

# Behind the Scenes

Collaboration and Creativity Come Together  
to Form Artistic Manufacturing



Mark Peterson and Troy Atkinson, General Managers at Scenic Technologies New York

**You have probably seen one of PRG-Scenic Technologies products on stage, on TV, at a concert or an event. It made you feel a certain way, drew emotion from you. It amazed you, but you probably never gave much thought to how this special product came to be.**

In a 175,000 square foot facility in New Windsor magic happens. Talented people bring together wood, paint, plastic and metal to create dreams, literally making real things from the wildest of imaginations.

PRG-Scenic Technologies manufactures sets for Broadway shows, concerts, convention stages and even holiday window displays. Their work has been part of the success of shows like *Phantom of the Opera*, *Miss Saigon*, *Moulin Rouge*, *King Kong*, *Beauty and the Beast*, and *Frozen*. PRG has permanent installs at Universal theme parks and has done experiential marketing pieces for the *Game of Thrones*. They have created concert stage sets for Queen with Adam Lambert, Britney Spears and many others.

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PRG stands for Production Resource Group, which is an international company that has facilities throughout the world, focusing on a variety of production services from scenic fabrication and automation to lighting and sound, to LED and Video and more. Scenic Technologies was founded in 1984 by Jeremiah Harris, John Wolf, Fred Gallo and Roy Sears. They joined the early version of PRG (then known as Harris Production Services) in 1982 and began developing new scenic fabrication and automation techniques for live entertainment. Their first landmark success was *Phantom of the Opera* in 1988, which featured their patented Stage Command® motion control system. In 2011, their work on *Spiderman: Turn Off the Dark* broke new ground in the industry with its integration of lighting, audio, video, and automation systems including massive scenery, all provided by PRG.

PRG General Managers, Mark Peterson (Sales and Business Development) and Troy Atkinson (Engineering and Operations), described the process of creating and fabricating a set for a modern production or event. For a Broadway show set, the show's production manager and technical supervisor will send out drawings for production companies to bid on. PRG will provide bids on 350 – 400 projects a year and often have 10 – 12 different projects in production at any one time on the shop

floor. "Once a bid is awarded things move very fast and we often have only a few weeks to complete a project," explains Peterson. "The tech supervisor and production manager will work with our team to guide the process and then the set designer comes in at the end for the final paint finishes."

The production process starts at one end where materials are delivered and stored and flows down through the building gaining complexity until it is prepared for transport at the other end of the facility. Any single set might require fabrication and welding, machining, water jet, routing, milling and carpentry. It could be made of wood, metal, plastic, Styrofoam or any combination. It is likely to have many automated moving components that require motors, winches and cables – all of which are controlled digitally and pre-programmed by employees at Scenic Technologies.

Once completed the set is prepared to be transported and installed.

"Transporting these pieces can be very tricky because it doesn't matter how amazing it looked in the shop if it is banged up once it arrives at the theater,"

says Peterson. The logistics of how to disassemble and transport, then reassemble, is a critical component of designing the larger set pieces and especially the stages and sets for concerts and touring productions. While the basic technology for moving sets around on stage is as ancient as the Roman's circuses and gladiators, the technology and equipment has changed. Just in the thirteen and a half years Peterson has been there, the shows have grown bigger and more complex, *Spiderman* in 2011 hung 120,000 lb. of scenery from the steel grid. Audiences are looking for realism on stage now which means seamless automated transitions between scenes

Andy Stone, Harmony Water, and Loryn Benkowski working on scenic columns for the television show "Bull"





Sean Leary working on components for the touring production of "Les Miserables"

and actors interacting with automation, all the while keeping both actors, operators and the audience safe.

"Safety is our top priority," explains Atkinson. "At any point anyone can stop and say I am going to need more time to work this part so this will be safe, and Mark and I will go to the client and say we need that extra time." It is important to engineer the mechanisms and design so any possibility of something going wrong is thought of and addressed in preventative measures. "You can't control what happens once the product is on site so you have to prepare in advance for the changes a director might make to the machine or how it is used. Eliminate risk as best you can."

"There is very little we can't do," says Peterson. "We try to stay nimble and sometimes that requires starting work on a project before we get the bid. We will decide early on if the typical process will work but if not, we have the support of upper management to create small teams that can get the job done. Sometimes that means bringing in local artisans to create different looks. We encourage our people to think outside the box and we will try just about anything." Often times PRG will build an entire show in six and a half weeks or less. This includes custom scenic elements, custom mechanics, and automation.

There are 230 employees at PRG in the Hudson Valley and about 130 of those are part of Scenic Technologies. According to Atkinson, "There is a lot of overtime and we run multiple shifts. For the NBC Live performance of *Peter Pan*, for example, we put together a hybrid team because we only had 3 weeks to do the

set. They sat down around a white board and worked out who could do what and went directly into production. It was a very fluid process but with the same end goal it works out. When a team has passion for what they do they meld, and it all comes together nicely."

The employee passion for what they do is readily apparent when visiting the production floor at PRG. We met Michael Dalton, who was working on the mechanism to rotate a set platform, "Sometimes they (Peterson and Atkinson) will come in and say 'this is what we are working on, we have six weeks to get it done but we are already on week three.' That's what keeps things fun and challenging." He loves what he does and happily shares stories of opening night mishaps and scrambling to make it all work without the audience

ever being the wiser. Working alongside him is Nathan Fowler who has been with PRG for 29 years. Because he can't get enough of building sets he helps to build the set for Pine Bush High School's theater productions where his daughter is a student.

Further down there are two master machinists, Mark Holbert and Walter Salis, with decades of experience that "just can't stay away" from working on parts and making mechanisms for PRG.

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There is also a recent graduate from NFA high school, Joshua Myers, who is busy fabricating parts. Many of the employees have been with the company for years, even decades. They love the work but will eventually retire so PRG is always looking for people with the right skills and creativity to step in and join their team. Some employees are second or third generation and some are straight out of college theater programs.

"For me it all started with a T-square in high school," reminisces Peterson. "I actually went to Syracuse to study architecture, but I had been involved in set design since high school. There came a point when I realized architecture wasn't for me and I switched to the theater department." After college, Peterson worked with a theater company in Connecticut where he honed his project management and technical skills.

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Nigel Baboolal machining components for “Moulin Rouge! The Musical”

Atkinson came to his career from a different angle. He was more of a tech kid in school and worked residential construction with a family friend when younger. “I was always taking things apart and putting them back together as a kid. I got involved in my high school theater productions at John Jay in East Fishkill, where the director was constantly pushing me to try new things in set construction.” From there he went to SUNY Purchase’s Conservatory of Theater Arts & Film. During the summer between junior and senior year he landed a summer internship at Scenic Technologies where he was asked to manage the production of a set. He continued to work here throughout his senior year of college.

“Our employees come from many different backgrounds, from construction to auto mechanics, furniture restoration to artisans,” Atkinson explains. “It is important that we have this type of collaboration because by knowing each other’s backgrounds we are

able to look to them for their skill set, their expertise and with so many varied talents we can solve any problem.”

One of the newer skill sets that is in demand is for automation technicians. There are two types of automation at PRG. Internal automation, which is the use of CNC machines from companies like Allendale Machinery Systems (see profile on page 19), to fabricate parts and pieces for sets. Then there is the automation for production which is the actual movement of the scenery. For production automation PRG looks for someone that has experience with maintenance, mechanics, electronics, network technologies and possibly most important works well under pressure. Many of PRG’s projects include winch systems which are controlled by Rockwell automation built from the ground up and with a console user interface specialized for each show. Programmers and operators are needed to run the automation and think on their feet to ensure that everything goes off without a hitch because even though it’s cliché, “the show must go on.”

Scenery is everywhere, from store displays to the TV News broadcast set, trade show displays and amusement park installations, it isn’t just concerts and theaters. Atkinson and Peterson emphasize the importance of being collaborative and creative, using both left and right brain to incorporate the manufacturing and artistic process, that is how the PRG Scenic Technologies magic happens.



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