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### **FIRE-DEX, A MANUFACTURER OF TURNOUT GEAR AND PROTECTIVE APPAREL, USES LEAN MANUFACTURING AND EMPLOYEE FEEDBACK TO GAIN MARKET SHARE**

It's a given that firefighters never hesitate to go into a burning structure to help save lives, which means that their protective apparel must also live up to the same high standards. Fire-Dex in Medina, OH, manufactures NFPA (National Fire Protection Association)-compliant structural and proximity turnout gear as well as protective gloves and knit hoods. The NFPA consists of manufacturers like Fire-Dex, end-users, testing labs, and members of the academic community, all of whom seek to maintain a high quality standard for fire protection equipment.

Over the last 10 years the company has experienced 400 percent growth; over the last five, growth has been 100 percent. This growth rate is phenomenal considering that, due to stagnant funding and better fire safety practices, the number of core customers have remained unchanged during that time period. Of the past decade's approximately 1.2 million firefighters, 80 percent are in volunteer departments. "In Medina [population: 25,000], our fire department is all volunteer, and we're only 26 miles from Cleveland," said Bill Burke, president of Fire-Dex, who has been with the company for 22 years and president for the last 10. "We've had to work hard to grow our company in a stagnant market that receives limited funding."

In 1997 Burke consolidated the company's operations into one 28,000-square-foot facility in Medina to gain efficiencies between manufacturing and the front office. Previously there were offices in Cleveland and a manufacturing plant in Rome, GA. Eighty-five percent of customer orders are custom turnouts (fire suits), gloves, and hoods. Customers are encouraged to customize their apparel; Fire-Dex created a separate Website called Firewriter.net that facilitates customization for sizing, logos, and lettering.

"One hundred percent are made-to-order. We don't keep a finished goods inventory," explained Burke. On the supply side, the company keeps one month of inventory for basic supplies and accepts JIT deliveries for the rest. Customers are quoted a six-week lead time so that Fire-Dex has enough time to order the fabric, no matter how unique the request.

Fire-Dex invested in lean manufacturing in 2001, and that philosophy may spread to the office and the sales organization in the near future. For now, cellular manufacturing is used for production with one portion of the turnouts fabricated per cell. The first stop for any order is cutting and sewing. Turnouts then travel from the lettering cell over to parts (for pockets and sleeves) then to the assembly cell and to finishing where all the pieces are put together. Burke added: "Gloves and hoods do not leave their cell. Those are manufactured straight to the finished product. All orders go through final inspection and then are shipped out to the customer."

Fire-Dex employs about 110 people: 80 percent are production associates and 20 percent are management and administrative personnel. According to Burke, productivity incentives are given, with the total salary consisting of 80 percent regular pay and 20 percent incentives. Incentive payments are driven by "opportunities for improvement," or OFIs. The company borrowed the program structure from textile company Milliken as a means to foster feedback and encourage employee involvement. "OFIs are like a suggestion system for our employees to provide feedback on ways the company can improve," said Burke. "It's not just a complaint system. Each suggestion must also have a recommended solution to the problem."

In 2005 the company instituted a policy that, if an employee wants to partake in company profit sharing, then he or she has to submit five OFIs for the year. In 2006 that policy was changed to two OFIs per quarter "so we know that they are thinking about it all year," explained Burke. "So far, there is 100 percent participation for the year."

Company management also uses monthly company-wide meetings to review the status of customer orders, shipments, and company profit. Burke noted: "We publish profit, gross margin, and productivity data to share with the employees. It gives them a chance to learn basic business principles and helps them understand the relationship between wages, benefits, and suppliers to the overall net profit."

Over the last decade, Fire-Dex has gained market share and is currently number four in its market. Burke has set his sights to bring the company into the top three, a feat that requires toppling competitors who have been in business for over 100 years.

The company's consistent growth over the past five years qualified the company for selection in November 2005 to the Weatherhead 100, a list of the fastest-growing companies in Northeast Ohio compiled by the Weatherhead School of Management at Case Western Reserve University.