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Altenweg used a discarded ice fishing house frame made from 1 1/2-in. wide, 12-gauge Unistrut hangers. It's covered in see-through vinyl panels with a roof of tin.

Home-Built Monorail Carries Him To Shop

Ralph Altenweg rides to his shop in style on his own private monorail. The 82-year-old once spent his winters in Arizona. Now that he stays in Minnesota over winter, he needed a way to get safely through snowdrifts.

"My monorail carriage travels 97 ft. at about 2 1/2 ft. above ground level," says Altenweg. "I designed it so it will even hold a wheelchair if I ever need one."

Altenweg's monorail carriage runs on 1 1/2-in. sprinkler pipe with 2-in. pipe standoff supports attached to the side of a metal shed. Between the shed and the house, the rail is supported by arms attached to a ham radio antenna. Cable attached to the antenna above the arms supports them as they link to the monorail line.

Altenweg used a discarded ice fishing house frame made from 1 1/2-in. wide, 12-ga. Unistrut hangers. It's covered in see-through vinyl panels and a roof of tin. The only wood is old decking for a floor.

"The Unistrut is welded at the corners," says Altenweg. "It's surprising what it'll hold. I estimate the carriage has about a 400-lb. weight limit."

The carriage is suspended from two trolleys that ride on the 1 1/2-in. pipe. Each trolley has two V-shaped ball bearing wheels about 2 in. in diameter. The larger trolley also includes a battery-powered drive mechanism with a hard rubber drive wheel. The drive mechanism is a Rigid drill rewired and reconfigured to fit inside a short length of



Interior view of carriage, which can carry up to 400 lbs.

3-in. pvc sewer pipe. It sits between the drive wheel and the two wheels.

"I turned the drive wheel on a lathe to match the shape of the pipe," says Altenweg. "The trolley and the drive wheel have enough flex to be able to turn with the curve of the monorail."

A former electrician, Altenweg explains that rewiring the drill was "a piece of cake", but then he says, "I've learned a few tricks over the years."

His energy source for the 1/2-in. drill is two 12-volt garden tractor batteries connected in series. They in turn are kept charged by two small solar panels on the roof of the carriage.

"Over the course of the day, the panels produce enough electricity to recharge the batteries," says Altenweg.

A switch on the control panel can be turned toward the house or to the shop as desired. Altenweg installed a couple of safety overrides. A clutch lever to throw the drive out of gear hasn't yet been used. Likewise, the emergency shutoff hasn't been needed. The one safety measure that does get used is a bell, which he installed for his grandchildren.

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Rare 3-Wheeled Case Tractor

Maryland tractor collector Jim Gargani owns one of the most unusual tractors ever built, a Case 10-20. Designed as transitional power from large and bulky steam engines to smaller-size gas engine tractors, the 10-20 has many peculiar features, including a 22-in. wide by 52-in. tall main drive right rear wheel, a 12-in. secondary drive left rear wheel, and a single front wheel. The secondary drive wheel was mainly an idler but could be engaged by a temporary clutch for extra traction.

Gargani says the tractor's 4-cyl. gas engine, the same one used on Case automobiles at the time, is mounted crosswise on a sturdy I-beam frame. It has a high-tension magneto ignition and an impulse starter. Running at 800 rpm's, the engine produces about 29 hp. on the belt pulley, enough to power a 26-in. threshing machine or easily handle a 3-bottom plow. The radiator and fan on the left side of the frame cool the engine with splash and pump lubrication.

Gargani says that the unfortunate position of the operator's seat behind the right wheel fender doesn't allow the driver to see the front wheel to observe which direction the tractor is turning. Engineers solved the problem by adding a weather-vane type arrow on top of the wheel shaft.

Just over 6,500 of the tractors were built from 1915 to 1918 and because newer,



Case 10-20 is powered by a 4-cyl. gas engine, the same one used in Case automobiles at the time.

smaller, and easier-to-operate tractors had been launched, dealers needed almost 6 years to sell off all their inventory. Much of that production was sold to the Italian government, according to Farm Implement News in 1918.

Priced at just \$800 FOB, Racine, Wis., Case advertisements noted that the 10-20

was "the handiest small machine you could buy, getting in all the corners, working in orchards, and easily pulling 3-bottom plows. You're on par with the big fellow if you're the power farmer."

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