

# Forward Focus

Montana Manufacturing Extension Center

SUMMER 2003

## Visits Can Be Breath Of Fresh Air

By Deborah Nash

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Pete Smith, President of HCR, Inc., knows the value of seeing how other shops work and what their capacities are. He is an active member of Lewistown's CMMA (Central Montana Manufacturing Alliance), a volunteer group of manufacturers



*Left, Pete Smith, president of HCR, Inc., and, right, Mark Soares, president of J.E. Soares, talk shop during a tour.*

working on cluster development in that region. Through CMMA, Smith has made more use of his powder coating operation and other equipment and has toured member shops.

Recently he and some of his staff loaded into a Suburban and traveled from Lewistown to J.E. Soares, Inc., near Belgrade, to tour the equipment used there and see how Soares uses and integrates its 3-D

CAD software with equipment on the factory floor.

Several MMEC Field Engineers also toured the operation. They had recommended the rendezvous because both companies are similar in size, work with the same raw materials, have design software packages, and use welding, bending, cutting and other production equipment even though they produce very different products.

Soares is a 100 percent subcontract manufacturer for the precision sheet metal industry, doing business in Montana since 1978. HCR manufactures a proprietary product line, building each to customized specs.

Its line of highly energy efficient open-doorway products ([www.hrc-inc.com](http://www.hrc-inc.com)) have application in grocery store distribution centers, refrigerated warehouses, and food processing plants from -40° F freezers to non-freezer applications. The specialized products separate sub-zero, dry freezer air from warmer, moist loading dock air without the need of a door... also eliminating ice, frost, and condensation from doorway and floor. The company handles complete production, from design, to manufacturing, testing and installation. HCR is recognized as the leader in the industry with products in use all over the world.

*(continued on page 6)*

## New Faces for UTAP



Three engineers (l.to r., Brian Pendergast, Seth Partain, and Shane Cantrell) joined the University Technical Assistance Program this summer to work with Montana manufacturers while they work toward advanced degrees in Industrial or Mechanical Engineering at Montana State University - Bozeman. The trio will work with Mark Shyne and other MMEC field engineers, providing technical and research assistance to companies in support of economic development in the state.

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Director's Comment... **COMPETING**

George Keremedjiev, worldwide manufacturing consultant and strong supporter of MMEC, magnanimously agreed to write an article for this issue of *Forward Focus* ("Disassembling the USA," see p. 4-5). The concerns that prompted the article are deep, profound, and critical to Montana's manufacturing community and related segments as well.

There has been little national discussion about the plight of manufacturing until recently. But, as George notes, in the last two years, the USA has lost 2.6 million manufacturing jobs. Montana has lost about 3,000 factory jobs during the last three years. These are jobs that pay significantly more than the national wage average. It is easy to point to low-wage foreign labor as the culprit but larger issues are in play.

Economic recovery is hampered by a slow recovery in the manufacturing sector. *Why?*

- The cost of manufacturing in the United States has risen sharply as a result of increased costs for health-care, litigation and regulatory compliance.

- Intellectual property theft and counterfeiting (fake products make up about 8% of world trade, according to the International Chamber of Commerce).

- Illegal currency manipulation (especially China, Japan, Taiwan and Korea).

Solutions to the first two issues would have little result if the third is not addressed. Estimates suggest that China's currency is undervalued by 15 — 40%, which makes their exported goods even cheaper. The IMF Articles of Agreement, to which China has agreed, prohibit currency manipulation for the purposes of gaining an unfair advantage over other members. China's undervalued currency could be interpreted as violating several other international agreements including the World Trade Organization. This maneuver reaches into the commodities markets as well. Yet China and other overseas markets are potential buyers of our goods. But you simply can't compete if your opponents cheat.

Intellectual property theft is another overseas issue that needs to be resolved. And on the home front, tax and energy policies need revision; labor and environmental laws need to be revisited... you get the idea.

Solving the problems won't be easy. Protectionism is not the answer. *National Leadership is needed.*

The good news is that in bipartisan efforts Congress is considering bills (H2172 and S1326) that would establish an Undersecretary or Assistant Secretary of Commerce for Manufacturing and Technology. Passage of this law would create a national policy voice for U.S. manufacturers, a critical step to manufacturing health. There are other signs of life. The Senate and House Manufacturing Task Forces have been revived and a Congressional Manufacturing Caucus has formed. More and more national media attention is being drawn to the issues at hand.

This is a battle we must fight and win. Our future depends on it. Our livelihood, our standard of living, our freedom, our food supply, and our security are at risk.

Steve Holland  
MMEC Director

**Wood Conference Set for Seeley Lake**

With another fire season upon us, experts from around the country will meet with the public on September 25-26 at Seeley Lake, Montana, to share ideas for creating healthier forests and rural economies. This **Small Wood Conference** will help entrepreneurs, forest product business owners, conservation groups, builders, engineers, and tribal enterprises learn about the potential for turning "waste" into a product, make forests healthier, and bolster forest-based economies in a sustainable way. A number of experts in small business efficacy, community forestry, biomass energy, new product ideas, marketing, and small diameter engineering will speak at this two day event.

Organized by Montana Community Development Corporation (MCDC) in Missoula, and funded in part by a State & Private Forestry grant from the USDA Forest Service's Northern Region, it will be held at historic Camp Paxon at Seeley Lake. Registration is \$79, including all meals.

**TO REGISTER OR FOR MORE INFORMATION, CONTACT  
CRAIG RAWLINGS, MCDC, AT (406) 728-9234 EXT. 203**

## Now Certified to New Standard...

### CFAC ACHIEVES FLAWLESS ISO 9001:2000 AUDIT

*(Editor's Note: MMEC provides needed expertise to companies as they strive to be more competitive. During challenging economic times, do you move forward to strengthen your position or do you hold? What follows is a story about a Montana company that chose to move forward while facing adverse conditions, executed a plant-wide project flawlessly, and earned an important certification. A round of layoffs, prompted by a shortage of raw materials, dashed what should have been a celebratory achievement. This story recognizes a job well done by all involved and is a testament to the caliber of workers willing to put forth a huge effort while facing uncertain times.)*

by Deborah Nash

Less than one year after embarking on an ISO 9001:2000 conversion project with MMEC, Columbia Falls Aluminum Company (CFAC) sharpened its competitive edge, earning updated quality certification with a flawless first audit by a professional TUV Registrar.

CFAC accomplished what fewer than six percent of companies do in a first audit — zero findings of non-compliance. They can now readily demonstrate to customers a continued committed to quality and continuous improvement in the production of aluminum and aluminum alloys.

As a primary reduction facility, CFAC, turns alumina, refined from bauxite, into molten aluminum then cast into ingots of various size, shape,

and alloy that trades in the metals market. Approximately two pounds of alumina produces one pound of aluminum using an electrochemical process. At full capacity, CFAC produces 185,000 short ton each year. See [www.cfaluminum.com](http://www.cfaluminum.com).

Just when it was time to celebrate the ISO achievement this spring, a China-induced alumina shortage and very high power prices dropped CFAC production from 60 percent of capacity to 20, creating a layoff for almost half of



*CFAC Q-Team leaders and MMEC field engineers sport the MSU Bobcat logo on hardbats. All pictured here are MSU-Bozeman alums, l. to r., seated: Shawn Wang, CFAC; Todd Daniels, MMEC; standing: Kreg Worrest, MMEC; Tom Payne, CFAC; Mike Davis, CFAC; Steve Wright, CFAC; Paddy Fleming, MMEC. Not pictured but integral member of the Q-Team is Steve Knight, CFAC General Manager and Texas A&M alum.*

The plant has a history of continuous improvement including adopting Sumitomo process technology in 1976 to improve plant safety, industrial hygiene, efficiencies, energy conservation, and emissions at its northwestern Montana facility. It attained certification to the 1994 ISO 9002 standards in 1998.

its workers and keeping only one potline going. At full capacity, the plant runs five potlines and has about 500 workers.

Ironically, the abundance of power in the Northwest attracted plants. Three years ago, 10 aluminum

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# Disassembling the USA

*Reprinted from Metal Forming Magazine, September 2003*

I recently had a minor revelation about a major issue. We all know that manufacturing is suffering a dramatic decline in the USA. Just in June alone, we lost 54,000 manufacturing jobs. Since July of 2000 — 2.6 million manufacturing jobs have vaporized. Millions of jobs, millions of parts, millions of dollars — millions of skills have and are hemorrhaging out of the USA. There is no better place to experience the symbolism of these lost American treasures than at the Smithsonian museums in Washington, DC.

I took a careful walk through one of my favorite Smithsonian museums recently, the National Air & Space Museum. To my left, to my right, in front of me, behind me and in a carefully choreographed arrangement above me were aircraft and spacecraft — made in the USA. Everywhere I turned to look — I saw American craftsmanship at its best. It was awe inspiring to stand in front of the Wright Brothers Flyer, the Apollo 11 Command Module, the Lunar Lander, the propeller and jet aircraft. American tool-making, woodworking, molding, machining, and stamping excellence all around me. This aura of American manufacturing prowess was impressed upon me until I walked into the museum gift store.

I am not making this up. The first item I picked up was a tastefully



made patch, the kind one would sew on a jacket — with an American Eagle holding an olive branch with one claw and arrows with the other and with the words PROUD TO BE AN AMERICAN emblazoned in capital letters around this proud symbol of the USA. “Nice patch”, I thought, as I picked it up. The patch was stapled to a card with

the words Smithsonian Institution, Washington, DC printed on it just below the attached patch. A small sticker announced a \$5.00 price. I then bent the patch over to see where it was made — and instantaneously my mood was dampened. A small golden sticker pronounced it made in Taiwan. Two other patches, one with the White House image and the other a full American flag were likewise made in Taiwan.

I then methodically (and probably to the consternation of the gift shop employees who must have thought this tourist to be crazy for flipping each item upside down) checked the manufacturing source of as

## Think About it!

*U.S. Manufacturing spawns more economic activity and related jobs than any other economic sector.*

— Joel Popkin,  
Economist



## GEORGE KEREMEDJIEV

is an international management and manufacturing technology consultant through Tecknow Education Services, Inc., based in Bozeman, Montana. He and his wife Barbara also created and operate the acclaimed American Computer Museum there. His expertise spans over 20 years with the mistake proofing of metalforming and assembly operations. His clients span hundreds of companies including Delphi Automotive, Steelcase, Harley-Davidson, Kodak, Hewlett-Packard, Dell, Mercedes Benz, and many others. He has worked with or visited manufacturing plants across the globe. For the past 10 years, he and Economics Professor Dr. Lester Thurow from MIT have organized a yearly benchmarking conference on national and international economic manufacturing. He is actively involved with Precision Metalforming Association and other organizations.

many souvenirs and gifts as I had patience for. Despite this rough and unscientific survey, I can nevertheless report to you that over 99% of the items I checked were all made outside of the USA with the preponderance from China and Taiwan. How ironic to be in a museum filled with American made excellence of the past and have virtually no American items in its gift store. The irony seemed to have no effect on the other tourists as they snapped up the gift store items seemingly without a second thought about any manufacturing issues. Original American-made aircraft and spacecraft on display with miniature replicas made overseas for sale. "We can't even make souvenirs of what was once real," I remember thinking to myself.

I travel a lot throughout the USA in my consulting work. I can report to you that every souvenir shop — in the smallest to largest cities, highway stops, restaurants, etc., proudly displays stuff not made in the USA. I am very hard pressed to bring

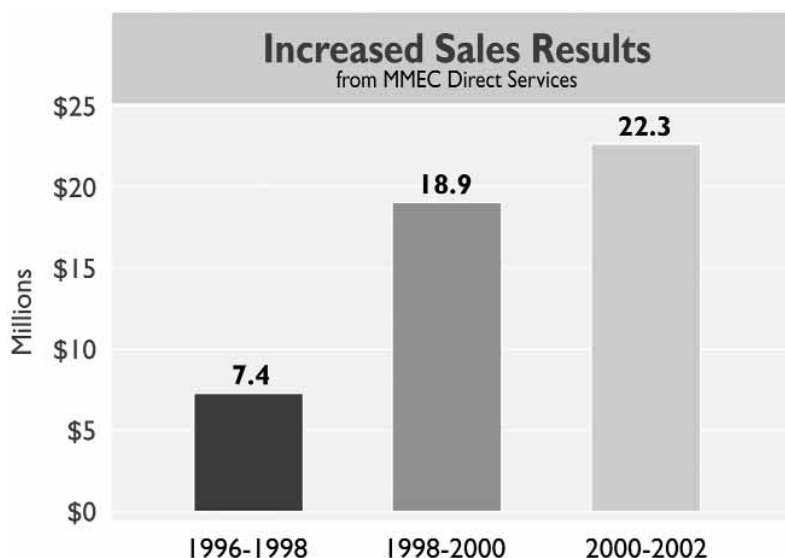
home a souvenir from my travels in the USA that was actually made there. I simply cannot believe that with today's automated sewing machines there is no patch maker who could produce American-made patches for American gift shops. Highway stops along Route 80 in Ohio, Indiana, Iowa — all are filled with items made elsewhere. The best example may be a restaurant chain that seemingly appears at every major highway intersection. You know which one. It serves home-style meals in a large room filled with American made antiques. As you eat you are surrounded with farm implements, mechanical gadgets, advertising pieces, etc. tastefully displayed on the walls. Finish your meal and go to pay the bill at the gift store, and voila! Just about every item you pick up is made everywhere else but the place where the nice antiques in the eating area are from. The food is good but I always feel funny as I step through the doorway leading from the restaurant to the "not made in the USA" gift store.

It seems that the message from Americans to Americans is very simple: Manufacturing in the USA has been, for the most part, relegated to museums and nostalgia filled restaurants and antique shops. Our superstores, our gift stores — our high tech and our low tech are all made everywhere else but here.

And you know what the most painful part of this to me is? I get the distinct feeling that for the most part, Americans could care less. Get more stuff for less money is the mantra. Who cares where it is made? As long as there is an American sounding logo on the item — buy it. Don't look at the box to find the source country — look at the price sticker. Don't worry about lost manufacturing skill sets — contract it out to the lowest bidder and then sell, sell, sell the hell out of it. The American selling it and the American buying it no longer care about the American making it. ■

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### Visits Can Be Breath... (continued from page 1)

HCR was particularly interested in seeing the automated backstop on a Press BRAKE (machine to bend metal) at Soares. Automation eliminates the miles a break operator walks over time to set and reset a backstop for various bend depths. According to Al Deibert, MMEC Field Engineer, in some situations an operator may have to change backstop depths at every stroke.

"We are at a point where we are considering buying a CNC BRAKE. It was a real benefit just to see how another company with similar capabilities and size has chosen to run their business. They have a lot of CNC machinery and seem to be keeping them busy. It reinforced my ideas that we ought to diversify, finding ways for new equipment to do what we need for orders and keep it busy," Smith said. "It was a breath of fresh air to see a company making expensive machinery pay for itself in a way that is a little different from ours. Soares is a neat, organized operation."

HCR is exploring how to expand into 3-D software. They currently design in two-dimension, saving time on drawings that may not be used again. Soares drawings are usually downloads from customers. Comparing did not give HCR all the answers, but they talked with Neal Story, Soares' CAD operator, about how drawings are communicated to the shop floor and saw a demo.

"When you do a lot of repetitive parts, you can put time into the software in terms of managing inventory, creating reuseable cut files and drawings used to assemble the unit. You can create spreadsheets that can be automatically updated with new dimensions for the same product. It's wonderful and powerful," Pete said, explaining the appeal of 3-D CAD software. ■



Left to right: Dan Rhyner, HCR special projects manager; Mark Warren, HCR production manager, and Steve Fralick, estimator at J.E. Soares, examine the edge detail capability of Soares' Amada CNC laser cutting machine (in background).

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## Sales Training Opportunity

### Looking for a way to improve sales performance?

"Action Sales Training" is coming to Bozeman and Missoula this fall. This is a great opportunity to get professional sales training to increase sales.

Kelly O'Connor from Business Source, a Montana company, will meet with participants one night per week for three hours over 10 weeks beginning in October, exploring part of the sales process each session. Participants fit approaches to their own words, personality, and product or service being sold.

During the next week, the techniques are worked into sales presentations for each business.

Participants will actually use it and monitor responses. Everyone then returns to class for rework and to get feedback from the instructor and the other participants, plus study a new aspect of selling. By learning selling principles in this hands-on working group environment with time to practice and improve each week, you will develop successful habits to increase your skills and confidence in selling.

Action Sales Training in Bozeman is sponsored by the Bozeman Chamber of Commerce, Clear Channel Radio, and Montana Manufacturing Extension Center. The cost of the course is \$1,195.00 and includes 30 hours of classroom instruction and all materials. *Clients of sponsors will receive a \$200.00 discount.*

**Contact Business Source for more information at (406) 582-5451.**

## Now Certified...

(continued from page 3)

plants operated in the region. Today, high energy costs coupled with an alumina shortage leave only two.

Still, CFAC views ISO certification and sound quality systems as the right way to do business. Staying competitive in the face of rising electricity prices and more competitors is more important than ever. The company has seen ISO become part of acceptance procedure from customers on the exchange market.

CFAC managers said they are pleased to have found ISO expertise through MMEC. It allowed the Quality management team (Q-Team) to remain on-site while assessments, training, and updating of procedures took place.

"Working with MMEC was a real cost savings and kept our Q-Team from having to make flights out-of-state for consultations. It kept us moving forward," Plant Manager Steve Knight said.

Some companies try to implement ISO systems by themselves. Others choose boilerplate forms and procedures manuals that may not fit the intricacies of the company, often resulting in dismal failure, according to Tom Payne, a CFAC manager and member of the Q-Team. He believes a company needs someone outside steering the effort.

"We were doing a lot [in quality assurance] before, just not formalized and not taking credit for it," according to Payne. "We know we need to do more than just look good on paper. It's how we do business. Our system is homegrown; we review and continue to develop it."

The new standards are helping them do that more systematically with its emphasis on measuring and review.

CFAC sent several employees to an ISO 9000/2000 Internal Auditor Training Course sponsored by MMEC in Bozeman in 2002. It then arranged for several MMEC engineers to come to Columbia Falls to perform a gap assessment to identify areas on which to concentrate to meld to the new standard. It also brought the Internal Auditor Training course to Columbia Falls to engage more staff and invited a neighbor, SemiTool from Kalispell, to take advantage of joint training to reduce costs.

MMEC Field Engineer Todd Daniels helped steer the conversion project, working on-site with the Q-Team, internal auditors, and other personnel. Reviews of all areas were scheduled: management, production, contract review and sales, purchasing/warehouse, existing quality system. He met periodically with the team, assigning tasks and setting check-point reviews and deadlines to move the conversion forward. Sections of the new quality manual were sent to MMEC engineer, Kreg Worrest, for independent review and feedback.

"Todd is a real task master. Our employees not only followed a plan; they wrote much of it. We wouldn't have buy in without it," Payne said.

MMEC was able to help CFAC develop a customer feedback form to improve measurement of customer satisfaction, as per the new standard.

"We are more aware of the downstream customer. ISO 9001: 2000 has

a different focus, more of a clarification on who is the customer," Payne said. "It also changes management responsibility, requiring top management involvement. We had that, but lots of companies don't."

MMEC's gap assessment reaffirmed a good level of management involvement. The assessment also found corporate goals and measuring systems were in good shape. The ensuing project helped pulled those into the quality system, build in a review process, and streamline some internal procedures.

Daniels explained that one of the reasons for review requirements in the new standard is to ensure that goals turn into actions and accountability. "For instance, if you set an acceptable scrap level of two percent, but don't measure it, how do you know if you are performing according to goals?"

They create awareness so a company can act, allocate resources appropriately, and continue to improve. The new standards

emphasize continuous improvement.

As a final step in the project, MMEC reassessed the updated quality

system to spot areas of non-compliance that could be fixed prior to the official audit, keeping formal audit costs and remediation down.

For CFAC, the upgrade is a definite competitive strategy customers are looking for. MMEC helped the company achieve certification in a shortened time frame, providing training, reducing costs, and saving management team time. ■

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**"Todd is a real task master. Our employees not only followed a plan; they wrote much of it. We wouldn't have buy in without it," Payne said.**



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# Don't Miss This Powerful "Marketing Game" Workshop



**MMEC's "Tools for Winning the Marketing Game" workshop and marketing panel discussion is set for Great Falls on September 18-19 and Billings on November 12-13.**

This workshop walks participants through an ever-changing, competitive environment. Prior to the event, participants are given market and customer information/ background about an actual computer hardware product, Voice Recognition Device (VRD). During the workshop, simulating a dynamic marketplace for VRD, strategic decisions are made about how to market this product in a competitive marketplace.

Teams of 3-4 people (team represents one competing company) make decisions about which customer segments to target and which channels of distribution to pursue. In support of these major strategic decisions, teams must also make decisions regarding

product features, price, sales promotion, customer service, marketing communications and production.

According to T.S. Laurens of Stampede Packing in Kalispell, *"The Marketing Game demonstrates the comprehensive nature of marketing from strategy to price and promotion."*

In multiple rounds, each representing a year, teams make decisions and input strategic variables related to these into a computer. They can then analyze the potential results of a decision (via a computer-generated proforma financial statement) prior to making/submitting final strategic decisions for compilation in actual simulation software. The simulation compiles and feeds back printed reports regarding company profitability and how each team is doing relative to the competition. Competitive market data and customer research are then used

to make further strategic decisions about customers to target, how to allocate resources, and how to differentiate from the competition.

*"Once we got started, we didn't want to stop. The dynamic competitive environment constantly challenged our team to make better and better strategic decisions!"* was the reaction of Kern Stevenson, Big Sky Carvers in Manhattan.

A four-hour marketing panel discussion on day two offers participants an opportunity to explore solutions to current marketing challenges in their specific businesses.

**For information or to register online, go to:**  
[www.mtmanufacturingcenter.com](http://www.mtmanufacturingcenter.com)  
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