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THIS PART REPRESENTS 477 DEFENSE MANUFACTURING JOBS IN WV.

WE HELP MAKE THE PART POSSIBLE.

RCBI is committed to manufacturing in West Virginia and has provided technology, training and niche manufacturing assistance to more than 2,500 manufacturers that employ nearly 47,000 workers.
The Line
Look in on important developments in the manufacturing industry.

Manufacts
Quick picks from statistics relevant to manufacturing.

The Last Page
Capacity interviews Col. William Bulen, Huntington District Commander of the U.S. Army Corps of Engineers.

AEP to Invest More Than a Billion Dollars in State Plants
Dana Waldo, president & CEO of Appalachian Power, details his company’s growing investment in WV.

Meeting the Competitiveness Challenge
John Engler, president of the National Association of Manufacturers, on his group’s ambitious legislative agenda.

Opportunity is Knocking at Our Door
WV can be a land of opportunity for manufacturers, says Karen Price, president of the WVMA.

Cost Segregation Studies Equals Tax Savings Opportunity
Accountants Steven Robey and Skip Harless offer a tax strategy worth evaluating.

The Soul of the Senate
Documentary on U.S. Senator Robert C. Byrd to premiere in May.

Use of Broadband Technologies Holds Tremendous Possibilities for WV
The WV Chamber of Commerce is working to improve access to broadband connectivity.

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Next Issue:
Preparing West Virginia’s workforce – for today and tomorrow.
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West Virginians can rightfully take pride in our state’s long and illustrious military heritage – a saga that can be traced back to even before we became a state.

From the American Revolution – which saw West Virginia frontiersmen and farmers fight as members of the Virginia militia – to the current conflicts in Iraq and Afghanistan, untold West Virginians of all races, creeds and social stations have answered their country’s call to duty. And thousands of them have made the ultimate sacrifice, giving their very lives so that we and our fellow Americans can enjoy the blessings of liberty.

At the same time, West Virginia industry historically has played a critical role in providing our military the wherewithal needed to fight. In a very real sense, many of our nation’s military victories were won not just with bombs and bullets but also with products forged in our factories and coal dug from our beloved hills.

Today, exciting new chapters are being written in this proud story. We explore some of these in this Spring issue of Capacity, which focuses on national defense and homeland security.

On our cover is Major Gen. Allen E. Tackett, the state’s adjutant general. A miner’s son from Cabin Creek and a 25-year veteran of the U.S. Army’s Special Forces, Tackett is working hand in glove with U.S. Sen. Robert C. Byrd, D-W.Va., to carve out important new missions for the West Virginia National Guard. As detailed in this issue, these include turning the former Memorial Tunnel on the West Virginia Turnpike into a hands-on underground training facility for first responders and transforming Preston County’s Camp Dawson into a modern training center for the war on terrorism.

The National Guard also has made West Virginia an important test bed for new homeland defense systems, a fact that, as Tackett suggests, could bring significant future opportunities for our state’s manufacturers.

Also shown on our cover is a schematic drawing of the U.S. Air Force’s Global Hawk robot spy plane. It’s a high-flying example of the kind of sophisticated space-age weaponry that’s now found in America’s military arsenal. And it’s an example, too, of West Virginia’s vital role in helping fill that arsenal.

Key components for the Global Hawk, which has more than proven itself in missions over Iraq and Afghanistan, are made in West Virginia, by West Virginia manufacturers, with assistance from the Robert C. Byrd Institute for Advanced Flexible Manufacturing (RCBI). This issue takes a look at Global Hawk and some of the other military hardware that’s manufactured here in West Virginia.

Responding to the nation’s needs in both peace and war is an integral part of the mission of the U.S. Army Corps of Engineers, as Col. William Bulen, commander of the Corps’ Huntington District, explains in an informative interview.

Other articles in this issue explore the RCBI 21st Century Manufacturing Network, which links Mountain State manufacturers to federal agencies to meet Department of Defense (DoD) and homeland security needs, and RCBI’s efforts to help state manufacturers comply with the stringent quality standards now required if they’re to supply the military.

Elsewhere in this issue:

Dana Waldo, the president of Appalachian Power, details the giant utility’s growing investment in our state, an investment that could dramatically increase if West Virginia is successful in luring a new coal-fired power plant that Appalachian’s parent firm, American Electric Power, plans to build somewhere in its Eastern region.

John Engler, the former three-term Michigan governor who’s now president of the National Association of Manufacturers, discusses NAM’s agenda for the 109th Congress, newly convened in Washington.

And Steve Roberts, president of the West Virginia Chamber of Commerce, talks about broadband technology and the promise it holds for West Virginia. Broadband could be the key to expanding Internet connectivity and use, especially in our state’s rural areas.

Plus, there’s more important, useful reading in this issue as well.

As always, we’re interested in hearing your thoughts, comments and suggestions. You may email us at Capacity@rcbi.org.
The horror of 9/11 forever changed that mindset. That fall day forced our nation to rethink our security, from the technology at our airports to the security at our borders to the training for our first responders. The tragedy left an imprint on America that has affected us all, and it resulted in an accelerated commitment to homeland security and improved defense technologies to meet the changing dangers facing the country.

Due to foresight and a commitment to excellence, West Virginia is fast developing into a leader in homeland security training and specialized defense manufacturing.

For example, after the fall of the Taliban in Afghanistan, Marines and Army Special Forces scoured the rugged hills and caves of that country searching for remnants of the old regime and for al Qaeda terrorists. Where did they train for this mission? West Virginia.

First responders – police officers and firefighters and emergency medical teams – stand ready to answer the call when the Department of Homeland Security raises the terrorist alert. The threat could come from a chemical tanker or a biological weapon. Where do America’s first line of response train to handle these and other situations? West Virginia.

Long before 9/11, our state already had identified looming threats and put in place the resources and expertise to train America’s first responders.

Perhaps the most visible piece of West Virginia’s counterterrorism training is the Center for National Response (CNR) at the Memorial Tunnel in Kanawha County. Started in 2000 with funding that I added to federal legislation, this center has provided one-of-a-kind instruction to more than 20,000 military and emergency responder personnel. Now, because of more than $20 million that I have added to federal legislation to equip and update the CNR, the National Guard is able to shape training to virtually any situation that emergency teams might face.

Camp Dawson in Preston County is another key piece of West Virginia’s homeland security network. Camp Dawson gives National Guardsmen and other military personnel the opportunity to train for a range of important missions, including special operations and defense against weapons of mass destruction.

Today, thanks to a decision by the U.S. National Guard Bureau, Camp Dawson is taking on a new mission. The Guard has chosen the Preston County facility as its first National Guard Joint Interagency Training Center for Homeland Defense. Simply put, Camp Dawson will be the site for the
country’s first comprehensive homeland defense facility. It will serve not only the National Guard, but also the training needs of the Department of Homeland Security and the Department of Defense, as well as emergency responders and other state and local agencies.

But homeland defense training is only part of West Virginia’s role in protecting America’s national security.

At a time when U.S. troops are engaged in a fight against terrorism overseas, West Virginia’s role as a leading supplier of cutting-edge defense products grows ever more critical. Our state is home to creative, innovative companies that are working to give the military the best weapons and training available. Manufacturers throughout West Virginia provide soldiers, sailors, airmen, and Marines with the tools that they need to protect America’s interests around the world.

During the mission in Afghanistan, for instance, the military has relied on Global Hawk unmanned aerial vehicles (UAVs) to track threats and seek potential targets. By giving troops access to detailed information without exposing them to the enemy, UAVs are truly lifesavers. The Bridgeport-based manufacturer, Aurora Flight Sciences, produces the tail sections and structural parts on the fuselage of the Global Hawk.

Aurora already has built specialized parts for all of the Global Hawks currently in service, and now the company is preparing to grow. Last fall, Aurora won a $20 million contract from defense contractor Northrop Grumman to manufacture key components for the latest design of the Global Hawk. This contract is a testament to the skill of West Virginia’s high-tech workers, and it means that Aurora will continue to infuse jobs and money into the Harrison County economy.

The next generation of these planes could receive a significant contribution from another West Virginia company, Augusta Systems in Morgantown. Right now, UAVs fly alone. But Augusta Systems is developing the technology to allow a number of planes to fly in unison, controlled by a single user and sending more complete information to American forces. By developing what amounts to the brain of a new generation of UAVs, this team of West Virginia researchers will enhance the surveillance and reconnaissance capabilities of America’s military, while decreasing the dangers to our men and women in uniform. I am proud to have supported this effort by winning more than $8 million in federal funding to speed the development of this technology.

These are just two examples of the high-tech manufacturing underway in West Virginia. Whether at Aurora West Virginia or Augusta Systems, or the weapon development underway at the U.S. Navy’s Allegheny Ballistics Laboratory in Mineral County or at Mason County-based Utron Corporation, Mountain State companies provide the men and women of our country’s Armed Forces with the technology, equipment, and training they need to successfully defend our nation.

I will continue my work in the Senate to ensure that the men and women of America’s Armed Forces have the resources that they need to do their job and return home safely.

What we have accomplished in West Virginia is because of teamwork. Cooperation among the federal government, private companies, the National Guard, the West Virginia Office of Emergency Services, and so many others has placed the Mountain State at the top of the list for homeland security preparation and specialized defense manufacturing. West Virginia has the best homeland security training facilities, companies committed to innovation and excellence, and patriotic men and women who are dedicated to their nation. Now, we will be able to share the expertise and the innovations developed in West Virginia with the rest of the country. The work we do in the Mountain State today will serve to protect America for many tomorrows to come.

U.S. Senator Robert C. Byrd, D-W.Va., has cast more than 17,000 votes in his Senate career, more than any other Senator in the nation’s history. He also has the distinction of having held more Senate leadership positions than any other Senator of any party.
Rep. English Wants A ‘Revolution’ In United States Trade Policy

The U.S. manufacturing base is “reaching a meltdown” and must be protected through a “revolution in U.S. trade policy,” says Rep. Phil English (R-Penn.). The U.S. government “can no longer stand on the sidelines advocating a free-trade status quo without aggressively intervening to make sure that American workers and American companies aren’t facing an artificial disadvantage in competing with other countries,” English told the Hermitage Rotarians in Pennsylvania. A trade deficit running at 5 percent of the country’s GDP cannot be sustained without a decline in the nation’s standard of living. April’s record $48 billion trade deficit “demands an immediate response from Washington policymakers,” English said.

But there is little desire to change trade policy “because to do so entails undertaking reforms in a whole range of sensitive areas,” English told his audience. The country needs stronger and more enforceable trade agreements; fundamental reform of existing trade laws; stronger customs enforcement in dealing with imports; commercial assistance for companies; and an overhaul of international institutions that oversee the trade rules, such as the World Trade Organization (WTO). China also needs to be addressed because it is “sapping our industrial base by illegally manipulating its currency, stealing intellectual property and using its tax and regulatory system to subsidize its products,” English said.

The Pennsylvania Republican has introduced legislation designed to address some of the problems facing manufacturers: The Trade Law Reform Act (H.R. 2365) would make it easier for American companies to seek relief from unfair trade; The Non-Market Economy Bill (H.R. 3716) would allow U.S. employers to file complaints about illegal subsidization from China and other non-market economies; and the CHINA Act (H.R.-3058) would punish Chinese currency manipulation by allowing tariffs of up to 40 percent to be levied on Chinese imports if directed by the U.S. Department of Treasury.

DoD Buying Chief Outlines Acquisition Strategies for Firms

Acquisition officials in the U.S. military are moving to a new model of purchasing broad “capabilities” that are fully integrated with communications networks. “We are moving in a new direction and these changes have already begun to be reflected in our industrial base, and I bet there are more changes to come,” says Michael Wynne, the Pentagon’s top acquisition official.

The biggest change is the Pentagon’s desire to buy products, systems and services that are enabled with knowledge, says Wynne. “We only buy products that are network-centric, instead of platform-centric products of the past.”

The Pentagon now provides contractors with a 39-page questionnaire requiring them to describe how their product is compatible with military networks. “If it isn’t, we probably won’t buy it,” says Wynne, “unless it’s an urgent need.”

And there are urgent needs. “I’ve got people lined up to sell me the latest high-tech gadgets: radars that go another mile down the road; guns that shoot more rounds; planes that fly slightly faster. Those things are all great and we need them,” Wynn told a recent meeting of the Center for Strategic and International Studies. “But if you are a business looking to sell to the Department of Defense, let me tell you what I also need and have yet to find: I need trucks that don’t rust. I need fuel efficient generators. I need fork lifts and conveyer belts that get my stuff off the boats and trucks and into the field much more quickly. Basically, I need faster, more efficient, more creative solutions to my logistical problems.”

All of these products will still have to be “net-centric,” and one way this is being done is through the use of radio-frequency identification tags (RFID). “This is knowledge-based logistics at its heart,” Wynne told an audience of about 200 executives and scholars. “This is getting our base set for the knowledge-enabled systems that will allow for ‘reach back’ – from the warfighter and personnel in the field back to headquarters in Washington or to wherever the knowledge exists that will help solve an immediate problem.

DoD is working with Wal-Mart on implementing RFID tags on all of its cases, pallets and packaging of items purchased by the military depots. “This partnership will effectively open the RFID market by introducing product volumes
not expected for years in the future,” says Wynne.

On the broader purchasing front, Wynne says the Defense Department will buy whatever it needs from wherever the best capabilities exist. “We see the industrial base as more than sufficient to meet our needs,” he says. “Note that I said ‘the’ industrial base, not necessarily the ‘American’ industrial base and not necessarily the ‘defense’ industrial base. We look simply to ‘the’ industrial base to satisfy our needs....When we want to provide our warfighter with a particular ability, we want to hear what all companies have to offer – both American and international, as well as both traditional defense companies and non-traditional defense companies.”

There are plenty of commercial companies wanting to supply DoD and there are plenty of defense suppliers that are able to buy the best materials from around the world and integrate them into their military products. This plays well with the new DoD buying strategy of opting for the purchase of capabilities over the purchase of products. “What that means is that instead of paying for a particular number of computers and software licenses for each user, we pay for the ability to access the latest computer technology that allows us to talk to each other in real time, over distances and on the Internet,” says Wynne. “It is now up to the company to make sure that we have the appropriate software and hardware to do just that.”

This approach gives DoD suppliers the flexibility to source parts and components from wherever they exist. “They can determine not only which products and services would be the best solution, but also where and by whom these products and services are developed and manufactured. And it is up to them to follow the industry trends,” Wynne notes.

If the best warfighting capabilities exist overseas, then DoD should not hesitate buying them, says Wynne, touching on the politically sensitive subject of “Buy American.” “It is important to reaffirm the fact that non-U.S. suppliers have a key role to play in our programs,” he says. “Though our allies and trading partners sometimes criticize our purchasing practices as being way too Fortress America, the facts show a good trade exchange occurs. And though some in our Congress and in our own administration say this is tantamount to a transfer of jobs overseas, in fact, it has prompted some countries to open companies here in the United States.”

The only area of the industrial base that concerns Wynne is the declining number of American students enrolled in engineering and the sciences. “We must reverse this trend if we are to retain our technology lead, no matter what our investment strategy would be,” he says. DoD will be re-introducing the National Defense Education Act of 1958 and calling it the National Defense Education Act of 2006. “We hope to spark the turn in the trend line as well as secure some great talent for our labs and our civil service,” Wynne says. “As you know, we are also faced with a potential retirement of tremendous talent and the need to refresh this as well. We would certainly look to your support as we reach out for this action.”
The U.S. metalcasting industry like all U.S. manufacturing has received a large amount of negative press recently. While our industry saw a downturn in production from 2000 to 2003 due to a down economy and increased foreign competition, it is critical that the record is set straight about the current state of the U.S. metalcasting industry as well as what our near future is forecast to be.

The U.S. metalcasting industry currently has 2,380 metalcasting facilities producing engineered cast components in iron, steel, aluminum, magnesium and zinc via more than 20 different manufacturing processes. The industry employs more than 220,000 people with 80 percent of metalcasting facilities being small businesses that employ fewer than 100.

In 2005, the industry is forecast to produce 14.3 million tons of castings, which equates to $33.6 billion in shipments. This is 4 percent growth compared to 2004 shipments. The forecast for the near future shows an increase in shipments of 11 percent by 2008, meaning the industry is forecast to achieve a 25-year high in shipments in 2008 that will equate to more than $40 billion in sales. While the U.S. metalcasting industry has lost more than 20 percent of its plants in the last 10-15 years, the casting tonnage it can produce today is equal to what it could produce 10 years ago.

A letter from Jerry Call, Executive Vice President of the American Foundry Society

An “unprecedented” new initiative has been launched to attract a new generation of highly skilled workers into the manufacturing profession. The “Dream it. Do it” awareness and economic development campaign was launched on Feb. 8 in Kansas City by the National Association of Manufacturers, Monster, the American Association of Community Colleges and the College Board. The Department of Labor is contributing $500,000 and the Kauffman Foundation is providing $900,000.

The campaign intends to educate students about the opportunities that exist in modern manufacturing operations at places like Dell, Motorola, Honeywell and Harley-Davidson. Students will learn about interesting opportunities available for skilled workers in the manufacturing sector through advertising, direct mail and brochures as well as a Web site. New training opportunities will be provided through coalitions of local civic, business and educational organizations.

“If we don’t address the skills shortage by reaching out to young people and expanding career training opportunities for them, our economy – and our country – will face a serious decline,” says Phyllis Eisen of the Manufacturing Institute. “Now is the time to start addressing these critical issues.” For information, go to http://www.dreamitdoit.com.
What these numbers reveal is that today’s metalcasting facilities are more efficient and technologically advanced than they have ever been. Robotics and automation are commonplace from the molding and coremaking lines to the pouring of the molten metal. The number of plants that have eliminated human labor entirely from the production process grows daily. In addition, other advanced technologies, such as rapid prototyping have become critical for metalcasters as a way to bring product to market in days. Our industry’s largest customers (Ford, GM, DaimlerChrysler, Caterpillar, John Deere, Dana, etc.) are some of the most advanced manufacturers in the industry, and they demand that we are in sync with their manufacturing and production systems.

Now we are not blind to the foreign competition from around the globe. We just don’t want to let it be the death blow to our industry. Currently, 18 percent of all casting demand in the U.S. is met by foreign sources. These sources include plants in Western Europe as well as those in low-cost nations such as Brazil, China, India and Korea. While these plants have gained this supply level through excessively low pricing, U.S. metalcasters have learned that our customers don’t make sourcing decisions on price alone. Customer service, engineering expertise and time-to-market (low lead times) have become critical factors in the sourcing process, allowing U.S. metalcasters to win back many jobs from low-cost sources as well as continue to increase our total revenue.

In addition, the U.S. metalcasting industry is in the midst of a Section 332 investigation with the U.S. ITC to determine whether low-cost nations are playing on a level field with us, or whether they are “dumping” castings in the U.S. by pricing below the cost of the raw materials and energy used to produce them. While the battle will continue well into the future, our industry is poised to continue as the globe’s leading producer of engineered cast components.

Our industry does have challenges to overcome, but they are not insurmountable. With our forecast looking bright, we are on the cusp of reaching levels of production and sales we haven’t seen in 25 years. It is a great time to be part of the U.S. metalcasting industry.

The manufacturing sector shed another 25,000 jobs in January, the third consecutive month of declining employment in manufacturing, according to the Bureau of Labor Statistics. There were 14,305,000 people working in the manufacturing sector, with almost 10-times that number working in the service sector: 132,573,000, including 21,711,000 people working for state, local and federal government and 15,093,000 working in retail trade.

The entire manufacturing sector lost jobs, says BLS. Industries with the most declines include motor vehicles and parts (-10,000), chemicals (-5,000) and semiconductors and electronic components (-2,000).

“After reaching an employment trough in February 2004, manufacturers added 85,000 workers through August,” says the BLS analysis. “The trend has since turned downward, and 61,000 jobs have been lost.”

The entire economy added 146,000 jobs in January, led by growth in education and health services (+35,000), professional and business services (+25,000), leisure and hospitality (+20,000), retail trade (+19,000) and government (+12,000). To view the complete report, go to http://www.bls.gov/news.release/empsit.toc.htm.
Members of the National Association of Manufacturers have adopted a new trade strategy that calls on the U.S. government to take a more aggressive role in the enforcement of trade agreements. The strategy, shaped in part by a contingent of small and medium-sized manufacturers unhappy with the current trade situation, also implores the federal government to strengthen its efforts to open overseas markets to U.S. exports.

The small manufacturers that were active in creating the NAM strategy said trade agreements should lead to “commercially meaningful gains for American manufacturing, globally and in the United States.” They inserted language in the agenda calling on the Commerce Department “to develop a sector-by-sector-analysis of the impacts of domestic and international factors on U.S. manufacturing.”

“We want to focus Congress and the administration on what is happening sector by sector,” says David Frengel, of United Penn Technologies, who led the effort on behalf of the small manufacturers involved in developing NAM’s trade policy agenda. “Once we get the sector-by-sector analysis, we can hold that up to the media and Congress and say, you better be watching these numbers.”

The new trade policy has made enforcement co-equal with market expansion, says Frank Vargo, vice president of international economic affairs at NAM. “What we’re saying is we’re going to make the system work for small companies and we are also going to insist that the trade negotiations really call for results-oriented steps that are going to level the playing field to gain the same access for U.S. goods in their markets that they have in ours.”

The agenda calls on the Bush administration to aggressively pursue new free trade agreements with Egypt, India, Malaysia, New Zealand and South Korea. It calls for the passage of the Central America Free Trade Agreement and for continued negotiations of the Doha Round of the World Trade Organization.

The NAM agenda, however, wasn’t well received by one rival trade association in Washington, D.C. The United States Business and Industry Council (USBIC), the 72-year-old organization representing the interests of about 1,000 small, mostly family owned domestic manufacturers, says the NAM document represents a setback for U.S. industry. The strategy, says USBIC, continues on a disastrous course that encourages the outsourcing of U.S. manufacturing capacity.

The NAM Trade Agenda 2005 and the NAM Trade Agenda for China 2005 are available for download at http://www.nam.org/trade.

Manufacturing & Technology News editor Richard McCormack spoke with Alan Tonelson research fellow at USBIC about the NAM trade agenda, and then later with Frank Vargo of NAM, who responded to Tonelson’s criticisms.
TONELSON: I’ve been looking at NAM’s new trade policy in tremendous detail. This brings the cause of balanced trade and strengthened domestic manufacturing several big steps backward. The NAM reform movement has so far proved to be a total fiasco. In my view, the NAM reformers have been taken for a ride by NAM’s vastly more experienced Washington staff, which has laid several very clever policy traps for them. The NAM reformers walked right into them.

From a purely tactical standpoint, the NAM reformers made a huge mistake by announcing at the start of this process that their chief aim was preserving NAM unity. Once the NAM leadership realized that, they also realized that the NAM reformers would have no real leverage, and that they could simply jerk them around and lead them by the nose and essentially in the end throw them a few crumbs, which aren’t even really crumbs – they are pretend crumbs – and the NAM reformers would be happy.

VARGO: I am really disappointed at how he characterizes our small companies who worked very hard and got demonstrable results. Dave Frengel [of Penn United Technology, who led the “reform” movement] and the others spent a lot of their money and time and doing a lot of work that they thought would benefit them.

TONELSON: The first major policy trap [the reformers] fell into was to accept NAM’s insistence that any trade remedies proposed in these documents be WTO consistent. The WTO is structurally incapable of promoting U.S. economic interests on any sustained basis. It is not anything like an American court of law as it’s commonly supposed to be. It is not comprised of objective judges seeking perfect justice and it’s not an institution in which all parties to a case can be assured of receiving a fair shake. It is a quintessential political organization like all international organizations and we don’t understand that the politics of the vast majority of WTO members are to keep the U.S. market much wider open than their markets are. The simple reason is they rely so heavily on exporting to the U.S. for any economic growth that they can achieve. Staying in the WTO means that virtually nothing effective can be done in terms of providing trade remedies for specific U.S. companies or specific U.S. industries as a whole.

VARGO: What a dumb idea. We’re going to leave the WTO and everybody else is going to stay in and play by the rules? No. The rules-based system would go out the window. Alan would say we win, but that’s nonsense. One-fifth of all of our manufacturing output is exported. That would be thrown into kilter. We would lose our export markets. We

You don’t have to talk to three manufacturers before you see that the trade problem facing manufacturers isn’t free trade. It’s China. Problem number two is China and problem number three is China.

VARGO: He’s pushing the same one-note sound bite that he’s been pushing for 10 years: “All of our ills are because of free trade agreements. These are flawed agreements. Put a freeze on trade agreements.”

You know, somebody ought to buy the guy a hand calculator and give him the Web address for the Census Bureau
because you don’t have to talk to three manufacturers before you see that the trade problem facing manufacturers isn’t free trade. It’s China. Problem number two is China and problem number three is China. That’s where the problem is and you have to address it, rather than just running around saying, “Oh, let’s put a freeze on trade negotiations.”

The numbers show that since 2000, when we started having our manufacturing job loss, that over 80 percent – four out of every five dollars in the increase in our trade deficit – has been with countries that we don’t have trade agreements with. So Alan is barking up the wrong tree. He is focusing on the 20 percent and ignoring the 80 percent.

The biggest increase in the trade deficit was with China and with the European Union. Now what do these two have in common? An undervalued exchange rate. Europe’s is pretty much taken care of, and it takes a couple of years for trade to turn around, but it will. China is not taken care of and it’s a really serious problem. China also has subsidies. It’s stealing intellectual property. It is selling counterfeited American goods around the world. You have to go after it.

**TONELSON:** The third policy trap the NAM reformers fall into is accepting the belief or the faith that we best open foreign markets by trying to micromanage economic and social trends in foreign countries – in enormous foreign economies and societies with deeply ingrained habits of doing business and doing government.

We should have learned from our experience with Japan with the structural impediments initiative of the early 1990s that this doesn’t work. And this doesn’t work because foreign bureaucracies are not accountable to anyone. They don’t have to write things down. They don’t have to get legislative approval for their decisions. They don’t have to publish what they do. They can erect trade barriers faster than our trade lawyers and trade officials can identify them.

So there is a long laundry list of Chinese trade barriers that the NAM is going to try to persuade the U.S. government to go after more vigorously. This is a fool’s quest. This is a wild goose chase that will take forever and achieve no results at all.

**VARGO:** The way trade negotiations were conducted for decades was the developing countries were given a pass because the philosophy was they were weak and we shouldn’t expect them to make concessions. There was a Cold War and we gave them billions of dollars in aid and said you can have access to our market and we’re not going to ask anything in return. We’re saying those days are over. They’re in the WTO; they’re not free riders any more. They have to pony up. That is a big change because the figures are astonishing. 70 percent of all of the imports that come into the United States come in duty-free and the average U.S. manufacturing duty is 1.9 percent. That’s heavily concentrated in textiles, apparels and footwear. If you exclude those sectors, then the average U.S. manufacturing duty is 0.9 percent. We’re very open. Alan’s answer is we’ll just put on high tariffs. But that’s not going to happen and if it were to happen that would not be good. That would throw U.S. industry into a calamity.

**TONELSON:** The problem is the NAM reformers are inexperienced. They are well intentioned but they are inexperienced. They never properly understood the real aims of U.S. trade policy and therefore can’t possibly come up with the kinds of policy changes that are necessary. If they get the problem wrong, they’ll never get the answer right.

They should have recognized that the outsourcers who run NAM will never change unless the NAM reformers threaten to walk out and unless the NAM reformers were
ready to play hardball. At the very beginning of the process, the NAM reformers announced we’re playing softball, in fact, they’re playing badminton.

Because they fell into these policy traps and because they endorsed the Bush administration’s outsourcing trade agenda and because they endorsed a further weakening of U.S. export controls, I think this NAM reform effort has pushed the cause for fair and balanced trade and a stronger manufacturing base several big steps backwards. They blew it.

**VARGO:** When Alan yaps about trade agreements being outsourcing agreements – by far the biggest one is NAFTA and that’s all about Mexico. But if you check the figures, our manufactured imports from Mexico were smaller in 2003 than they were in 2000. That’s the period we lost three million manufacturing jobs. There was no huge rush to Mexico to start producing goods there and bring them into the U.S. It just didn’t happen.

**TONELSON:** There is this wonderful proposal that we’re going to put U.S. government sales agents on the ground in China to promote exports. Where is the money going to come from? I don’t see many federal agencies outside the military and homeland security hiring people, do you? There is no money. The notion that the Chinese are not importing enough U.S. products because we don’t have enough salesmen on the ground is silly.

**QUESTION from Mfg. & Tech. News:** NAM would say that USBIC is a protectionist organization trying to carve out its own turf or steal members from NAM.

**TONELSON:** First of all, USBIC was originally founded as break-away faction of NAM, so we’ve always had very strong differences on NAM on many issues and this is nothing new. USBIC criticizing NAM policy positions is nothing new. We are a different organization. If we agreed with NAM we would be members of NAM.

Second, are we hoping to recruit members? Absolutely. Just like they are. We are hoping to persuade U.S. manufacturers that we have the right answers and we are looking out for their best interest, not NAM. So we’re guilty as charged. What in the world is wrong with that? And third – this nonsense about protectionism – you know we’ve got a country that is going to be racking up a $625-billion trade deficit for 2004; most major U.S. industries are losing market share to foreign competition in the U.S. market, the market that they should know best and should doing best in. Every other remedy to this problem has failed already: improve the savings rate; improve our school system; open new foreign markets. These have already failed.

**Q:** The NAM staff says that there really was no rift between the small and large members of NAM over trade and that little if anything should be made of such a rift.

**TONELSON:** If there is no rift then why change? Either NAM’s smaller members were already quite happy with NAM’s trade policy positions or they weren’t. Presumably if the smaller companies were content, then no change would have been made and no explicit specific effort would have been made to bring the smaller companies more deeply into the process. So that is an obvious canard. I think the big companies saw them as rubes that just came into town off of the turnip truck. They were easy marks and they could essentially by pretending to work with them, they could diffuse this revolt and pull the wool over their eyes and in my view that is exactly what they have done.

**VARGO:** This is disgraceful; he didn’t have to say that and he shouldn’t. I won’t say anything pejorative about him except that he has no agenda. The small companies did something here. They really accomplished something. They’re enthusiastic. Now, can we implement the agenda? I don’t know. Some things, like getting the countervailing duties applied to China and other non-market economies, are totally within the ability of Congress and the administration. Getting China’s currency to change, Congress can’t legislate that. So it’s tough, we have to get the Europeans, the Japanese and others to join with us. ✌
Eroding Industrial Base Raises Concern Deep Within the Military

Buyers involved in weapons systems, supportability, sustainability and upgrades are finding that U.S. industry is no longer able to supply basic parts, castings, chemicals and materials. They are beginning to worry and want a political solution to a problem bigger than they can address.

The decline of basic U.S. industries is beginning to stir angst among procurement officials and buyers within the defense community. The rapid decline in the number of metal foundries, the loss of expertise and capabilities, and the growing dependence on imported castings and parts is raising alarm bells among military specialists involved in weapons systems, supportability, sustainability and upgrades.

A program run by the Defense Department called the Diminishing Manufacturing Sources and Materials Shortage (DMSMS – pronounced Dee-mas) is putting together a database used by military buyers throughout the services to help them identify shortages of parts, processes and materials. Escalating shortages of basic parts and processes “makes it hard to sleep at night,” says one DMSMS official.

“We’re out here stomping on the grass to put out a grass fire but we haven’t looked behind us to see that the barn has gone up,” says Brian Suma, who runs the DMSMS Information Systems project at the Army’s Tank-Automotive and Armaments Command (TACOM). “I’m supposed to be the guy who is saying that not only do we have a grass fire going up, but I need to be telling you that we have a barn fire, too. How do we get that information out to people so there is visibility so that somebody does something about it?”

The Defense Department has been aware for years about production issues regarding obsolete electronic components and subsystems. But only now is the realization growing that heavy manufacturing and castings capabilities “are killing us,” says George Crandell, vice president of operations at the Castings Emissions Reduction Program (CERP) in McLellan, Calif. “Castings is one of our biggest problems right now because companies we talk to about design are all leaving.”

The Defense Department has been slow to recognize the problem because the military is a relatively small buyer in the overall market, accounting for an estimated 10 percent of all castings and materials. “Because we’re not buying every day, when we go back and look for these parts we’re finding that the manufacturers are gone and the tooling is gone,” says Crandell. “For a pretty simple industry, it’s down below the radar screen and nobody pays much attention until they can’t get a long lead-time item like a transmission case.”

Earlier this year, CERP organized a meeting to discuss the deteriorating health of the U.S. metal castings industry and its impact on the defense industrial complex. Attendees at the “Metal Casting Technology Forum: Ensuring a Strong Domestic Capability” held at the Rock Island Arsenal, dis-
cussed the industry’s plight and made recommendations on addressing it.

“Weapon system metal castings can become unprocurable as a result of the plant closings,” says the final report issued from the event. “As the U.S. foundry base erodes, the domestic capability to ensure an uninterrupted supply of parts to the Department of Defense becomes more and more uncertain. A sustainable foundry strategy needs to be developed to thwart this erosion and minimize the long-term consequences of relying on foreign sources for parts.”

Participants said that DoD buyers tend to be unaware of problems until they issue requests for bids and get no response from industry. “The majority of metal castings in the U.S. now come from China and other third-world countries,” says the report. “China has very aggressive plans to dominate the metal casting industry and the other industries that depend on it. The success of their plans could have significant impact on our future national security.”

Participants said they are growing increasingly concerned about the declining U.S. investment in research and development in the metal casting industry. “There is no place to get information on the overall U.S. investment in metal casting research and who is doing it,” says the report. “At the same time, we need to stop the portability of our technology to offshore competitors.”

The group recommended that Congress becomes “more informed on the global perspective and the state of the domestic foundry industry.” They recommend that Congress start holding hearings on the erosion of the metal casting industry and discuss “the impacts this will have on our security and way of life.”

Participants also recommended that Congress consider requiring that defense components be 100 percent made in the United States. Congress needs to help develop and deploy a comprehensive strategy to save the industry. This initiative should include the creation of new data gathering mechanisms, funding research and development of lightweight metal castings including magnesium, titanium and thin walled castings, and ways to accelerate deployment of technology into industry.

The group recommended that the Defense Department Manufacturing Technology (ManTech) programs be reoriented away from “single point solutions” to much broader based “robustly” funded initiatives. DoD must “look at the entire suppliers’ base, not just the big defense prime contractors,” says the report.

The federal government also needs to become more active on the trade front and consider applying tariffs “on industries that don’t meet human standards for acceptable working conditions,” says the report. Trade laws should be changed “to help level the playing field for U.S. industries and to neutralize the effect of foreign subsidies for their industries.”

The DMSMS community “has acknowledged that there is a problem,” says Sheila Ronis, president of University Group Inc. of Birmingham, Mich. This is a community of “solid citizens who are trying to get parts for their [military] services – they are not policy people at all but the people who want to support the warfighter in the field. But it is Congress who at the end must say that the United States has to maintain a healthy industrial base. At some point, somebody has to say that a manufacturing sector that falls below 15 percent or 10 percent of GDP is too small, and nobody has said anything of the kind.”

Ronis, who has become a vociferous proponent of developing a strategy to deal with the declining industrial base, says the Pentagon does not know what military supply chains look like “all the way down to the bottom and the closer to the bottom you get the more Chinese you get,” she says. “We are getting to the point where we can’t design anything, we can’t make anything and we can’t engineer anything and the entire security of the United States is at risk.”

“We are getting to the point where we can’t design anything, we can’t make anything and we can’t engineer anything and the entire security of the U.S. is at risk.”

DMSMS provides military buyers throughout the services with information about shortages. The DMSMS database started first with parts, but program managers found that buyers were having problems finding sub parts and components. It was soon discovered that manufacturing processes needed to make replacement parts were also diminishing, as was the production of chemicals.
“If you don’t have a certain chemical, you can’t do these processes,” says Suma. “How do we identify those and make those problems visible to the people who need to know who are making decisions on where to go next? How do you tell an engineer that the chemical family he’s been using for all of his processes is no longer going to be available next year or has moved offshore? It becomes a critical issue because we no longer have a source for it in the United States and we can rely only on the outside source.”

DMSMS is starting to work with different organizations, trade associations and societies asking them what capabilities are being lost. “Industrial base studies have been done on these issues, but they are not done in the context of what you actually have to do; they are done as a general capability issue,” says Suma. “A lot of times when you get down to the actual person responsible, he’s only interested in having the parts right now to make his system work – he doesn’t really have an issue with the entire casting industry having a problem. He anticipates and expects someone else will take care of that for him, but many of those functions have been pulled out because people really didn’t see the need for them....There is a feeling that the overall capability does exist so long as you just put time and money into it, but the people in the DMSMS community are saying that even if you put a lot of time and money into it you’re still not going to have the capability.”

There are many examples of products and technologies that are thought to be robust but are either on the brink of disappearing or have already moved offshore. For instance, DMSMS was alerted to the fact that there was only one company left in the country that makes a roller cutter for armored plate or heavy steel. The company was on the verge of bankruptcy, and its demise alarmed a group of defense buyers. “But when you talked to the industrial base people, they said that we had the capability from other people who make rotary cutters,” says Suma. “When you go out and do a search of Web pages, there are all kinds of rotary cutters, but 99 percent of them are for textiles. There is a big difference between cutting textiles and cutting armored plate.”

Another issue came up when a foreign company purchased the only company in the United States producing a chemical used as a common binder. The binder secures windows to aircraft and holds aluminum panels in place. But the foreign chemical company closed the U.S. plant after it could not meet requirements from OSHA and EPA. The company told its customers that they had to buy from overseas subsidiaries.

“We found out about this and we found that it was used for a lot of other purposes and we said, ‘Wait a minute. We have to get the word out on that,’” says Suma. “That was the catalyst to start pushing us into materials as well as the parts area.”

From Suma’s perspective, the job of cataloging the problems associated with so many different industries, materials and processes is overwhelming. “You want to talk about the headaches I get? How do I tie all of these things together and make this information available? You always get naysayers who say your data doesn’t have enough information in it and I’m the first one to say that I’m still crawling putting this stuff together.”

Adds Crandell of the Castings Emissions Reduction Program: “It’s going to take somebody at [Defense Sec. Donald] Rumsfeld’s level to say we have to rethink what we are buying, who we are buying from, who we are supporting and can we afford to give a British company a contract for all the titanium in the Howitzer. Does that make sense?”
U.S. Senator Robert C. Byrd calls him “the best general since Hannibal.”

Gov. Joe Manchin says having him as the state’s adjutant general “should be extremely comforting to the people of West Virginia.”

He’s Major Gen. Allen E. Tackett, a man whose foresight, expertise and dogged determination have put the West Virginia National Guard in the forefront when it comes to national defense and homeland security.

On Tackett’s watch, the abandoned Memorial Tunnel on the West Virginia Turnpike has been turned into a unique underground training facility for first responders and once-sleepy Camp Dawson in Preston County has been transformed into a modern training center for the war on terrorism.

At the same time, the West Virginia National Guard has designed and implemented innovative new strategies to assess terrorist threats and the vulnerability of potential targets – strategies so effective that the West Virginia Guard was assigned to do threat assessments for last year’s Democratic and Republican national conventions and G-8 Summit.

“We’re being tasked by the National Guard Bureau and the Department of Defense to go almost anywhere an event is taking place that is of critical importance because we’re the leaders and we have the knowledge and the technology to do the job,” says Tackett.

And the West Virginia Guard has undertaken these new initiatives while an unprecedented number of its members have been called to active duty in the war on terror.
“We’ve been taxed extremely hard the last couple of years with deployments. But even though we’ve been taxed, we’ve answered the call. Every Army unit that we have in the West Virginia National Guard – except for the 249th Army Band and one aviation detachment out of Wheeling – has been on active duty somewhere. And every organization has done a tremendous job. But we’ve still been able to maximize our vision.”

A miner’s son from Cabin Creek, Tackett enlisted in the West Virginia National Guard as a private with the 16th Special Forces Group in 1963, then attended Officer Candidate School and was commissioned a second lieutenant in 1967. He spent the next 25 years with the Special Forces, culminating with a three-year tour as a battalion commander.

Then Tackett was assigned to West Virginia Guard headquarters, where he served in a number of increasingly important posts, quickly rising in rank. Gov. Gaston Caperton appointed him adjutant general in 1995. Gov. Bob Wise later reappointed him, as did Gov. Manchin when he took office in January. In reappointing Tackett, Manchin noted that under the general’s command the West Virginia Guard has become one of the highest-rated in the nation.

“Advancing from a private to a major general is an accomplishment which exemplifies his dedication to the National Guard, our country and our state of West Virginia,” says Sen. Byrd, who has worked closely with Tackett for more than a decade.

Even before becoming adjutant general, Tackett was warning about the dangers of terrorism.

“After the Gulf War, it was easy to see that in the future, no army could hurt us on the battlefield,” he says. “Terrorism is the only way to destroy us.”

But Tackett’s warnings fell mostly on deaf ears – even after the 1993 bombing of the World Trade Center and the related plot to attack the United Nations and New York’s Lincoln and Holland tunnels deep beneath the Hudson River.

Then came the 1995 release of sarin gas, a deadly nerve agent, in the Tokyo subway – an attack that killed 12 people and injured thousands.

The subterranean sarin attack gave Tackett an idea: “The Tokyo attack happened in the subway. So where do you train in the subway? There’s no place. But here in West Virginia we had an abandoned tunnel that you could put a subway venue in – like we’ve done – where you can actually train first responders in how to react to that kind of event.”

THE TUNNEL IS HOME TO “THE ONLY SUBWAY CAR IN WEST VIRGINIA” AND A REPLICA OF A BOMBED-OUT BUILDING THAT LOOKS MUCH LIKE THE SETTING FOR A HOLLYWOOD DISASTER MOVIE.
Located roughly 30 miles south of Charleston, the Memorial Tunnel – a half-mile long and four stories high – was the pride of the West Virginia Turnpike when the roadway opened in 1953. But when the turnpike was widened from two lanes to four in 1987, the road-builders opted to bypass it, going around the mountain rather than through it. After that, the abandoned tunnel was used for testing ventilation techniques that later were applied to construction of tunnels in the English Channel and Boston Harbor. Later, the Turnpike Authority simply used it for storage.

Today, the tunnel has become the Center for National Response (CNR), a one-of-a-kind training facility that provides realistic, challenging training and exercises for first responders.

“There’s no other place that offers this kind of environment and training,” says CNR Director Ronald E. Thomure.

As Tackett envisioned, the tunnel is home to a subway car – “the only one in West Virginia,” he quips – and a make-believe subway station, as well as a half-dozen other training areas, including a replica of a bombed-out building that’s filled with smashed cars, twisted steel and slabs of concrete and looks much like the setting for a Hollywood disaster movie. Bloodied mannequins and real-life role players with bogus injuries add to the realism.

Other highly realistic areas reproduce three separate levels of illicit chemical, biological and drug laboratories, ranging from a simple “meth” lab to one capable of turning out weapons of mass destruction. And there’s a mock highway accident setting, which can offer a number of scenarios involving hazardous materials.

In one particularly challenging setting – the “egress trainer” – participants must crawl to safety through a pitch-dark, three-level maze of tiny plywood rooms and corridors, constructed to recreate the frightening, claustrophobic conditions they could encounter in a collapsed building. To add to the realism, the maze can be filled with smoke, forcing the trainees to crawl with oxygen tanks and masks.

“You really hate it when you have somebody just about make it to the end of the course but then turn back because they’re afraid they’re going to run out of air,” says Thomure.

Since it opened in May of 2000, more than 17,000 personnel – from across the nation and foreign countries as well – have trained at the tunnel. These include members of local police, fire, rescue, medical, hazardous materials (HAZMAT), K-9 and search-and-rescue units, as well as various state emergency response agencies, the FBI, the Drug Enforcement Agency, the Red Cross and units from virtually every branch of the military.

“Nothing is canned about these exercises,” says Thomure.

With little fanfare or publicity, the West Virginia National Guard has made the Mountain State an important test bed for new homeland defense systems.

Major Gen. Allen E. Tackett, the state’s adjutant general, sees that bringing significant future opportunities for many state manufacturers. “As we test and evaluate these systems and people recognize the need for them nationwide, it’s going to increase the industrial base of West Virginia companies,” says Tackett.

Col. James A. Hoyer, deputy commander for installations and activities with the Guard’s Homeland Defense Joint Task Force, cites three examples. All are high-tech and ultra sophisticated. But they’re not taken from the pages of a spy novel or a James Bond movie. They’re very real, and they’re being tested right here in West Virginia.

One is a new remote surveillance device that’s been developed by a small Morgantown company, Azimuth Inc., for the West Virginia Guard and the Naval Operations Other Than War Technology Center.

Azimuth, Hoyer explains, was “tasked to develop a system that could employ cameras in a remote method using either satellite or cell phone signals. They needed a place to test that capability. We had homeland defense and counter-drug missions where we needed remote surveillance. So we took that system and put it into effect.”

Originally, the system was the size of a large suitcase. Now, after four generations of refinement, it’s much smaller – little more than book-sized. Meanwhile, tests have shown it can be triggered by a cell phone signal from literally thousands of miles away.

“The people work really well with the West Virginia Guard,” says Azimuth President/CEO Craig Hartzell. “Working with the Guard means we have immediate access to the end user, and they clearly have the technical know-how that’s required. Plus, frankly, there’s not much we wouldn’t do to support Gen. Tackett and the Guard’s mission.”

Azimuth, whose Engineering Group is located in Fairmont, was founded in 1988 by Hartzell and Vice President Adam Macias, who met while serving in the U.S. Army Special Forces. The company and its 75 employees concentrate on working with the Department of Defense, the FBI and other federal agencies. A typical product: an extreme-duty...
“All those who attend are offered individualized training tailored to an organization’s requirements.”

A major concern facing first responders today is how to minimize confusion and achieve a seamless response when multiple agencies may be involved in an incident. The CNR addresses that problem by coordinating exercises that involve as many as a dozen agencies.

Closed-circuit television cameras monitor each training exercise, with tapes later screened for the participants so they can see what they did right and wrong.

“If you’re going to make a potentially fatal mistake, this is the place to make it, not out there in the real world,” says Thomure.

Tackett argues that the practical experience that first responders and other trainees get in the tunnel better prepares them to deal not only with underground incidents but also with above-ground emergencies of all kinds.

“If they can do their job here, they can do it anywhere,” he says.

“If you can get your communications systems to work to the outside world, if you can get your equipment to withstand the pressures that are put on you in a tunnel environment, then you can survive anywhere else. That was my concept for the tunnel – to build the most hazardous, strenuous training exercise possible.”

Titan Corp., a San Diego-based defense firm, is the prime contractor in charge of day-to-day operations at the tunnel.

In addition to the tunnel itself, the facility has more than 10,000 acres of surrounding woodland that can be used for training purposes. The land, which stretches from the turnpike’s Paint Creek interchange to the top of the ridge through which the tunnel passes, is owned by a trio of coal companies that have agreed to allow its use.

It was Sen. Byrd who, at Tackett’s urging, secured the federal funding necessary to develop and operate the tunnel as a training center, and the two also worked closely together in the remarkable transformation of Camp Dawson.

Tackett long had known Sen. Byrd, but he vividly recalls the first time he visited the senator’s office in Washington.

“In 1996, I had the opportunity to meet with him and his staff and talk about some of my ideas for the National Guard. I went there with state Sen. Bill Wooten and we met with all of our elected officials in Washington to brief them on a plan we called ‘Facilities 21,’ a construction program designed for a 13- to 15-year period of time with the aim of rebuilding the National Guard into the 21st Century. When we briefed Sen. Byrd, he was very supportive of our ideas.”

The plan not only called for replacing many of the state’s old, outdated National Guard armories with new, modern facilities, it also envisioned developing Camp Dawson into a national training center.
Tackett notes that Camp Dawson is “located within an eight-hour drive of 90 percent of the East Coast population,” making it “an ideal location to become a really active facility to support operations of the Department of Defense across the eastern part of the United States.”

Camp Dawson was established in 1909 when the West Virginia Legislature authorized the purchase of approximately 196 acres of land on Dunkard Bottom along the Cheat River. The camp was named in honor of William M.O. Dawson, a native of Preston County, who served as governor from 1905 to 1908.

Troops began training at Camp Dawson during the summer of 1909 and continued until the start of World War I. The camp wasn’t used again until 1928, when it was re-established as a training site for the West Virginia State Militia. Units trained regularly at the camp until the outbreak of World War II, when the federal government leased it for use as a Prisoner of War camp.

Since the original purchase, additional land purchases have brought the camp’s total size to nearly 4,200 acres.

In 2002, Camp Dawson opened its Robert C. Byrd Regional Training Institute, a $22 million complex with high-tech classrooms and labs and 183 hotel-style rooms for the soldiers and civilians undergoing training at the site, near Kingwood.

Like those at the Memorial Tunnel, the training facilities at Camp Dawson are one-of-a-kind. One of its four major training areas is a 700-acre tract that includes a mock POW camp for military police training and a former manganese plant for urban combat training.

Last year, Camp Dawson was designated as the nation’s first Joint Interagency Training Center for Homeland Defense. Since then, a second center has been designated in San Diego to serve the western part of the nation.

“This is a win-win for West Virginia and for the country,” commented Sen. Byrd when he announced the designation in May. “West Virginia will see an increase in jobs and funding, while the nation will benefit from top-notch homeland security training and expertise.”

Elements of the U.S. Marine Corps, the Army’s Special Forces and the Army’s famed 10th Mountain Division are among the military units to make recent use of Camp Dawson’s terrain and facilities.

Tackett points out that it’s not just the military that’s training at Camp Dawson: “We’ve gotten the Department of Energy there, the National Park Service, the International
Heading that mission is Col. James A. Hoyer, deputy commander for installations and activities with the West Virginia Guard’s Homeland Defense Joint Task Force.

Hoyer recalls the start of that mission:
“After 9/11 – actually the day of 9/11 – the governor turned in a meeting to the general and said, ‘We’re going to start getting calls from civilian sites asking for support. What do we have to offer them?’

“We already had in place a strong counter-drug program that supported not just traditional drug-reduction missions but also provided operational support for law enforcement agencies. So we used that and leveraged that into starting to do some vulnerability assessments on key sites.

“One of the things we found was that most of the sites – the national figure is more than 85 percent – are privately owned. So we go to a site and say, ‘Here are your vulnerabilities that we have found.’ If we do that, you’re then going to look at me and say, ‘OK, how do I go about fixing that and where am I going to get the money to pay for it?’ So we had to come up with some things that give them some improved protection right away at little or no cost. That’s where we came up with awareness training and counter measures.”

A big part of that, Hoyer says, is education and dispelling the myth that all terrorists look like Middle East males. Terrorism, he notes, can wear many faces.

“What we teach them to do is to profile indicators and not people. If you profile people, you’re going to lose.”

At the same time, he says, there are “things that facilities can do that don’t cost them a lot of money, things like changing up the way they do patrols and the types of patrols they do. Basic vehicle inspections can be important. If I’m a terrorist and I’m checking out a target and I see those things in place, then I’m going to take the path of least resistance and go elsewhere.”

The National Guard, Hoyer says, is working in partnership with the West Virginia Manufacturers Association to identify potential industrial targets and better protect them.

Union of Operating Engineers, the CIA and the FBI. Nearly every federal agency and state agency that’s involved with homeland security and homeland defense is recognizing Camp Dawson as the facility and the place to be trained for prevention and deterrence of terrorism.”

Today’s expanded role for the West Virginia Guard has meant a dramatic increase in its economic impact.

Tackett notes that when he became adjutant general, the National Guard had an annual payroll of $87 million. The decade since has seen that annual payroll grow to $312 million.

“In 1995, we had 971 full-time employees,” he says. “Today, we have 6,200 Guard members, and will grow to 7,000 by 2007, with 2,500 full-time employees and a payroll of $750 million.”

And the general sees even greater growth in the West Virginia Guard’s future.

“We’ve been able to move ourselves forward because of our early start before 9/11 ever happened, and our continued course in that direction has put us ahead of everyone else. I can see us becoming a really big player in the way that the National Guard will take on the mission of homeland defense for the United States of America. And I think most of the training of those people involved in defending America is going to take place in West Virginia – at the tunnel, at Camp Dawson and our future training sites.

“Camp Dawson is just going to grow and get a lot bigger, facility-wise. Right now we have 183 rooms. I can see that going to 500 or 600 rooms, which would mean we could have 500 or 600 people there every week of the year going through different training. These people will have to be fed and will have to have recreation. So there’s a great deal of economic impact at work.

“And as we develop our southern training ranges, we’re looking at a facility that could mirror an active-duty post such as Fort Bragg or something like that. Can you image what that would do for West Virginia economically?”

Tackett shrugs off any suggestion that all of this is somehow his personal handiwork. “The real person behind this is Senator Byrd,” he says. “He sees something he knows has potential for the state of West Virginia, and he finds a way to make that come about. I don’t care where you go in West Virginia, you can’t go anywhere that Senator Byrd hasn’t touched in a way that will mean success for West Virginia in the years to come.”

James E. Casto is senior public information specialist at RCBI.
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West Virginia plays a pivotal role in supporting our nation’s defense with the latest in cutting-edge technology.

Highly skilled and dedicated West Virginia workers have always played an important role in arming America’s military – from the Harper’s Ferry rifle factory that was the target of John Brown’s historic 1859 raid, to the Kanawha Valley chemical industry spawned by World War I, to the dozens of Mountain State plants that produced the 1,001 things needed to fight and win World War II.

Today, this proud tradition continues, with West Virginia manufacturers providing our military forces the kind of sophisticated weaponry and technology they urgently need in Iraq, Afghanistan and elsewhere.

West Virginia workers build key components for the high-flying Global Hawk unmanned aerial surveillance vehicle and a number of military aircraft, including the nation’s newest jet fighter, the F-22 Raptor. American troops in Iraq fire missiles with parts made in West Virginia. Lightweight composite materials developed and produced in West Virginia play an increasingly important role in aircraft and other military hardware. And no one will ever know the number of lives saved by military-issue life preservers and other survival gear made by West Virginians.

In 2003, companies in West Virginia received $207.4 million in Department of Defense prime contracts, nearly double the $107 million received in 2000. The final total for West Virginia’s share of 2004’s defense spending isn’t available yet, but it’s expected to reflect a significant increase from the 2003 figure.

A significant share of those defense dollars came to West Virginia through the efforts of U.S. Senator Robert C. Byrd, D-W.Va., the ranking minority member of the powerful Senate Appropriations Committee.

“At a time when U.S. troops are engaged in a fight against terrorism overseas, West Virginia’s role as a leading supplier of cutting-edge defense products grows ever more critical,” says Sen. Byrd. “Our state is home to creative, innovative companies that are working to give the military the best weapons and training available. Manufacturers throughout West Virginia provide soldiers, sailors, airmen, and Marines with the tools that they need to protect America’s interests around the world.”
A New Eye In The Sky

Key components for Northrop Grumman’s Global Hawk – designed to give battlefield commanders unprecedented, near real-time, reconnaissance images – are manufactured by Aurora Flight Sciences of West Virginia.

Global Hawk will win no beauty contests. Some suggest it looks like a large, ungainly bird with stick-like wings and a lumpy head. But the robot jet’s ocean-spanning range of 13,500 nautical miles and its ability to fly 36 hours without refueling combine to make it a formidable eye in the sky. It can fly halfway around the world to where it’s needed and then hover there for as long as 24 hours, while its sophisticated sensors give military commanders detailed views of an area more than twice the size of the state of West Virginia – day or night, cloudy or clear.

Radar, optical and infrared images taken by Global Hawk during a mission are instantly sent via satellite to ground troops nearby or to a distant command center. The aircraft operates on a set of instructions that can be written on a laptop computer and then downloaded into its on-board system.

Though it was then still in development, Global Hawk was pressed into service in Afghanistan in 2001. There, its airborne cameras sent back pictures so detailed they could show vehicle tire tracks from 65,000 feet up. In the course of more than 60 missions, it supplied more than 17,000 intelligence, surveillance and reconnaissance (ISR) images.

Later, during the first months of Operation Iraqi Freedom, Global Hawk generated more than 4,800 ISR images, accounting for more than 55 percent of the targeting imagery that was used to destroy Iraq’s air defenses.

Now, Aurora, a major subcontractor on the Global Hawk program since 1995, is busily at work fulfilling a $20 million contract to produce components for the latest versions of high-flying reconnaissance craft. The components, to be part of the RQ-4A and RQ-4B variants of Global Hawk, are being built at Aurora’s Bridgeport, W.Va., facility.

The work consists of fabricating sets of composite and metal components for eight Global Hawk aircraft. The com-

No one will ever know the number of lives saved by military-issue survival gear made by West Virginians.
pany’s Bridgeport facility last year completed delivery of six Global Hawk component sets with a total value of more than $11 million. To date, components for all 14 Global Hawks have been produced at the Bridgeport facility, and parts for another 80 aircraft remain on option.

In addition to the Global Hawk, Aurora also produces components for the F-14 Tomcat, E-8C Joint STARS, EA-6B Prowler and E-2C Hawkeye aircraft.

“Aurora Flight Sciences is a great economic success story,” says Sen. Byrd, a long-time supporter of the Global Hawk program. “A decade ago, the company had four employees in the state. Today, it employs almost 200 people in West Virginia and adds more than $15 million to the state’s economy each year.”

“For decades, West Virginia’s economy has relied on the strength of our arms and backs,” says Byrd. “But we also must use the strength of our minds and seek new opportunities to create jobs and lift our state. Cutting-edge innovations and growing expertise, like that at Aurora Flight Sciences, will help to lead the way.”

Aurora’s work on the Global Hawk, says Byrd, “demonstrates … that affordable, high-precision manufacturing is not something that must necessarily be sent out of state or overseas. That expertise is available right here in West Virginia.”

Aurora President John Langford says Byrd “helped us to understand that West Virginia is an ideal location for defense manufacturing. The state’s large population of skilled workers and proximity to our offices in Northern Virginia has given us a competitive advantage it would be difficult to find elsewhere in the country.”

The Robert C. Byrd Institute for Advanced Flexible Manufacturing works closely with Aurora in a number of ways.

RCBI has assisted Aurora with engineering component drawing reviews, bid submission preparation, manufacturing equipment requirements and capabilities as well as technical training for production of Global Hawk components. Aurora has regularly used high-tech manufacturing equipment, including a Cincinnati Milacron Sidewinder 5-axis CNC Machining Center, at RCBI’s Bridgeport facility to machine metal components and fabricate tooling in support of the Global Hawk contract.

Equipment at the RCBI Composites Technology & Training Center, also in Bridgeport, has been used extensively by Aurora for inspection and testing of parts. The non-destructive ultrasonic squirter, which offers validation of parts by non-destructive testing means, was – and continues to be – a critical technology to Aurora as it undertook the Global Hawk project.

Further, the Clean Air Technology “softwall” cleanroom at the RCBI Composites Center ensured that stringent prototyping and tooling fabrication of component parts could be completed in a timely manner so Aurora would meet the Global Hawk contract deadlines. Activities by Aurora

Aurora Flight Sciences is a great economic success story. A decade ago, the company had four employees in the state. Today, it employs almost 200 people in West Virginia.
in the cleanroom included the hand lay-up of mold tooling and vacuum bagging of various components for curing processes.

RCBI has also provided assistance in the use of a cutting edge technology, dimensional verification and validation to blueprint specification technology, with access to its FARO Arm, which offers accurate, portable measurements designed to control dimension quality. In addition, RCBI has regularly facilitated discussions and played an advocate role by identifying both major prime contractors and subcontractors that could support and enhance production of Global Hawk component parts at the Bridgeport facility.

RCBI, says Director and CEO Charlotte Weber, “is indeed pleased to be of assistance to Aurora Flight Sciences of West Virginia in its work on this remarkable contribution to the nation’s military. It’s another instance of how we can help West Virginia companies use technology to effectively compete in today’s challenging economic environment.”

**ATK Growing at Rocket Center**

Alliant Techsystems – or ATK, as it’s generally called – was spun off from Honeywell in 1990 and since then has grown into a major aerospace and defense contractor. A $2.4 billion company, it specializes in conventional and “smart” munitions, propulsion systems, metal components and composite structures.

Headquartered in Edina, Minn., the company employs 13,800 people in 23 states, including 1,000 who work at the Allegheny Ballistics Laboratory in Rocket Center, W.Va. ATK is the largest tenant at the center, owned by the U.S. Navy

ATK’s work force at Rocket Center has grown steadily in recent years and is slated to grow again with the company’s decision to shift its fuze-making operations from Janesville, Wis., to West Virginia. The company says the move, which it expects to complete by August, will create 180 jobs at Rocket Center.

“ATK continues to grow its operations in West Virginia, thanks in large part to the modernization funds that have been made available to the Navy’s ABL facility through the work done by Sen. Byrd,” says James Condon, vice president and general manager of ATK’s West Virginia operations. “We look forward to helping build West Virginia’s economy and, most importantly, providing U.S. forces and our allies with unmatched advanced weaponry.”

In a news release announcing the new jobs, Sen. Byrd calls ATK’s decision “a credit to the facility’s improvements and the quality work of its employees.”

Last year, ATK, in cooperation with the U.S. Naval Sea Systems Command, established a new medium-caliber production facility at its Rocket Center manufacturing center. The new state-of-the-art line, which went into full production in December, produces components for 20mm,
25mm and 30mm medium-caliber ammunition. In addition, the facility produces mechanical fuzes for medium-caliber ammunition, as well as warhead liners for Hellfire, Brimstone and Javelin missiles and 120mm tank ammunition. ATK estimates that the facility will produce five million components annually.

Also in December, ATK announced it had received a contract worth about $5 million to produce rocket motors and heavy warheads for air-to-surface missiles. The components will be manufactured at Rocket Center. ATK provides all rocket motors and heavy warheads for Maverick missiles, which are used by all branches of the U.S. military, as well as 27 international customers. 

The Maverick components will be delivered to missile-maker Raytheon Co. in early 2006 for missiles approved for sale to Poland and South Korea.

And ATK has received an initial $80 million contract from the U.S. Army to design, develop and begin low-rate initial production of the XM395 Precision Guided Mortar Munition (PGMM). The contract, which runs through 2009, could lead to U.S. production with total sales of more than $500 million.

The Army originally picked ATK as the selected source for the program. However, Lockheed Martin protested that decision and the Pentagon subsequently received both proposals in a second competition before reaffirming its original decision and awarding the contract to ATK.

ATK will manage the PGMM program and lead system integration from its Plymouth, Minn., facility. Program support will be provided by ATK facilities in Woodland Hills, Calif., and Rocket Center.

PGMM is one of three advanced weapon systems currently under contract at ATK. In 2003, the company won a $223 million development program for the Advanced Anti-Radiation Guided Missile (AARGM), and in May 2004, the Navy selected ATK’s Ballistic Trajectory Extended Range Munition (B-TERM II) for its Extended Range Munition program.

Vought Aircraft Industries of Dallas, Texas, selected ATK to supply composite parts for the F-22 Raptor, the U.S. Air Force’s next-generation stealthy air dominance fighter. Included is production of composite pivot shafts, part of F-22’s horizontal stabilator, a key control structure on the aircraft. The shafts are produced at Rocket Center.

ATK and RCBI’s Rocket Center facility have partnered in various initiatives over the years.

For instance, when ATK needed to expand its machine operations but didn’t
have the trained workforce it needed for the additional metalworking involved, it approached RCBI for help. As a result, the RCBI Machinist Technology Program was tailored and presented to ATK employees in partnership with the Allegheny County (Maryland) Career Center.

In another cooperative venture, RCBI and ATK teamed to open an Engineering Prototype Facility at RCBI’s Rocket Center facility.

“We are pleased to continue to work in partnership with ATK,” says Mark R. Julian, RCBI Deputy Director and COO.

FMW Expanding In Bridgeport

In January, the West Virginia Housing Development Fund’s board of directors approved a $2.5 million construction loan to FMW Composite Systems Inc. to expand its manufacturing facility at the Mid-Atlantic Aerospace Complex at the Harrison-Marion Regional Airport in Bridgeport, W.Va.

FMW will use the loan to build a 12,500-square-foot facility to produce silicon carbon fiber, which is increasingly used in both military and commercial aircraft.

The company has been working with the U.S. Air Force to design, develop and improve the fiber’s quality and lower its cost. Now this has been accomplished – and patented – and the company needs a larger facility to meet the increased demand.

FMW has 54 employees and plans to hire 150 more by 2009.

The company got its start in 1992 as FMW Rubber Products, manufacturing Flexcel refueling systems, an 80-gallon synthetic rubber fuel bladder designed to extend the range of the popular M1A1 Abrams tank. FMW produced the systems for both the U.S. Army and Marine Corps, while developing a next-generation product – the Forward Area Self-Contained Transportable (FAST) system.

The FAST system offers greater capacity – up to 300 gallons – and can be used to refuel a wide variety of vehicles, including tanks, trucks, helicopters and airplanes.

Since 1993, FMW has evolved into a full-scale composite company, providing engineering, development, manufacturing and production expertise to commercial companies, defense contractors and the U.S. military. In 2002, FMW acquired the Titanium Matrix Composite division of Atlantic Research Corp, an acquisition that significantly enhanced the company’s technical capabilities.

Today, FMW provides a wide variety of products to the military. These include composite parts for the Global Hawk, as well as nozzle links for the F-15, F-16 and F-22 fighters.

The company won a contract from the National Aeronautics and Space Administration to manufacture a space optical bench component for the Hubble Space Telescope, and it’s also under contract to NASA to develop a lightweight equipment carrier for future shuttle missions. The lighter weight will enable the spacecraft to carry more scientific equipment.

FMW works closely with the RCBI Composites Technology & Training Center at Bridgeport.

WV Workers Saving Lives

In 1967, Irv Davies of Vancouver, Canada, designed a new float coat and started a fledging firm with a staff of five, including his teenage son Dwight. The next year film star John Wayne called and ordered a coat (“A buddy of mine got one … and it’s the greatest.”) Other customers were equally enthusiastic. The company steadily grew – in both reputation and size. In 1980, when the Freedom sailed to victory in the America’s Cup competition, her crew was wearing Mustang products.

Today, Mustang Survival Corp., a Canadian-based company with U.S. facilities in Bellingham, Wash., and Elizabeth, W.Va., is one of the world’s most-respected names in protective clothing and survival gear.

In 1999, Mustang acquired Wirt Inflatables at Elizabeth. With the assistance of RCBI, the Wirt County plant has bid on – and won – a series of Department of Defense contracts.

Identification of particular bid opportunities and special procurement history searches have given Mustang the tools needed to win contracts, says RCBI Director Weber.

“RCBI’s mission of developing a quality, just-in-time supplier base for the DoD and commercial sector falls squarely in line with the outcomes that Mustang has experienced,” says Weber. “We’re thrilled with the successes that Mustang is experiencing and eagerly continue to assist the company.”

Mustang’s Elizabeth plant manufactures military-issue life preservers, anti-exposure suits, wet weather trousers and other life-saving equipment. The plant has approximately 90 employees.

The workers say they have seen their products on television in news reports from Iraq, and they believe in their company’s motto: “WE SAVE LIVES FOR A LIVING.”

“We look forward to helping build West Virginia’s economy and, most importantly, providing U.S. forces and our allies with unmatched advanced weaponry,” says ATK’s James Condon.
The global economy benefits West Virginia residents and businesses through jobs at home and profits abroad.

A few examples include:
- The employment of more than 30,000 West Virginians by export sales from West Virginia companies.
- Export by West Virginia companies to more than 145 different countries, almost the entire world.
- A 46.79 percent increase in West Virginia’s exports during the first six months of 2004, to $1.75 billion compared to $1.2 billion during the first six months of 2003. The increase exceeded the U.S. growth of 13.6 percent during the same period and marks the fifth consecutive year that West Virginia export growth has outpaced the national average.

Exporting continues as one of the brightest spots in West Virginia’s economic picture.

Exporting helped Appalachian Electronics Instruments, Inc., a small firm in Ronceverte that makes quality control support equipment for the textile industry, deal with staggering declines in basic mill activities. The company now has equipment installed in two different Chinese plants.

The Equipment Lock Company in Hedgesville saw exporting as a way to expand into a market without actually having to relocate. The company makes anti-theft and safety devices for heavy and agricultural equipment.

Tabor Machine Company, which manufactures mining
Trade events

Three types of trade events provide West Virginia companies opportunities to conduct business overseas:

- **Trade missions** feature custom-tailored business appointments for each mission member. Often these meetings are with officials at levels the company might have trouble reaching on its own. Matchmaking programs offered through the U.S. Department of Labor are often used to provide one-on-one meetings with potential business partners.

- **Trade shows**, which offer benefits to buyers and sellers alike, provide companies one easy-access location to introduce new products, conduct business, shop and research. Trade show attendees use sophisticated visiting strategies, according to the U.S. Department of Commerce Trade Information Center, allowing companies the chance to interact with exactly the right customers.

- **Catalog shows** mean West Virginia companies don’t even have to leave the office to present their products and/or make contacts to worldwide audiences. WVDO equipment, increased its exports from 14 percent to 40 percent in a year’s time.

West Virginia’s global reach also connected an artist on a 52-acre Fayette County farm with a Japanese retailer who buys antiques in the United States and sells them at his store. Stephanie Danz, the owner of Mountain Art Glass and the creator of unique glass jewelry and kaleidoscopes, now exports her work through Kenichi Nomura’s store, Joyful Antique.

Expertise through the West Virginia Export Council, the U.S. Commercial Service and the West Virginia Development Office helps these companies and others navigate the rules and regulations necessary for a successful exporting experience.

A new global business portal, [www.WorldTradeWV.com](http://www.WorldTradeWV.com), is a joint website developed by all three groups to provide a resource center for West Virginia companies interested in developing international markets for export.

The site provides information needed to successfully enter or expand businesses in the global marketplace with export assistance, educational resources, links to international publications and a trade events calendar as well as tools for currency conversion and world clocks. This is truly a one-stop shop for export information.
representatives showcase product literature, samples, videos and other visuals at shows matched to companies’ targets.

WVDO representatives arrange for interpreters and in-country transportation, coordinate receptions and market briefings and translate product literature. They also can help with logistics including visas and passports. Companies pay a nominal participation fee and travel expenses.

Export help
Other aids for West Virginia exporters include the New Market Entry Incentive and the West Virginia Small Business Development Center (WVSBDHC).

Grants through the New Market Entry Incentive reduce the costs for companies entering a new market.

Many of West Virginia’s exporters qualify as small businesses. WVSBDHC consultants can help strengthen profit margins, improve cash flow, increase sales and market share, promote more efficient business planning, improve access to capital and cultivate a more productive staff. WVSBDHC also provides consulting on financial matters and loan package development, international trade services, procurement assistance, online or on-site training, technology grants and workforce training grants.

The U.S. Department of Commerce Export Assistance Centers in Wheeling and Charleston link West Virginia companies with U.S. Embassy-qualified international buyers, low-cost export solutions and market research. The centers also promote BuyUSA-member catalogs at high-profile trade shows. For more information on BuyUSA, which matches trade leads with BuyUSA-registered firms around, visit http://www.buyusa.com/page/my_gtn/splash.asp.

The United States Export Assistance Center in Charleston is at 405 Capitol St., Suite 807; Charleston, WV, 25301; (304) 347-5123. You can contact the Wheeling center at 316 Washington Ave.; Wheeling Jesuit University; Wheeling, WV, 26003; (304) 243-5493.

West Virginia University and the West Virginia Export Council jointly put on a class each year to qualify company representatives and students as export managers. The weekend classes cover six weeks of a semester and teach all aspects of exporting from finding a customer to shipping products and collecting money. It is taught from the academic standpoint as well as from the real life perspective with the goal of helping existing West Virginia companies export their goods and services and training export leaders of tomorrow.

Marshall University’s Center for International Programs, established in 1993, finds interpreters as they are needed when potential international business partners visit West Virginia.

International offices
West Virginia also maintains two international offices. The West Virginia European Office, established in Munich, Germany, in 2000, promotes and increases trade and investment between West Virginia and Europe, which accounts for more than 60 percent of the state’s export market.
The largest portion of international investment in the state comes from Europe, as well. Officials also see the office as a catalyst in the expansion and development of cultural, educational and social partnerships throughout Eastern Europe.

The West Virginia Japan Office opened in 1990 in Nagoya.

**Recognizing export success**

West Virginia’s exporters can qualify for two different awards.

The Excellence in Exporting awards, established in 1983 and presented by the governor and the West Virginia Export Council, honor companies and business professionals for their leadership and success in the state’s exporting efforts.

The Governor’s Commendation for International Market Entry, the other export award, is based on the tradition of framing the first dollar a business earns and displaying it prominently. Created in 2002, the market entry award represents the first peso, mark or other currency a West Virginia exporter earned in an international market. Sixty-five West Virginia companies have received the award, which recognizes their sales to nearly 70 countries.

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**2005 Trade Events**

The West Virginia Development Office sponsors various trade mission events annually. Below is a list of events tentatively scheduled for 2005. For more information, please contact the West Virginia Development Office at (800) 982-3386 or (304) 558-2234.

**APRIL 29-MAY 3**
Interzum, Cologne, Germany
Contact Leslie Drake: ldrake@wvdo.org

**MAY 19**
Videoconference with Australia
Subject: New Free Trade Agreement
Contact Leslie Drake: ldrake@wvdo.org

**SEPTEMBER**
Trade Mission to Brazil
Contact Leslie Drake: ldrake@wvdo.org

**OCTOBER 25-28**
China Coal & Mining 2005, Beijing
Contact Debra Martin: dmartin@wvdo.org

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**Don Gallion** is president and CEO of FCX Systems, Inc., of Morgantown, and is chairman of the West Virginia Export Council.
Providing a conduit that links the Mountain State’s manufacturers to federal agencies to meet Department of Defense (DoD) and homeland security needs is the hallmark of the 21ST Century Manufacturing Network at the Robert C. Byrd Institute for Advanced Flexible Manufacturing (RCBI).

Since January 2001, more than $220 million in federal contracts has been awarded to the RCBI network’s quality-based participants, who because of their participation are positioned to take advantage of production opportunities they otherwise couldn’t access. These contracts involve the manufacture of textiles, metals and electrical components, weapons components, and spare and repair parts for military vehicles.

From odd-shaped handles or brackets for military vehicles and weapons systems to flotation devices or other life-saving apparel, the manufacturers in the network offer valuable products and services that meet federal agencies’ stringent requirements.

“Because of the importance of electronic commerce and its expanding role in commercial success as well as the resulting vitality that the manufacturing sector contributes to our economy, we are pleased to contribute to manufacturing strength through our electronic supplier chain,” says Charlotte Weber, Director & C.E.O. at RCBI.

The eight-year-old network at RCBI offers a region-wide infrastructure that is transforming the region’s manufacturing supplier base into successful members of today’s manufacturing sector. With it, RCBI has implemented an aggressive, sharply focused, electronic clearinghouse that provides access to electronic parts catalogs, such as the one at the Defense Logistics Agency (DLA), as well as a variety of other DoD sourcing centers and other prime contractors. With real-time access to bid opportunities on these electronic resources, RCBI facilitates a competitive, just-in-time, cost-effective, DoD supplier base of quality-based manufacturers.

About 320 companies, primarily in West Virginia and the bordering states of Kentucky, Ohio, Pennsylvania, Maryland and Virginia, are actively participating in the network. These companies are located throughout the 55 counties across West Virginia and employ more than 10,000 individuals at an annualized payroll of nearly $376 million.
Mustang Survival Corp. is an active participant in the network, where it focuses on finding bid opportunities and receives bid preparation assistance. The Elizabeth-based company produces military issue life preservers, anti-exposure suits, inflatable bladders and other protective garments for the most demanding users - from offshore sailors and power boaters to the U.S. Coast Guard, jet fighter pilots and even NASA astronauts.

Another defense contractor in West Virginia, a long-time participant in the RCBI network, is FMW Composite Systems Inc. of Bridgeport. The defense supplier manufactures components for commercial aircraft, unmanned surveillance aircraft and other military vehicle needs.

Bob Diadone, Senior Vice President of Operations at FMW, notes that the company regularly takes advantage of RCBI offerings, including technical training and technology assistance. He credits the network specifically with opening new NASA and DoD markets for the Harrison County manufacturer.

“I can’t overstate how critical the connections through the RCBI 21ST Century Manufacturing Network were in helping us get new business in our shop here in Bridgeport,” Daidone says.

Weber cites the vital support that such manufacturers provide not only themselves but also the state and nation by deepening the pool of quality defense suppliers, helping reduce the expenses associated with a reliance on sole source suppliers for costly parts.

“By accepting this challenge and helping expand the list of quality, capable suppliers to the DoD, our state’s manufacturers are doing the very thing that West Virginians are well recognized for – shouldering their full share of the responsibility for our nation’s defense,” Weber says.

“West Virginians are always proud to have a hand in this effort,” she adds.

Another manufacturer pleased to participate in the network, Greg Ray of GPR Enterprises in Huntington, explains that his business is succeeding and growing because of his collaboration with RCBI and the network.

The Huntington entrepreneur first approached RCBI to enquire about opportunities through the network in 2001, before he had even officially started his business and while he was taking classes in the RCBI Machinist Technology Program. In December 2001 he completed his machinist training in the program, where he says he developed not only his machinist skills but also his entrepreneurial spirit for business-contracting opportunities.

“Upon graduation,” Ray says, “I knew I wanted to take the skills I learned from the machinist program to the next level.”

Because of the network’s connections Ray was able to identify contracting opportunities and receive bid development counseling. By the following summer he had bid on and was awarded contracts for the manufacture of metal handles for the M198 Towed Howitzer and octagonal nuts for the 155MM Lightweight Towed Howitzer.

Weber points to GPR Enterprises as “a true success story for RCBI and Greg Ray. From work force training to the business development incubation process to the award of DoD contracts, RCBI has realized our very purpose and mission with Greg’s success,” she says.

Ray is still honing his skills as a contractor and defense supplier. He says he continues to rely on assistance from RCBI as he readies another proposal to manufacture another metal handle for the U.S. Army. With information from the RCBI network, he obtained updated technical drawing packages and military
packaging instructions for the handle, which is similar to the ones he previously made for use on the howitzers.

“RCBI provided me with updated drawing specs and contracting changes that have occurred over the last couple of years,” Ray explains. “I’m glad that I can rely on the 21st Century Manufacturing Network and technical expertise of the RCBI staff,” he says.

A more recent addition to the network is General Technologies Inc. of South Charleston, which joined the network in 2004. This family-owned company, which produces sealing components and gaskets as well as valves for other industrial uses, was hoping to expand its business, so it turned to the network for new manufacturing opportunities.

As a result of RCBI assistance, the Kanawha County manufacturer was notified in February that its proposal to the Defense Supply Center Philadelphia to manufacture sealing components is being favorably considered and may soon be awarded. General Technologies has begun using the RCBI network to develop its contracting efforts, such as relying on bid identification and proposal preparation training.

Thanks to the RCBI 21st Century Manufacturing Network, manufacturers continue to take advantage of contracting opportunities that allow them to remain competitive and active members of the electronic supply chain across West Virginia and the region. For information about the network or to become a participant, call 800.469.RCBI (7224), log on www.21stmanufacturing.org or email 21stcentury@rcbi.org.

Martin Spears is a technical assistant at RCBI.
Committed to environmental stewardship.

West Virginians associate Appalachian Power with customer service, innovation and value. It’s one reason we’ve decided to return to our roots and again use the name as our brand. It is a welcome move for many customers who recognize our dedication to the environment. Whether it’s our leadership in the development of cutting-edge clean-coal technology, a commitment of billions of dollars in environmental upgrades for power plants, or support for local environmental education programs, Appalachian Power will continue to focus on the stewardship of our natural surroundings.
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Because of the quality management practices in place at companies all across the Mountain State, our state’s manufacturing base continues to bid on and win lucrative contracts. These contracts result in federal dollars coming here to West Virginia, supporting our businesses, their employees and families, instead of going to other regions of the country or, even, offshore.

Companies across West Virginia are positioning themselves to take advantage of these lucrative opportunities, available to organizations with quality systems in place.

As larger companies increasingly require their sub-tier suppliers to register their management systems to recognized quality systems or industry-specific specifications, the need for implementation of these systems continues to grow. These companies, and many more like them, rely on the Robert C. Byrd Institute for Advanced Flexible Manufacturing (RCBI) for a full spectrum of assistance to ensure their management systems are in order.

RCBI works daily to assist manufacturers with development and implementation of these often-stringent systems, from ISO 9001: 2000 (the International Quality Management System Standard for all types of organizations and industrial sectors), ISO 14001 (the Environmental Management System Standard), AS9100 (specifically for the aerospace sector) or the fast approaching TS16949: 2002 (the international
technical specification) – which is replacing QS-9000 (the automotive standard). Another important way that RCBI assists involves customer-specific or sector-specific requirements, including military specifications and those for the automotive and aerospace industries.

With this assistance from RCBI, companies are able to undertake larger production runs or produce standardized products that are enhanced by improvements such as the use of Lean Manufacturing practices in their assembly processes.

“RCBI’s assistance to smaller manufacturers enhances the sector’s competitiveness and broadens opportunities by allowing manufacturers to enter markets that require certification.” - Dale McBride

FMW Composite Systems Inc.

The goal at RCBI, according to Charlotte Weber, Director & CEO, is to ensure that West Virginia’s and the region’s manufacturers can maximize their effectiveness as suppliers in the global marketplace, maintain or expand their markets and, ultimately, grow their businesses.

“We recognize their ability to produce quality products and succeed when given the opportunity,” Weber says. “By having access to assistance in implementing and relying on these quality management practices, our state’s manufacturers can expect increased contracting opportunities and continued success while meeting their market’s requirements.”

Dale McBride, owner of FMW Composite Systems Inc. in Bridgeport, understands market requirements that often dictate an organization’s need for recognized management standards, such as ISO 9001. His company has bid on and won literally millions of dollars worth of military and scientific contracts. From the manufacture of components for a space optical bench component for the Hubble Space Telescope to the development of a prototype Super Lightweight Interchangeable Carrier (SLIC) pallet for the space agency to production of fuel cell bladders for the U.S. Army, FMW has proved its operations are world class.

FMW Composite regularly turns to RCBI for quality and technical assistance. “RCBI’s assistance to smaller manufacturers,” McBride says, “enhances the manufacturing sector’s competitiveness and broadens opportunities by allowing manufacturers to enter markets that require certification.”

FMW isn’t the only company that has found that RCBI services are a supportive resource when lucrative contracts require registration to or compliance with recognized quality systems. Manufacturers across the state and region also take advantage of RCBI’s expertise in response to market demands for quality by using RCBI’s brand of quality systems assistance.

“Quality systems not only help keep doors open at manufacturing facilities across our state, but they also maintain and expand markets for our state’s smaller manufacturers,” according to RCBI’s Weber. “This means they not only keep their doors open, but have the opportunity to grow.”

But quality management is more than just registration to or compliance with internationally recognized systems. Quality also addresses the skills of workforce members in areas such as communicating effectively, influencing others, building trust, resolving conflict, adapting to change, participating in teams, solving problems and improving processes. These activities are geared toward developing leaders and enabling an organization to become or remain a high
Quality – the degree to which a set of inherent characteristics fulfills requirements.

Requirement – a need or expectation that is stated, generally implied or obligatory. Qualifiers can be used to denote specific types of requirements – e.g. product requirement, customer requirement, quality management system requirement, specified requirement, etc. There is no such thing as high quality or low quality. Implementing a system does not enable you to make a better product for your customer. Organizations can go bankrupt trying to improve products beyond the customer’s requirements and what the customer is willing to pay for. In the strictest sense, your product either meets requirements (i.e. it is a quality product) or it doesn’t.

Customer satisfaction – the customer’s perception of the degree to which the customer’s requirements have been fulfilled. Because many things can impact perception such as the organization’s efficiency and effectiveness, perceived value and customer service, the whole picture of a quality organization is required – not just meeting the specified requirements. This is what sets one organization apart from another.

Quality Management System – a management system to direct and control an organization with regard to quality. There are quality management system requirements that address new product development. Therefore, even marketing and R&D function within the Quality Management System.

Quality Management – Coordinated activities to direct and control an organization with regard to quality.

Product – result of a process. There are generally four categories: services, software, hardware and processed materials. Service is the result of at least one activity necessarily performed at the interface between the supplier and customer and is generally intangible. Software consists of information and is generally intangible and can be in the form of approaches, transactions or procedures. Hardware and processed materials are tangible.

Process – Set of interrelated or interacting activities which transform inputs into outputs.

System – set of interrelated or interacting elements or processes.
ditional bidding opportunities with the space agency. Laura “Jo” Nuce, Special Projects Manager at the manufacturing company, says, “RCBI is opening up opportunities for us that we’re excited to have and has linked us to ones we would have no other way to reach.”

Since 1996, RCBI has opened opportunities for manufacturers by providing quality implementation assistance to 129 companies across the state and region.

Specifically, because of RCBI assistance Aurora Flight Sciences of WV, BF Goodrich, Bombardier Aerospace, FMW Composite Systems, Inc. and Star Technologies are each registered to various quality management systems. These registrations are requirements for the manufacturers if they expect to remain in the supply chain for the Department of Defense (DoD) as well as other agencies such as NASA.

Without ISO 14001 Environmental Management Systems registration, Mayflower Vehicle Systems Inc. in South Charleston was in danger of losing lucrative automotive contracts because of rigorous environmental standards. Registration to the standard was needed in a relatively short time because of pressing demands from the manufacturer’s customer market. RCBI staff went on-site at the plant, assessed the manufacturer’s needs and assisted with the implementation of the quality system. The resulting ISO registration ensures that the plant – recently acquired by Union Partners and renamed Union Stamping & Assembly Inc. – can continue to bid on contracts to produce automotive parts for GM, Chrysler, Ford, Freightliner, Saturn and Toyota.

**“RCBI is opening up opportunities for us and has linked us to ones we would have no other way to reach.”** - Laura “Jo” Nuce

Industrial Plating & Machine

This same business requirement is also a reality for Star Technologies. The Huntington-based company manufactures precision clamping devices and stampings for military and commercial markets. “Without RCBI's help, we could not have achieved AS9100 quality standards and we could not be a vendor for General Electric aircraft engines and Lockheed Martin and Pratt Whitney,” says Rick Houvouras, Managing Partner of Star.
“The quality training services provided by RCBI have been outstanding,” Houvouras notes. “Their assistance in our efforts to become AS9100/ISO 9002 certified has been invaluable. If your company is in need of upgrading your quality system, I would recommend the Robert C. Byrd Institute.”

Houvouras also points out the economic contributions to the state that his family-owned business offers. “Every dollar we produce in sales comes from outside of this area; every dollar we bring in is a new dollar for this community.”

Eagle Glass Specialties is another of the state’s manufacturers that has used services at RCBI for its quality management system. The Harrison County manufacturer, in operation since 1921, supplies worldwide glass fabrication needs of Display, Lighting, Aerospace, Security, Utility and Transportation industries.

Darren Huckaby, Engineering Manager at Eagle, says RCBI knowledge and experience was essential in preparation for the company’s certification to the ISO 9001: 2000 standard.

And RCBI isn’t merely preaching the implementation of quality systems to others; West Virginia’s only statewide manufacturing technology assistance center is also on the front line with its own management system. For proof, one needs look no further than the RCBI Composites Technology & Training Center in Bridgeport, which received ISO 9001: 2000 Registration in May 2004.

The RCBI Composites Center offers state-of-the-industry equipment and technical expertise to assist manufacturers in achieving worldwide competitive capacity in composites-sector development and manufacturing, a growing sector in the industry.

Mark R. Julian, the Deputy Director & C.O.O. at RCBI who offers principal oversight of day-to-day activities at the RCBI Composites Center, says the certification demonstrates the statewide organization’s commitment to industry. “Because RCBI is the only statewide manufacturing technology center serving West Virginia, we are committed to providing manufacturers a valuable resource to diversify their market opportunities, so they can compete with the world’s best and grow,” he says. “By achieving the ISO registration of our Composites facility, we are reinforcing the importance of the quality-approach we advocate.”

“RCBI played a key role in the implementation of Aurora’s quality program and is an instrumental part of our continued success,” Langford says. “The staff at RCBI provided technical assistance while we were developing our quality program. Today they help us maintain the program by assisting in the development of quality training programs for our West Virginia workforce.”

Perhaps Star Technologies’ Houvouras says it best as he bluntly gives a bottom-line description for business success. “If I can’t manufacture my products efficiently, keep up with the increasing demand for quality and stay current with today’s technology, I am out of business. It’s that simple.”

Erica Cheetham, Chief Quality Officer at RCBI, reaffirms: “Our certification will provide further confidence for our customers and further recognition of the RCBI Composites Center’s commitment to the composites and aerospace industries.”

In addition to the RCBI Composites Center’s ISO registration, the Clean Air Technology “Softwall” Cleanroom at the RCBI Composites facility, which is available for industry use, is designated as successfully passing standards for an ISO 14644-1 and ISO 14644-2 Class 6 clean zone/Fed Standard 209E Class 1000.

This ISO standard mandates the specific particle-count measurements that classify the cleanliness level of a cleanroom. The RCBI cleanroom features structural framing with clear PVC sidewall curtains and uses positive air pressure to remove dust particles and moisture to provide an unpolluted environment for composites-parts lay-ups during the assembly process.

John Langford, President of Aurora Flight Sciences, says he is indebted to RCBI for the assistance his company received as it sought, and ultimately achieved, ISO registration. Aurora is a leading supplier of unmanned air vehicle (UAV) designs, components, metal and composites structures, and flight services for government, industry and academic institutions. The manufacturer’s Bridgeport operations builds components for U.S. military programs, including the Air Force’s Global Hawk UAV.

In addition, the Harrison County manufacturer regularly uses the RCBI Composites Center as well as the manufacturing technology resource’s other services.

“If your company is in need of upgrading your quality system, I would recommend the Robert C. Byrd Institute.”

- Rick Houvouras
Star Technologies
According to the U.S. Bureau of Labor Statistics, the nation’s manufacturing sector lost 3 million jobs between July 2000 and January 2004. Here in West Virginia, we experienced more than our share of these losses.

Complex interrelated issues such as tax law, currency valuation, outsourcing, trade deficits, regulatory compliance, international standards, health care costs, product liability and aging infrastructure tempt us to throw up our hands in despair and hope for some magical solution, perhaps granted by the federal government or a paternalistic large corporation.

However, recent issues of Capacity have included information and ideas that suggest positive pathways to our future.

In the premier issue of Capacity, Karen Price, president of the West Virginia Manufacturors Association, noted that “business will gravitate to places in the world that offer the assets they need to be successful.” She cited a National Research Council forum, New Directions in Manufacturing, in which participants identified experience, learning, technology, capital and innovation as productivity drivers for manufacturing.

In his article in the Fall 2004 issue of Capacity, Professor Richard Lester of MIT suggested that sustainable economic growth is increasingly linked to the capacity for innovation in products, processes and services. As Lester pointed out, an important strategy for negotiating the transition to a more knowledge-based economy includes our ability to harness innovations by upgrading existing value chains, as well as building on existing industrial capabilities that diversify into new products and market areas.

According to New Directions in Manufacturing, the manufacturing sector accounts for 62 percent of all research and development performed in the United States and more than 90 percent of all patent approvals originate in the manufacturing sector. This is of key significance, as research and development represent the single most important source of technological advances that lead to higher productivity as well as new processes, products and practices.

Thus, the key question: How do we transfer these observations into meaningful actions that can apply to our present set of circumstances?

A major new coordinated activity, the Government Agencies Technology Exchange in Manufacturing (GATE-M), has been formed to act as an advocate for manufacturing R&D and help provide a foundation or framework for a national initiative in manufacturing. Part of the reasoning in starting the GATE-M project was, according to Dale Hall, Director of the National Institute of Standards, “the realization that there is some commonality of interest among the agencies but that we don’t have a formal way of sharing information.”

This realization strongly suggests a type of action that can be taken on a local level in order to reinvigorate our manufac-
Innovation and technology advancement often happen at the interface of several disciplines. Many of our best intellectual assets and specialized skills in West Virginia are geographically dispersed. Yet, there often exists opportunity to use these physically separated assets to find commonality of interests and to create innovation-driven economic activity. A key action to overcome any disadvantage associated with not having intellectual assets intensely concentrated is to actively facilitate the interface between skilled workforce, private companies, universities and government resources.

A good example can be seen in a recent collaboration established between FMW Composite Systems, located in Bridgeport, and Rampant Technology Partners, located in Charleston. FMW is the world leader in the development and manufacturing of Titanium Matrix Composites (TMC). FMW’s patented TMC process for strengthening titanium through the use of silicon carbide fiber reinforcement (SiC) is a promising solution for reducing weight and increasing performance across a range of manufactured components used in both military and commercial aerospace applications. A large portion of the cost of the TMC is associated with the raw material cost of SiC. FMW has initiated a multi-phase program that has the goal of establishing a reliable industrial base for the supply of aerospace quality SiC fiber at a price of $1,000 per pound based upon a production rate of 3,000 pounds per year. The current industrial cost from an outside vendor is $3,700 per pound. The U.S. Air Force holds that FMW’s program is strategically important and promising enough that it is underwriting much of the cost of specialized equipment so that the SiC can be produced at the Bridgeport site, thus reducing risks associated with interruption of supply.

The process to manufacture silicon carbide fiber is a cold wall chemical vapor
deposition (CVD) process that is inherently inefficient. Studies have shown that only 5 to 7 percent of the precursor chemicals are used during the deposition process. In order to meet the cost objective (90 percent material efficiency), a chemical recycling system to capture and reuse these chemicals must be designed and fabricated.

Although this effort requires significant chemical engineering resources, the anticipated scale and duration of the project did not dictate the development of this capability in-house. As a result, FMW sought an outside partner with the necessary skills and ability. After an extensive search, and a serendipitous introduction, the group that was selected for this project was Rampant Technology Partners in Charleston.

Rampant is an entrepreneurially-oriented consulting and research firm dedicated to bridging the gap between innovation and commercialization. It is able to provide a complete range of consulting management and technical services in the chemicals and materials sectors.

The effort of the Chemical Alliance Zone CEDTA represents at least one active step that can be taken toward a revitalized manufacturing base.

This partnership between FMW and Rampant shows how small technology companies located within West Virginia can team together to bridge the gap between research and commercialization. Without this partnership, FMW would have had to invest a large amount of time and money to arrive at the same solution. If FMW is successful in reducing SiC costs, it could mean West Virginia-based manufacturing jobs producing components for a variety of military and commercial aerospace applications. Collaborative efforts of this type are critical to growing jobs in West Virginia.

The historic success in research and development at the South Charleston Technology Center provides another example of how a focused effort to revitalize our manufacturing base can be supported. Dow’s recent downsizing of the research staff at the South Charleston Tech Center has made available facilities that support a wide range of research and development activities. The new BioChemistry and Allied Sciences Incubator at the South Charleston Tech Center, combined with the newly formed Mid-Atlantic Technology Research and Innovation Center (MATRIC), creates a base of capability to establish a collaborative environment and mine relationships to drive new research and business development activities.

In conjunction with its Incubator project, the Chemical Alliance Zone has recently received legislative approval to form a Center for Economic Development and Technology Advancement (CEDTA), which will institute specific actions to create a networked platform of information and connectivity that can help put our region back on track.

As research and product opportunities are identified, it is likely that the initial small scale manufacturing will occur near the technical capabilities. While not ensuring a return to historic levels of production, these activities are an important step towards using resident intellectual capacity along with our supporting physical infrastructure to revitalize our technical and manufacturing environment.

Author Michael Porter argues that a whole new class of institutions, termed Institutions for Collaboration (IFCs), now plays an important role in competitiveness. According to Porter, IFCs are a common feature in competitive regions and play an essential role in connecting the resources of a region and fostering
efficient collective activities.

West Virginia has a surprisingly large number of groups making active efforts to initiate or support innovation-led economic development. In addition to universities, federal agencies and large corporations, organizations such as the Robert C. Byrd Institute for Advanced Flexible Manufacturing, the West Virginia High Tech Consortium, National Center for Technology Transfer, West Virginia Venture Connection, Advantage Valley Entrepreneur League System, Chemical Alliance Zone, and Polymer Alliance Zone are some of the IFCs that represent resources or support structures for knowledge-based economic development in West Virginia.

While there are a large number of organizations and groups interested in supporting economic growth, one of the obstacles to fully realizing the potential of these West Virginia IFCs is that they are physically removed from one another and thus do not enjoy sufficient regular interaction to stimulate and support a broad-based utilization of the available resources. To accelerate the opportunity for success, West Virginia must establish a thorough catalogue of its range of assets and facilitate more efficient, systematic means of acting on opportunities for collaboration and teaming to acquire research, form innovative business teams, solve product or process problems and identify and respond to market opportunities.

The Chemical Alliance Zone CEDTA provides an example of a specific effort to resolve the problem of geographic dispersion by creating a robust information technology platform to efficiently create the type of connection that enabled FMW to collaborate with Rampant Technologies. This effort represents at least one active step that can be taken toward a revitalized manufacturing base.

In order to respond to the reality of the 21st century economy, West Virginians must embrace a passion for self determination by creating and supporting the means to advance existing and new technologies across a wide range of product types. A concentrated, holistic effort to identify and inventory our assets and to actively support technology advancement and business formation can enable and accelerate the reinvigoration of our manufacturing base. It is critical that all interested parties find a means of getting involved, cooperating to help create a networked information platform that can efficiently connect and support knowledge-based activities that enhance opportunities for technology and innovation driven economic development.

This can and will lead to the type of job creation that has long-term positive implications for our state.

The South Charleston Technology Park

The South Charleston Technology Park sits on 600 acres, and is home to research and pilot scale manufacturing operations of the Dow Chemical Company and Bayer. EDS and CDI also have significant operations at the site.

The Chemical Alliance Zone, a non-profit corporation of citizens, labor leaders, educators, government officials, chemical executives and business leaders committed to maintaining and expanding the business of chemistry in the West Virginia counties of Cabell, Kanawha, Putnam and Wayne, received a West Virginia Economic Development Authority (WVEDA) grant to create the Biotechnology and Allied Sciences Incubation Center (BASIC) at the site. The Incubator was created to:

- Stimulate and foster the creation and growth of technology-based small business in our area.
- Leverage critical technical and business infrastructure.
- Attract growing technology-based firms from other regions to our state.

The 10,000 square-foot Biotechnology and Allied Sciences Incubation Center is located in Building 701, a multipurpose research and development building located at the front of the technology park. The 85,000 square-foot building contains office space, as well as 77 wet labs, many of which are equipped with floor-to-ceiling ventilation hoods and two-level access.

A large-scale laboratory is also available, offering two extended height twenty-foot hoods, and is suitable for larger scale research operations. Associated office space and conference rooms are available, offering technology based enterprise an excellent and cost-effective facility for start-up or expansion. The building has its own fiber optic connection, and three T1 lines are in place with the capacity for rapid and significant expansion.

The Biotechnology and Allied Sciences Incubation Center is operated by the Chemical Alliance Zone and is overseen by its Venture Subcommittee, assisted by its Technology Advisory Board. Tenancy in the incubator will afford not only space for laboratory and office operations, but a wide range of expertise and assistance focused on growing the tenants business profitably, and graduating them from the incubator environment. Within the incubator, a comprehensive and accessible support structure is in place providing access to:

- Venture Capital.
- Seed Funding.
- Physical Facilities.
- Technical Expertise.
- Business Services.
- Entrepreneurial League System.

BASIC also has the resources to install key shared or appropriate tenant-specific technical infrastructure to

Rudy Henley is senior managing director of McCabe Henley LP and is a general partner of Mountaineer Capital.
Taking a Step toward

By Ted J. Hapney

Edward J. George is a member of the law firm Robinson & McElwee PLLC and co-chair of the Vision Shared Permitting Focus Area Team.

Ted J. Hapney is an International Representative with the United Mine Workers of America (UMWA) and co-chair of the Vision Shared Permitting Focus Area Team.

A Vision Shared is...

West Virginia: A Vision Shared is a comprehensive economic development strategy that builds on West Virginia’s strengths and seeks solutions to challenging issues. It identifies initiatives that need to be strengthened and establishes performance measures to gauge success in creating a new West Virginia economy.

A Vision Shared takes a holistic approach to economic diversity, encompassing all the elements that potentially could impact our success (e.g., health care, education, tax reform, infrastructure). Each West Virginian has a stake in this process.
While individuals, partners, or corporations are busily involved with product development, business plans, market research, and financing, obtaining the correct permits can be overlooked. A lot is involved in understanding and fulfilling federal, state, and local permit and licensing requirements. Types of permits can vary from those required for timber harvesting, oil and gas mining, or hazardous waste removal to the certification requirements of contractors, electricians, and nonprofit organizations.

“The sheer complexity of the organization, technical jargon, and bulk of paperwork can be very intimidating to first-time users of the system, such as those opening a business, relocating to the state, or trying to participate in the public review process,” explained Randy Huffman, Assistant Cabinet Secretary of the West Virginia Department of Environmental Protection and a member of the Vision Shared Permitting Focus Area Team.

Last December, West Virginia: A Vision Shared’s Permitting Focus Area Team recommended a draft bill that will provide regulatory relief to the citizens of West Virginia. The Permitting Team presented draft legislation to the Vision Shared leadership with the recommendation that the proposed Act, known as the Permitting Information Act, be submitted to the West Virginia Legislature for consideration during the Spring 2005 session.

The legislation, as the task force envisioned it, will streamline and simplify government, reducing redundancies in permitting and licensing procedures, and thus facilitate the process for applicants as well as permit-issuing agencies.

The Permitting Information Act was first outlined in the fall of 2004 by Vision Shared’s Permitting Focus Area Team, a coalition of 18 businesses, labor organizations, education affiliations, and government agencies from throughout West Virginia. Part of my responsibility as a co-chair was to ensure that the interests of business, labor, environmental, education, and nonprofit sectors would be equitably served by this legislation. Everyone from homeowners to entrepreneurs to environmentalists will find benefits from the provisions of the bill.

“By capitalizing on areas of common ground, like permitting needs and processes,” said my co-chairman Edward J. George, “we hope to show that there is more that unifies us than divides us.”

Permitting Information Ombudsman

A primary provision of the Permitting Information Act is the creation of an office of Permitting Information Ombudsman, who will be responsible for gathering and maintaining information about all permits necessary to start and run businesses in West Virginia. The permitting information ombudsman will provide resources and expertise at a single location to assist entrepreneurs and existing businesses and nonprofits.

The Permitting Information Act outlines a set of procedural rules that delineate the following mandates and functions:

• To determine the data collection requirements that each permit-issuing agency must follow as they submit their information,
• To require each permit-issuing agency to fully cooperate in providing information about their permitting requirements, and
• To establish a central repository that contains information about the types and purposes of all permits issued.

While the ombudsman will gather, organize, and disseminate information, “the ombudsman should have no say in the substantive permitting review, analysis, and decision-making,” said George. The Vision Shared Permitting Team realized that the various agencies already have the expertise to rule on the legitimacy of permits and licenses, so the ability to do so should remain within those agencies.

The proposed bill would allow the permitting information ombudsman to review the agencies’ cooperation with the mandates of the ombudsman’s office. Consequently, the ombudsman’s office will have the authority to assess the cost of gathering information that the agencies fail to provide. It is not yet certain where the central permitting office
will be housed, but it is anticipated that the ombudsman will work out of the Governor’s Office of Technology.

One-Stop Shop
A common complaint made by businesses around the state refers to the need to resubmit the same information over and over again when dealing with different state agencies. This not only costs these businesses time and effort, it requires various state representatives to process this information repeatedly. Presently, there isn’t a central information resource describing the laws, regulations, purpose, types, and names of permits that includes information about fees, time parameters, or places to seek additional assistance.

Developing a clearinghouse—a “one-stop permit shop”—can help the state by reducing redundancies and inefficiencies and improve the business climate by facilitating compliance with required state permits and regulations. Centralizing all permitting and licensing information will reduce rework.

The primary tool of the “one-stop” for both the business owner and the permitting information ombudsman will be a centralized resource website, designed to include information on the requirements for permits of all types, from tax permits to corporate and employer registration to environmental permits.

One model for the website is Business4WV.com, created by Tygart Technology and operated by the Department of Administration. Business4WV.com presently enables entrepreneurs to register a new business or nonprofit. The site contains a great deal of information, links to agencies, and resources about various permits. However, since state agencies are not required to report to Business 4 WV, the website cannot guarantee that every requirement is listed. According to Mary Ratliff, a developer of the Business4WV site and also a member of the Permitting Focus Area Team, the proposed Vision Shared initiative is more sweeping. “A Vision Shared wants to go a little deeper [than the Business4WV website] and identify all of the permits and licenses a given business needs to have.”

The Permitting Team also considered that computer access is not necessarily available to all entrepreneurs and so as long as a year to complete depending on the complexity of the system and the level of cooperation from individual agencies.

West Virginia is joining other states across the nation in finding ways to remove the barriers to economic and community development. It will require time and effort, but if we are successful in this project, it will significantly reduce the time that it takes for a business to determine a comprehensive list of what permits they must submit. This will result in time savings for all parties involved in the permitting process.

“For business owners, members of the public, and agency employees alike, a world with less paperwork, quicker turnaround, easier access, and fewer headaches would be a dream come true,” said Tom Heywood, Chair of the Vision Shared Results-based Government Steering Committee.

As interconnectivity and integration become a reality, we will move closer down the path toward a true permitting one-stop shop. This is very positive news for West Virginia’s economic future.

Anyone who would like to volunteer with the implementation of A Vision Shared or make suggestions for its improvement should contact Implementation Task Force leaders Mike Basile at mbasile@spilmanlaw.com or Kenny Perdue at kperdue@wvaflcio.org. Details about A Vision Shared can be seen on the initiative’s website at www.visionshared.com.
The first authorized biography of U.S. Senator Robert C. Byrd, “The Soul of the Senate,” will premiere May 28th at the Clay Center in Charleston, WV. The hour-long biographical documentary was produced by MotionMasters, a Charleston-based electronic communications firm, and the West Virginia Humanities Council. It will also air statewide on May 29 at 7 p.m. and May 31 at 10 p.m. on West Virginia Public Broadcasting.

The premiere will be the culmination of several years of fund-raising, research, shooting and editing, according to Diana Sole, president of MotionMasters and executive producer of the project.

The documentary depicts Byrd’s rise to power from humble origins. Byrd is the only U.S. senator to be elected to eight consecutive six-year terms and has held more leadership positions than any other senator of any party.

“The story of Sen. Byrd’s life is truly remarkable,” said Sole. “Here’s a child, motherless at less than a year old, who would ultimately become one of the most influential leaders in our nation’s history. Whether you agree with him on the issues or not, Byrd commands a great deal of respect, and rightly so. He has had a remarkable Congressional career that spans more than 50 years, and he will tell you he has worked with, not for, a total of 11 U.S. presidents.

“This documentary has some fascinating material in it. Some of it predates his Senatorial career. One particular interview we uncovered is old newsreel footage shot just days before Byrd was sworn into office in the U.S. Senate. We also have some wonderful footage shot in the 1980s by Bill Drennan and Mike Willard, who started a project on Byrd, but never completed it. They shot some very poignant material that has never been seen publicly, and we’re thrilled they granted us permission to use it in The Soul of the Senate,” said Sole.

Contemporary interviews were shot with many of Byrd’s colleagues, including Senators Daschle, Dole, Clinton and Graham, to name just a few. In addition to congressional leaders, the documentary features interviews with historians, parliamentarians and Sen. Byrd himself. Nationally acclaimed actor James Brolin narrates the documentary.

The documentary is part of an educational package, which also includes a teacher’s study guide and a website.

Principal underwriters include Appalachian Power, The Dominion Foundation, Mylan Pharmaceuticals and Verizon. Additional sponsors include ATK Tactical Systems and the State of West Virginia Governor’s Office.

Additional support was provided by: BB&T; The Dow Chemical Company; The Marshall University Foundation, Inc.; Robert H. Mollohan Charitable Foundation, Inc.; United Bankshares, Inc.; the West Virginia Department of Education and the Arts; West Virginia University and The Robert C. Byrd Health Sciences Center.

MotionMasters and the WV Humanities Council will make free copies of the educational package available for teachers and students throughout the state school system. This package will enable students to explore Byrd’s passionate devotion to the Constitution and his reverence for the Senate. They will examine the separation of powers through Byrd’s historic opposition to the line item veto as well as his willingness to stand on his convictions even in the face of political and public disfavor.

For more on The Soul of the Senate, go to www.motionmasters.com.

After May 28th, visit www.soulofthesenate.org.
If they’re to maintain competitiveness and expand market opportunities in today’s global economy, businesses not only must have access to resources and a dedicated workforce, but also high-speed, high-capacity – i.e., broadband – access to information and data on the Internet.

Access to broadband connectivity and greater use of web-based business applications are essential for the continued viability and future growth of West Virginia’s manufacturing sector. Use of these technologies can enhance the productivity and operational performance of manufacturers, particularly small- to medium-sized enterprises in rural areas. Broadband technologies also can provide other remarkable benefits for our state.

Although West Virginia has seen substantial progress over the past several years in the expansion and availability of high-speed Internet options, such as cable and DSL, businesses and communities in our state still lag the rest of the nation in overall use of this new technology and its many beneficial applications.

Recognizing this, the West Virginia Chamber of Commerce, along with A Vision Shared: West Virginia, has been spearheading a statewide working group to examine West Virginia’s broadband situation and to explore new approaches to propel the connectivity and use levels of businesses, community and residential households.

This collaborative project involves a diverse group of 55 stakeholders who are working to develop strategic recommendations on how best to expand high-speed Internet connectivity and use in West Virginia, particularly in rural areas. The long-term goal is to help find ways to expand broadband use, spur economic development and improve the overall well-being and prosperity of communities.

The group has been examining not only existing wired high-speed Internet technologies, but also many emerging broadband technologies that may hold tremendous opportunities to expand connectivity across our state. These emerging technologies include, among others, Wi-Fi and Mesh Networks, Wi-Max, satellite, broadband over power lines and fiber-to-the-home.

So how might West Virginia – and its rural manufacturers and businesses – benefit from a statewide strategy to increase access to and use of broadband technologies and applications?

First, high-speed access to the Internet has evolved as a vital component of maintaining competitiveness and information-sharing, particularly for businesses in today’s Information Economy. Although businesses in West Virginia, located mostly in rural areas, have advantages such as a motivated, skilled workforce, lower costs of energy and proximity to major markets, these businesses need access of high-speed communications technology to stay connected to affiliated operations, transfer data files and digital records, market and sell their products, and expand their reach worldwide for new customer possibilities.

Thus, high-speed Internet access is critical for companies to remain viable and competitive in a national and global economy and to maintain their locations in West Virginia’s communities.

Additionally, if greater broadband access were provided for West Virginians who live and work in rural communities, then a number of other benefits could be realized:

- **Home-based and micro business e-commerce** – The Internet allows for home-based work opportunities and expanded cost-effective sales opportunities for entrepreneurs, micro-enterprises and cottage businesses.
- **Virtual professional services** – Broadband access will be the key to enticing professionals to relocate to West Virginia and enjoy its scenic beauty and quality of life, instead of remaining inside large, crowded, costly metro areas.
- **Distance learning** – With high-speed connections, more West Virginians would have greater access to on-line educ-
Broadband technologies and specialized curriculum; without the cost and travel time involved in traditional programs.

• Rural healthcare – Benefits and improvements could be realized using tele-medicine and video conferencing to provide world-class healthcare and much-needed specialists to local, rural practices and facilities via the Internet. Moreover, emerging broadband-based web applications offer promising opportunities to deliver health care services in a very cost-effective and beneficial manner.

“Telemedicine” has long been one of the most promising applications for high-speed networks. More and more rural and outlying hospitals and clinics have limited or no access to the expertise and experience of doctors and specialists found in urban centers. But diagnoses and consulting can be done (any time, anywhere) thanks to the use of high-quality audio and video and of real-time data connections between central and remote locations.

Many specialists now can even provide diagnostic and consulting services right from their own homes. And, new advanced health care application delivered via the Internet may help revolutionize our current health care and home care delivery systems, and possibly greatly reduce overall systemic costs.

• Emergency services – including firefighters, police forces and medical crews – see wireless broadband as a vital addition to their tools, and are lobbying Congress to help improve these capabilities. Municipalities from Milpitas, Calif., to Washington, D.C., are experimenting with technologies that can speed emergency response times and help provide environmental data such as hazardous chemical readings.

Broadband applications also are being used for flood control monitoring and alerts, as well as fire prevention.

Broadband presents the ability to download large files (including CAD drawing packages and streaming video) or transfer large files of text or graphics at higher speeds without tying up phone lines. So you can be on the net, enjoying a faster better connection, while simultaneously talking on the phone. Smaller manufacturers – who need access to such technology and technical offerings – can take advantage of new services with broadband faster and cheaper than regular modem-access allows. Because broadband technology removes the need for continual reconnection to the net, you are always connected – sending and receiving information – at any hour of the day or night.

With access to broadband and RCBI’s multitude of technology offerings, you can fully realize the potential of opportunities that are critically important to successfully competing in a globally competitive Information Economy.

From contracting and partnering opportunities to technology access and quality implementation to other workforce development and training programs, RCBI’s proven and advantageous online offerings are merely a click away at www.rcbi.org.

Stephen G. Roberts is president of the West Virginia Chamber of Commerce.
AEP TO INVEST MORE THAN A BILLION $ IN STATE PLANTS

By Dana Waldo
A construction boom is underway in several areas of West Virginia, brought about not by an influx of new residents or businesses, but by a huge investment in pollution control equipment at American Electric Power’s generating units in the state.

Last year, we announced that we would spend $1.2 billion to add a Flue Gas Desulfurization system (FGD) at our Mountaineer Plant in New Haven, and FGDs and Selective Catalytic Reduction systems (SCRs) at both units of our Mitchell Plant in Moundsville.

The $1.2 billion is only part of what we have spent and will spend over the next several years to reduce emissions at our plants. For example, we already have more than a half billion dollars in SCRs in place at our Mountaineer Plant and at all three units of our John Amos Plant in Winfield. Plus, although we haven’t yet announced it, as our largest generating plant, the Amos Plant is very likely to receive FGDs on all three units – another $800 million investment.

In all, it’s an investment of $2.5 billion. But the dollars are only part of the story. With the huge investment come thousands of construction jobs. We estimate that there could be as many as a thousand construction workers for each of the projects. Many of these are already on site working, but the numbers will grow. There are also some permanent jobs associated with operating the new equipment, and more tax dollars will roll into county and state coffers as well.

FGDs remove sulfur dioxide (SO$_2$) from plant stack emissions. SO$_2$ is a precursor of acid rain. FGD technology can remove up to 95 percent of SO$_2$ from the flue gas. FGDs neither use nor produce harmful chemicals, but do produce a significant amount of gypsum. The gypsum can be used in drywall or it can be safely managed in a landfill. We are hopeful that we can entice a gypsum plant to the state, making an even greater positive impact on the economy with the FGD project.

FGDs also increase the amount of water vapor emitted through the stack. This is important to note, because the stack plume, which is almost invisible now, will change to a billowy white water vapor, similar to the look of the water vapor that comes from cooling towers.

SCRs remove nitrogen oxides (NO$_X$), a contributor to ground level ozone or smog. SCRs remove up to 90 percent of NO$_X$. SCRs use ammonia in a chemical reaction to...
convert NO\textsubscript{x} back into harmless nitrogen and water vapor. AEP’s SCR units use a urea-to-ammonia system for the SCRs’ ammonia supply. Urea, a white granular power that is commonly used in lawn fertilizers, is stored at the plant and used to create ammonia gas on an as-needed basis.

In addition to removing sulfur dioxide and nitrogen oxides, FGD and SCR systems working together can remove up to 90 percent of mercury (see sidebar, p. 65).

Use of FGDs and SCRs will ensure that AEP will be able to provide low-cost electric power to West Virginia customers regardless of the development of new pollution control requirements. A study performed for AEP’s Board of Directors that was issued last summer concluded that the investments that were being made in air quality improvements would be compatible with any reasonably projected control programs.

These investments will also result in the generation of tradable credits that will be important in the continuing operation of AEP’s existing coal fleet. In the absence of the ability to trade we could be faced with early retirement of a significant portion of our efficient fleet, possibly requiring the purchase of externally produced energy or the construction of gas-fired units.

In addition to investments in FGDs and SCRs, we have planned investments in new clean coal technology, including the development of an Integrated Gasification Combined Cycle plant somewhere in our eastern service territory (see sidebar on previous page).

Our multi-billion dollar investment in West Virginia makes our position clear: Appalachian Power and our parent AEP are committed to the state. We’re committed to being an environmentally responsible company, we’re committed to bringing jobs and tax dollars to the state, and we’re committed to providing energy at the lowest possible cost to our customers.

Dana Waldo is president and chief operating officer of Appalachian Power, a unit of American Electric Power. Appalachian Power provides electricity to about a million customers in West Virginia, Virginia and Tennessee. He has been with AEP for about 25 years, but immediately prior to his current position, Waldo had left the company to serve as president and CEO of the West Virginia Roundtable for five years.
At the end of 2004, the West Virginia Department of Environmental Protection issued a mercury fish advisory, saying that people should limit consumption of fish caught in most of the state’s rivers and streams. Mercury is toxic and can cause neurological damage. It can affect unborn children, so pregnant women are advised to be especially careful.

About 6,000 tons of mercury are emitted into the environment worldwide each year. Half that comes from natural sources such as volcanoes, forest fires, runoff from mercury rich soils, etc. The other half comes from human activity. Coal-fired power plants are always fingered because burning coal releases mercury into the atmosphere. Coal-fired plants in the U.S. emit about 48 tons a year, or 1 percent of worldwide emissions. That may not seem like a large amount, but it is the country’s largest single source of mercury deposition caused by human activity.

One problem in removing mercury from plant emissions is that there is no proven means to address mercury removal on a stand-alone basis. The amount of mercury in the emissions from power plant stacks is about nine parts per billion. Imagine filling the Houston Astrodome with a billion ping-pong balls. Now imagine nine of those balls are black. Removing mercury from power plant stack emissions is like being asked to locate and remove those nine ping-pong balls.

The upside is that some environmental retrofits designed to address other pollutants also remove mercury. Well in advance of any U.S. EPA mercury regulations, Appalachian Power and AEP have voluntarily started projects at several of our plants that will reduce emissions of multiple pollutants, including mercury.

In West Virginia, we are installing combinations of Selective Catalytic Reduction units (SCRs) and Flue Gas Desulfurization systems (FGDs) at our largest plants. While designed to address nitrogen oxide and sulfur dioxide emissions, the two systems in tandem have been shown in many plants like ours to remove up to 90 percent of mercury as well.

The reduction program in which AEP is engaged will be ready to meet the requirements of the proposed mercury reductions that came out in March or those currently listed in the Ihofe-Voinovich Clear Skies Act. Appalachian Power supports the Clear Skies Act as the best solution to mercury reductions as it produces significant reductions in a clearly defined but achievable time frame that has a reasonable impact on the cost of electric power.​
MEETING THE COMPETITIVENESS CHALLENGE

NAM
President John Engler gives his take on the bright future of U. S. manufacturing.
The results of the elections of 2004 have created an extraordinary opportunity for business to accomplish some long-overdue legislation needed to make U.S. manufacturing more competitive in the global marketplace.

The manufacturing community has an aggressive legislative agenda driven by unprecedented foreign competition that threatens our vital export sector. Some of the problem is attributable to unfair trade practices such as illegal subsidies, tariffs, product piracy and currency manipulation. But an even greater challenge is the propensity of our policymakers to shoot ourselves in the foot with unwise policies that drive up the cost of producing in our own country. A recent study by the NAM found that external costs associated with taxes, litigation, health care and pensions, regulations and soaring energy prices added 22.4 percent to the cost of labor in the U.S. compared to our major trading partners. We can’t blame this on others; we’re doing it to ourselves.

Yet another self-inflicted wound is a public school system that does not prepare young people for careers in modern manufacturing. They are not getting the science, math and computer skills they need to deal with modern technology. Our member companies have jobs going unfilled because they cannot find qualified applicants.

Now that the 109th Congress has convened, the NAM has hit the deck running with an ambitious legislative agenda focused on these major areas:

• Reducing unnecessary external production costs. No other country permits its legal system to raid corporate treasuries the way we do. The asbestos mess is a national scandal in which once-great companies are being driven to ruin and tens of thousands of jobs lost, mainly to enrich a handful of unscrupulous trial lawyers. We can bring sanity to our legal system without compromising the rights of individuals who seek redress for real harm or loss.

• The absence of energy policy is keenly felt by manufacturers who are especially dependent on natural gas, many of which are an extraordinary opportunity for business to accomplish some long-overdue legislation needed to make U.S. manufacturing more competitive in the global marketplace.

We can bring sanity to our legal system without compromising the rights of individuals who seek redress for real harm or loss.
them for both energy and as a feedstock. At the behest of environmental groups, the government encourages more reliance on gas, yet every effort to identify and bring on line new sources of natural gas is resisted. We find ourselves caught in the middle of this Catch-22, and we must put an end to it.

- Rising health care costs are one of the biggest issues for manufacturers today. It is a major impediment to our ability to compete. For many companies, it has become an issue of survival. We believe the answer lies in an aggressive two-track strategy of reducing health care costs today while experimenting with changes or alternatives to our present health care system. For example, chronic conditions – such as diabetes and asthma – account for 70 cents of every health care dollar. Many of our members are achieving great savings through aggressive disease management.

- We must continue our pressure for a level playing field with our foreign trading partners. We are committed to free trade. The United States is the world’s largest exporter and would suffer more than any from an outbreak of protectionism. At the same time, unfair trade practices are taking a toll. Illegal subsidies and tariffs, product piracy and currency manipulation must be stopped, and a key part of the solution is more free trade agreements that provide us assurance of fair trade.

- We need tax laws – permanent tax laws – that encourage capital investment and R&D. We cannot compete with the world on wages. The saving grace of our economy has always been creativity and innovation, and manufacturing is where it happens. More than two-thirds of our R&D is in manufacturing. Yet we have to re-fight the battle for the R&D tax credit every other year.

- Telecommunications are critical to our efforts to become more competitive. The NAM favors deregulation and widening the services available. We want to see healthy competition in telecommunications. It may be necessary for federal pre-emption of state and local authority if required to assure maximum competition among providers. There is more at stake here than providing entertainment and communications to consumers—as important as that is.

As a former governor, I understand the appeal of the goals pursued by
state regulators, to keep rates low. But overall economic
dynamism calls for bolder steps and more unified national
markets than state regulators have generally been inclined
to allow. We need to unleash the full power of our telecom-
munications technology.

And we simply must do a better job of preparing young
people for careers in manufacturing. There was a time
when anyone with a high school education and basic me-
chanical aptitude could look forward to a good career in
manufacturing. That time is past. Modern manufacturing
is sophisticated and demanding. Our young people simply
must get more science, math and computer skills. Our pub-
lic schools, community colleges and universities must work
directly with business to prepare young people for careers in
modern manufacturing.

But will the best and brightest want to work in manufac-
turing? Many say no, and that is a crisis for manufacturing
and our country’s status as a world leader. The perception
of manufacturing is powerfully negative, built on old ste-
reotypes of dark factories and dead-end assembly line jobs.
One of our biggest challenges is to counter this false image
and persuade young people that careers in modern manufac-
turing are desirable.

The NAM is doing its part. We have announced a na-
tional campaign to change this image called Dream It, Do
It. Launched first in America’s heartland, Kansas City, in
January, the campaign will move to other cities promoting
manufacturing careers as a great career choice through an
exciting multi-media campaign. We will be working with
local educators, civic leaders and economic development
groups to support the idea of manufacturing as a viable
career.

In sum, manufacturing needs policy makers and educators
who understand the critical importance of manufacturing to
our country, the extraordinary challenge posed by unprec-
edented global competition, and the urgency of making our
competitiveness a national priority. Business has shown
what it can do in the political arena and must now translate
November’s electoral victories into policy victories. The key
to our success in both is the same — energized employees
who understand the issues and make their voices heard.
Maybe it's just human nature, but it's always seemed to me that most of us are more likely inclined to think about our shortcomings and what we don't have, rather than about how fortunate we are. What sells newspapers, I am told, are stories about unfortunate occurrences, rather than the fact that someone has succeeded or some other bit of good news.

Here in West Virginia, I believe we’ve long grown accustomed to looking on the down side of things. In contrast, I would like to challenge you to start thinking about not only where our state stands today but where it could be in the future.

As president of the West Virginia Manufacturers Association, it is my job to work to create a climate in West Virginia where our manufacturing industry can grow.

All of us have our share of glum days. Thus, I sometimes feel like I’m making no headway at all. I lament about how bad our situation is as it relates to our cost of doing business and our ability to grow more manufacturing jobs.

But I am not one who likes to dwell on the negative.

Certainly, we have a challenge before us to change the misguided policies, stifling regulations and shortsighted laws that have worked together to block manufacturing expansion. But as we strive to overcome these challenges, there are a number of positive elements in West Virginia that can contribute to the success of a manufacturing economy.

Those positives deserve more attention than they customarily receive.

We know that West Virginia is one of the most beautiful states in the nation. With our scenic mountains and rivers – and the lowest crime rate in the country – West Virginia is an ideal place to live and raise your family. This is an important factor when considering the location of a business. But our abundant natural resources can serve us twofold, by creating an idyllic place to live and by providing an important resource for job creation.

Properly managed, our natural resources can offer enjoyable recreation opportunities while contributing to our economy.

One of the sectors of manufacturing that can grow in West Virginia is the secondary wood products industry. Over three-fourths of the land mass of our state is covered in forests. The majority of these forests consist of hardwood trees – trees that naturally re-generate. So our forests are constantly growing. Currently our growth rate outstrips our harvest rate by a ratio of 2-to-1. This growth provides a tremendous opportunity for our wood products industry to expand.

In the last 15 years, companies such as Armstrong World Industries, Columbia Forest Products, Georgia-Pacific and Weyerhaeuser have found West Virginia to be the right place to manufacture wood products, and they have brought new investment and jobs as they opened their doors for business.

With our thousands of acres of forestland, we can look forward to more growth in the wood products industry sector for years to come.

West Virginia’s stake in the aeronautics industry also is growing, as evidenced by the Mid Atlantic Aerospace Complex in Bridgeport. Pratt & Whitney, Lockheed Martin, and Bombardier, among others, have found a home here.

We have an able workforce that provides these employers

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**Helping Build the Future in Manufacturing**

Marshall University’s Office of Academic Affairs is pleased to serve as an educational partner with the Robert C. Byrd Institute for Advanced Flexible Manufacturing throughout West Virginia. By providing the academic structure that will complement other RCBI training programs, we are doing our part to strengthen West Virginia’s manufacturing and business communities.

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with the skill sets they need. Moreover, turnover and absentee rates are extremely low. Our state’s training programs – such as those offered by the Robert C. Byrd Institute – are highly regarded by industry because they offer course work designed to meet the specific needs of the employer, not just in aerospace but in various segments of manufacturing.

Also at Bridgeport, the RCBI Composites Technology & Training Center supports the region’s fast-growing aviation and aerospace industries, the composites-manufacturing sector, other commercial market sectors, the DoD and NASA. Composites hold the promise of creating a whole new generation of West Virginia jobs.

With the location of Toyota Motor Manufacturing WV Inc. and NGK Sparkplug near the confluence of Interstates 64, 77 and 79, the state is poised to attract more transportation-related manufacturing.

Our rivers provide a low-cost alternate method of transportation that few other states can offer.

Granted, our natural resources, workforce, training and transportation are only one side of the equation. If we’re to take full advantages of these pluses, we must partner with our state’s leaders to make important changes in policies, regulations and laws that are restraints to job growth.

During the past few years, because they have heard the collective voice of manufacturers and other businesses, our state lawmakers have acted to improve our civil justice climate with the passage of the venue bill and medical malpractice reform. And in January’s special legislative session, Gov. Joe Manchin and the Legislature took a bold step toward privatizing our workers’ compensation system and retiring the unfunded liability that has hung over employers and employees for many years.

List West Virginia’s assets and you start with our remarkable natural resources – water, timber, coal, oil and natural gas. Couple those riches with our tremendous transportation system, a dedicated workforce and training opportunities that are second to none and you have a formula for progress. Add to that a growing willingness on the part of our state leaders to remove those things that have been a barricade to new investment and there’s every reason to see West Virginia as a land of opportunity for manufacturers.

Karen Price is president of the West Virginia Manufacturers Association.
An often-overlooked tax savings opportunity is likely to be found in accelerated depreciation of costs associated with the construction, renovation or purchase of a building. The tax life of most commercial buildings is 39 years. The tax life on equipment and land improvements, however, can vary from 5 to 15 years. Most personal property associated with manufacturing activities is assigned a tax life of 5 to 7 years. With this large difference between the categories, it’s important to identify any items that can be properly classified in a category with a shorter tax life.

Many manufacturers can benefit greatly from the asset depreciation service referred to as a “cost segregation study.” This is an engineering-based approach that enables building owners to reallocate costs of property from a 39-year depreciable life (i.e. most real estate) to 5, 7 and 15-year lives. In doing so, current depreciation deductions are increased and, accordingly, taxable income is decreased. Taxpayers utilizing cost segregation studies should expect to pay less income tax in the early stages of a building’s life, thus providing an increase in cash flow.

How much of a manufacturing facility’s costs can be reclassified through a cost segregation study? While results vary, typical studies result in 20 to 60 percent of total costs being reclassified. Many items that would otherwise be classified as building components can be reclassified to personal property due solely to their relationship to the manufacturing activity.

Cost segregation is a tax strategy that has been around for a long time. In the landmark case of Hospital Corporation of America [HCA] v. Commissioner, 109 TC 21 (1997), the U.S. Tax Court ruled that property qualifying as tangible personal property under the former investment tax credit (ITC) rules would also qualify in the same manner for purposes of federal income tax depreciation. Thus, given the ruling in HCA, taxpayers can rely on ITC regulations, rulings, and court decisions when determining whether property should be depreciated as real property, land improvements or personal property. In a 1999 IRS Legal Memorandum, the Service acquiesced to the theory of the HCA case and indicated that the IRS would not contest the reclassification of building costs into different asset categories that result in shorter depreciable lives. However, the IRS advises its field agents to determine if the project owner’s reclassification of these costs is based on a detailed cost segregation study performed by qualified professionals. Without a qualified study, reclassifications into shorter lives

There are hidden tax benefits to be found in investments in newly constructed, acquired or expanded manufacturing facilities, if you know where to look.

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Many manufacturers can benefit greatly from the asset depreciation service referred to as a “cost segregation study.” This is an engineering-based approach that enables building owners to reallocate costs of property from a 39-year depreciable life (i.e. most real estate) to 5, 7 and 15-year lives. In doing so, current depreciation deductions are increased and, accordingly, taxable income is decreased. Taxpayers utilizing cost segregation studies should expect to pay less income tax in the early stages of a building’s life, thus providing an increase in cash flow.

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will generally not withstand an IRS audit. This is why it is highly recommended that professionals who deal specifically in the area of cost segregation studies be engaged to perform such a study.

The best time to conduct a cost segregation study is in the year of purchase, construction or renovation. However, it is possible to go back and look at buildings acquired as far back as 1987. There is no need to amend prior year returns to benefit from the unclaimed depreciation. The IRS considers the change in computing depreciation as a change in an accounting method and therefore, requires the filing of Form 3115, Application for Change in Accounting Method, with a timely filed (including extensions) original federal income tax return for the year of change. Even though the filing of the form is required, the change is considered automatic. Any additional revenue or expense to be recognized as a result of the change is, pursuant to Revenue Procedure 2002-9, taken into account completely in the year of change.

Typical purchases of real estate involve the acquisition of land, land improvements, building and personal property. However, because of the costs involved in performing cost segregation studies, owners should consider a study only when expenditures equal or exceed $1,000,000. Studies are usually performed by CPAs with the assistance of engineers or architects and generally take from four to six weeks to complete. For projects that qualify for a cost segregation study, the costs of the study can often be recovered through the first year’s tax savings.

Allocating costs for a newly constructed or renovated facility or the purchase price of a newly acquired facility is an underutilized tax planning opportunity. A proper cost segregation study should reduce a manufacturer’s cash outlay for taxes in the early years.

Steven S. Robey, CPA, CVA is a P.L.L.C. member and member-in-charge of the Tax Department with Arnett & Foster. He has more than 27 years of public accounting experience, the last 22 of which have been concentrated in taxation.

Harry “Skip” Harless, CPA is a senior manager with Arnett & Foster, P.L.L.C. He has more than 15 years of public accounting experience, the last eleven of which have been concentrated in taxation.
extreme-duty electronics system designed specifically for operations on high-speed, open cockpit patrol boats.

Azimuth works regularly with the Robert C. Byrd Institute, leasing time on its equipment and taking advantage of the training it offers, and Hartzell is quick with his praise. “RCBI is a great program,” he says, “and I’m not afraid to tell anybody that.”

Another system being field tested by the West Virginia Guard is a portable, high-tech computer system that can be loaded into a plane and used to help pinpoint illegal drug cultivation, identify terrorist enclaves or – on a happier note – find a stranded hiker.

It’s dubbed Project Oculus – “oculus” is the Latin word for eye – and it’s a creation of West Virginia University’s Center for Industrial Research Applications.

Explains Hoyer: “This is a pallet system with a series of sensors that loads in the back of a C-130 aircraft. You then can fly that C-130 anywhere and, depending on what sensors you put in, you can detect illegal aliens on our Southwest border or, if you’re over Columbia, you can look for certain radar signals, microwave signals, things of that nature and detect illegal narcotic production. There are already orders from government agencies for 10 of these systems to be produced this year by West Virginia companies.”

A third system tested by the West Virginia Guard is one developed by Information Manufacturing Corp. at its state-of-the-art “Information Factory” at Rocket Center, where nearly 150 people work in document conversion and information for the Department of Defense and other customers. IMC also operates facilities at three other West Virginia locations in Clarksburg, Cowen and Morgantown.

Pointing to a photograph showing a stack of documents several inches high, Hoyer explains: “That stack of papers is one month’s worth of cell phone records for four Middle Eastern foreign nationals living in this country illegally and trafficking in cocaine. It’s believed the profits they generate are going back into a couple of different organizations. We took the technology that IMC uses to manage medical records for the Department of the Army and we were able to use it to do a frequency analysis, taking a look at who these individuals were calling. That helped the law enforcement folks pin down that they were putting their money in four different locations in four cities around the country. So the Internal Revenue Services then was able to go back and track that money that was made in illegal narcotics and being transferred to the Middle East.”

The system, Hoyer notes, is portable and can be easily flown anywhere.

“You could, say, fly it to Afghanistan. They could pull records out of a cave there and process them with this system and send them back to the Defense Intelligence Agency. That timeliness hopefully could prevent something from happening.”

With future development, he says, the system will have both military and civilian applications.

1,000 different projects.

MATRIC’s vision is to match that size and scope in the future. To that end, MATRIC has developed similar relationships with five universities throughout the state, including West Virginia University, Marshall University, West Virginia State University, the University of Charleston and WVU Institute of Technology. The presidents of these universities serve on MATRIC’s board of directors and have encouraged collaboration between MATRIC and teams of university researchers.

A Saint Albans native and former technology development program manager for the Space Shuttle Program in Houston, Texas, I joined MATRIC in April 2004 as President and CEO. Since then, we’ve built a nine-member team. Many are former Dow Chemical researchers, including Dr. Parvez Wadia, former vice president of R&D for both Union Carbide and Dow Chemical.

MATRIC is focusing its R&D thrusts in three areas: chemical processes and products, biosystems and software systems. To date, we have submitted 27 proposals worth more than $21 million to create technologies for a variety of commercial and government customers, including the Department of Defense, the Department of Energy, the National Aeronautics and Space Administration and the Federal Bureau of Investigation. Other MATRIC inventions, such as advanced medical devices, are being directly developed and patented.

As technologies are created, each innovation will be commercialized to produce manufacturing and service jobs in West Virginia. Relationships with local companies are being established through an Office of Commercialization in order to accelerate bringing these products to our industries, patients and consumers.

The economic impact of MATRIC is potentially enormous. First, MATRIC will employ hundreds of scientists and engineers with higher salaries and better benefits. Second, MATRIC technologies could be licensed to West Virginia-based businesses that could offer new products and services, adding jobs to dozens of companies. Third, MATRIC could create an attractive climate in West Virginia for other high technology companies.

One only has to look to the Research Triangle Institute to see the way these factors have made a positive impact on the North Carolina economy. Currently, it is home to 136 high technology companies that employ approximately 43,000 workers.
facilitate growth.

Other tenants in the building include MATRIC, a not-for-profit Research Institute focused on the chemical, biomedical and software arenas, Marshall University and West Virginia University Institute of Technology. Their presence offers incubator tenants access to research and commercialization expertise and partnerships, providing them with technical leverage far beyond their own resources. In addition, tenants can tap into the world-class expertise of a network of former Union Carbide personnel in chemical technology, marketing, process development, licensing and intellectual property.

Soon, the incubator will also host The Center for Economic Development and Technology Advancement, a partnership among Marshall University, West Virginia University, the Polymer Alliance Zone and the Chemical Alliance Zone. This entity will focus on working aggressively to take advantage of the existing facilities and capabilities and draw upon the market and technical expertise of the individuals in the region and large companies such as DuPont, Dow, Bayer, Shell, and GE to engage in the following activities:

• Development and application for research grants providing funding for university and private sector partnerships engaged in research directed toward technology commercialization.
• Development of alliances with regional and national institutions of technological excellence to engage West Virginia’s doctoral granting institutions in research partnerships directed at commercialization of research at these centers of excellence.
• Active assembly of attractive technology-based ventures.
• Provision of a network of support for technology-based ventures in areas of strategic interest for economic development within the State to accelerate and increase the probability of success.

Our vision is for BASIC to become a powerful engine for economic growth, with physical facilities and business and intellectual resources to offer entrepreneurial firms a fertile environment for growth and success. 📈

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How Can We Help You?

The Institute of Occupational and Environmental Health (IOEH) provides full-spectrum, multidisciplinary services to meet the complex health and safety needs of West Virginia employers and workers.

• Pre-placement, OSHA, and DOT examinations
• Evaluation and treatment for environmental and occupational toxic exposures
• Care for newly injured workers, including low back injuries
• Treatment of cumulative trauma disorders (such as carpal tunnel syndrome)
• Causation analysis for workplace injury, illness, or exposure
• Objective and unbiased impairment evaluations
• Second-opinion independent medical exams

• Edward Doyle, Jr., MD, MSc
  Director
• Robert Gerbo, MD
  Clinic Director

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CAPACITY: For those not familiar with the Army’s Corps of Engineers, what are some of your organization’s responsibilities in our area?

**Bulen:** The Huntington District covers a 45,000 square-mile area across most of West Virginia and Ohio, the eastern edge of Kentucky and small sections of Virginia and North Carolina. The people in this district have designed and constructed more flood-control dams, levees and floodwalls than any other Corps District. We developed and maintain the navigation infrastructure on 311 miles of the middle section of the Ohio River and on the Kanawha River in West Virginia. Over the years, our work has saved billions of dollars in flood damage, aided regional development through the transport of bulk commodities on inland waterways, provided recreational opportunities and protected and enhanced the environment.

**C:** How does the Huntington District support national defense efforts?

**B:** One of the areas I’m most proud of is that our Corps employees have been very active in supporting the military in the Gulf Region. Some deployed as civilian volunteers and others as members of the National Guard or Army Reserve. Our main focus has been in support of the U.S. forces deployed in Afghanistan and Iraq and in restoring Iraq’s infrastructure, including electricity and oil production. We’ve also been involved in the construction of bridges, roads, hospitals and schools. Our people have done – and continue to do – an exceptional job, often doing difficult work in dangerous conditions. Many have volunteered to go over more than once.

**C:** Flooding has been a major problem in our region in recent years. What is the Corps doing to help communities cope?

**B:** The Corps has several programs dedicated to reducing flood damages in our area. We maintain 35 flood control projects – lakes and reservoirs that can hold back water when heavy rain hits. Many of those were really put to the test in January of this year, as 11 projects reached record levels after heavy rainfall in northern Ohio. The Corps has also built 30 major local protection projects, including floodwalls, levees and channel projects, that have prevented over $8.9 billion in cumulative flood damages. We also manage the Section 202 program, a voluntary program that relocates homes and businesses out of the floodplain. More than 350 structures have been floodproofed, thanks to this program.

**C:** The Corps manages the locks and dams along the Ohio and Kanawha Rivers that allows industry to move large quantities of raw materials. How crucial is that for manufacturers and other businesses?

**B:** It’s vital – the port of Huntington is the largest inland port in the United States, with more than 80 million tons of bulk commodities being transported every year. Most of this material is coal, and three quarters of that goes to power production. Since transporting by barge is the most economical and environmentally friendly way to move raw materials, with savings of over $1 billion dollars over the next least expensive mode of transportation, it’s important to keep the rivers open to traffic.

**C:** Are there any changes in store at the region’s locks and dams?

**B:** The biggest change is taking place at the Marmet Locks and Dam in Belle, W.Va., where construction is underway to build a modern lock chamber. The existing chambers force a tow to lock through one barge at a time, and it can take up to four hours for a tow to lock through. The new lock will measure 110 feet by 800 feet and allow tows to lock through in less than an hour, speeding up the traffic flow on the Kanawha River. That project should be finished in 2009.

**C:** What is the role of the Corps in the event of disaster?

**B:** The Corps has an emergency management team that’s always ready to assist local, state and federal disaster relief efforts. We can offer engineering and technical support and immediate mobilization to the site of any disaster, including flooding and hurricanes. We also work with the Federal Emergency Management Agency (FEMA) to provide temporary housing to disaster victims.

**C:** One final question, this one on a more personal note: As a member of the military, you’ve moved around to places like Germany and Alaska, taking on different assignments. How does the Huntington District compare to your other assignments?

**B:** I’m really impressed with the work force here, and the leadership is excellent. It’s an honor to command here. One of the things unique among military officer careers is that you never do the same job twice. As you attain rank, you’re always getting more responsibilities. It puts you on a fast learning curve, and you’re always tackling new challenges. I enjoy that. ✌️
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