



FAUR-SIGHT

Robots, Technology Dominate Plant Floor

By Matt Ottinger

Walk along the floor of Faurecia's new Columbus South plant and one may feel as if he's in a *Transformers* film. Sturdy machines lift emissions components with ease like a professional wrestler preparing for a body slam. That slam, however, is replaced by delicate, precise placement in advance of a welding operation.

Robots are also seen working alongside people and autonomously rolling through, focused on a mission of transporting racks of parts throughout the facility.

Faurecia is North America's eighth largest automotive supplier. Its global headquarters is in France and the company has operations in 35 countries with a network of 300 production sites and research and development centers. Although its Columbus South operation focuses on emissions control, Faurecia also specializes in automotive interiors and seating. Customers include Ford, General Motors, BMW, Hyundai, Nissan and Volkswagen, and it has a partnership with Cummins Emissions Solutions.

'My co-worker is a robot'

V-Cell operator Misty Lang points out her workstation during a tour. She relishes the job, which she's held for nine months, and remarks how the fast pace of the work gives

her energy. While the work is expeditious, she celebrates that the new technology has alleviated the need for heavy lifting – a trademark in some manufacturing jobs.

A Seymour resident, Lang had worked in the manufacturing and education fields and wanted to do something different. She admits that working with robotic teammates was an adjustment.

"The robots were overwhelming at first," she says. "I was thinking, 'I'm going to be in charge of that robot? They cost millions of dollars.'"

Yet Lang has come a long way on the job in just nine months, now serving as a tour guide to this reporter after having recently made a presentation to suppliers.

She points out the many streamlined operations at Faurecia – a company so innovative it filed for over 500 patents in 2016 alone. Lang lauds the geographic diversity of her co-workers, many of whom hail from other states and countries at the international company.

Collaborative robots, known as "cobots," are found throughout the 400,000-square-foot facility.

"(Cobots) do some of the more highly repetitive, lower-skilled work, like pick and place," explains David DeGraaf, president of Faurecia Clean Mobility North America. "Instead of having someone do that all day long and risk repetition injuries, a cobot can do that. They have sensors so if an employee bumps it, it will stop. It's conducive to working alongside somebody."

"Our stacking stations are the biggest

example of co-existing robots and the human worker," elaborates Mike Galarno, plant manager. "The employee is standing in the cell, putting the gasket on the V-band flare and Marmon Joint located between the two modules. There's no wall between the worker and the robot except for a light curtain. It's a little unique in that you don't have the full caging around the system, so they have to co-exist in the same environment."

Screenshots

The modern societal inclination to stare at screens can be irritating for anyone who's been bumped into by an enthralled pedestrian or for a teacher attempting to capture a student's attention. Before the \$64 million Columbus South location opened in 2016 and launched its "Digital Enterprise 4.0" approach, managers were spending a great deal of time posting data to visual boards. That process is now completely digitized with touchscreen monitors.

Information can also be sent immediately via text or email to staff, customers or suppliers. Screens can be written on or marked up directly and data from the past can be quickly accessed and analyzed.

"As soon as something happens on the line, I can have a notification on my phone," DeGraaf illustrates. "We can track the issue, who's working on it and (the estimated time) to get back online. Our maintenance team can manage different parameters of how that equipment's running – cycle time, energy usage, any type of anomaly that's happening.



Faurecia ensures all staff are on board with its “clean mobility” approach as every employee – even communications and HR personnel – works on the shop floor for one week to immerse themselves in the process.



They can get into a more predictive aspect: ‘We need to fix this before it breaks.’”

Galarno also touts the speed of the digital convenience.

“Employees can access the work procedures and the real-time statistics on process control, and the gap leaders have digital boards and touchscreens where they can pull information, whether it’s training information, quick response problem-solving tools to production or downtime data,” he adds. “All that is at their fingertips to optimize operational performance and quality. Some supervisors have it on their iPads.”

A 10-gig fiber optic backbone runs through the building and five server closets are found on the shop floor. Those have the capability of over 1,000 ethernet drops into

the plant and each machine has two of those drops, so should one point of access fail, the machines still run.

“From a people standpoint, it’s a mind shift because it accelerates the proactive approach we can take versus reacting to a situation,” DeGraaf imparts. “That’s a paradigm shift. From a skillset perspective, you’ll see people using iPads – a lot of touchscreens on the machines. The plant manager can look at real-time information and what trends are.”

Clean cut

Clean Mobility is a way of life at the plant – and “clean” encapsulates several aspects of the production. For starters, the company’s full-time workers wear white

shirts. Despite any outdated reputations such manufacturing operations may have, those clothes are rarely sullied.

The moniker also applies to the focus on reducing pollutant emissions.

“Clean Mobility includes anything from emissions coming out of the engine – so the manifold to the tailpipe,” DeGraaf articulates. “Also the electrification, and we have a composites business working on fuel cell tanks.”

Faurecia has also emphasized reducing nitrogen oxide (NOx) emissions from diesel engines, which helps ensure compatibility with European standards. It recently marketed a new Ammonia Storage and Delivery System™ that has reduced NOx emissions from diesel-powered city buses by up to 99%. Acoustics, weight reduction (which aids gas mileage) and energy heat recovery are also critical components of Faurecia’s assemblies.

Safety first

Despite the *Transformers* analogy, one needn’t worry about a nefarious Decepticon lurking around the corner. In fact, safety is paramount on the Faurecia floor.

To simply step onto the floor, a visitor or worker must wear steel-toed shoes (or provided foot protectors), as well as special sleeves, glasses and vests.

“From a quality aspect, predictability, uptime, efficiency, ergonomics with our workforce and safety (are important),” DeGraaf notes. “Some ask if these robots are safe to work with. There are some robots within a fenced area. But there are automated guided vehicles that will drive by you, but they have the safety sensors on them, so they’ll stop so they don’t make contact with something or someone. They won’t move until you get out of the way or they’ll find a different path.”

The short but sturdy autonomous intelligent vehicles (AIVs) are a remarkable sight, rolling through the facility on their own individual missions, recharging on a track in transport. Once they arrive at the component rack of choice, they simply slide under it, raise – and off they go. At Faurecia, the heavy lifting is done by AIVs, not workers.

“The goal here is nobody lifts anything over 25 pounds long term,” Galarno quantifies. “Some of these components weigh in the 40- to 60-pound range and we don’t want to ask operators to lift those 600 to 800 times a day.”

“This place has a job for every type of person,” Lang adds. “The technology has made my job pretty easy. There’s no lifting. The most bending over I do is tying my shoes. Everything is at the push of the button.”

RESOURCES: David DeGraaf, Mike Galarno and Misty Lang, Faurecia, at www.faurecia.com