

ForwardFocus

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Winter 2006

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Plus
2006 OUTLOOK
Manufacturing

Montana Manufacturing Center

University Technical Assistance Program

The CMX...Improving Performance On and Off the Slopes

By Deborah Nash, MMEC

Need often drives innovation; passion takes it to the next level. The power of it continues to surprise Mark Hoffman, who designs and manufactures the Crazy Mountain Xtreme (CMX), a lightweight, high performance snowmobile built for mountain powder riding.

"When I ride [the latest model], I smile, thinking we managed to make it better yet again. I don't know how we did it, but we did!"

His continuing innovations to the CMX keep customers coming back for more, with over half being repeat customers.

Mark and a friend began custom designing their own sleds after coming back empty-handed from the first World Snowmobile Expo held in West Yellowstone back in 1991.

"There was nothing there for us. We came back home disappointed, with money in our pockets," he reflects. "We decided we would have to build our own if we were going to have machines suitable for mountain powder. Factories just didn't build machines for what we wanted them to do."

The first were built from scavenged parts. In 1993, Mark built another, this time using all new parts. That sled was featured in a "Modstock Competition" magazine in the winter of 1995, and the phone started ringing. Mark has been building sleds to order ever since at Crazy Mountain Motorsports, which he owns and operates with his wife Vicky in the farming community of Clyde Park. The couple closed their general repair

business there in the winter of 1996-97 to focus on building sleds.

Innovative

The CMX features good power to weight ratio, balance, and exotic materials such as titanium, Chrome Moly, carbon fiber and other sophisticated materials right down to the wiring. These materials and Mark's passion for con-



Well protected in the bumper, the light weight LED tail light array fits CMX design and look as new sled takes shape.

tinuing innovation on the CMX greatly enhance the snowmobiling experience for his customers.

When riding mountain powder, less weight is critical for both flotation and better performance, Mark explains. For that kind of riding, you need more track

on the ground. The CMX is the answer.

In 1999, Crazy Mountain developed a great aftermarket belt drive system that is also available in a kit for other machines to replace chain case drives. It is significantly lighter than those systems and the direct-drive systems typically used in the industry.

Another innovation is an off-side throttle, and new this year are a special track improvement and different seat. The track improvement, suggested by the Hoffman's son, Kamron, decreases rolling resistance and offers other advantages like better sled cooling, less snow build up and efficiency gain. "CMX" is etched into all product innovations. All are added to help customers rip down a trail and through rugged terrain with ease.

"Our machines add to the fun factor. They are designed for horsepower craving, adrenaline junkies," Vicky says with a grin, adding, "But you don't have to be an excellent rider or 'crazy' as some infer from our name (depicting the beautiful mountain backdrop to their community). The CMX makes everything easier."

Tapping Others

A trained machinist, Mark thrives on creating and building things. "I don't want to give up the hands-on in business; it is therapy for me," he declares. As an avid rider, he calculates and designs for precise performance needs easily. Manufacturing efficiency, on the other hand, has not come as naturally. A recent improvement using point of use storage (POUS), where materials and tools are set up right at the workstations, was not

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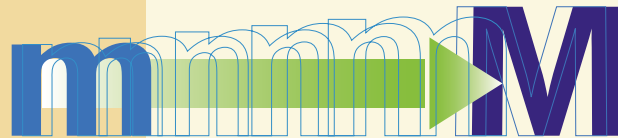
An Eye Opener

The Director of the Bureau of Business and Economics Research (BBER),



Paul Polzin, invited me to be part of the 31st annual Economic Outlook Seminar this year. I was honored as the Bureau was founded in 1948 and has a rich and respected reputation.

The half-day sessions are founded on a different theme each year. This year it was "regulation" and "Montana's Legal Environment: Are We Open for Business?"



Small firms carry larger burden.

The sessions include presentations on the outlook for Montana's basic industries. In fact, you will find a summary of the Manufacturing Outlook in the center of this issue, which BBER generously allowed us to reprint from the BBER Economic Outlook magazine.

As the luncheon speaker, I was intrigued to explore the topic of regulation. After all, we talk about it all the time — usually in the context of "burdensome" or "irritating" regulation. Regulations can also be necessary and important — rules we live by. For example, traffic regulations keep us safe and moving on our streets and highways.

However, I was not prepared for all I learned. For instance, the 2003 Federal Register, a daily publication of the

federal government that lists proposed changes to agency rules, contains 71,269 pages (down from the record of 75,606 in 2002).

The 2002 Unified Agenda, published in the Register twice a year, summarized the rules and proposed rules each Federal agency expects to issue during the next six months — a total of 4,266 regulations at various stages of implementation throughout the 50-plus federal departments, agencies, and commissions, up 2% from the previous year. Of those:

- 127 were considered "economically significant" with at least \$100 million in economic impact. Those rules would impose at least \$12.7 billion yearly in future off-budget costs.
- Five agencies wrote 1,973 rules, nearly half of the 4,266 (Treasury 530, EPA 417, Department of Transportation 365, Homeland Security 338, Department of Agriculture 323).
- Regulatory costs for all exceed all corporate pre-tax profits, which totaled \$665 billion in 2002.
- Of the 4,266 regulations, 859 would affect small business.

The average cost of compliance for small and medium-sized corporations to comply with the tax code's 5.5 million words (more than seven times longer than the Bible) is \$7,240 for every \$1,000 in taxes they pay.

Most notable was a 2001 Office of Advocacy of the Small Business Administration release stating that the US manufacturing sector shouldered \$147 billion of the \$497 billion in estimated

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NorthWestern Energy joins the Montana Manufacturing Extension Center in co-hosting another great Compete Smart manufacturing conference set for October 4-5, 2006 at the Helena Great Northern Hotel. The highly acclaimed event is supported by other generous sponsors. An invigorating keynote speaker, plant tours, valuable breakout sessions, and several surprise events are in the works! Be watching future issues for more on what the conference has to offer that can help you Compete Smart.

**Mark Your Calendar
October 4-5, 2006
Helena, Montana**

Innovator Reaps Rewards with SBIR Support

By Deborah Nash

Entrepreneurial Montanans are reaping the rewards of innovation support from the Montana Small Business Innovative Research (SBIR) program at the Montana Department of Commerce.

Arbuckle Ranch, Inc., Billings, is one such company working to develop an effective native grass seed harvester. In the accompanying summer 2004 photo, the

Phase I SBIR prototype of the Arbuckle Native Seedster is shown just a short month after project approval. The Phase I established the technical feasibility of the seedster, focused on developing patented seed dislodgement technology of counter-rotating brush and combing drum that "plucks" the ripe seed of native grasses and other plants while leaving the rest of the plant intact. Native grass seeds ripen at differing times and have other characteristics that make them difficult to harvest. The Arbuckle team estimates there are over 100 native grass seeds of economic importance and for which, combines and stripper methods are ineffective or unable to effectively dislodge, collect, separate, or convey the seed. Based on successful harvest of five divergent species, the Seedster is expected to effectively harvest most of those species.

"That summer day in 2004 we demonstrated that we dislodged seed and only seed, i.e. no chaff... indicating the first two steps were resolved," says inventor Lee Arbuckle. "Getting to that development stage wouldn't have taken place with our SBIR/USDA support; and it wouldn't have taken place without a lot of design/manufacturing advice from MMEC Field Engineer Dale Detrick."

But solving seed dislodgement is just one of the harvest steps. The process of the harvester consists of four steps: A) dislodgement of seed, B) separation of seed from chaff, C) conveyance of seed to



Lee Arbuckle during demo of a prototype Arbuckle Native Seedster which worked as expected. Seed dislodgement on everyone and everything! Continued refinements underway.

a receptacle and D) off-loading of seed.

After demonstrating the device to several professionals including Dr. William Goldner, National Program Leader of USDA/SBIR Competitive Program unit in the Cooperative State Research, Education, and Extension Service, Arbuckle and Goldner discussed the important step of being able to handle the flow of dislodged seed. Arbuckle was considering a pneumatic approach.

The Phase I award was followed by a Phase II which is just over half completed. Inventor Lee Arbuckle predicts that the seed dislodgement mechanism will be commercially ready by July 2006.

The Goldner visit led to an additional Phase I SBIR proposal, this time to develop a pneumatic conveyance technology and off-loading system. That project is just about to conclude its Phase I, Arbuckle said, and demonstrates the technical feasibility of the pneumatic conveyance system (PCS).

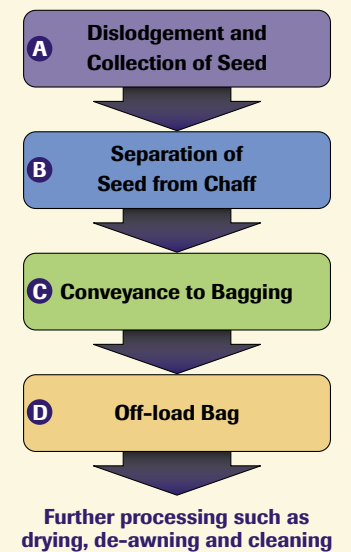
"The PCS also wouldn't have happened without the excellent advice from Detrick at MMEC," he noted.

Near the end of January, Arbuckle and his wife Maggie found themselves in a

frenzy preparing a Phase II proposal to demonstrate the commercial feasibility of the PCS. "If it is approved and all goes well we will have the first commercial release complete by July 2006, with a much more advanced version in 2007."

The Montana SBIR program was started in 1999 to help Montana companies compete for more than one billion dollars in federal grants that have been earmarked to fund research and development. Prior to the creation of the SBIR Rural Outreach Program, businesses in rural states like Montana competed very poorly for SBIR funding at the national level. Today a number of companies advance through SBIR grants (visit <http://sbir.state.mt.us/>).

Flow Chart of Harvest Steps



Help Marketing Your Business

A 2006 Trade Show Assistance Program through the Montana Department of Commerce is intended to help Montana based companies to explore new domestic and international wholesale markets through exhibiting at trade shows outside of the state. "We know what wonderful businesses and innovation our state has to offer. This program can help you share this with the country and the world," Governor Brian Schweitzer said.

"The key is making that first connection face to face," according to Tony Preite, Director of the Montana Department of Commerce.

Any Montana company providing a product or service, or adding value to a product in Montana, is eligible to apply, according to Lonie Stimac, Marketing Officer. The business must be a first time participant in the specified show. Agricultural companies are referred to the Department of Agriculture for similar assistance.

Business can get a 50 percent reimbursement of up to \$3,000 for such things as booth rental and promotional materials. To get more information, call Stimac at 406-841-2783.

Crazy Mountain Xtreme (continued from cover)

intuitive. Mark contends that everyone has a mindset that affects how they do things.

“Mine was that a toolbox is for tools. So that’s where we kept them. We spent a lot of time running back and forth across the shop for tools,” he says. “Now we think work station, and our parts and tools are kept at the appropriate work station.”

POUS, recommended by the Montana Manufacturing Extension Center (MMEC) as part of a Lean Manufacturing approach to business, can decrease production time by eliminating excess part searches and material handling. It simplifies physical inventory tracking, storage, and handling. Crazy Mountain often taps the expertise of MMEC and its University Technical Assistance Program engineers, saying their experience helps to break those “mind sets” that can hinder productivity.

Students in MSU College of Engineering senior design classes have also contributed to process improvements at the firm, helping set up a logical inventory numbering system that uses letter combinations to represent the myriad parts in relationship to build stages.

Cellular Manufacturing

Last year, MMEC/UTAP performed a value stream mapping analysis at Crazy Mountain, developing a conceptual design for a future facility that will incorporate the goals of the client. The analysis illustrates the current state of operations and identifies areas for improvement using Lean. A manufacturing cell for rear suspension work, set up where hundreds of parts are used, has improved productivity by 30 percent. Additional cells will maximize space for increasing production and help prepare



Vicky & Mark Hoffman

for expansion that includes a showroom.

The dream of adding to the facility is, of course, weather dependent. With the low snowfall in recent years, it’s been more a survival time, Mark notes. When customers drop by, the talk undoubtedly

turns to the weather, early snows being a good indicator for the season along with trepidations about a possible shift in the jet stream. A good snow year will be good for business.

To help weather low snow seasons, the Hoffmans and employee Brent Smith attended an MMEC Lean Manufacturing class several years ago to learn more about cutting wastes and improving process flow using value stream mapping.

“Having all of us attend was important because now we all understand what we’re trying to accomplish, and Brent has contributed ideas on procedures and improvements that are helping,” Mark said.

“It’s amazing how we have refined procedures, improved quality and are making our orders faster since adopting Lean principles. MMEC/UTAP really helped us get organized.”

“They have greatly improved our professionalism,” Vicky adds.

Today, Crazy Mountain builds six sleds at a time, creatively using old hospital beds as lifts for flexible access to physical build points that start with the chassis, track, and belly pan. Inspired by Lean class learnings & project work, the crew designated time this summer for workplace organization, the 5-S (*sort, set-in-order, shine standardize, & sustain*). They have tossed accumulated but outdated items and initiated a “cleaning shop” sale on the company website www.crazymtn.com.

“We’ve definitely learned how to uti-

lize space better,” the couple says.

One design challenge MMEC worked with the company on several years ago was the tail light assembly for the CMX. The early design used an incandescent bulb and bulky wiring that was difficult to install and required occasional repairs for customers’ machines.

MMEC Field Engineer Mark Shyne and a University Technical Assistance Program (UTAP) engineer did some research into a design improvement using LED arrays and recommended several local design companies that could build and supply the parts. Advanced Electronics Designs in Bozeman was selected, and that tail light configuration is working very well.

The array fits into the sleek bumper rather than on the rear of the seat as in other brands. The change not only looks sharp but adds greater field reliability.



Crazy Mountain Motorsports was the first to offer a belt drive system (CMXDS) as standard equipment as well as offer it in kit form for upgrading older heavy chain case drive systems on other machines.

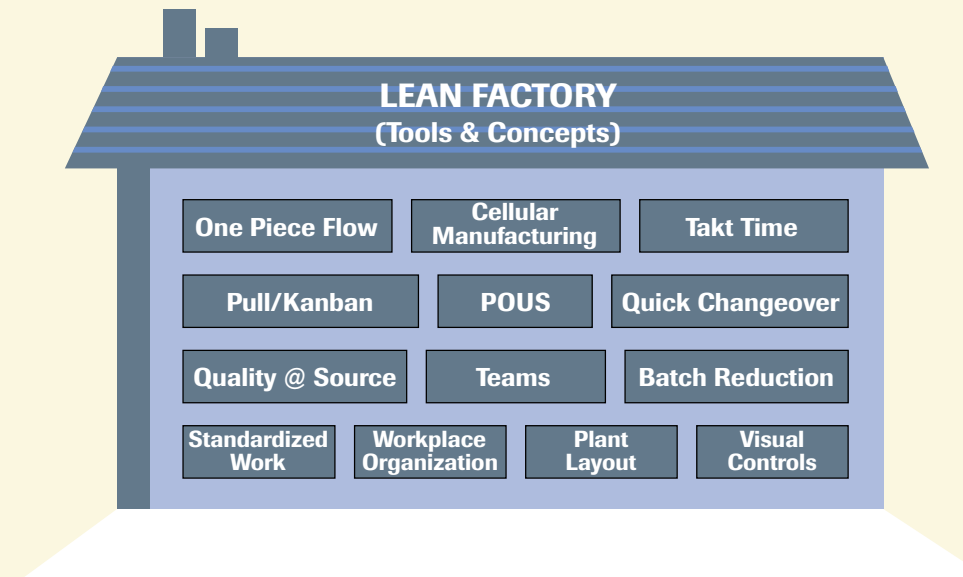
reduces assembly problems and improves quality. Assembly now takes minutes, cutting the time by half an hour per unit using a much less bulky wiring assembly and creates happy customers, since LEDs don’t burn out.

(Crazy Mountain Xtreme continued)

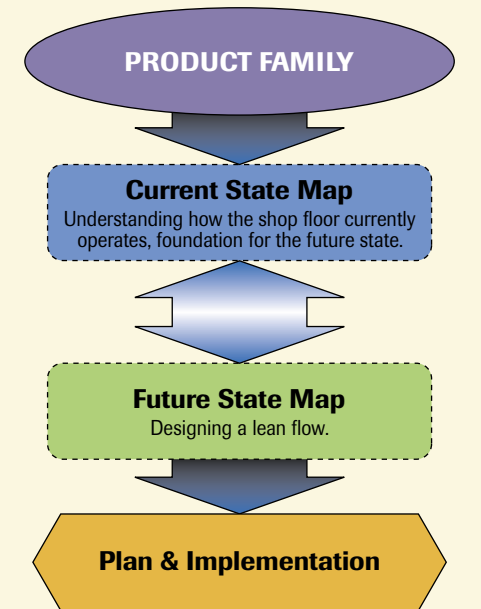
“MMEC is such a valuable resource. Every time we’ve needed help with something, MMEC has helped us or put us in connection with someone who can,” Mark says about his efforts toward continuously improving operations and the CMX.

“When our customers ride with bud-

dies who are on [traditional brands], that’s when everyone can see the performance difference, even over stock brands that have modifications. Our customers are very loyal, dynamic and fun to be around. We have made some wonderful friends through the business,” Vicky states with pride.



Using Lean concepts, MMEC/UTAP explored the current state of operations with Crazy Mountain Motorsports to develop a future state and implementation plan.



CMX – increasing the fun factor

Got Leftovers?

Find it, give it away, buy-sell-trade on the Montana Material Exchange!

Leftovers have a way of taking over space not only in the refrigerator but also in your business or warehouse. Whether it’s packing peanuts, pallets, chemicals, construction materials, or something else entirely, the Montana Material Exchange (MME) provides an opportunity to unclutter, whether it be surplus or used, industrial by-products or any other unwanted but usable material. Consider MME as a cost-saving alternative to disposing of accumulations or as a low-cost resource for finding materials that you need.

Created and maintained by **Montana State University Extension, Montana Pollution Prevention Program**, this free

web-based service connects businesses, government agencies and other organizations that have materials they need to get rid of with parties who can use them. By providing reuse opportunities, MME helps you prevent waste and reduce environmental impacts at the same time that you save on disposal costs. And it can help you in your 5-S initiative (*sort, set in order, shine, standardize, and sustain*), a building block of Lean Manufacturing.

Small or large quantities of almost any usable material can be listed on the MME website. Both “wanted” and “available” listings can be posted, and any listing can be confidential if requested. Users can also designate “available”

materials as free to schools, charities, or government agencies. So before you pay to dispose of those old desks, leftover construction materials, or surplus cleaning chemicals, etc., remember that someone else might be happy to take them.

Visit the MME at www.montana.edu/mme. An informative brochure and step-by-step e-guide on using the MME are also available free from the Montana Pollution Prevention Program by contacting the Mike Vogel or Cali Morrison at 406-994-3451 or via email at mvogel@montana.edu or cmorrison@montana.edu, respectively.

SPECIAL FEATURE

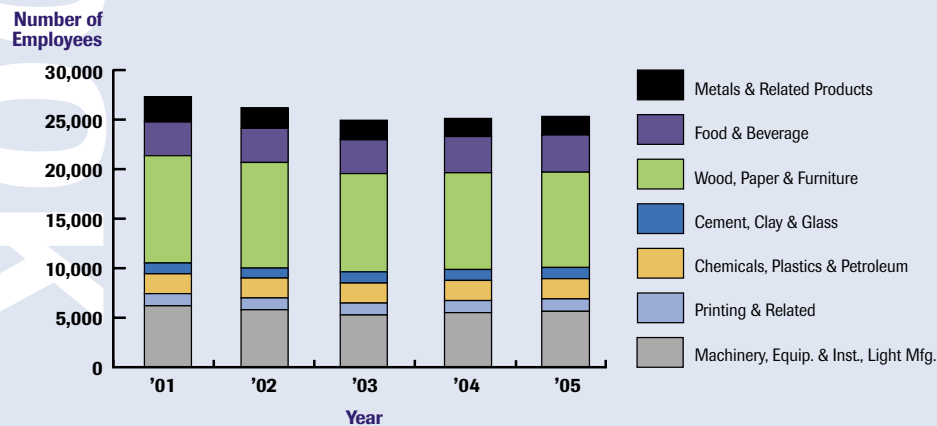


THE 2006 ECONOMIC OUTLOOK FOR MONTANA'S MANUFACTURING INDUSTRY

Each year, the Bureau of Business and Economic Research (BBER) economists at the University of Montana collect and analyze economic data for various industries in the state of Montana. For 31 years, this information has been presented in eight or nine Montana communities in a series of Montana Economic Outlook Seminars. This year's circuit entitled "Montana's Legal Environment: Are We Open for Business" concludes in early March and has been made possible with generous support from First Interstate Bank.

This year, Jack Morton and Michael Harrington, both lawyers and professors at UM's School of Business Administration, discussed the relationship between Montana's business and legal environments. The latest economic trends were highlighted by BBER Director Paul Polzin, while other experts examined the outlook for various industries influencing Montana's economy. MMEC Director Steve Holland was the featured lunch speaker with "Conversations from the Field." Manufacturing data presented during the seminar is a special feature in this issue of Forward Focus.

Figure 1
Montana Manufacturing Employment, 2001-2005



Sources: Bureau of Business and Economic Research, The University of Montana-Missoula; Bureau of Economic Analysis, U.S. Department of Commerce.

Table 1
Employment and Labor Income in Montana's Manufacturing Sectors, 2001 and 2005

Manufacturing Sector	Labor Income [thousands 2003\$]		Employment	
	2001	2005	2001	2005
Machinery, Equip. & Inst., Light Mfg.	\$226,049	\$206,425	6,204	5,649
Printing & Related	37,435	38,088	1,229	1,256
Chemicals, Plastics & Petroleum	191,842	219,446	2,001	2,037
Cement, Clay & Glass	44,500	45,177	1,094	1,134
Wood, Paper & Furniture	434,797	399,278	10,828	9,618
Food & Beverage	116,238	127,088	3,400	3,751
Metals & Related Products	118,112	90,175	2,546	1,880
TOTAL	\$1,168,974	\$1,125,676	27,302	25,285

Sources: Bureau of Business and Economic Research, Bureau of Economic Analysis, U.S. Department of Commerce.

Montana's Manufacturing Industry

(Reprinted with permission from BBER 2006 Outlook publication)

by Charles E. Keegan III, Thale Dillon, and Robert Campbell

Following three years of declining production, sales, and employment, Montana's manufacturing industry saw improvement both in 2004 and 2005. The sector currently:

- Employs over 25,000 people
- Produces approximately \$5 billion in output annually, and
- Accounts for over 20 percent of Montana's economic base.

After a 1 percent increase in 2004, average monthly manufacturing employment was up approximately 1 percent in 2005 as well. Over half of surveyed Montana manufacturing firms reported increased profits, with another 19 percent indicating profits equal to 2004. Sales were up for 61 percent in 2005, and production increased for 60 percent. The increased manufacturing activity in Montana can be attributed primarily to a continued strong U.S. economy, even with dramatically higher energy costs and the impacts of several major hurricanes.

A number of factors prevented a better performance by Montana manufacturers in 2005.

- Virtually all of surveyed¹ Montana manufacturing firms reported their plants being negatively affected by high energy prices in 2005, with higher raw material, operating/production, and transportation costs being the most common consequences.
- Labor availability continues to be a problem. Not only do firms have difficulty recruiting and retaining skilled workers, they also have difficulty attracting quality employees

for entry-level positions, resulting in problems with work ethics, absenteeism, and performance.

- As in the past, raw material availability

In 2005, over half of surveyed Montana manufacturing firms reported increased profits...

and cost continued to be a problem in 2005. This is especially the case for the wood products industry (see pages 27-28 in BBER Outlook publication), but shortages and higher prices for items such as steel, plastics, and concrete made this problem more universal.

- Additionally, freight availability (and now also cost) is still an issue, especially for those firms shipping primarily out of state. Manufacturers expressed concerns over the availability and cost of both truck and rail transport.

Montana's manufacturing industry has not always been faced with as many challenges as it is today. There was substantial growth in the industry throughout the 1990s, a decade in which Montana manufacturers added over 2,000 jobs, reaching a peak of over 27,000 workers. This increase was followed by a rapid decline that continued through 2003, when employment fell back under 25,000 workers.² After suffering job losses during the "manufacturers' recession" in 2001, firms throughout the nation continued to cut back through 2003. Job losses in Montana were proportionately less than in the nation as a whole in 2002, but proportionately higher in 2003.

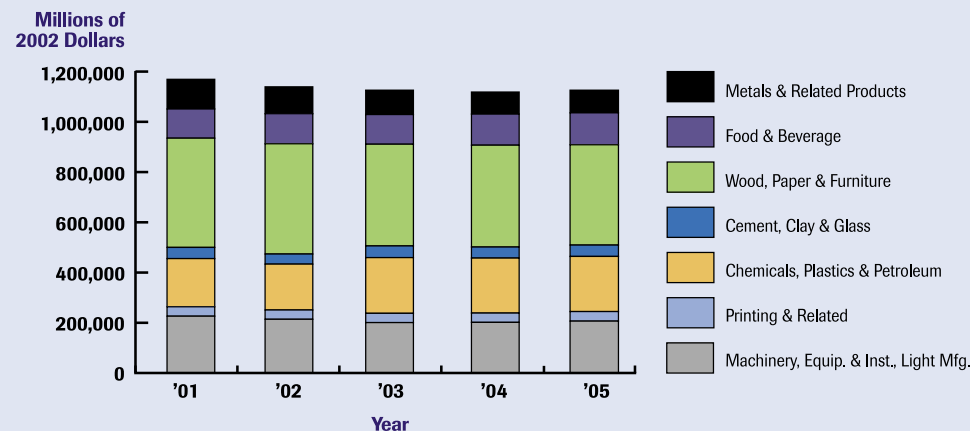
Table 2
Manufacturing Employment and Labor Income Among Montana Counties, 2003

County	2003 Manufacturing Employment*	% of State's Manufacturing Employment*	2003 Manufacturing Labor Income [thousands 2003\$]	% of State's Manufacturing Labor Income
Yellowstone	3,670	16%	\$215,000	23%
Flathead	3,520	15%	\$148,300	16%
Missoula	3,060	13%	\$137,400	15%
Gallatin	2,630	12%	\$108,700	12%
Ravalli	1,310	6%	\$ 51,400	5%
Cascade	1,020	4%	\$47,200	5%
Lake	960	4%	\$29,300	3%
Lewis & Clark	790	3%	\$32,800	4%
Lincoln	600	3%	\$23,100	2%
Silver Bow	590	3%	\$30,000	3%
Remaining 46 Counties	4,610	20%	\$113,300	12%
Montana	22,760	100%	\$ 936,500	100%

*Estimates do not include the logging and forest management industries, which would add more than 2,000 jobs and over \$107 million in labor income.

Sources: Bureau of Business and Economic Research, The University of Montana-Missoula; Bureau of Economic Analysis, U.S. Department of Commerce.

Figure 2
Labor Income in Montana Manufacturing Industries, 2001-2005



Sources: Bureau of Business and Economic Research, The University of Montana-Missoula; Bureau of Economic Analysis, U.S. Department of Commerce.

Outlook: 2006 and Beyond

The U.S. economy is projected to remain strong in 2006, with global economic conditions expected to weaken slightly. However, a weaker U.S. dollar may aid a number of Montana manufacturers. In line with these expectations, Montana manufacturers have a fairly optimistic outlook for 2006. Over half of the manufacturers responding to our survey (Montana manufacturers with 20 or more employees) expect improved conditions, while 43 percent think 2006 will turn out about the same as 2005, leaving only 6 percent who foresee worsening conditions. Fifty-seven percent expect to keep their work force at the same level in 2006, while a full 39 percent foresee an increase. Fifty-one percent of firms expect higher profits in the coming year, with 40 percent expecting them to stay the same as 2005. Given that 2005 exceeded expected production, sales, and profits for surveyed manufacturers this reflects a generally optimistic outlook for Montana manufacturers.

When manufacturers were asked to rate a list of issues in terms of general importance to their business, 97 percent of respondents rated energy costs as important, followed by the availability of qualified workers and health insurance costs, both important to 95 percent of respondents. Workers' compensation rates were important to 92 percent.

As in previous years, surveyed manufacturing firms highlighted several issues that will influence their operations in the coming year. By far, the biggest concern for 2006 is the cost of energy, including fuel, gas, and electricity. There seems to be little optimism here, though, as only 10 percent foresee a reduction in natural gas prices, and a mere 2 percent predict electricity prices will go down (see sidebar).

The future of energy costs clearly colors expectations for manufacturing performance in the coming year. Along with labor shortage and transportation problems, it can make it difficult for the industry to be competitive in Montana. However, with some energy prices showing decreases and the U.S. economy projected to remain strong or even strengthening further, there is good reason for a positive outlook. Lowered energy costs would ripple through all parts of manufacturing, improving many of the issues that were problematic in 2005, such as the cost of raw materials, freight, and production. The quality and size of the Montana labor pool is still a problem, though, with no expected near-term improvement. According to the Montana Department of Labor and Industry, the retention rate for college graduates is improving. However, our surveys still indicate a limited availability of the technically trained workers the industry needs.

¹We surveyed 222 Montana manufacturers employing 20 or more employees and selected other firms, of which 80 percent responded.

²The change from the Standard Industrial Classification (SIC) system to the North American Industry Classification System (NAICS) has made it problematic to provide consistent and continuous time series data for employment and labor income. Numbers for years prior to 2001 are based on the old SIC system, while the more recent figures are based on NAICS.



Energy Issues

Survey recipients were asked their expectations with regard to the prices of various types of energy. (Table 3) Respondents were the least optimistic with regards to the price of natural gas. Close to three-quarters (71 percent) anticipate further increases in this area, while only 10 percent anticipate price decreases. Respondents also showed low optimism regarding electricity, with 55 percent expecting a price increase and 43 percent expecting prices to remain at the current levels. Gasoline and diesel inspired the highest level of optimism, with over 20 percent anticipating the prices of each to go down. However, the survey was administered during peak gasoline and diesel prices. Still, price increases were anticipated by 40 percent for gasoline and by 43 percent for diesel. For fuel oil, 52 percent of respondents expect prices to go up, while 15 percent anticipate a price decrease.

Table 3
Energy Prices
“Compared to [prices in Nov. 2005], what do you anticipate will happen to energy prices in 2006?”

Fuel Oil	52%	33%	15%
Electricity	55%	43%	2%
Natural Gas	71%	19%	10%
Gasoline	40%	39%	21%
Diesel	43%	35%	22%

Manufacturing News

Innovative Instruments

World-renowned guitar maker **Gibson Montana** (www.gibson.com) announced the launch of six new Gibson acoustic models this year. The growing company took center stage at the Winter NAMM convention held in Anaheim, Calif., in January with some of the most innovative new models every presented. These fine instruments are handcrafted at the Gibson Acoustic division in Bozeman, Montana.

Brand on Product

Bacterin International in Belgrade recently released its first medical device carrying the Bacterin name brand. The device, Via Wound Drain, drains excess fluid from the body after surgical procedures. Bacterin previously worked only with other companies to produce medical devices. It created and branded the Via Wound Drain as a way to diversify revenue sources, according to a recent Bozeman Daily Chronicle article quoting Investor Relations and Marketing Manager Molly Mason. Bacterin plans to release another drain, the Elutia Wound Drain featuring an anti-microbial coating, later this year.

Exports Increase

Exports of **industrial machinery**, Montana's leading manufactured export, increased by 78 percent in 2004 (latest available data) to \$110.3 million for the year while shipments of **inorganic chemicals** rose to \$75.3 million, an increase of 143 percent.

Competitiveness Rating

According to a new study, entitled State Competitiveness Report 2005 just released by Boston's Beacon Hill Institute at Suffolk University (www.beaconhill.org), **Montana ranks 33rd** for economic competitiveness. Massachusetts leads the nation for its strength across a broad variety of economic indicators for the second straight year. Neighboring New Hampshire ranked second, improving from its 7th place ranking in 2004. Louisiana finished last. (courtesy of MATR News, Montana Associated Technology Roundtables, www.matr.net)

Early Fire Season

Neptune Aviation in Missoula has sent several tankers south over the New Year to fight tough wildfires in Texas and Oklahoma, according to a Missoulian article. The Neptune tankers were dispatched by the National Interagency Fire Center in Boise, Idaho.

Name Change

The food business incubator known as the Mission Mountain Market has changed its name to better denote the increased services available within the new **Mission Mountain Food Enterprise Center** (MMFEC).

Labor Available

Cable Technology, Inc. recently opened a site in Great Falls citing available labor as a key reason. The firm is shifting most front-office, sales, engineering, quality control and large quantity manufacturing from Kalispell.

Got News? Send us your company news briefs using MFG News in the subject line to dnash@coe.montana.edu

Help with our MAILING LIST MAKEOVER

MMEC is updating its MAILING LIST and customer database. Over the next few months, we will be contacting you for an update on your company contact information to keep the quarterly manufacturing newsletter Forward Focus, future training dates, and conference information reaching you in a timely manner.

This information is stored on a secured system and is not rented or sold. We value your time and your trust and want to keep you informed about manufacturing news and events in Montana. So, please, don't hang up when we call!

New Face in UTAP

Clint Finlayson recently joined the crew of the University Technical Assistance Program in the MSU College of Engineering. He is working toward an advanced degree in Industrial and Management Engineering after earning a Bachelors degree in Industrial Engineering from MSU in December. UTAP is supported by the Economic Development Administration, U.S. Department of Commerce, through its University Centers Program.



Clint Finlayson

Exporting Award Winners Announced

Governor Brian Schweitzer joined with Kim Wild, Chair of the Montana District Export Council, and members of the Montana District Export Council in honoring three statewide winners of the Montana District Export Council's Governor's Excellence in Exporting Awards for 2005.

Exports are an important and growing sector of Montana's economy. The value of Montana exports exceeded \$842 million in 2004. The 2005 Exporter of the Year was awarded to Pasta Montana in Great Falls. Export Marketing Program excellence was awarded to Quake Industries in Belgrade. Also receiving an award as Export Advocate was Carey Hester of the Montana Department of Commerce.

Pasta Montana, www.pastamontana.com, the state's largest manufacturer of dried pasta, received recognition for its significant contributions to the state and local economy by the export sale and marketing of its product. In the past eight years, pasta exports from the state of Montana grew from under \$22,000 to \$11.6 million. Dried pasta now ranks as the 13th largest export commodity from the state. The company employs approximately 75 people.

Quake Industries, <http://quakeinc.com>, was recognized for excellence and effectiveness in its efforts to develop and increase export sales of its shooting sports slings for rifles and bows, accessories and hunting equipment. With 11 employees, it currently exports to 22 nations worldwide. Nearly all annual revenue is comprised of business from outside of Montana, infusing the Belgrade economy with over \$1 million of new money per year.

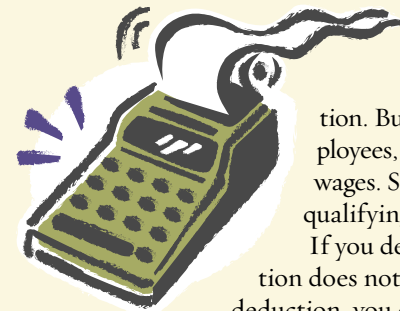
Export Advocate Award winner Carey Hester of Helena initiated and developed technical training for Montanans through a series of export workshops after realizing that companies needed more than information and counseling to effectively compete in global markets. He is the Senior International Trade Officer with the International Trade & Relations Bureau.

For more information on Montana exports go to www.exportmontana.com.

Your Income Tax Burden...

Deciphering the New Manufacturers Deduction

by David L. Gilmer, CPA
Guest Writer



The American Jobs Creation Act of 2004 passed some time ago, but we are just now seeing and dealing with some of its benefits. One provision provided a manufacturers' deduction as a result of the international turmoil over the United States' export subsidies. Although prior regulations concentrated on exporting goods by providing export tax benefits, the new bill provides many benefits to American manufacturers that are not participating in the global market. Many other industries will reap benefits including agricultural, construction, motion picture, publishing, auto rental and leasing, and engineering and architectural services.

In reading material covering the new deduction, it is apparent that the most important and difficult part of taking advantage of the deduction is in learning all the definitions. The next step is gathering the data defined in order to calculate the deduction. Here are a few highlights of how the deduction will work.

The deduction is being phased in based upon a percentage of the lesser of Qualified Production Activities Income (QPAI) or Taxable Income. The percentage for 2005 and 2006 is 3%, increasing to 6% for 2007 through 2009, and peaking at 9% for 2010 forward. If you have negative QPAI or Taxable Income (a loss), you will not get the deduction, and there are no carryovers.

Part of the goal of the American Jobs Creation Act of 2004 was to stimulate job growth. As such, the first limitation that should be addressed is that the deduction is limited to 50% of W-2 wages. For small Montana businesses, this is one area in which the entity type you have chosen will effect your ability to take this deduction. Partnerships and LLC's will not have qualifying wages to partners or members. If the only indi-

viduals working are owners, you will not be able to get the deduc-

tion. But if you have other employees, you will have qualifying wages. S-corporations will have qualifying wages to the owners.

If you determine that this limitation does not prevent getting the deduction, you can proceed to calculating the deduction. As mentioned, the lesser of the QPAI or Taxable Income is multiplied by the applicable percentage. But what is QPAI? QPAI is your domestic production gross receipts reduced by the costs of production, other deductions, expenses and losses directly allocable to such receipts, and a portion of deductions, expenses and losses not directly allocable to such receipts (overhead). These receipts include the sale or exchange, or lease or rental, of qualifying production property that was manufactured, produced, grown or extracted by you or your company in whole or in significant part within the US. This also includes selling qualified films you produced, selling electricity, natural gas, or potable water you produced, construction activities, and engineering or architectural services performed in the US for construction projects located in the US. Retail sale of food and beverages are not allowable receipts for the deduction. You must also consider who exactly has the benefits and burdens of ownership in determining which entity is entitled to the deduction. This applies in situations

where companies hire independent contractors to perform construction or other activities on their behalf.

So what do all these definitions, calculations and rules mean to you? Well, you should start by sitting down with your tax advisor and going item by item to determine whether or not you qualify for the deduction. Then, it will be a matter of determining how to gather

The deduction is being phased in... peaking at 9% for 2010 forward. Montana manufacturers helped shape this new bill by participating in focus groups organized by Senator Max Baucus in response to the export subsidy turmoil.

the information needed to calculate and verify the appropriate figures. Expect these activities to be detailed and time consuming for the first year. While calculating the deduction could amount to keeping a second set of books, depending on your situation, the deduction may be well worth the extra cost and effort.

David L. Gilmer, CPA of Junkermier, Clark, Campanella, Stevens, PC, has worked in the Missoula office for seven years and serves a variety of business and individual tax clients. He also performs operational audits for financial institutions.

Ag Innovation Center gets another year

The U. S. Department of Agriculture has given the Montana Agricultural Innovation Center another year to spend more than \$360,000 remaining in federal funds on programs that promote Montana-made, value-added products, according to an early winter Montana State University press conference in Bozeman.

The center provides farmers and ranchers with services such as market analysis, marketing assistance and packaging design for value-added products (manufacturing), starting with raw materials that are modified or enhanced to add to their worth. Adding value helps generate more money in the local economy, according to Montana's USDA Rural Development Director Tim Ryan.

Free China IP Advice

A new China Intellectual Property Rights (IPR) Advisory Program at the Department of Commerce will allow U.S. small and medium-sized enterprises to request free one-hour consultations with an experienced volunteer attorney to learn how to protect and enforce intellectual property rights, such as trademarks, patents or copyrights, in China. Commerce developed this program in coordination with the American Bar Association, National Association of Manufacturers, and the American Chamber of Commerce in China.

Information on how to use the SME China IPR Advisory Program can be found on the following Department of Commerce websites: www.export.gov/China and www.Stopfakes.gov.

The Commerce Department also offers legal advice on starting export operations through the ELAN program which can be found at www.export-legal-assistance.org.

Director's Comment (continued from page 2)

regulatory compliance costs in the year 2000. The report also said **per employee regulatory costs for businesses with fewer than 20 employees were \$6,975. Compare that with the cost per worker of \$4,463 for firms with more than 500 employees.**

Clearly, small firms – Montana businesses – carry a disproportionate burden from regulatory costs. This has a huge impact for Montana, its companies being small by national definition (small and medium sized businesses have 500 or fewer employees!).

I may seem biased, but with good reason. Why? Small Businesses create more jobs than large businesses; are more innovative and generate more new technology; and small manufacturers supply the parts that large manufacturers integrate into final products. Small businesses are the backbone of the U.S. economy.

The U.S. needs to heed the findings of the Office of Advocacy of the Small business Administration and stop choking the goose that lays golden eggs.

Steve Holland, MMEC Director

Reducing Industrial Energy Use

BOZEMAN – Thursday, March 9, Montana State University will host a live nationwide satellite teleconference on "Industrial Efficiency Initiative: Save Energy, Maximize Profits." The teleconference will focus on proven management strategies as well as innovative techniques that can reduce energy costs and maximize profits.

The presentations take place in room 127 of the Burns Telecommunications Center at MSU and apply to all types of manufacturing, including food processing. Participants can register online at <http://www.nwfpa.org> or contact Keri Hayes or Duane Griffith at (406) 994-3511. Registration fee is \$60.

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If you have no network, it's time to get started.

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March 21 and 22 at the Holiday Inn in Missoula

See full conference details and online registration at:
<http://www.medamembers.org/sbiragendamarch06.html>

Pre-Conference activities start at 10:30am, March 21, and feature three targeted mini-workshops-STTR Funding, Getting Started in the SBIR Program, and Intellectual Property Strategies. Or, arrive at 3:00 p.m. to join a tour of Bee Alert, an award-winning Missoula SBIR company that is training bees to locate IED and other explosive devices.

The pre-conference day concludes with a 5:30 p.m. registration and networking session, where you can view tradeshow exhibits and engage in deal-making or tip-swapping with other Montana entrepreneurs.

“Got Networking ?” keeps rolling at 7:30 the next morning. You will hear from three of the top 10 federal prime contractors as well as federal agency program managers from USDA, DoD, and NASA. Get energized by our inspirational lunch speaker, and then learn about new opportunities in the commercial and research track breakout sessions.

Sign up now! <http://www.medamembers.org/sbirregister.html>

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