GEAR BOX BIRTH

GOT IT MADE

At Freightliner's plant in Portland, Ore., a new truck is born every 12 minutes

BY KATIE DODD

A DEEP COBALT BLUE FREIGHTLINER CORONADO CAB trimmed with chrome hangs suspended in the air, patiently waiting its turn in line. In a few minutes, it will be lowered onto its shiny new chassis, and equipped in short succession with tires, a hood and bumpers, before being powered up and driven off the lot. Less than 18 hours ago, this gleaming beauty was little more than a pile of parts, but before long it will be easing on down the road. And it's just one of the 78 trucks that will be born at the Freightliner plant in Portland, Ore., on this drizzly Friday.

"Every 11 and a half to 12 minutes, a new truck is started up and leaves the line," says Ken Koppler, the plant's safety manager, as he dons safety glasses and ushers us onto the floor for an all-access look at the making of a truck.

Opened in 1970, the Freightliner plant sits on 26 acres and occupies

OF A BIG RIG

KURT HETTLE

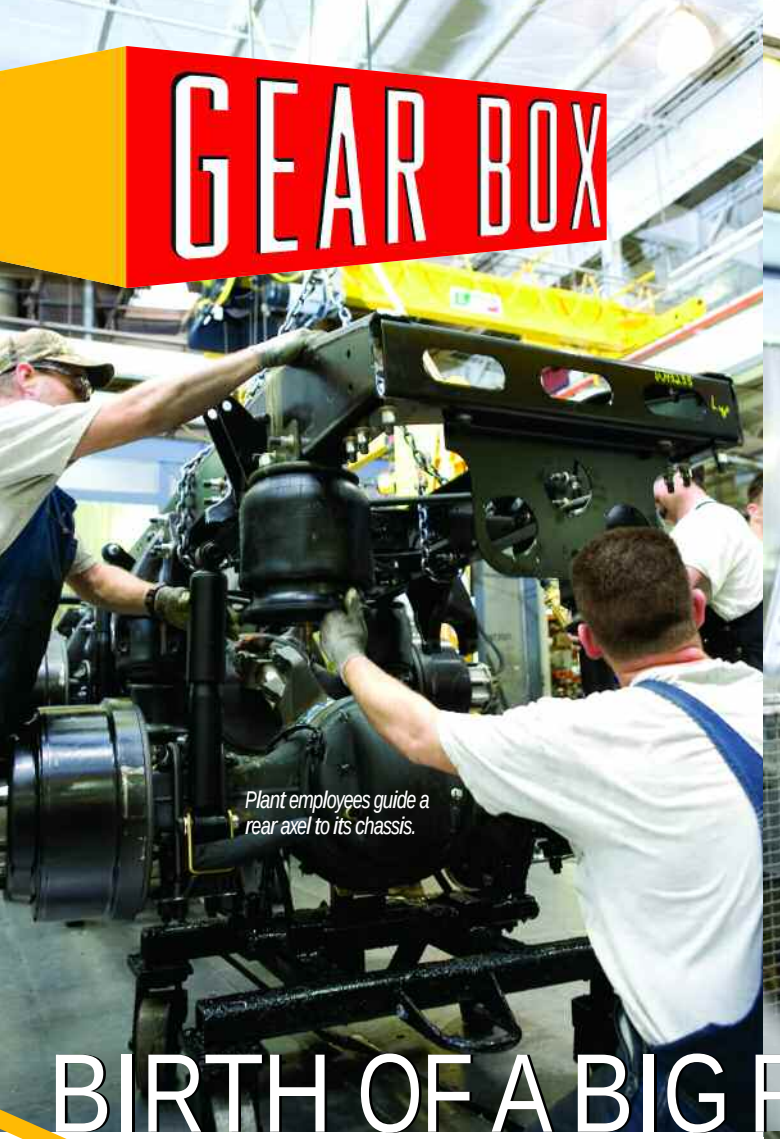
580,000 square feet. It is primarily an open floor, with few divisions between areas. In the painting area, you can still hear the cacophony of drills and welding equipment. While watching a group of workers attaching axels, you'll catch glimpses of colorful cabs traveling across the plant on their way to meet their chassis.

More than half the rigs produced at the plant each day are Freightliner's Century Class, Columbia and Coronado models, all popular with owner-operators. About a third of the trucks produced bear the Western Star brand, including some heavy-duty 6900 models. About three trucks a day are hand-constructed for the military.

But it's the first-class owner-operator trucks that are the Portland plant's bread and butter, with their eye-catching chrome trimmings, luxurious interiors and the range of custom paint designs for both cab and chassis that require the Portland plant to mix more than 1,000 different colors of paint a year.

"If someone wants a unique shade of purple, we'll mix it," Koppler says. "It's whatever the owner wants."

A robot applies adhesive to a cab's windshield.



Plant employees guide a rear axel to its chassis.

Spot welding on Western Star cabs is all automated

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The plant employs 1,708 people, who work in three shifts. Production begins at 6:15 a.m., a second shift begins at 3:15 p.m., and from midnight to morning, production halts but a graveyard shift handles maintenance and material handling.

A cab's life begins in an area called "Rough Cab," also known as "pre-paint." Freightliner cabs are constructed of aluminum, and the chassis are put together with permanently constructed Huck bolts.

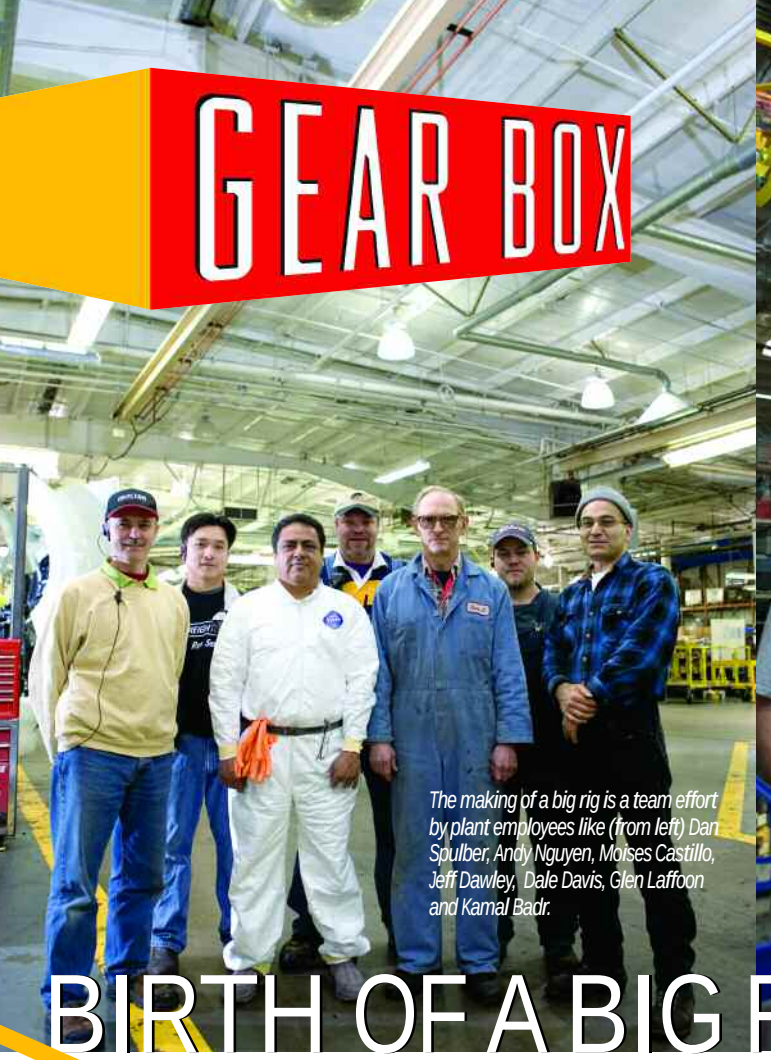
"The only way to get a Freightliner chassis apart is to use a torch," Koppler says.

The basic cab is the same for all three Freightliner models made at the plant. It's details such as the hood, grill, bumpers and interior that give each model a unique look.

The Western Star trucks are built a little differently. Their cabs are made of steel, with a fiberglass and composite sleeper that is built separately and attached after painting. They are spot welded together, while Freightliners are put together using structural fasteners as well as adhesive technology.

After undergoing their various methods of construction, all cabs head to an area known as E-Coat, which prepares them for painting. E-Coat stands for electrocoating, a patented 15-step process that takes about two hours from start to finish. The floor vibrates beneath our feet as an automated system lowers the cabs in and out of a series of solutions — an alkaline wash, a rinse, a rinse conditioner, and a surface

Air tanks wait patiently to be paired with their trucks.



The making of a big rig is a team effort by plant employees like (from left) Dan Spulber, Andy Nguyen, Moises Castillo, Jeff Dawley, Dale Davis, Glen Laffoon and Kamal Badr.

The engine is lowered into place on an angle.

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conversion that opens the pores of the metal to help the primer sink in. For aluminum cabs, this is a chrome phosphate solution; for steel cabs, it's zinc phosphate. Then the cab is loaded into the E-Coat tank, where 250 volts and 250 amps of electricity draws the paint pigments to the surface. After air-drying, the cabs are baked in an oven at 375 degrees and emerge with a high gloss black finish that is sandable and serves as a primer for the paint.

Cabs are painted in a "clean room" that is sealed off from the rest of the plant to prevent dust from lodging in the paint. Non-metallic colors are applied by two robot arms, with two sprayheads each. Touch-ups, metallics and custom work are done manually by workers dressed head-to-toe in white jumpsuits and hoods that make them look like astronauts.

From there, the painted cabs are transported to "Finish Cab" where they are outfitted with windshields, dashboards, bunks, lights and other components.

Meanwhile, across the plant, frame rails and kit carts — which includes cross rails and steering gears —wait for their turn to be assembled into full-fledged chassis that will form the basis for the completed 18,000-lb. truck.

A finished Freightliner attracts attention in the plant showroom.

"Our frame rails come from Mexico and are pre-stamped with a unique truck number," Koppler says.

As a frame rail descends from its storage perch, the matching kit cart is pulled, and assembly begins. With the chassis suspended in the air, the axels are rolled underneath and attached. The chassis is washed and dried, then sent into a bright white tunnel to be painted. An electrostatic process is also used here to guard against corrosion.

Once the engine has been installed, the completed chassis travels toward the center of the floor to meet its other half. The Coronado cab begins to slowly inch forward, as a worker straddles the chassis and prepares to guide it into place. Nearby, a group of supervisors pointing and calling out serial numbers stop for a brief moment to watch the process. The now nearly complete truck makes its next stop in the tire area, where more than 400 tires are mounted and aired per shift.

"This is the real birth of a truck, right here," Koppler says.

When the hood and bumpers have been attached, and fluids put in, an employee climbs into the cab. And then, less than 24 hours after its first parts were put together, the big rig roars to life.