

The Toys That Make Engineering Noise

Matthew Jaster, Senior Editor

Last year, Hot Wheels celebrated its 50th anniversary. While a writing gig in manufacturing and engineering probably sounded surreal to the 8-year-old version of this author, truth be told, he was obsessed with Hot Wheels and Matchbox toys for most of his childhood. Somewhere in a box in the basement there's a 1967 Camaro and a 1953 Corvette that would still bring a smile to this face.

My brother and I spent a great deal of time with Hot Wheels driving around a town we built near a model railroad. These "car chases" were reminiscent of a certain 1970s/1980s television program where Bo and Luke Duke tried to avoid the authorities of one Hazzard County (*The Dukes of Hazzard*). Oh, the memories! The Hot Wheels eventually led to building intricate LEGO sets and designing our own automobiles, spaceships and vehicles.

We spoke to some regular contributors of the magazine to get some feedback on some of the toys that may have influenced *their* career paths. Here's what that had to say:

Ray Drago, chief engineer of Drive Systems Technology, Inc. (DST) said his father was a longshoreman but he was also one of those guys who could build or fix anything so he spent a lot of time in his workshop fiddling with all sorts of tools. He also fixed cars including, and especially, their transmissions.

"In my youth, most cars still had manual transmissions and I recall helping my dad rebuild them in his rented garage. He was more a mechanic than an engineer, but he did know about ratios, numbers of teeth, diametral pitch, etc. I learned these terms from him and was fascinated by the way shifting gears made the car move at different speeds," Drago said.

Drago's parents gave him an old, used Erector Set when he was about 8 or 10 years old. In those days, Erector Sets had gears in them and were often used to build working machines. He used the parts to build lots of different operating toys.

"Building things that moved was great fun and trying to figure out how to make the stuff I built move in specific ways fascinated me. I built a Ferris wheel by following a plan that came



with my first kit, but I was much more interested in creating machines that did stuff like steam shovels, steam rollers, and what was my idea then of cool cars!" Drago added.

For resident gear blogger and president of Beyta Gear Service, Charles Schultz, was all about the slot cars in his youth.

"There were several different styles, some with a face gear and pinion drive, others with a 'pancake' motor and 4-gear-system between the motor and the rear axle. Slot cars used to be on TV shows like *Batman* (Bruce Wayne had a huge layout in his mansion). In fact, slot car shops still exist; my friend Eddie Sauer runs one in Loves Park out near Rockford, Illinois."

Schultz also wanted an Erector Set, but never got one so he had to make do with Lincoln Logs and pre-LEGO building blocks. "I also built plastic model car kits; learned to make exploded view assembly drawings from those instructions," he said.

In 2019, the amount of toys and playsets dedicated to STEM fields is staggering. There are plenty of options available to entice future generations in areas like manufacturing, engineering, robotics and automation.

"Building real things rather than just playing with toys or, even worse, video games, causes kids to think. When they think about how something works they are more likely to try to make other things that work," Drago added. "I see this in my own grandkids today. They all (granddaughters and grandsons alike!) have LEGO sets and motors that go with them. It is interesting to watch the sophistication of their 'stuff' increase with age." ⚙️

