

“Adult Size” Pedal Pulling Rig Custom-Built For Fun

By Lorn Manthey, Contributing Editor

“Our small town has a great summertime celebration, so we added to the excitement this year by building an adult pedal pulling tractor and sled,” says Minnesotan Andy Hall. “My brother Mike’s wife is on the event committee and they said it was a good idea, so we were all-in with an authentic design.”

One of the riding contestants was heard to say “the Hall’s rig looks just like a scaled-down version of a full size tractor and sled.” And indeed it is because Andy says they modeled the tractor after a Case 1070 from their farm and the pulling sled from those built by Vaughn Bauer in Iowa.

“The pulling tractor is built to an unusual 2.6:1 scale because we already owned 26/12:00-12 tires that looked like they’d work on a small tractor.” To figure the scale they measured those tires against the rear tires on their Case 1070 farm tractor and scaled the length, width, height and frame dimensions accordingly.

“We didn’t have to go very far for dimensions, just out the main door of the shop,” says Andy. The Hall brothers, including Andy, Mike, Jeremy and Tony, built the tractor and sled in about a month. Andy says he worked on it every day around his regular job repairing and rebuilding farm machinery.

The Halls used 12-ga. steel for the frame and sheet metal that they rolled and formed for the hood. The steering wheel, made from 5/8-in. roll stock, is balanced and welded to the 1-in. solid steel steering shaft. That connects to a rack and pinion steering setup pulled from an old golf cart.

“We knew a couple of the drivers weighed over 300 lbs., so we made the wheel, shaft and steering system really strong,” Andy says. “As the riders are pedaling they’re pulling, pushing and putting a lot of torque on the wheel.”

The 400-lb. tractor moves forward as riders push on sturdy pedals mounted on 5/8-in. roll stock. Number 60 roller chain connected to the 1 1/4-in. rear axle on a 3:1 drive ratio turns both wheels simultaneously as the chain rolls

across 3 sprockets.

Riders sit on a seat rescued from an old self-propelled sprayer. “We designed the seating and operator platform so people from about 5 up to 7 ft. tall can pedal the tractor,” Andy says. “We knew up front that one of the drivers was going to be a neighbor who’s 6 ft. 10 in., so that’s how those dimensions came about.”

The sled is 11 ft. long and has a 4 by 5-ft. sled pan made of 3/16-in. AR 400 steel. It doesn’t have lift wheels, but it does have a scale-size operator platform above the weight transfer box.

“We put the cab and bench on there so kids can ride and feel like they’re part of the action,” says Andy, “and I think it really added to the fun at the event.”

They debuted the rig at their local Butterfield, Minn. festival in July, 2018. They had 97 people compete in different classes that included kids aged 12 to 17, 3 different women’s powder-puff classes for various ages, and different age classes for men. “The youngest rider was a 11-year-old girl and the oldest was an 82-year-old grandpa,” Andy says. “Everyone who competed had great expectations when they jumped on the seat, but they learned real quick that it’s not as easy as it looks. Even my grandma, who’s 82, wanted to drive, but she recently had two knees replaced and decided that probably wasn’t a good idea.”

As the tractor and sled move forward, the weight transfer box moves to the front of the sled, driven by a #60 roller chain. “We put 40 to 160 lbs. in the weight box depending on which class was pulling,” Andy says. “We also added suitcase weights to the back and front of the tractor for the stronger and larger men’s class.”

Contestants generally pulled from 40 to 60 ft., although Andy says they did have a few women get close to 70 ft. when there wasn’t quite enough weight in the transfer box. The box moves to the front of the sled, then releases and stays there as the contestant continues to pedal.



Dan Hall debuted his sons’ pedal-pulling tractor at a Butterfield, Minn., competition this summer. The adult-size sled they built is modeled after full-size sleds used at regular tractor pulling competitions across the U.S.



“There was a lot of cheering and probably a few side bets among friends about who could pull the longest distance,” says Andy. “They’ve already asked us to do this again next year, so in the meantime we’re going to make a few refinements and get the weights and classes a little better organized.”

Andy says he and his brothers would

consider hiring the tractor and sled out to other communities and may also build other tractors and sleds. They have all the plans for this tractor and sled on CAD and could easily replicate the design.

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Do You Know The History Of Vacuums?

Learn why vacuum cleaners have always had headlights at the Vacuum Cleaner Museum in St. James, Mo. The answer is just one of hundreds of facts to be learned at the museum, where visitors can see more than 600 working vacuums going back more than 100 years.

“The vacuum cleaner was the first electrical appliance with a cord,” says Tom Gasco, curator of the museum. “Before there were wall-mounted electrical receptacles, electric vacuums were plugged into receptacles screwed into light bulb sockets. Without light in a room, the vacuums needed a headlight.”

Although hand-pumped vacuums go back to the 1890’s, museum exhibits start with 1910 and move along by the decades. Each exhibit shows how designs reflected the times. In the 1940’s canister vacuums were made out of pressed cardboard with metal at both ends. In the 1950’s they had big tail fins and in the 1960’s they looked like robots.

Gasco’s fascination with vacuums started at the age of 6 when he brought home a discarded vacuum cleaner. With the help of his dad, he fixed it. He bought his first car for cash with money made selling vacuums door to door. By the time he was 21, he had a sales and repair shop.

That first vacuum was the start to a collection that became his museum. “People would give me old vacuums they or their parents or grandparents had used,” he says.

“If I got multiples, I would use some for parts.”

As his collection grew, so did its reputation. He helped design Air-Way Corporation’s Signature Series of vacuums in 2000. The company sold 8,000 of them, 100 with Gasco’s signature on them, making them instant collector’s items.

In 2009 he joined the Tacony Corporation, which owns Simplicity and Riccar vacuum cleaner brands. His collection was moved into the museum adjacent to the factory where the 2 brands are built. Visitors to the museum can see modern vacuums being made.

Gasco’s collection was joined by that of the late Stan Kane of St. Louis. Kane appeared on The Tonight Show 77 times with his collection. Although 200 duplicates were recently sold off Gasco, who continues to test and consult on design, says the museum will continue to grow.

“The vacuum is always improving,” says Gasco. “It is also one of the few appliances that is constantly changing as new designs attempt to get more dirt out. The final design that is completely effective has yet to be made.”

Contact: FARM SHOW Followup, Vacuum Cleaner Museum & Factory, 3 Industrial Dr., St. James, Mo. 65559 (ph toll free 866 444-9004; www.vacuummuseum.com).



The Vacuum Cleaner Museum in St. James, Mo., displays more than 600 working vacuums going back more than 100 years. The Hoover Dustette (left) is one of the rare ones.