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This American Life

The Transformation Of American Factory Jobs, In One Company

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Dean Kaufman/[The Atlantic](#)

Maddie Parlier at work.

This is the second in a two-part series. Part one is [here](#). For more, see Adam Davidson's [cover story](#) in this month's issue of [The Atlantic](#).

Larry Sills is the CEO of Standard Motor Products, like his dad and his grandfather before him. The company makes replacement parts for car engines. Larry grew up with the company, and he has seen the workforce change over the years. A few decades ago, a lot of his workers had no high school degree. Some couldn't read.

"We had a plant in Connecticut where we didn't realize it, but they were illiterate," he says. "And then when we switched to the next generation, we had to be able to read the instructions. To our astonishment, they couldn't do it."

But in today's factory, workers don't just have to know how to read.

"We have a microscope, a hot stand, snap gauges, ID gauges," Standard employee Ralph Young says. "We use bore mics, go-no-go plugs."

Young is the perfect model of the new factory worker. He has an encyclopedic knowledge of metals and microscopes, gauges and plugs. He works on the team that makes fuel injectors, which require precision engineering. At the heart of the assembly process is an automated machine run by a computer process known as CNC.

"When I came here 20 years ago, we didn't have CNC equipment," he says. "It was more of the hammer and screwdriver fix, to where now it's all finesse."

"Now it's all finesse" could be the motto of American manufacturing today. In factories around the country, manufacturing is becoming a high-tech, high-precision business. And not everyone has the finesse to run a CNC machine.

I can read, I've had some computer classes, and I have a Bachelor of Arts degree. But when I asked Ralph's boss, Tony Scalzitti, if he would hire me and train me on the job, his answer surprised me.

"No," he said. "The risk of having you being able to come up to speed with training would be a risk I wouldn't be willing to take."

To become like Ralph, I'd have to learn the machine's computer language. I'd have to learn the strengths of various metals and their resistance to various blades. And then there's something I don't believe I'd ever be able to achieve: the ability to picture dozens of moving parts in my head. Half the people Tony has trained over the years just never were able to get that skill.

And if you don't get that skill, a mistake on this machine can be catastrophic. All the work that's done here happens on a scale of microns. One micron is four-hundred-thousandths of an inch. A human hair, for example, is 70 microns thick. Here, you cannot be off by one-tenth the thickness of a hair.

"A 7- or 8-micron wrong adjustment in this machine cost us a \$25,000 workhead spindle," Young says. "Two seconds, we could lose \$25,000."

"That's why I wouldn't hire you," Scalzitti says."

It's not all Ralphs who work here.

Madelyn "Maddie" Parlier is more like the old style of worker. She does have a high school diploma, but no further education. She works on a simple machine that seals the the cap of a fuel injector onto the body. All she does is insert two parts and push a button. It requires no discretion, no judgment. There's only one way to run it: the right way.

"It does it for you," Maddie says. "All you do is put the piece in, push the clamps down, and push your finger."

There are a lot of things Ralph knows that Maddie wishes she knew. She wants to know how many microns thick the different parts are. She wants to know the computer language used on the machine she runs. She wants to know all the things that make Ralph's job prospects so much brighter than her own. And until she knows those things, her future is far less certain.

Maddie has a job, I learned, because of some simple math. A machine could easily replace her — a robotic arm could put the parts in and take them out — but it would cost around \$100,000. Maddie makes a lot less than that, and, for now, the math is in her favor.

But if the price of a robotic arm goes down, or a factory in China learns how to make that part for a lot less, Maddie's job is at risk. Simple calculations like that have cost around 5 million factory workers their jobs over the past decade.

But just because the calculation is simple doesn't mean the decision to lay off workers is easy.

"It's gut-wrenching," says Larry Sills, the CEO. "We're not a big Wall Street company. We are a family company. We have a very strong loyalty to our people, and we think they feel the same back. So this is brutal."

If the decision is so brutal, why does he do it? Why not keep those workers on?

"The decision is not made by us," he says. "The decision is made when the consumer walks into Wal-Mart, and there's two products on the shelf and one is made in this

country and one is made in China. And the one in China is 50 percent cheaper than the one that's made here, and they choose the one that's made in China."

This is why Standard Motor Products has outsourced parts like electric relays or air-conditioning compressors to factories in low-wage countries.

Maddie knows all this. She knows she's not living in the old days. She worries about the technology or the low-wage worker abroad who could replace her. She knows that unless she learns some of the things that Ralph knows, she probably won't have a job this good for long.

She wants to go back to school, but she's a single mom with two kids.

"I have to go back on my time, and I don't have time," she says. "When I get off work, I go pick my kids up and that's it. My life revolves around my children."

In the old days, Maddie would have learned on the job. That's what Ralph did. He didn't have to pick between paying his bills and having a future.

But now, the gap between the skilled and the unskilled is so vast that often the only way to make the leap is by leaving work and getting some education. And that's just not financially feasible for a lot of Americans.



Dean Kaufman/[The Atlantic](#)

Larry Sills, CEO of Standard Motor Products.