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Double HH reaches another milestone

By Merle Pochop, CIRAS

Hope Haven is a community-based enterprise known for providing meaningful employment to physically and mentally challenged individuals. Recently, Hope Haven established Double HH Manufacturing in Rock Valley, Iowa, for manufacturing agriculture hardware components and parts for contract machining.

Double HH's motto is to make sure that people are not just engaged in "work", but also work competitively to make a profit whenever they can. Its employees are trained to cut, drill, mill, and weld, as well as finish and inspect a product to make sure it is right.

In the past few months, Double HH employee numbers had grown to nearly 50, prompting General Manager Loy Vant Hul to consider a new product line. Specifically, Vant Hul wanted to manufacture a technically more demanding diesel engine part to include with the company's existing offerings.

It was at this point management decided that quality had to be its priority focus for which reason it sought ISO certification. Working with Woody Grabenbauer of Northwest Iowa Community College (NCC) and CIRAS Industrial Specialist Merle Pochop, the company first went through an audit process and then, in January 2004, became certified as an ISO 9001 compliant company.

NCC assisted by sharing expenses incurred in training and preparatory steps. Pochop provided the education, and co-quality management representatives Garry Janssen and John Wallenburg offered hands-on training and support. The Double HH team leader was Julie Van Houten.

ISO certification benefits were immediate and apparent, according to Janssen. "Often, new or



Double HH Manufacturing staff members gather to "show off" their ISO 9001 award certificate.

returning customers require responses to lengthy questionnaires. But now, when we say we are ISO certified, we can skip to the bottom of the page!" he said. Communication between management and employees also increased substantially, added Janssen, allowing the company to make improvements in areas it may have overlooked in the past.

Vant Hul states that ISO 9001 implementation brought unique perks for the company. "We didn't want anyone to look at our quality system and think it was an extra support item. Now, our people are able to measure up in terms of quality and productivity. For this reason, we don't need to refer to our work with challenged people in our ISO system," he explained.

Becoming certified is considered a major achievement for any company. For Double HH, with its dual role of community service provider and an operation that works for profit, the event called for special recognition.

On a Friday afternoon in March, HH managers took time to celebrate this special achievement. They closed the plant and catered a dinner for employees and invited guests, which included Hope Haven board of directors as well as NCC and ISU service providers. Double HH employees received special monogrammed jackets to commemorate the event.

For information on ISO 9001, contact Merle Pochop at 712-274-0048; mpochop@ciras.iastate.edu. ■



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The mission of CIRAS is to enhance the performance of Iowa industry through education and technology-based services.

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DOE grant helps company identify over \$1 million savings

By Rudy Pruszko, CIRAS

On December 18, 2001, North Star Steel in Wilton, Iowa, received a \$78,900 U.S. Department of Energy (DOE) grant for a plant-wide assessment (PWA) to improve productivity, reduce waste, and enhance global competitiveness. The project was started in February 2002 (see *CIRAS News*, Spring 2003).

The grant, awarded through a competitive bidding process, involved matching funds from North Star Steel, the Iowa Energy Center, and MidAmerican Energy Company. In addition to monies, North Star Steel, the Iowa Manufacturing Extension Partnership (IMEP), and CIRAS contributed time as a match to the DOE grant. The grant also required that the assessment methodology, data, and technical solutions developed from the project be made public for sharing with other steel mills nationwide where similar assessments and energy/waste reduction improvement methods could be deployed.

"This grant will enable North Star Steel Iowa to focus on key manufacturing areas and development of best practices that may be adopted by others throughout the industry," said North Star Steel Iowa General Manager Carl Czarnik. "We are pleased to be recognized by the U.S. government for our continuing efforts to manufacture quality steel products in a manner that is more efficient, cost effective, and environmentally sound," he added.

One year later, on April 15, 2003, the PWA was completed at North Star Steel, revealing potential savings of \$2,639,960 that could be achieved in a total of 21 projects. North Star Steel plans to see the implementation of 15 of these projects in the future, with projected annual savings of \$1,720,250. The savings per ton of steel produced will be \$5.73, and the average payback period is 1.5 years for the 15 projects.

In preparation for the PWA application process, North Star Steel had to undergo a total assessment audit (TAA), which identified areas that needed to be addressed. The Iowa Energy Center, CIRAS, and IMEP were involved in performing the TAA.

The TAA identified potential savings in five operational areas: electric arc furnace dust reduction and dust recycling alternatives, electric motor energy efficiency, melt and reheat furnaces, heat recovery alternatives, and energy management planning. TAA findings were then used to support the DOE grant application.



"This grant will enable North Star Steel Iowa to focus on key manufacturing areas and development of best practices."

CIRAS Industrial Specialist Rudy Pruszko managed the PWA in conjunction with North Star Steel. Lead individuals from North Star Steel were Jack Skelley, regional environmental manager and Tom Levad, engineering supervisor at the North Star Steel plant. Since the completion of the PWA, projects that were implemented have produced energy savings estimated in the initial assessment.

Information in the final report will be applicable to other North Star Steel manufacturing plants, as well as steel mill plants owned by U.S. competitors across the country. The report can be found as a case study on the DOE Industrial Technologies Program Web site at www.oit.doe.gov/bestpractices/factsheets/north_star_steel.pdf.

For more information on plant-wide assessments, contact Rudy Pruszko at 563-557-8271, ext 251; rpruszko@ciras.iastate.edu. ■

ISO 9001:2000 certification, an ISU first By Verl Anders, CIRAS

In December 2003, the Iowa State University Seed Testing Laboratory was certified to the ISO 9001:2000 international quality standard, becoming the only entity on campus to receive this distinction and the only public seed test lab in the nation to be ISO certified.

The ISO international quality standard provides businesses a system to perform follow-ups on quality management systems towards satisfying customers and improving processes that provide services. Orion Registrar (www.orion-iso.com), Arvada, Colorado, performed the ISO certification under the direction of CIRAS Industrial Specialist Verl "Andy" Anders. The certification process was initiated at the urging of a major customer. The transition to ISO standards was accomplished in 18 months, beginning June 2002.

Established in 1895, ISU's seed lab is a full-service seed verification facility providing over 200 different types of seed tests for over 300 plant species. Tests include germination and vigor testing, purity and noxious weed exams, genetic trait testing, and seed health testing. Customers range from small private seed firms to multi-national firms.

With 12 years' experience in ISO certification, Anders provided assistance in interpreting the ISO standard for a lab environment. This involved discerning types of information to be included in documentation, working with the lab's implementation team on documentation review processes, and matching traditional ISO terminology to lab practices. A key part of the implementation was encouraging the lab team on their progress.



Above: Kim North, a certified seed analyst, analyzes a seed sample for germination. **Lower left:** Certified Seed Analyst Usha Arora performs a purity test on a sample of oats.

How has the ISU Seed Testing Lab benefited from ISO 9001:2000?

As with many companies that get certified, the most important outcome was the lab's ability to retain business with a major customer, according to Seed Testing Lab Manager Dan Curry. Additionally, a rigorous adoption of the standard has helped the company better understand customer needs, improve supply processes, and provide superior training opportunities for lab employees.

Since seed lab testing processes also involve Iowa State students, ISO implementation was useful in improving student scheduling, training, and retraining processes. It also provided a clear understanding of competency levels critical to the overall management of testing processes.

Curry sees new opportunities for the Seed Testing Lab, particularly in its potential to educate seed labs and seed growers nationwide while serving as a leader in the certification process. In June 2004, Anders and a private consultant provided internal auditor training to seed growers from South Dakota, Iowa, and Wisconsin. In 2005, Anders and Curry plan to provide education and implementation assistance to seed labs for U.S. lab accreditation to meet U.S. Department of Agriculture standards.

For more information, contact Dan Curry at 515-294-0117; curry@iastate.edu, or contact Verl Anders at 515-294-1316; vanders@iastate.edu. Information about the seed lab can be obtained at www.seeds.iastate.edu/seedtest. ■



Center's assessment helps cut costs

By Sunanda Vittal, Engineering Communications and Marketing

An outside perspective often has the potential to yield significant savings for manufacturers looking to implement energy conservation and efficiency measures into industry operations, according to Greg Maxwell, Iowa State University mechanical engineering associate professor.

Maxwell heads the Industrial Assessment Center (IAC) at ISU, a U.S. Department of Energy-funded program that offers energy use, productivity enhancement, and waste reduction assessment services at no cost to qualified small and mid-sized manufacturers across the state. The center uses teams of graduate and undergraduate students from different engineering disciplines who, led by engineering faculty, visit companies to study plant operations, collect data, and write reports on their findings.

The IAC program, which began in 1976 with just four centers at Georgia Tech University, the University of Tennessee, the University of Pittsburgh, and Case Western University, now is offered at 26 universities in the U.S. Iowa State initiated the program in 1991 and has since worked with 350 manufacturers statewide with over 120 students participating. The program has a dual mission: to provide student training in industrial energy conservation and to assist manufacturers in reducing energy consumption.

Plant personnel caught up in day-to-day operations often tend to overlook opportunities, or just don't have time or resources to address energy-related issues, explains Maxwell. "We tell our clients that we bring five or six pairs of 'fresh eyes' walking through their facility and can present new ideas to existing methods of operation or energy utilization practices." Moreover, adds Maxwell, the audit team's recommendation, which is backed by hard numbers, serves as a legitimate point of departure for selling ideas to upper management. "We have seen many cases where this re-evaluation results in changes that lead to overall process improvements," states Maxwell.

The audit process takes approximately 8–10 hours, including time spent prior to the visit in gathering a year's worth of billing information on utilities and waste disposal. The audit team then tours the plant with a designated guide, who answers questions and elaborates on plant activities and procedures. The main objective of the tour is for the team to follow the product flow, understand the process, and identify potential areas where energy, waste, and productivity recommendations can be made.

The team uses several engineering instruments for measuring various aspects of energy usage such as temperature, air velocity, electric power flow, flue gas



The IAC is located in the H. M. Black Engineering Building on the ISU campus.

analysis, light levels, and compressed gas leaks. Data is also gathered on the cost as well as different materials used in the plant. A wrap-up session at the end of the day, attended by the plant's decision-makers, allows the team to present recommendations and answer questions.

Common industry requests, according to Maxwell, occur in the area of energy usage from assessing compressed air (leaks, improper use of compressed air, etc.) and steam systems (boiler blow down, combustion inefficiencies, steam traps, and steam leaks) to evaluating use of lighting on the manufacturing floor. The IAC also provides services in productivity improvement, pollution prevention, and waste minimization and caters to a broad range of industries, from food processing, textiles, lumber, and printing to electric products, measuring instrumentation, and miscellaneous manufacturing industries, to name a few.

For more information or to see if your company qualifies for a free assessment, visit the IAC Web site at www.me.iastate.edu/iac or the DOE's industrial technology Web site at www.oit.doe.gov/iac. Greg Maxwell may be reached at 515-294-8645; gmaxwell@iastate.edu. ■

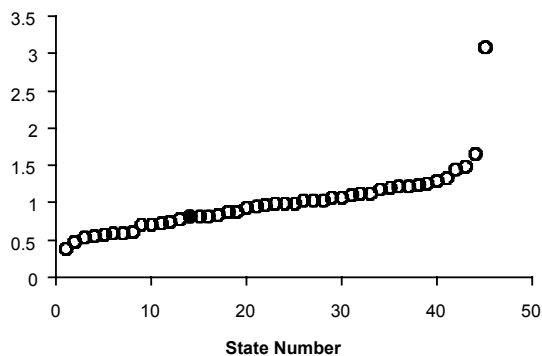
Workers' Compensation—A primer By Ron Cox, CIRAS

Most Workers' Compensation (WC) programs were started prior to 1920 to protect employees injured at work. WC typically provides (1) medical and disability claims to employees injured on the job or to those who contract a work-related illness, (2) partial reimbursement of lost wages, (3) death benefits, and (4) protection for employers from lawsuits. Sufficient funds must be gathered to pay for the cost of the benefits and to operate the system.

How does Iowa compare with other states?

Actuarial & Technical Solutions, Inc. (ATS) produces a comparison of the 45 states without monopolistic funds.¹ Net insurance costs per \$100 of payroll are calculated assuming a hypothetical distribution of manufacturing jobs. Iowa's comparative rates are \$2.86 per \$100 of payroll compared with the national average of \$3.51.

An index is created based on these hypothetical premiums that has an average defined as 1.0. The index varies from a minimum of 0.385 in Arizona to a maximum of 3.077 in California. Iowa's index is 0.815, placing it as the 14th lowest out of the 45 states. The average WC index in the eight-state grouping of South Dakota, Wisconsin, Iowa, Nebraska, Illinois, Kansas, Minnesota, and Missouri is 0.898. Iowa is the third lowest in this group with a rating that is 91% of the group average. A graph showing the WC index is displayed below. Iowa's value is highlighted.



ATS also ranks states based on statutory benefit provisions (wage replacement benefits allowed by law). The index has an average of 1.0 and varies from 0.561 in South Dakota to 3.501 in Michigan. Iowa ranks 31 out of the 50 states with an index of 1.080. The average index in the eight-state grouping is 0.922. Iowa is second highest in this group with a rating that is 117% of the group average.

Iowa's frequency of long-term disabilities is 43% below the national average, placing Iowa second out of 41 states that participated in an OSHA data collection program.² The claim process efficiency of the states was also estimated, and Iowa was rated as adverse.

The Work Loss Data Institute studied OSHA data and computed a state-by-state rating based on six performance

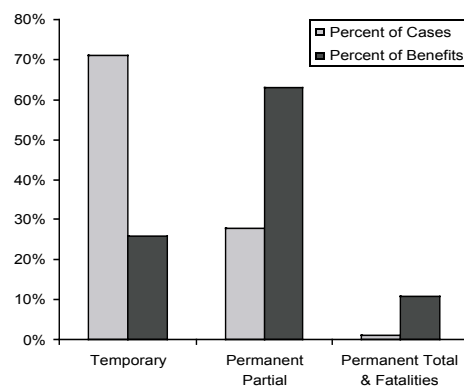
indicators (incident rate, cases missing work, median disability duration, delayed recovery rate, and key conditions: low back strain and carpal tunnel syndrome).³ In their report of 42 states, nine states received an A or A-grade. Iowa was one of those states. Iowa was ranked first in Cases Missing Work. Iowa's lowest ranking was 25th in the Carpal Tunnel Syndrome category. The eight states in the comparison region had the following grades: South Dakota no report, Wisconsin—B+, Iowa—A, Nebraska—B, Illinois—D, Kansas—B, Minnesota—A, Missouri—C.

As a percentage of covered wages, actual WC benefits paid in 2000 vary from 0.47% in Massachusetts to 4.24% in West Virginia.⁴ Iowa's rate was 0.84%, compared to a national average of 1.03%. This data has less significance than the ATS comparative ranking since actual payments are dependent on the type of industry and other factors that vary from state to state.

What drives WC costs?

An insurance company's income includes factors such as premiums and investment income, while the company's costs are determined by factors such as claim costs and insurance company overhead. Insurance premiums are driven by the type of industry being covered, the frequency of claims, and the cost of the claims. Claim costs include costs for medical care and benefits for lost wages or death. Of the WC benefits paid out nationally, approximately 45% of the total is medical costs. The amount can vary from state to state based on industry mix, compensation laws, earnings replacement level, and medical costs. In Iowa, 49% of the costs are medical related.

Wage replacement benefits are often referred to as statutory benefits. State-by-state statutes dictate the duration and magnitude of benefits. Low benefit states should have lower premiums and vice versa. However, this is not always the case due to variations in insurance company profits, claim frequency, inefficiencies in the system, variations in disability ratings, etc. For instance, California has some of the lowest benefits but some of the highest premiums in the country. The distribution of non medical cash benefits is displayed below by type of injury.⁴



Insurance overhead costs include the costs of issuing the policy, servicing clients, settling claims, auditing, defending clients in court, education, profit, taxes, etc. In 2000, these costs amounted to about 18% of the total premiums collected. Some of these overhead costs add to the “friction,” or inefficiency, of the WC system. The non-value-added friction costs arise from disputes, delays, accumulation of rules and regulations, attorney involvement, etc.

All of these costs are sometimes broadly grouped into two categories: (1) short-term costs, which include plant safety, medical care, and short-term wage benefits, and (2) long-term costs, relating to long-term disability issues, laws, regulations, disputes, delays, the insurance company, and the medical and legal systems.

How is the WC premium determined?

The National Council of Compensation Insurance has developed a class code system to calculate premiums. Approximately 300 classifications exist. The “manual rate,” the cost of WC insurance per \$100 of payroll, is computed for each classification code for each state. The manual rate is adjusted for a number of factors, including

- the company’s deductible
- local health-care costs
- benefit rates
- distribution of injuries in the state (short- vs. long-term)
- friction
- company size
- the experience modification factor

Quantity discounts, dividends, state taxes, competition among carriers, etc., can also affect the premium paid.

How does the mod rate influence premium?

The experience modification rate (experience rating, EMR, X-mod factor, mod rate) is a method to adjust premiums based on a company’s past experience with losses. It is meant to provide a better indicator of the potential for claims and to serve as an incentive to reduce claims. A yearly weight-averaged number is assigned to each company relative to its industry type. The number is used to compare the company’s claim activity to similar companies. The rate may decrease or increase the premiums depending on whether the rate is less than or greater than one. The mod rate is based more on the frequency of claims than on the magnitude of the claims. One large claim may be an anomaly but a company with many small claims is likely to be unsafe and, with time, numerous large claims are likely to result.

Why are WC costs increasing?

WC costs decreased for seven straight years from 1994 to 2001.¹ WC costs increased from 2001 to 2002 and again in 2003. The increases have been attributed to a number of factors, including

- double-digit medical cost increases the past two years
- funds for potential terrorism events

- increases in lost-time claims
- self insurance by companies with low costs

How do you decrease your WC premiums?

Here are some suggestions to decrease WC costs and, subsequently, premiums:

- Develop a safe work environment to reduce the occurrence of injuries.
- Make sure your business is classified correctly so that the manual rate is correct.
- Make sure the mod rate is computed correctly.
- Increase the deductible, which may be computed on a per-injury basis as a capped aggregate or in combination.
- Self insure if you have a good loss experience.
- Increase the use of robotics and power-assisted processes.
- Use cordless tools.
- Incorporate advances in ergonomic design.
- Increase and improve the quality of job training.
- Design the work environment to reduce the potential for fraud.

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EDA assistance extends to companies and research project

By John Roberts, CIRAS

In fiscal year 2003, 28 Iowa businesses received technical assistance from the Iowa Economic Development Administration (EDA) University Center in the areas of product design, product testing, productivity, and quality management. Many EDA projects are ongoing, but work that has been completed thus far has generated positive feedback. In surveys, average client satisfaction level was 9.3 with 10 being the highest. Below are examples of last year's EDA projects and their potential to reduce costs, increase sales, and create new opportunities for Iowa manufacturers.

Five Star Industries, a manufacturer of concrete mixer trucks in Knoxville, Iowa, requested Iowa State University (ISU) assistance to improve their chute design. The Iowa EDA University Center worked with ISU's Institute for Physical Research and Technology (IPRT) and Paul Berge, a metallurgist with the Iowa Companies Assistance program, who performed a material analysis of the concrete chutes. Design modifications led to a \$1,300,000 sales increase and \$90,000 in retained sales.

Yellow Jacket Manufacturing in Griswold, Iowa, had developed an idea to reduce the production time and cost of their muffler core tubing. The Iowa EDA University Center worked with ISU's Structural Testing Research Lab to test current construction methods against a proposed new method. Yellow Jacket plans to use the test results to sell the benefits of the new design to their clients.

Hawkeye Steel Products Inc. in Houghton, Iowa, requested ISU assistance to redesign a float for its animal drinking systems. The Iowa EDA University Center worked with Hawkeye Steel Products to develop and successfully test a prototype float design. The company expects to increase annual sales by \$50,000 and reduce annual costs by \$9,000.

American Athletics Inc., a manufacturer of athletic equipment in Jefferson, Iowa, wanted to change several of its products to improve market potential and reduce production costs. The Iowa EDA University Center, together with IPRT, the Iowa Companies Assistance program, and the Structural Testing Research Lab conducted engineering analysis, material analysis, and testing to incorporate design changes. American Athletics anticipates an annual sales increase of \$450,000 and \$6,000 in cost reduction.

Two start-up companies were assisted by the Iowa University Center:

Mike Kirkham from Charles City, Iowa, designed a forearm crutch that can be quickly shortened for easier storage when not in use. Kirkham, who is disabled and uses a forearm crutch, requested Iowa EDA University Center assistance to test his new design for load capacity. IPRT, the Iowa Companies Assistance program and the Structural Testing Research Lab assisted in the project. Kirkham has set up his own company now called Mobility Concepts, which specializes in the newly designed crutches.

Kurt Sherer from Corydon, Iowa, developed an alternative drive system for bicycles for which he built a working prototype and requested assistance from ISU to improve the design for manufacturing purposes. The Iowa EDA University Center is currently assisting Sherer with engineering documentation and parts specifications. The project is ongoing, but Sherer has started a company called Sherer Cycling.

Recently, CIRAS and the ISU Department of Economics submitted a proposal to the U.S. Department of Commerce's EDA Denver regional office for the Iowa EDA University

Center to study select regional economic conditions and identify industries more likely to impact the state's economy. Information gathered here is expected to help the Iowa EDA University Center determine the type of technical assistance it needs to provide and ways to utilize resources more efficiently. Research participation by Iowa EDA University Center will involve

- conducting detailed assessments of regional industrial structures and identifying the extent of economic interdependencies among communities and counties
- assisting ISU's economics department in a unique data collection project to create an industrial occupation matrix and a ranking system that will recognize potential growth and minimum threshold sizes for industrial clusters
- working with ISU Extension and CIRAS to disseminate information on EDA University Center services through Web sites, statewide presentations, and educational materials on economic development issues

In other ventures:

- The Iowa EDA University Center continues to conduct rapid prototyping demonstrations. This year, the

Many EDA projects are ongoing, but work that has been completed thus far has generated positive feedback. In surveys, average client satisfaction level was 9.3 with 10 being the highest.

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CIRAS 2004 ANNUAL REPORT

University Extension

IOWA STATE UNIVERSITY

College of Engineering

CIRAS Mission Statement: *The mission of CIRAS is to enhance the performance of Iowa industry through education and technology-based services.*

From the Director

Extension is just completing a comprehensive futuring exercise, which has been undertaken to guide the organization as it embarks on its second century of service to Iowans. Although CIRAS will be involved with all 10 of the initiatives in the forthcoming plan, two items deserve special mention as we reflect on the accomplishments of this past year.

Special Community Initiatives is an effort to more closely align Extension to the changing needs of Iowans. An example of a community initiative is the focused assistance that the Procurement Technical Assistance Center (PTAC) staff are offering to 10 Iowa counties that are classified by the federal government as economically distressed.

Key to this initiative is the involvement of the County Extension Education Directors (CEED) from these 10 counties. The CEED is responsible for understanding the county constituents and identifying clients that are likely to benefit from selling their services to the federal government. This has provided an efficient method for the PTAC staff to access these clients. Though just underway, a number of promising bid opportunities have surfaced that may lead to government contracts for businesses in these communities.

Development of stronger partnerships is another initiative that is essential to the future of CIRAS and Extension. With continued cuts to the Extension budget, it has become essential for CIRAS to seek innovative partnerships to leverage limited resources. A number of recent applied research opportunities associated with energy systems is very timely given recent energy cost increases that have added to the struggles that manufacturers are facing.

Through a joint effort with the Iowa Energy Center (IEC) and the Department of Energy, CIRAS staff have been assessing the opportunities for energy, productivity, and waste improvements in the food processing industry. The IEC has also provided support for a study of water and wastewater use in manufacturing. In addition, CIRAS teamed with the IEC, the Department of Mechanical Engineering at ISU, and private consultants to develop an energy-use best practices manual for the food processing sector.

As a result of the developing partnership with the IEC, CIRAS has initiated two new projects—one focused on the chemical sector in Iowa and a second looking at the use of premium efficiency motors in manufacturing. We also are now supporting a staff person in the Department of Electrical and Computer Engineering at ISU to oversee continuing education courses for the utility industry, and we plan to hire a new staff person this fall to assist manufacturers with reducing their energy costs.

Given the changing environment that we all must adapt to, we envision a future where focused, community-based initiatives and strong partnerships are essential to providing the crucial support that manufacturers need to increase their profitability and enhance the economy of the state.

Ronald A. Cox

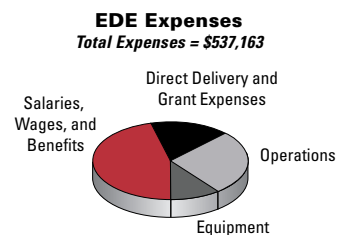
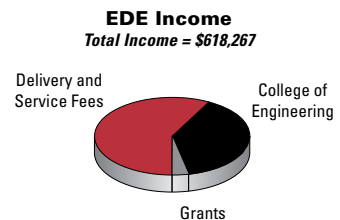
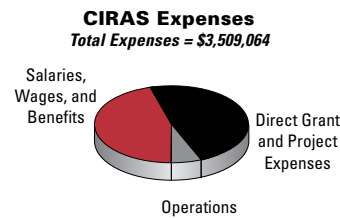
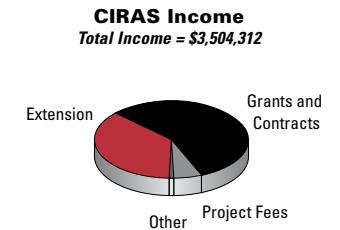
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Iowa Manufacturing Profile

Iowa is home to 5,775 manufacturing establishments. The three areas below reflect how the manufacturing sector plays out as a portion of the state's total economic activity:

Labor Force	15%
Work Earnings	20%
Gross State Product	21%

2003–2004 Highlights

Engineering

- CIRAS engineers evaluated a cooling tunnel for Schebler Company, Bettendorf, and developed a new computer program to use when assessing capabilities of future tunnels. “The program essentially verified the accuracy of our model, which gave us a better understanding of the heat transfer process for the design we had developed,” states Schebler Company President Gerry McClure.
- A company located in Houghton contacted CIRAS for help in redesigning the float for a heated animal drinking system. “The new float should allow us to increase sales and eliminate most if not all warranty situations involving water delivery requirements in extreme situations,” states Tom Wenstrand, president, Hawkeye Steel.
- The Iowa EDA University Center provided technical assistance to 28 rural Iowa companies.

Management Practices

- CIRAS authored a successful grant to the USDA/DOE requesting funds to adopt new technologies for the production of methyl esters developed by ISU researchers. These technologies are anticipated to yield yearly savings exceeding \$100,000 at West Central Cooperative in Ralston and significantly reduce the environmental impact caused by methyl ester production.

Government Procurement

- The Procurement Technical Assistance Center (PTAC), funded through the Defense Logistics Agency, has a pilot initiative to better serve the distressed counties of Iowa. The PTAC staff is working with 10 county extension education directors to provide procurement information to the manufacturers in distressed counties.

Productivity

- Grimm Brothers Plastics, Wapello, was keen to see a reduction in quality problems. By applying Six Sigma tools taught by CIRAS, the team was able to reduce scrap and rework from 11% to 3%.
- A productivity improvement-training project with Schumacher Elevator in Denver helped the company achieve an 84% increase in shipped products per week, which translates into an annual net profit increase of approximately \$300,000 and 12 saved jobs.

Quality

- Double HH Manufacturing, Inc., Rock Valley, needed to become ISO 9001 certified due to demands from a major customer. CIRAS assisted in the certification process that took approximately nine months, retained five jobs with \$350,000 in sales, and added two new jobs.
- Over the last three years, the CIRAS Quality Systems Team has helped Omaha Standard, Council Bluffs, document a quality management system as a means to control processes and prepare the company for ISO 9001 certification. The company estimates benefits to be in the range of \$7 million.

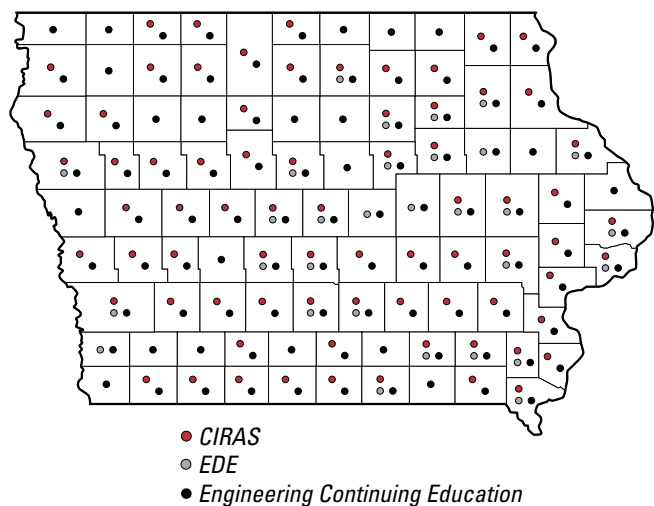
State and National Initiatives

- The USDA and CIRAS have worked for the past two years developing a national certification program to identify, qualify, and label biobased products for federal procurement. Several ISU faculty members and other universities across the country are participating in product testing and developing standard criteria.
- In joint ventures that involve the U.S. Department of Energy, Iowa Department of Natural Resources, and Iowa Energy Center, CIRAS continues to work to improve quality and efficiency in the food processing industry. Efforts have also focused on boosting industrial efficiency and productivity by reducing raw material and energy use per unit of output, decreasing generation of wastes and pollutants, and improving labor and capital productivity.
- ISU Extension/CIRAS is facilitating the work of the newly formed BIOWA Development Association. BIOWA is a trade association, formed to promote and support the growth and development of industries that produce products and energy from biorenewable resources.
- Funds from the W. K. Kellogg Foundation, Iowa Energy Center, Cargill Dow, and the U.S. Department of Energy were used to conduct research and demonstration projects for biobased supply chains that (1) promote local ownership and control, (2) share risk and rewards across the supply chain segments, and (3) model environmental stewardship and economic sustainability for farmers, processors, distributors, and consumers.

Continuing Education

- Engineering faculty working with Engineering Distance Education (EDE) produced and delivered 66 on-line engineering credit courses to 848 off-campus learners, 484 of those employed by Iowa companies.
- Extension staff from ISU's College of Engineering offered courses and workshops attended by 2,357 engineers from across the state.

Project Activity



Small businesses go global with USCS help

By A. J. Anderson, U.S. Commercial Service



Would you like to take advantage of fast-growing export markets overseas, but are not sure where to go for answers to your questions? The U.S. Commercial Service (USCS), a U.S. Department of Commerce unit, is a lead federal agency that promotes exports of goods and services,

particularly by small and medium-sized businesses, and helps protect U.S. business interests abroad. The USCS has more than 100 offices nationwide, including the Iowa Export Assistance Center (EAC) in Des Moines and more than 150 foreign offices in over 80 countries.

The USCS provides a range of services for small businesses to develop markets abroad. The Gold Key Service, for instance, has commercial service experts in foreign markets researching and screening potential distributors for a company and then scheduling one-on-one meetings with top prospects in a foreign market. Even logistics, such as hotel reservations, transportation, and interpreters, can be arranged in a foreign country for a U.S. company before it leaves the country!

If a U.S. exporting firm feels it just isn't quite ready to travel overseas, but is still interested in searching for qualified representatives, it may want to consider USCS's International Partner Search instead. Here, USCS commercial specialists abroad conduct searches and prepare reports identifying potential prospects that have personally examined the company's literature and have expressed interest in a possible commercial relationship.

For companies that need detailed market knowledge about prospects for their products or services in a targeted country, the flexible market research offered by the USCS may be the answer. This service provides answers to sometimes complex questions involving overall product or service marketability in a target market or country. U.S. companies have the flexibility to design their own questions or choose from a core menu of standardized questions developed by the USCS.

Iowa Export Assistance Center

The Iowa EAC is the local office representing the USCS, with services that fall into three broad categories:

- Helping small businesses develop exporting expertise
- Promoting products overseas
- Locating potential buyers, partners, or distributors abroad

The Iowa EAC also provides counseling for Iowa companies on matters such as export finance, insurance, export documentation and controls, foreign tariffs and taxes, market sector and country reports, and trade shows and advocacy.

The Iowa center is currently providing training on export issues, such as adopting the Census Bureau's new automated export system, which will replace the existing paper version of the shipper's export declaration. The Iowa EAC often collaborates with other state and local partner organizations, such as the Iowa Department of Economic Development, on statewide programs.

For further information and consultation on your organization's export-related needs, contact Allen Patch, A. J. Anderson, or Jeremy Baril at the Iowa Export Assistance Center in Des Moines at 515-288-8614 or visit the Web sites at www.export.gov and www.exportpartnership.com. ■

Iowa EDA

Continued from page 8

center worked with two Iowa metal casting foundries interested in rapid prototyping techniques for creating short-run production parts.

- The center has completed a three-tier gate model for providing guidance to entrepreneurs and potentially improving their success in starting an Iowa business.
- The Iowa EDA University Center assisted two members of the Iowa Association of Regional Councils in developing their regional Web sites. There are 16 regional councils in Iowa, each with a council of government, or COG, composed of county, city, and town officials who support local economic development efforts.

The Iowa EDA University Center was established in 1989 to provide technical assistance and technology transfer to small manufacturers in rural communities. The center also provides guidance, information, and design assistance to entrepreneurs in their efforts to develop new marketplace products.

For more information on the Iowa EDA University Center and to see if your company is eligible for EDA assistance, contact John Roberts at jroberts@ciras.iastate.edu; 515-294-0932 or John Van Engelenhoven at jve@ciras.iastate.edu; 515-294-4475. ■

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WebWatch: Engineering a better solution

Looking for ways to improve your company's product line or test a product for performance and reliability?

Or do you need to consult with an expert on making changes to the physical layout of your facility?

Is electronic design (circuit board-level electronic components to perform specific tasks) something that your company can use to enhance product performance?

To learn more about how concepts such as noise control, rapid prototyping, and finite element analysis can advance your manufacturing efforts, visit the CIRAS Web site at www.ciras.iastate.edu and click on "Engineering."

www.ciras.iastate.edu



Focus: Engineering

CIRAS News is published quarterly by the Center for Industrial Research and Service and edited by the CIRAS publications team. Design and production is by Engineering Communications and Marketing, Iowa State University. Contact John Van Engelenhoven at 515-294-4475 or jve@ciras.iastate.edu with questions and comments regarding the newsletter.

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