

The E-Z Way Out

Jeff Reinke, Editorial Director

An enthusiastic embrace of Lean Manufacturing initiatives has kept golf cart manufacturer E-Z-GO on par for success



E-Z-GO golf car headquarters in Augusta, GA.

It's an interesting parallel that can be drawn between an American manufacturer and a professional sports franchise. Both operate in highly competitive environments which are becoming more global in reach and opportunity. Additionally, finding qualified workers is always a challenge, and both have very passionate stakeholders that are constantly demanding a better return for their invested time and money. And in the end, both want, and need, to win.

Perhaps there is no better example of these two worlds colliding than the E-Z-GO golf car headquarters in Augusta, GA. It's on these walls that quotes from legendary football coach Vince Lombardi can be found reminding the company's 1,100 employees that, "The achievements of an organization are the results of the combined efforts of each individual." Similar to the way his football teams embraced this mantra of teamwork and responsibility, so have the people at E-Z-GO. Unfortunately, this wasn't always the case.

"When I came here about four years ago, our plant floor was chaos," reflects Westy Bowen, E-Z-GO's V.P. of Six Sigma. "The floor was covered with materials, there was little organization, and the whole facility was very dark. Most concerning, however, was that much of the processes were at the same level as the plant's appearance." It was about this same time that E-Z-GO's parent company, Textron, was looking for a volunteer to pilot their Lean Accelerator program.

The E-Z Way Out

Published on Industrial Maintenance & Plant Operation (<http://www.impomag.com>)

“We raised our hand,” states E-Z-GO President Kevin P. Holleran, “because it was a great opportunity to tap into the available resources and implement some much needed change. In all honesty, I’m not sure this plant would still be operating in the same capacity if we hadn’t gotten so involved in Six Sigma and its Lean methodologies.”

E-Z-GO is one of the top two manufacturers of golf cars in the world, and has been a part of Textron since 1960. The company’s origins go back to 1954 when a couple of brothers, Bev and Bill Dolan, thought up the concept for their car while sitting on the front porch of the club house at the famed Augusta National Golf Club. Although its history and brand recognition are second to none, increased competition, especially offshore, demanded that the company find new ways of improving quality, and lowering overhead costs.

The Answer Within



Production of the **RXV** offered E-Z-GO the opportunity to put lessons learned from other parts of their plant to practical use, as the new vehicle would also demand a new, more advanced manufacturing facility and line.

“We started by benchmarking ourselves against a number of automotive production plants, and related manufacturers, like Crown fork lifts,” begins Eric Cardinali, E-Z-GO V.P. of Integrated Supply Chain. After garnering a better foothold on what Lean was all about, the company began implementing a number of Six Sigma related tools, including:

- The implementation of a Design For Manufacture & Assembly (DFMA) methodology. This translates to those designing the cars being tied into the production element, so the product design meshes more appropriately with manufacturing strengths and capabilities.
- Highly visible production scoreboards that show, in real-time, how many

The E-Z Way Out

Published on Industrial Maintenance & Plant Operation (<http://www.impomag.com>)

cars have been built versus how many were scheduled. By instilling a sense of accountability for their work, employees are asked to take greater responsibility for the company's results. This ties them in to the big picture and offers a stronger connection to producing higher quality work in a more efficient manner.

- SQDC (Safety, Quality, Delivery and Cost) boards were put in place to demonstrate how much labor has been invested in each vehicle. It's another efficiency benchmark that shows workers how they can help the company to be as profitable as possible.
- New warehouse and transportation management systems that have resulted in efficiency improvements, i.e. being able to transport two additional carts per trailer. The use of their own Cushman-branded industrial tugs for Kanban replenishment, instead of fork trucks. This serves as an excellent selling point when taking visitors and prospective clients through the plant.
- RFID technology has been implemented for better inventory tracking and production management.
- When servicing higher-end customers, added attention to these logistical details goes a long way. As Cardinali, explains, "When you deliver to some of these prestigious golf courses, they expect even the driver to look and act a certain way, so you can imagine how they're going to react if something's wrong with their order. This is where the ability to track that order throughout the production process to ensure timely and accurate delivery has been a real benefit. By tracking the order through the manufacturing process we can avoid any final delivery problems, or be supplied with enough time beforehand to make the necessary accommodations."

Saving Strokes

E-Z-GO's association with lower numbers is not limited to the golf course. Here are some of the results they've experienced upon implementation of their Six Sigma program:

- » **The mixed model**, or Turf and Terrain, work cell, which will assemble any variety of E-Z-GO models, was producing 45 machines in eight hours in 2003. Currently, it can build 100 new units in 10 hours.
- » **The Fleet Golf Car TXT line** went from 180 vehicles manufactured in eight hours to 330 in 10 hours.
- » **Plant wide**, the average number of labor hours/vehicle went from 10 to 7.5.
- » **1st time quality levels and on-time delivery rates** went from 60 to 95+.
- » **The number of suppliers** has been reduced to 300, from 500.
- » **Labor costs** were also significantly reduced once gas and electric vehicle assembly was combined for golf cart production. Even though the powertrain differs, nearly 90 percent of these vehicles are identical.

Cardinali's favorite story, however, doesn't relate to any of these initiatives. Rather, he points to how an old piece of equipment exemplifies the new mindset these changes have inspired. In looking at the welding operations that were in place, E-Z-GO thought they would either have to invest significantly in a new robotic welder and related automation equipment, or investigate outsourcing frame production. Those working on the cell responded by re-organizing production flow themselves in order to better accommodate new product demands.

The E-Z Way Out

Published on Industrial Maintenance & Plant Operation (<http://www.impomag.com>)

“The changes that were implemented on that cell, by those working here, have made our operating margins so much better,” explains Cardinali. “It just demonstrates how the people here have embraced what we’re trying to do, and they understand that they’re having an impact on our business’ long-term viability, and as a result, their own future.” And it’s not just those in the welding department. Cardinali points to how people are always asking questions, and have laid out or re-organized other cells as well.

It’s this mentality that fuels the “Passion For Premier- Greatness Starts With Me” program referenced throughout the E-Z-GO facility. “This keeps the customer and the goal to be “the” premier golf car and utility vehicle manufacturer- the very best at the center of all we do,” explains Kathy Searle, V.P. of Communications. “Passion For Premier program recognizes employees who exhibit the behaviors that will improve customer satisfaction and quality. It is all about providing our end customer with as high-quality a product as possible. Keeping the customer happy makes the company more profitable and creates a better place to work for everyone involved.”

“In addition to our employees, we’ve also had an upper management team that was very receptive to the changes that have been made,” adds Bowen. “Everyone involved knows and understands that this is a continuing process; we can always get better. Changes continue to be made weekly or even daily.”

Not only have employees taken notice of the changes, so have officials at its parent company. E-Z-GO won Textron’s Top Gun Six Sigma competition two years in a row, and continues to embed these Lean approaches into other areas of the company, such as accounting. Future goals also include winning the illustrious Shingo Prize for manufacturing excellence.

A New Opportunity



Adjustable, more **ergonomic frame carriers** (above) is one of the efficiency-focused changes that E-Z-GO has implemented.

Although the continuous journey that is Six Sigma helped E-Z-GO realize tremendous improvements in safety, materials management, and labor costs, perhaps the biggest test came with the introduction of a new line. With the release

The E-Z Way Out

Published on Industrial Maintenance & Plant Operation (<http://www.impomag.com>)

of the RXV golf car, and the multi-million dollar production investment that accompanied it, E-Z-GO was faced with not only implementing all they had learned, but also adapting and overcoming the normal challenges that accompany a new production line.

Additionally, the RXV is positioned as a revolutionary product with enhanced suspension and motor control capabilities, so its assembly is much more technical in nature. This led Cardinali and his teams to spend more time in getting the right employees in place. The company has also invested significantly in Lean and Six Sigma training.

This line has been in operation since January 28 and embodies a number of lessons learned, with greater ergonomic cell considerations, and reversible and adjustable frame carriers that are identical to those used on Harley-Davidson motorcycles. All of this is housed in a facility that is bright, clean, and exhibits little wasted space.

Although the RXV production line has not been without its challenges, Bowen knows things will improve: "We're starting to see a pull versus push mentality here. The people are implementing these improvements themselves, and no stone is left unturned when it comes to ways of making things better."

Perhaps the best way to summarize the turnaround comes from Holleran, when referencing a recent customer visit. He describes a client who, before selecting E-Z-GO, toured its facility, as well as those of its competitors. "Previously, we tried to deter people from visiting our production facility; now it's a selling tool. Our operation, in many cases, is what seals the deal."

Source URL (retrieved on 10/20/2014 - 9:20pm):

<http://www.impomag.com/articles/2008/04/e-z-way-out>