.

The Gold Wing came with 2 operator's manuals—one for the bike and one for the navigation system. By the time the snow melted, we had already added an MP3 player to the audio system and had the navigation system calculate the best route to our first run.

The only way to describe this motorcycle is simply "amazing" because of its ease of riding with 2 people on it, its comfort in cold weather with heated seats, handgrips and foot vents, an onboard navigation system second to none and a sound system that makes the kids with boom boxes ask us to turn it down. Along with all this, you get power and performance on par with a Corvette, trunk space of a small SUV and better gas mileage than most hybrids. On a recent Polar Bear Run from New Jersey to Pennsylvania, with about 500 miles on the motor, she averaged over 42 mpg.

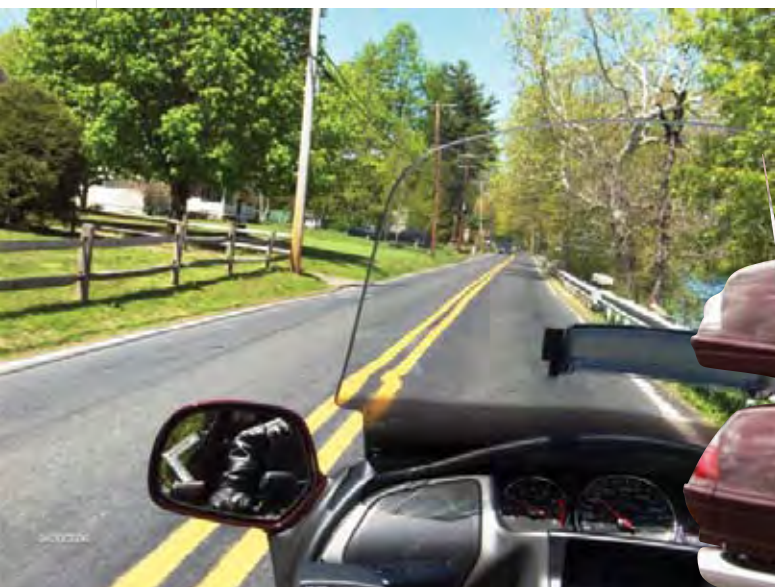
By Jorge (and Julia!) Perez,  
Director of Technology, Lincoln Mold  
And Die Corporation, Roselle, NJ

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@todaysmachiningworld.com](mailto:jill@todaysmachiningworld.com).

Because of the comfort factor riding the Gold Wing and of course the price of gas, I find myself using it everyday; for getting to work and then pleasure riding during any available time I have. My wife has her own motorcycle but has only used it once since we got the Gold Wing. We also became members of the Gold Wing Road Riders Association (GWRRA) and have become part of an extended family known as NJ Chapter H. Those have booked our weekend calendar until late November of this year. We've had a negative reaction from our kids, who now find it difficult to break into our schedule.

Julia and I attended the Hobo Rally for DE Chapter A. We had a great time with all the food, Poker Runs and motorcycle events. On the way back from Delaware, I lowered the radio and asked Julia if she wanted to pull into the rest area. There was no response from her until I nudged her because she had dozed off. Talk about comfort.

The next day, nine motorcycles gathered at our house for a run through some of the best cruising roads in America. It took us from Somerset County to Frenchtown, NJ to Route 611 along the Delaware River and back along the country roads of Flemington, NJ. The last stop before getting home was the ice cream store along Route 22 in Whitehouse, NJ. This is now a typical Gold Wing weekend for us.



your ride

*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).*

**Have a technical issue you'd like addressed? Please email [noah@todaysmachiningworld.com](mailto:noah@todaysmachiningworld.com). We'll help solve your problem, then publish both the problem and solution in the next issue of the magazine.**

Dear Shop Doc,

For turning external threads on my CNC lathe, I am currently using a laydown threading system. I chose this style of threading system due to the option of using the partial profile or full profile type of inserts. The partial profile inserts give me the capability of achieving a range of threads per inch, so I don't need an insert for every "pitch" of thread. For a larger production run, I purchased the full profile insert for the specific thread per inch – I wanted the entire job to be very consistent in the quality of the thread. The full profile insert is good because it can cut the major/minor/pitch diameters all at the same time.

But at times, I have a problem with smaller diameter or coarse threads. It seems that the insert rubs on one side or the other of the 60° angle. I would guess 65% of the threads are produced with great success, but there are some threads with poor tool life and others that fit loosely on gauges even though the major diameter is correct.

What can we do for the tool life and gauging issues I listed? I really think the laydown inserts are a great advantage overall.

Dreading the Threading

Dear Dreading,

These issues can be fixed in a couple of simple steps. You should see included with the holder, an anvil that the insert sets on. This is more than just a seat like a turning insert and holder sometimes has. This anvil is tapered to a certain angle. The standard anvil included with a laydown holder has 1.5° of taper.

These angles correspond with the required helix angle that a threading tool will need to have designed into it. You don't want it to rub as it travels at the extreme "feed per revolution" to cut a screw thread feature.

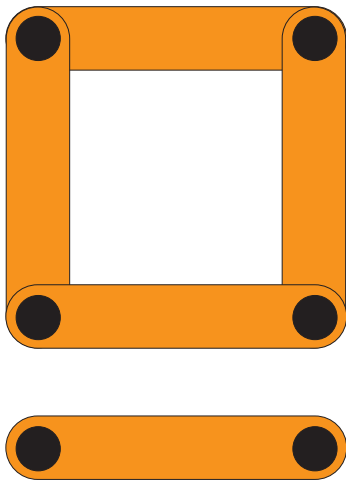
For your problem with smaller diameter or coarse threads, the helix angle needs to be adjusted due to these 2 variations of thread dimensions. The helix angle has to be increased the closer the tool gets to the centerline of the machine. It also needs to be increased the more it moves per revolution, as that is required with coarse threads.

There are many angled anvils available that will achieve other helix angles besides 1.5°. The standard anvil, with 1.5° helix, will accommodate about 65% of threads, which is what you have encountered so far. Actually, by reviewing any of the tool manufacturers' charts that tell you which anvil to use for specific threads, you will see that the 3/8-24 thread is the smallest to use the standard 1.5° anvil. I suggest you review the charts that the manufacturers provide in their technical sections and order a couple of the 2.5°, 3.5° and even 4.5° anvils. You will see a great improvement in the quality of the thread form. The gauging will be better, and the tool life will increase.

Good Luck,

**Jim Rowe**  
Application Specialist / Medical Accounts,  
Mahar Tool Supply, Warsaw, IN

think tank



# Rigid Square

Construct a square from four identical linkages hinged at the corners, as shown. Such a figure is capable of moving on its hinges to become a rhombus (a parallelogram with four equal sides). How many linkages of the same length must be added in the same plane to make the square rigid? The linkages must be in the same plane as the square, and each one can be connected only at the hinges.

Send in your answer—quick! Fax Jill at 708-535-0103, or email at [jill@todaysmachiningworld.com](mailto:jill@todaysmachiningworld.com)

## Text Twist

V N E P R A O D T

The nine letter word is

DAVENPORT

### Who Twisted Masterfully?

**Steve Taylor** of Global Shop Solutions in The Woodlands, TX with a grand total of 379; **Dan Cibulskis and the team** from Aurora Air Products in Aurora, IL with a grand total of 246 words; **Al Bjork** of Toledo Screw Machine Products in Toledo, Oh (who admitted to using an online program but I'm giving him his due anyway!) with 351 words; **John Hall** of Crowley Tool in Hendersonville, TN with 165 words; **Brian Hurtle** of Alexander Screw Products in Indianapolis, IN with 200 words; **Linda Knoth** of QUEM, Inc. in Largo, FL with 228 words; **Janice Leto** of Moldcraft Co., in West Chester, PA with 183 words; **Steve Reinsel** of Linvatec in Largo, FL with over 100 words.

For a complete listing of words our readers found, please email Jill at [jill@todaysmachiningworld.com](mailto:jill@todaysmachiningworld.com)

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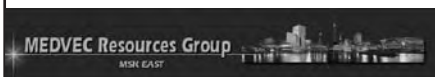
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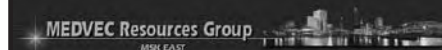
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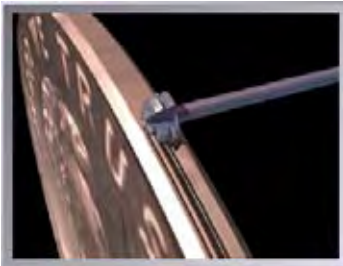
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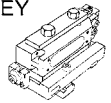
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# afterthought

## Unplugged

I spend too much time looking at screens during the day. I think most Americans do. I sit in front of the word processor and the Internet for at least 6.5 hours out of my 8-hour work day. I go to the health club sometimes after work, where I ride the exercise bike while I surf the Internet and maybe watch a little T.V. too. Then I'll come home, throw myself on the couch and watch the T.V. shows I've recorded with TiVo. I have to at least watch *Mad Money*, then some sports or an important series like *Lost*. Later in the evening, I have to maintain my fantasy baseball team, check my email, go to myspace.com and check my online dating service.

And when I'm all done, I feel rather gross. I spent my day learning about what other people are doing, or watching them do stuff on T.V., and now I have to go to bed, and the cycle starts over again tomorrow. What did I do that day?

“ What did they do with all their time  
when they weren't working in the fields  
or reading the Bible? ”

I think about people 50, 100, 1000 years before me. What did they do with all their time when they weren't working in the fields or reading the Bible? They probably sat around and talked to each other. Maybe they all hung out at the local saloon. Perhaps they played cards or played instruments or practiced fighting in any number of ways. They those things because they had little to read, no electronic screens of any kind, and their chairs or couches probably weren't that comfortable.

I just moved into urban Chicago, after living with my parents in the southern suburbs of Chicago for more than a year. My commute to work has now gone from 15 minutes to 45 minutes, but it's worth it. After the 45 minute commute ends, I get to walk around my Bucktown neighborhood (It's a trendy area on the west side of Chicago). Sometimes I sit at the Italian ice stand and talk to the owner there. I go into the bed store half

a block down from my apartment and chill out with the sales guy who sold me my bed. I may go to the park and play croquet with some complete strangers. Last Saturday night, I was walking from my apartment to the bar scene, and I ran into the artist who had built a sculpture on my street of a cow standing on its hind legs, holding a telescope. He was polishing the telescope's tripod. He told me that the name of the piece was “Cowlileo,” and that it was “whimsical” art, which pays the bills, but he is really wanting to do more fine art that's more abstract and feeling oriented. We chatted about art until 11:00 p.m. Sunday, I played tennis at some public courts on the lake front. I played with a short African-American guy named Mickey, a Romanian guy named Cody and a Jamaican guy named Marvin.

I came to work this week refreshed. I did things last weekend that were pure, real, non-screen related. I met people. I walked down the street to go get something to eat, rather than driving. Sure, on Friday night it was 2:30 AM, and I was on my couch, watching Sports Center, eating Doritos and Ben and Jerry's; but I was tired from all that I had “done” that day.

Noah Graff

Lloyd Graff is on vacation.

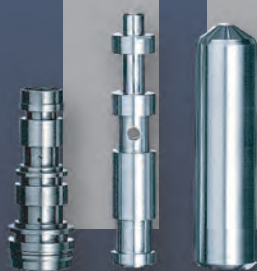
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