



Senior industrial engineer Igor Zemskov disassembles a prototype in the Radio Flyer prototype shop in the company's Chicago home office on Dec. 10.

# BUILDING A BETTER WAGON

Inside Chicago's Radio Flyer prototype shop

**A**t the western edge of Chicago, across from an Old Country Buffet and within barking distance of a PetSmart, the prototype shop at Radio Flyer toils in anonymity. Or rather, as much anonymity as you can have when you work inside a large modernist glass rectangle washed in natural light, with a Godzilla-sized toy red wagon on your front lawn. Here, on this property, for a century, the classic red wagon has been developed. And developed. Then developed some more. You'd think they would have figured it out by now. "But we're slow learners," said Robert Pasin, Radio Flyer's chief wagon officer. That's his actual title. He's the closest thing Radio Flyer has to a Santa Claus.

His grandfather, Antonio Pasin, founded the company in 1917 (initially as Liberty Coaster) after arriving from Italy three years earlier (he died in 1990). Antonio was a carpenter who made grape presses for Italian immigrants in Chicago still longing for home; a decade later, his company was stamping out 1,500 little red wagons every day, and from this very building, which has stood in the Belmont Cragin neighborhood, in various iterations, for decades.

Antonio's wagons are still fine-tuned daily inside its prototype shop, which is found behind a large white door at the end of a long white hallway. To reach it, you pass the Engine Room, a conference space where designers hash out secrets; a wall of framed patents that stretches back decades; and the Competitive Product Library, which is essentially every tricycle, pull wagon and rocking horse not made by Radio Flyer, aisle after aisle of toys, bought and hoarded for "research purposes." The prototype shop itself is quiet at the holidays. Anything found under a Christmas tree that came out of this space was conceived, tested and built ages ago. The busiest time at Radio Flyer is August to October, when the company presents its latest creations to retailers



An employee's workbench at the Radio Flyer prototype shop bears tools, supplies and figurines for inspiration. (E. Jason Wambsgans/Chicago Tribune)

business development — essentially head elf of Radio Flyer — explains in much blunter fashion.

"Most of what we do fails," he says.

He has black hair with tufts of white working themselves into his beard; he does not look elf-ish but rather, if Santa's workshop employed a casually dressed industrial designer of average height who knew his way around a 3D printer, Schlegel would be that guy. He carries a twinkle in his eye — that vanishes quickly on the subject of failure.

He bends to demonstrate the Radio Flyer folding wagon, outfitted with a tailgate feature — the latest in a century of options created for the company's little red wagon. He lifts a blue Igloo cooler and wool blanket from the tailgate and drops them into the wagon basin, illustrating how a foldable wagon with fabric sides fixed in place by a steel frame might carry children or picnics, or both at the same time. He explains that they only arrived at this, a workable, foldable wagon — now Radio Flyer's best-selling variation of its red wagon — in 2016, after more than a decade of disasters.

"It was a low point in the workshop," Schlegel says.

"It was a big test of our relationship," Pasin says. "We spent a ton of money trying to get it right. And it wasn't happening, so I said, 'We've got to kill this thing.' Tom hadn't been here that long (back around 2003), so he thought he was definitely going to be fired. But really, it solidified our friendship. This, I said, is how we innovate."

The wagon made to carry one child only didn't sell. The "Jungle Express" wagon was a "total loser," Pasin said.

Their workshop today is a sea of wooden tables on steel legs and familiar Radio Flyer red, on toy wagons and

# MOST OF WHAT WE DO FAILS

like Walmart and Target, then hopes for the best.

Most of what gets developed in the prototype shop, though, never makes it that far.

Tom Schlegel, executive vice president of design and



A CNC (computer numeric control) machine cuts modeling foam in the prototype shop. Most of the concepts don't make it to the marketplace. (E. Jason Wambsgans/Chicago Tribune)

toy cars and color swatches and every tool cabinet. The space was once a Radio Flyer factory floor (the wagons themselves are now built in China). Schlegel said that when he started at the company, the closest thing Radio Flyer had to a prototype shop was “a small closet with a band saw.” Today the room contains 3D printers, a milling machine, a grinder for metal and a drum sander for wood.

A CNC (computer numeric control) machine that can carve anything can be seen through a window, dominating in its own office, its long, tubelike arm reaching across the room and, Daniel Day Lewis-like, dipping down to drink the milkshake of whatever material is placed before it. There is a woodworking space (for quicker prototypes), and a room for testing paints, lined with ventilation screens and colored-spattered surfaces and looking vaguely sinister.

At any given time, a few of the 16 full-time designer elves can be found in the prototype shop. Most of them, like Schlegel, have industrial design and mechanical engineering backgrounds. Tyler Cross, the prototype shop manager, i.e., the elf foreman, hails from Minnesota and started here eight years ago and says he comes from a long lineage of industrial designers — his grandfather did similar design work at General Motors in Flint, Mich.

Asked what innovations he would like to see come to the red wagon if he ran Radio Flyer, he laughs nervously and says the job is really about thinking three steps ahead ....

Yes, but innovations? Rocket wagons perhaps?

“I’m not going to answer,” he answers.

In a corner, several large lumps sit beneath black tarps, prototypes that are not for a stranger’s eyes. On a window ledge sits a wagon redesigned to resemble an old-school Soap Box Derby car. It’s very cool, and it will never get

made, because the company decided that it would never sell.

“We think it’s cool too,” Schlegel says sadly.

In the next room, beyond the drill presses, is the Bone Yard, containing dead husks of doomed ideas; you are not allowed to see inside. Still, a peek reveals a large warehouse space lined with cinder block walls and many, many variations on toy wagons and toy cars and toy riding horses. Cross figures there were 500 concepts developed in the Radio Flyer prototype shop last year alone; of those ideas, only 50 made it to an actual prototype-building stage; and of those, maybe 15 were presented to retailers in the fall; and of those, maybe 12 became toys that were sold in stores

Most of what they develop, Schlegel notes, were not even wagons; the company’s tricycles are its biggest sellers these days. Radio Flyer is, if nothing else, a creature of its time.

A boomer standard that became a yuppie standard that became every helicopter parent’s must-have. Even the company name, for instance: It’s a 1920s mashup of once cutting-edge inventions, radio and flight. (Pasin jokes that if his grandfather started Radio Flyer today, the company would be named “Quantum AI Dronester.”)

Beside the reception area — which, like the rest of the building, is behind steel gates and not open to the public — there is a museum devoted to products that have come out of its workshops, from garden wagons to their own take on the classic Playskool Inchworm riding toy (Radio Flyer now has the trademark). Among the artifacts, an original Liberty Coaster from Antonio, who spoke no English when he moved to Chicago and worked initially in a local piano factory. Gradually, besides his grape presses, he made a series of tricycles and phonograph cabinets and furniture



David Packowitz, a product development engineer, tests a Kid & Cargo Wagon in the Radio Flyer prototype shop. (E. Jason Wambsgans/Chicago Tribune)

for other newly arrived families. He also built a wooden wagon, presumably for carrying tools. (His grandson said that the family doesn't know for sure why he built the wagon.)

To trace the evolution of that little red invention is, in a way, to sketch a cultural history of the country: In the 1920s, the first wagons had a baked enamel finish and curled, streamline body (which remains the signature design). By the '30s, Antonio was selling a "Lindy Flyer," in honor of Charles Lindbergh. Working headlights came soon after. World War II brought the "American Beauty" wagon. Davy Crockett wagons premiered in the '50s. In the 1960s, a wood-paneled "Town & Country" wagon debuted, then a "Radio Astronaut" wagon. Muscle cars got a nod in '70s designs. The company, which was slow to embrace plastic, unveiled its first plastic wagon in 1994, years after its competitors. Cup holders arrived two years later; seat belts in 2003.

Pasin, who became company head in 1997, said the wagon has become a "kid transport," with some of the most popular tweaks coming from ingenious hacks of

unsuspecting customers. Their canopies, for example, are formal variations on what they saw parents jury-rigging above Radio Flyers on rainy days in Lincoln Park.

Pasin says the company has come to recognize his grandfather's red metal wagon as a blank canvas — one that still sells, but only a fraction of the 140 or so toys and wagons they also sell. So on a snowy December day, through a skylight in the workshop, you can see an old stone chimney from the 20th-century days of Antonio, then you look down and see a company that now seems more like a tech startup, one that still makes a toy from the 1920s that no one ever needed to improve on, yet remains, forever, a work in progress.