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## Oregon Iron Works finds profit in high-tech, green products

By Dana Tims, The Oregonian

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Thomas Boyd, The Oregonian

Oregon Iron Works, a traditional welding and metal fabrication business, is making big waves through innovative ventures into the manufacture of streetcars, buoys for wave-technology projects and military applications such as a high-speed stealth water craft. And, unlike many Oregon businesses, they are hiring.

CLACKAMAS -- Chandra Brown rests her left leg on a chair in her cramped office at **Oregon Iron Works** in Clackamas, a bag of ice covering her dislocated kneecap. "Roller skating," said Brown, the company's 41-year-old vice president. "I went down in a heap."

It's a rare misstep for Brown, the multi-degreed former temp who is blazing the company's path to becoming the first U.S. streetcar manufacturer in six decades.

Amid a general decline of manufacturing and the wreckage of the economic downturn, Oregon Iron Works, once a traditional welding and fabrication shop, is beating the odds and emerging as a national leader in green technologies.

And they're hiring.

The Oregon-grown company recently made headlines by landing a contract to develop North America's first commercial ocean wave-energy system. With recent investment of millions of dollars, the company is also carving out niches in hydroelectric systems, unmanned seaplanes, nuclear-containment equipment, steel bridge girders and space-launch platforms.

Brown, one of two Oregonians invited to attend President Barack Obama's Jobs Summit in December, often serves as the public face of the company. But the seeds of Oregon Iron Works' transformation were planted long before she arrived.

"We've come a long way from a small, traditional fabrication company," said Terry Aarnio, company president.

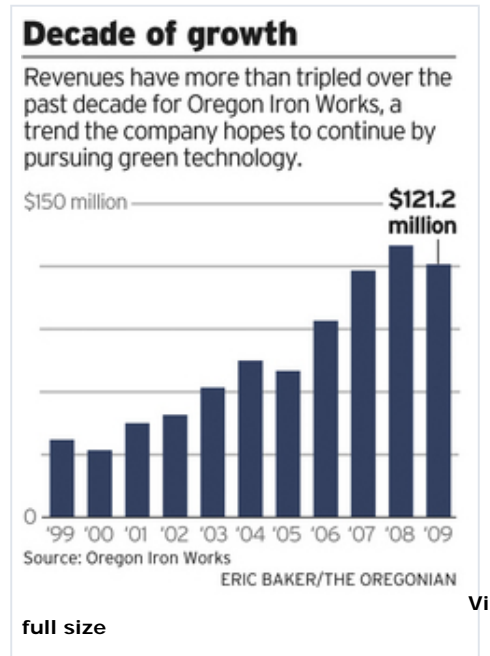
"But everything we're doing today is still building on those core competencies."

When Aarnio bought Oregon Iron Works in 1975, not long after dropping out of college just shy of graduation, the business comprised all of 12 employees jammed into a 5,000-square-foot shop in Northeast Portland. Sales that year totaled \$850,000.

Today, nearly 400 employees occupy work bays covering 305,000 square feet. A separate facility in Vancouver, recently rebuilt after a major fire, handles final assembly. Anywhere from five to 20 separate projects are under way at any one time, spinning benefits for more than 300 local and national vendors. This year's sales will exceed \$120 million.

Along the way, the company's desire to remain flexible allowed it to confront and overcome obstacles that may have otherwise impeded growth and expansion, Aarnio said.

"We pressed harder and harder to find contract opportunities that were much more complex than what we had been doing before," Aarnio said. "That meant gaining expertise in using more complex



metals, machining operations, mechanical and electrical controls. What we finally struck on was a niche sandwiched between a traditional fabrication company and a large defense contractor."

Defense contracts that once represented as much as 65 percent of the company's work now hover at around 10 percent. Still, Aarnio said, they are a crucial piece of Oregon Iron Works' business.

A similar hurdle arose when the company first considered getting involved in fabricating huge containment vessels for nuclear power plants and the ongoing cleanup of the Hanford Nuclear Reservation in Washington.

"As we started to get familiar with everything nuclear work entailed, we'd laugh and joke that the paperwork alone would outweigh the product," Brown said. "But we got serious, learned it inside and out, and now it's a real strength."

And, unlike virtually all other Oregon manufacturers, the company is growing. The wave-energy contract, for example, has the potential to add as many as 150 jobs. Scores more could be generated if streetcars take off.

All at a time when conventional wisdom holds that American manufacturing is all but dead, long ago having been packed up and carted off to China, Europe and just about anywhere but here.

"Diversity is the key to what makes us successful," Brown said. "That's allowed us to embrace an array of new green energies."

Brown knows that one of her talents is telling the Iron Works story.

When the Wall Street Journal called recently, asking how many jobs Brown's United Streetcar division will produce in coming months, the query was immediately patched through. Aside from a personal assistant, there's not a flak-catching public relations specialist in sight.

"I do get teased, like, 'Lord, could you be in another article?'" she said. "But my bosses couldn't be more proud. We all have our strengths here, and they realized early on that this was one of mine. They happily pushed me down that path."

Barely slowed by her roller-skating mishap -- "It's amazing what you can do with a BlackBerry and a computer" -- Brown is far more than a good-news figurehead.



full size

Thomas Boyd/The Oregonian

Chandra Brown is a driving force among Oregon Iron Works' management team. She serves as president of the company's United Streetcar division, overseeing the manufacture of the nation's first domestically produced streetcar in nearly six decades.

View

"Chandra had the vision to see the possibilities of this (streetcar) project and grasp them," Aarnio said. "She is leading the way toward the modern American streetcar."

The company currently has orders for 13 streetcars, six from Portland and seven from Tucson, Ariz.

But with nearly 85 U.S. cities contemplating the leap toward multimillion-dollar rail projects -- at least 30 of which could be under construction within two years -- the time is now if Oregon Iron Works wants to see the estimated \$12 million it has pay off.

Two factors add to the urgency.

First, there's the host of seasoned international manufacturers poised to jump into the game. Then there's Oregon Iron Works' work with partner Rockwell International to develop a drive system.

"Everything is on the line for the company right now," said Rick Gustafson, director of **Portland Streetcar**. "There's zero room for error."

Assuming Rockwell can complete the complex engineering alterations, Brown will then have to persuade potential customers in Los Angeles, Salt Lake City, Detroit, Seattle and elsewhere that their "first off the assembly line" products are reliable.

If Brown is daunted by the task, she doesn't show it.

"I got promoted by taking risks," she said. "This is just one more step in that process."

--Dana Tims

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