A New Industrial Revolution, Part 1

Spend any amount of time nearly anywhere in Pennsylvania, and you'll hear it time and time again: Shale gas production is fueling an American industrial revival. With a rich energy history — the first oil well was drilled in Pennsylvania — the state is now experiencing a "new industrial revolution" thanks to North America's largest natural gas reserve. Engulfing roughly 75 percent of the state is what the Pennsylvania Department of Community and Economic Development calls the key to the future of the energy industry in Pennsylvania—and one that has already created thousands of jobs. Today, 240,000 Pennsylvanians are employed by the oil and gas industries, both at the drill site and beyond. And the Pittsburgh region is at the center of the story, with established energy companies, advanced manufacturing facilities, and some of the nation's leading academic institutions coming together to create an economy that has outperformed the national average, in terms of unemployment, for over five years. This revolution has propelled Pennsylvania forward as a net exporter of natural gas when only five years earlier it was importing 75 percent of its natural gas needs.

- Pittsburgh region manufacturers are rising to meet the needs of a new and rapidly expanding shale industry, many of whom are hiring and expanding as a direct result of the Marcellus Shale boom:
- Aggressive Grinding Service has put its business model of being constantly overstaffed and over-equipped to work and underwent a $4 million expansion in the last year as 50 percent of its business grew to be tied to shale.
- Elliott Group has embraced its union and management partnership and looks forward to the challenge of facing capacity constraints as it continues to find opportunities in the shale industry, even as the past year saw the

company usher in a new $17 million manufacturing and service facility.
- After cutting its staff by 30 percent in 2007, Dura-Bond Coating recently opened a brand new facility and added 65 jobs as a direct result of the Marcellus Shale Boom.
- Aquatech utilized its over 25 years of experience in treating industrial wastewater to expand into a company that manufactures mobile units for treating all aspects of shale gas application wastewater at the drill site.

These companies have all directly benefitted from Marcellus Shale — and are helping to create a state that is distinguishing itself as a global innovation and skilled workforce leader.

A Unique Business Model: Aggressive Grinding

Aggressive Grinding offers a precision grinding service to the oil and gas industry, with tolerances measured in millionths of an inch on materials such as carbide and ceramics used in high-wear oil and gas applications, including drill bits, bushings, and nozzles. It credits a unique business model for allowing it to be able to deliver to such a fast growing and unpredictable industry.

“I have a philosophy of being overstaffed and over-equipped,” explains Lester Sutton, founder, president, and CEO of Aggressive Grinding Service. “It goes against all accounting practices,” he admits, but he stresses the necessity of such an against-the-grain business practice when working in an industry that he says is among the worst at predicting its demand. With approximately 50 percent of Aggressive Grinding’s business recently growing to be tied to the shale industry, the company had to be able to deliver. “It is very much a flash industry,” with “extreme” sporadic demand throughout the year, he says.

The company’s distinctive way of doing business has brought it to the forefront for an industry where downtime while waiting for a critical replacement wear part that can shut down a drilling head can cost up to $200,000 an hour in lost productivity, Sutton says. “That’s really where we’ve separated ourselves from the rest of the people in our industry — being able to meet those demands.” As the manufacturing industry looks to Lean more and more to reduce inventory and reduce costs, this grinding service company has positioned itself to respond to manufacturing demands as quickly as possible. While energy companies are flying in to receive a critical part, Sutton’s company is ready to receive any specialty item that the oil and gas industry needs and says the company is fortunate in the sense that it is somewhat protected, and can have the opportunity to prepare for a quick turnaround. “It generally takes a minimum of three days to manufacture a piece of carbide. We may be able to grind it in an hour.”

Sutton’s business model, though unique, has proven advantageous for his business. “Every accountant would tell me that I’m doing the wrong things. My pocketbook tells me that I’m doing all the right things. My customers tell me that I’m doing all the right things.”

The way I run my business isn’t in any way by the rule book.”

Union & Management, Working Together: Elliott

Slated for shutdown five short years ago, Elliott, a 100-year-old maker of advanced centrifugal compressors and steam turbines, has transformed itself into a world class organization—one that is expanding to meet the demands of a growing oil and gas industry. “We are expanding our manufacturing capabilities, but more importantly we’re continuing to expand our people,” says Art Titus, chief operating officer. “From an operations perspective, [the growing demand] puts additional pressure on trying to find a workforce that works as we’re expanding into these new opportunities.” He adds, “One of the things that we’ve focused a lot on is the fact that our power is in our people.”

One of the places where Titus thinks the company has really benefitted from its renewed focus in its people is in how it’s created an invaluable labor-management partnership. “I think our union saw management as the enemy,” Titus explains, “and it’s pretty clear when you look at industry, where companies go that see each other as enemies.

“We consider them our partners,” Titus says now of the United Steelworkers that design, manufacture, and service the turbo-machinery that are used in oil and gas, refining, and other power applications at the Jeannette, PA facility. And Alan Rudick, USW local 1145 unit president, agrees: “This is the American dream, right here.”

Please tune into tomorrow’s Chemical Equipment Daily for part two of this two-part piece.

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