



Iowa Strengths for Advanced Manufacturing

- Quality of workforce
- Geographic location
- Presence of national and multinational advanced manufacturing firms
- Family-friendly environment
- High-quality and responsive community college system
- Tradition of inter-firm collaboration
- History of invention and product innovation

In early 2005, John Deere invested more than \$4 million at its Davenport, Iowa facility to launch production of a new articulated dump truck.



Iowa Facilities Growing to Meet Worldwide Demand

As business icons go, the John Deere tractor ranks right up there with Coca Cola's logo, the Nike "Swoosh," and McDonald's Arches. Few may realize however, that Deere & Company is the world's leading manufacturer of forestry equipment and a major manufacturer of construction equipment. At its Iowa factories in Dubuque and Davenport, John Deere produces a complete line of solutions for customers worldwide. And its Construction and Forestry Division is continuing to add production capacity and employees at those Iowa locations in order to satisfy a booming global demand for its equipment.

Since 2004, the company has made significant investments in the two factories, "So we can deliver globally the world's finest solutions and value in equipment, service and support—on time, every time," says Jim Schrempf, John Deere Dubuque Works general manager. "The renovations include redesigned and reequipped assembly lines with advanced manufacturing technology geared for built-to-order, just-in-time delivery of products."

The Dubuque Works, which opened in 1947, is a sprawling facility stretching more than one mile long on 1,465 acres. "We manufacture crawler dozers, skid steer loaders, backhoe loaders, winches and components for heavy equipment products," says Schrempf. The products are distributed through more than 500 construction and forestry dealer locations worldwide.

The John Deere Davenport Works began production in 1974. Today, the facility has more than two million square feet under roof and manufactures four-wheel-drive

continued on page 6





Iowa Develops Training for Advanced Manufacturing

In the massive 750,000-square-foot Guardian Industries float glass manufacturing facility in De Witt, Iowa, clear float glass, safety tempered glass and mirrors are produced for construction and commercial customers throughout the upper Midwest.

In the highly automated facility, silica sand and other raw materials are transformed to glass through an 18-hour manufacturing process. The materials are mixed and introduced into a furnace where they are melted at 1500°C. The molten glass then flows into a bath of molten tin in a continuous ribbon. The glass and tin do not mix and the contact surface between the two materials is perfectly flat. After leaving the molten tin float, the glass is slowly cooled at controlled temperatures until it reaches room temperature.

Now in its 10th year of operation, the 285-employee facility operates seven days a week, 24 hours a day and produces more than 600 metric tons of glass each day. According to Bill Jacobyansky, Guardian maintenance manager, getting optimum productivity out of each employee and machine is a must.

As global barriers to trade continue to be dismantled, Iowa manufacturers find themselves confronting scores of aggressive new competitors from every corner of the world every day. These global competitive pressures are forcing companies to find ever more efficient ways to produce goods and services, and to extract more productivity from their workforce and manufacturing systems.

Always looking for opportunities to keep his workforce highly trained and productive, Jacobyansky is excited about Guardian's sponsorship of a first-of-its-kind advanced technical program developed at Eastern Iowa Community

College. The new EICC program will train students and workers in the science of intelligent machines known as Mechatronics. Mechatronics is a word first coined in Japan some 30 years ago.

"Mechatronics has come to denote a synergistic blend of mechanical engineering, electronic control and systems thinking in the design of products and manufacturing processes," says Mark Shroeder, EICC director of business and industry. "Our mechatronics program will allow us to better meet the training needs of employers and their workers in our area."

EICC received an Accelerated Career Education grant of \$366,000 from the Iowa Department of Economic Development to develop and fund the program.

Day and evening classes will include self paced courses, along with hands-on and one-on-one work with instructors. Students and workers will be able to study and receive training in mechanical drives, fluid power, electrical motor control and robotics.

"The college is adding a whole new dimension of training that's geared to work around people's work schedules," says Jacobyansky. "We will certainly encourage employees to increase their skill sets with the mechatronics technology program, as well as look at graduates of the program to come work for us."

Mechatronics is the synergy among mechanical, electrical and software engineering to bring about optimum performance of machines and processes. At EICC, synergy is the result of a public-private partnership that delivers vital workforce training while advancing the ability of Iowa companies to compete in the global economy. ■



Rockwell Collins Grows by Design in Iowa

The recent unveiling of Boeing's new 787 Dreamliner flight deck (shown above) provided a first look at Rockwell Collins' next-generation avionics systems. As Boeing's supplier and systems integrator, Rockwell Collins has reasserted its global leadership in the design, integration and manufacturing of avionics electronics by designing and producing flight deck display systems, pilot controls, and communication and surveillance systems.

The company is also providing its technology leadership for new military programs that will change the way U.S. and allied troops communicate on the battlefield.

But this is nothing new for Cedar Rapids, Iowa-based Rockwell Collins, a leader in the development and production of advanced communication and aviation electronics for worldwide air transport, regional, business and military markets. Rockwell Collins' communications equipment was used for NASA's Apollo, Gemini and Mercury programs, providing voice communication for every astronaut traveling through space.

The company—with approximately 9,000 employees at five Iowa locations, including more than 3,000 engineers and scientists—continues to expand its significant Cedar Rapids' presence. Its latest growth is the leasing of a new 100,000-square-foot facility that will provide space for 425 design engineers and administrative staff.

According to Kent Statler, Rockwell Collins senior vice president and general manager of services, the space will house the design engineering team for Future Combat Systems (FCS) and Joint Tactical Radio Systems (JTRS). There, FCS and JTRS components, control devices and systems, and equipment prototypes for both these programs will be designed and tested.

Rockwell Collins—with approximately 9,000 employees at five Iowa locations, including more than 3,000 engineers and scientists—continues to expand its significant Cedar Rapids' presence.

“Employing advanced model-based development processes and tools, we will realize significant reductions in development cost, cycle time and life cycle costs associated with FCS, JTRS and other information management products,” says Statler. “The applied research at our new engineering design center will translate into manufacturing programs and jobs at Rockwell facilities within the next five years.”

Although the company is leasing, rather than building its own space, Rockwell Collins will receive a series of research and development, and

investment tax credits for the project, due to recently enacted changes to Iowa Department of Economic Development-administered tax incentive programs. These changes allow companies with leased property investments to qualify for tax incentives.

With a 70-year track record of innovation and quality, Fortune 500 Rockwell Collins is one of Iowa's leading high-technology companies and also one of its advanced manufacturing leaders.

Born and raised in Iowa, Rockwell Collins' expertise has been to the moon and back. And with 98 percent of the world's airlines choosing Rockwell Collins equipment, the company's continued leadership in aviation electronics is helping improve flight operations, efficiency and safety.

For more information on how an Iowa location can help your company soar in today's global economy, visit the Iowa Department of Economic Development (IDED) Web site at www.iowalifechanging.com. For a confidential consultation with an IDED project manager, call 800.245.IOWA (4692). ■

Omaha Standard

Builds \$20 Million Manufacturing Facility in Iowa



With completion of its \$20-million, 200,000-square-foot manufacturing facility in Council Bluffs, Iowa, Omaha Standard will celebrate its 80th year in Council Bluffs in a state-of-the-art production plant, which makes it one of the industry's most efficient makers of truck service bodies and hydraulic equipment.

"Since 1926, Omaha Standard has produced hundreds of thousands of truck bodies in Council Bluffs," says Tom Moser, who, along with his brother Jim, is co-president of Omaha Standard. "In 2006, we will be in our new facility producing the next hundred thousand to come."

Omaha Standard's product line of truck utility bodies, platforms, rack sets, dump bodies and Eagle lift gates are sold throughout North America via a 200-dealer network. With the move to its new manufacturing facility, Omaha Standard will consolidate from six buildings in three locations to one facility. When fully operational in late 2005, the company will become more efficient by increasing productivity, reducing waste, and eliminating redundant processes associated with three separate locations.

"The new building will add efficiencies by allowing us to incorporate our lean manufacturing initiative," says Eric Kluver, Omaha Standard plant manager. "Our shop floor will be set up using manufacturing cells staffed with cross-trained teams, giving us the ability to track output from raw material to finished product."

The facility will also feature an advanced electrocoat painting process. "E-coat is an environmentally friendly and efficient method of applying paint to metal. This new system allows us to produce a product with a more even and durable finish," says Kluver, adding that another benefit of an E-coat system is the virtual elimination of paint waste.

The project, located in a state of Iowa Enterprise Zone, will receive a series of tax credits and abatements. Iowa also showed its support of advanced manufacturing by providing Omaha Standard with \$1.5 million in forgivable and low-interest loans.

With the widest selection of truck equipment available from one manufacturer, Omaha Standard must be able to move quickly to satisfy customer needs. Operating from a new \$20-million manufacturing facility and utilizing Iowa workers, Omaha Standard continues to set the standard in the truck utility and service body marketplace.

For more information on how an Iowa location can lift you above the competition, visit www.iowalifechanging.com or call a project manager of the Iowa Department of Economic Development for a confidential consultation at 800.245.IOWA (4692). ■

Nestle Purina Expanding its Fort Dodge, Iowa Facility

Plant in midst of second multi-million-dollar expansion in three years

Friskies Prime Filets, Nestle Purina PetCare's best-selling cat food product, will soon be made at its Fort Dodge, Iowa facility. The move bolsters the factory's reputation for quality, while boosting its output and payroll. In addition to this newest product line, the plant will produce numerous varieties of Alpo, Friskies and Mighty Dog, as well as other Purina pet foods.

"Friskies Prime Filets is Nestle Purina's best seller in the 5.5 ounce canned cat food category. Installation of new equipment to make the product allows us to meet high customer demand and add extra production capacity," says John Brocke, vice president and director of North American manufacturing.

The more than \$11-million expansion project is Nestle Purina PetCare's second major upgrade to the 145-employee Fort Dodge operation in less than three years. In 2003, the company made a similar multi-million investment in advanced, state-of-the-art production equipment.

"Fort Dodge was chosen for investments because of its reputation for quality and because of support from state and local governments," says Brocke. "The facility and the workers are really excellent. The quality out of the factory is best in class."

The Iowa Department of Economic Development awarded Nestle Purina a \$300,000 forgivable loan to leverage the expansion project, which is expected to be completed in early 2006 and will add the equivalent of 31 full-time employees. The city of Fort Dodge provided a \$100,000 forgivable loan package.

Fort Dodge Mayor Will Patterson says he's extremely pleased that Nestle Purina PetCare management recognizes the excellence of the area's workforce. "I believe our whole community, our whole workforce is of that caliber," he says.

The Nestle Purina expansion has also caused a welcomed ripple effect with the announced expansion of Silgan's Fort Dodge metal can manufacturing plant. Silgan, which is a supplier to the pet food plant and other customers, is investing \$24 million to expand its Fort Dodge facility. When complete, the Stamford, Connecticut-based company will add 32 new jobs to its 145-employee operation.

In Fort Dodge, Iowa, industry leader Nestle Purina is thriving due to a central U.S. location, a talented and abundant workforce, and local and state governmental support. As a result, its manufacturing facility is in the midst of a second multi-million-dollar expansion that will help the company meet a burgeoning demand for its products.

For more information on any of Iowa's financial assistance programs, visit www.iowalifechanging.com or call a project manager of the Iowa Department of Economic Development for a confidential consultation at 800.245.IOWA (4692). ■



John Deere – continued from page 1



John Deere Dubuque Works has hired more than 300 new employees since 2004.

loaders, motor graders, log skidders, articulated dump trucks and cabs. In 2005, John Deere invested more than \$4 million at the Davenport Works to launch production of the dump truck line, which originated at South Africa-based Bell Equipment Limited. John Deere is a 32 percent shareholder of Bell.

“We are now producing articulated dump trucks (ADT) for the North American market,” says Gail Leese, general manager at John Deere Davenport Works, adding that the market for ADTs continues to grow at a brisk pace. “This addition, along with the other expansions, is part of a long-term strategy to more efficiently deliver products to our customers.” Recent investments also include a new paint system and a significant increase in the wheel loader capacity.

The expansions at the two locations—which will result in significant new manufacturing jobs within the next five years—were awarded a series of state tax credits and benefits from the Iowa Department of Economic Development-administered tax incentive programs. Since the start of 2004, the Dubuque facility has hired more than 300 employees, and the Davenport facility has added more than 400 employees.

Moline, Ill.-based Deere & Company is Iowa’s largest manufacturing employer. At its Dubuque and Davenport locations product innovation is enhanced by workers utilizing state-of-the-art manufacturing technology and processes. Iowa locations and the state’s highly skilled workforce is helping Deere & Company achieve and exceed its goals of delivering —on time, every time—superior products to a worldwide customer base. ■

Global Manufacturer Expands in Independence, Iowa

L&M Radiator, Inc., worldwide manufacturer and distributor of MESABI industrial radiators and heat exchangers, will expand North American production by building a plant in Independence, Iowa.

L&M president Dan Chisholm said the decision to build in Iowa was made after exploring options to expand in Minnesota, Texas and other states. “The labor force is also a consideration. Northeastern Minnesota has a strong economy and an enviable 2.9 percent unemployment rate. We have to compete with everyone else for skilled workers and the pool just isn’t large enough. The Iowa option kept surfacing as the best solution for us,” said Chisholm.

The new plant in Independence will grow to 30 persons after one year and 65 or more after three years, according to Chisholm. “We’re impressed with the available skilled labor force that shares our Minnesota work ethic. Independence is a small town but we’ll draw from there and larger surrounding communities.”

Chisholm said the renovation and expansion of the new Iowa plant, now estimated at 25,000 square feet of manufacturing space, would commence yet this year and be fully operational in early 2006. However, the Iowa plant has been manufacturing since October 2005.

L&M manufactures heavy-duty radiators, oil coolers, heat exchangers and charge air coolers used on equipment serving mining, oil and gas drilling, construction, waste management, forest harvesting and municipal transit. ■

Iowa's Bridge to the Hydrogen Economy

With the recent groundbreaking of Hydrogen Engine Center's (HEC) manufacturing facility in Algona, the bridge between the needs of today's industrial engine users and the promise of tomorrow's hydrogen-powered economy may be right here in Iowa. The groundbreaking comes less than one year after HEC's introduction of the world's first hydrogen-fueled internal combustion engine. And according to Ted Hollinger, HEC founder and president, it's only the first of a three-phase project to build a 140,000-square-foot manufacturing facility.

"In the first phase, three inter-connected buildings will be constructed to increase HEC's manufacturing, testing and office space," says Hollinger, adding that HEC plans to create 200 new manufacturing jobs in the near future.

The \$2 million first phase of the project is slated to be completed in spring 2006. Scientists have long believed that hydrogen is the renewable energy medium with the best potential to replace fossil fuels. In fact, NASA has used hydrogen as a rocket fuel since the 1940s.

HEC's product, called "Oxx Power," is an extensively modified Ford 4.9L engine that runs on commercially

available hydrogen, as well as natural gas, liquid propane or gasoline. When the HEC facility is complete, the company will produce 12,000 hydrogen engines each year.

"We expect our engines to be used in specific industrial applications such as back-up generators, baggage vehicles for airports, irrigation pumping stations, forklifts and subterranean mining equipment," says Hollinger. "We want to be known as a center of excellence for the commercialization of hydrogen internal combustion engines." HEC will soon be supplying all the engines for Montreal airport's baggage vehicles and shuttle buses.

Hollinger spent most of his career as an electrical engineer, designing semiconductors in Silicon Valley. He was then director of Ford Motor Co.'s Power Conversion Group and power conversion group vice president of Ballard Power Systems, responsible for the development of hydrogen engine electronics. After Ballard cancelled its hydrogen-fueled engine program, Hollinger founded HEC to continue the work.

After coming to Algona to visit his son, Hollinger found a community that supports his vision.

"We're very happy to be in Algona

where people have been so supportive of our work. The city's help, along with that of Kossuth County and the state of Iowa, have enabled us to increase production capacity well before we might otherwise have been able to do so."

Maureen Elbert, Kossuth County Economic Development director, says the community had to prove to HEC's board of directors that Algona was a good match for the facility. "HEC was heavily recruited by other states and Canada," says Elbert. "We had to create the best business environment for them to grow their business."

The facility, located in a Kossuth County Enterprise Zone, gives HEC a series of tax credits. The project also received a \$400,000 investment from the Iowa Department of Economic Development-administered Physical Infrastructure Assistance program.

And, while HEC's ultra-low emissions engines are not intended for use in passenger vehicles, the technology that HEC has developed will pave the way for this increasing use of hydrogen power. From this leadership position, HEC and Algona will have tremendous growth opportunities as the automotive and other industries move toward hydrogen and other renewable energy sources. ■



HEC Founder Ted Hollinger

IOWA
life | changing®

BUSINESS_{phere}

Published by: Iowa Department of Economic Development
200 East Grand Avenue, Des Moines, Iowa 50309
800.245.IOWA (4692) ■ 515.242.4896 ■ 515.242.4809 (Fax)

www.iowalifechanging.com



Mary Lawyer
Director,
Iowa Department
of Economic
Development

o p i n i o n

Iowa Manufactures a Solid Future

Advanced manufacturing is a major driver of the Iowa economy and the critical mass of expertise here is well worth investigating, if your company is seeking competitive advantage in new operations.

Manufacturing makes up about one-fifth of Iowa's Gross State Product, the largest industry sector of the state's GSP. Advanced manufacturing employs 8.5 percent of the total Iowa workforce, nearly three percentage points higher than the national average.

Led by John Deere & Company and Rockwell Collins, the state's two largest employers, the manufacturing community is meeting world competition head-on with new process technology and innovative products, as shown by the examples in this publication.

The success of John Deere, Rockwell Collins and other leading manufacturers is built on Iowa's talented workforce. A steady flow of technicians from our state-wide system of community colleges drives productivity in manufacturing as a product of technology training. Engineering and technology programs at the state's universities are prime recruiting grounds for advanced manufacturers and innovators in research and development.

Our companies are able to attract the skilled professionals they need to keep their competitive edge because the living is easy. Iowa's family-friendly communities are welcoming

places, showing off new recreational and cultural opportunities that were stimulated by Vision Iowa investments.

Companies ship products and services worldwide from this center of the continent location using well established routes on Interstate highways, air, water and rail. This transportation network supports the presence of a growing number of international firms such as Siemens, Danisco, Ajinomoto, and Barilla, which have significant U.S. operations based in Iowa.

Through networking, Iowa's manufacturers share expertise in lean manufacturing, supply chain efficiency and rapid prototyping, strengthening the powerful environment for success.

The Iowa Department of Economic Development builds on these strengths with a focus on advanced manufacturing, extending financial and tax benefits to companies making substantial investments and creating higher skill, higher paying jobs.

Many companies these days are finding that it pays to explore options in Iowa as they plan manufacturing expansions. You can get in touch with us at www.iowalifechanging.com.

Come to Iowa for a confidential discussion of how we can help your company succeed. ■