



Bayer, along with his sons, built a 1/2 scale semi-tractor and low-boy trailer, shown hauling two custom Deere lawn tractors of their design.

Model Semi With Flatbed Trailer

By Lorn Manthey, Contributing Editor

Viewed from ground level through a smartphone camera, the Bayer semi-tractor pulling a low boy trailer with a Deere dozer on board looks like a genuine Peterbilt over-the-road rig. This low-angle view, however, is a bit deceiving, because the rig is actually 1/2 scale, true to form from the front bumper to taillights, standing only about 4 1/2 ft. tall. Ben Bayer, along with sons Fletcher and Mitchell, debuted this realistic mini-rig at the 2022 Lawn and Garden Tractor Extravaganza. It's 27 ft. long, weighs about 2,000 lbs., and rides inside their enclosed 28-ft. trailer.

Cell phone cameras were everywhere as the Bayers unloaded their custom-built rig, fired up the semi-tractor's engine, and drove it around the parking lot. The crowd's reaction was exactly what the Bayers were hoping for when they started the project more than 2 years earlier.

They first built an authentic Deere mini-

dozer, using the transmission from a Snapper zero-turn mower, tracks from a Vermeer trencher, a 14-hp. Kawasaki engine, and a blade setup from a Deere 318 lawn tractor. Their machinist friend Brian Garber made an adapter that bolted to the flywheel of the engine so they could power a hydraulic pump and run the transmission. They pushed up to 8 in. of snow with it the first winter, but since it was a rough ride, the Bayers decided it would be nicer to haul it on an authentic trailer. Enter the kids with a wild idea: Let's build an authentic mini-flat bed and semi! And so began their homeschool shop project.

The Bayers traded parts from an older 245 Deere lawn tractor for a good engine and transmission, then extended the tractor's original 2-ft. frame by 8 ft. to create a chassis 10 ft. long. They mocked up a wood frame and cardboard cab to serve as a template for the sheet steel. It was complete with fenders and a bumper. The Bayers worked nearly a

year to build out the cab and the chassis with its 3/4-in. and 1-in. steel tubing. Working without specific plans caused a design hiccup, so they had to cut the frame apart and rebuild. Mitchell says, "One side is now about 1/2 in. shorter than the other, but nobody really notices."

The tractor's fenders, which look factory-made, are adapted from a trailer. The truck's 12-in. 5-lug-chromed wheels and the matching 8-in. flatbed wheels are also from a trailer. Custom chrome exhaust stacks, mirrors, and custom air cleaners round out the realistic mini-model.

The Bayers built the trailer frame using steel parts from a CNC design that Mitchell provided to Longhorn Fab Shop. The steel beams use 2-in. strap steel welded to vertical 1/4-in. plate steel. The trailer has a stainless rear bumper, authentic running lights, and wood flooring made from quarter-sawn ash.

Never short on ambition, Fletcher also built a half-scale 4020 using the frame from a 1966 Deere 110 garden tractor. The rear rims are from a 1980's minivan.

Ben encouraged his boys to work on and build unique projects after enjoying that type of work himself helping out at his grandpa's John Deere dealership. He's worked in landscaping for 20 years while continuing to buy, sell or restore 300 and 400 series Deere lawn tractors.

"Involving the boys in all aspects of the work has been rewarding because they always liked to build things. These projects are actually part of their homeschool shop work."

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Mini trailer frame beams use 2-in. strap steel welded to vertical 1/4-in. plate steel.



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