



Tandem axle trailer with a load of firewood. Rocker bars allow both sets of wheels to move up and down with the terrain.

Self-Loading, Self-Dumping Log Hauler

Al Holt, Butternut, Wis., built a dump-style log hauler equipped with a wood rack and hydraulically-operated boom.

"I use it to haul logs to my sawmill. It really works slick," says Holt. "Except for the hydraulic components, I designed and built the entire machine including the winch."

What makes the tandem-axle log hauler different is that the hydraulic-operated boom mounts on one side instead of on front. The boom swings nearly 270 degrees, allowing logs to be dragged in from as far away as 100 ft. from both sides and back of the machine. The boom is raised and lowered by a 32-in. long, 3-in. dia. hydraulic cylinder, allowing Holt to raise the log and swing it over onto the rack.

The boom can handle logs up to 20 ft. long. To operate both the boom and winch he plugs a pair of hydraulic hoses into a pump that he keeps on his Chevy Suburban, or into the pto-driven pump on his tractor.

Another unique feature is the winch, which was made using the front drum brake from a 3/4-ton pickup. The winch mounts on the side of the log hauler and is driven by a hydraulic motor. "By using a 12-volt remote control, I can operate the winch from more than 100 ft. away. It lets me control the boom while hooking up logs and then dragging them in and loading them on the trailer," says Holt.

Holt also designed the log rack to dump the load. "I raise the boom all the way up and attach the cable to the rack, then operate the winch to raise the rack and dump the wood off. An extra pulley in the cable works like a block and tackle to provide twice the pulling power for dumping."

He bought the remote control unit from a company called Futaba for about \$800. The remote control operates a solenoid air



Boom is used to dump entire load at once by raising rack.

valve that activates a small air cylinder on the winch's clutch. The remote control also actuates the hydraulic motor and boom through solenoid valves as it loads the log. There are six buttons on the remote control – two to engage and disengage the clutch, two to extend or retract the cable, and two to raise and lower the boom.

The winch mounts on swing bars so that it automatically centers the cable with a 1 3/4-in. wide opening in the frame through which the cable runs. The frame above the spool serves as a hydraulic reservoir.

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Belt Pulley Mounts On Tractor Pto

"We use the belt pulley to saw firewood. Works great," says Warren Farley, who designed an adapter to connect a belt pulley and gearbox off an old Ford 8N tractor to the pto on an Oliver 55 tractor.

"It lets us use the tractor to pto-drive our buzz saw," he says.

The belt pulley came equipped with a cast iron gearbox that Farley hooked up directly to the Oliver's pto. The gearbox is held in place by a pair of 5-in. sq., 1/2-in. thick steel plates. A 4-in. long, 3-in. dia. pipe that's welded to both plates encloses the pto. One of the plates bolts to the gearbox; the other bolts to the back of the tractor in place of a pto guard that Farley removed from the tractor.

"It turned out good," says Farley. "We had been using my old IH LBBR stationary engine to operate the saw, but its output was only about 500 rpm's so the saw's blade ran

too slow to do a good job of cutting wood. The belt pulley and gearbox double the speed coming out of the tractor pto. Even with the tractor barely idling, the saw still runs 3 or 4 times as fast as it did before."

The belt pulley and gearbox were designed to bolt directly to the Ford 8N tractor, but Farley couldn't bolt them directly to the Oliver. "The belt pulley and gearbox are designed to take a 1 1/6-in. pto shaft, whereas the Oliver has a 1 3/16-in. pto shaft. Also, the mounting bolt holes are different so the gearbox wouldn't have lined up correctly. A commercial adapter to convert from 1 3/16 to 1 1/6 is available, but it would have set the gearbox 4 in. farther back from the tractor. The 4-in. long pipe makes up for the difference between the plate and adapter and makes it easier to keep tension on the flat belt so that it doesn't slip on the pulley."



"There's nothing like it on the road," says Randy Hinzmann, who replaced the rear axle on his 1991 Geo Metro with a single center-mounted wheel.

3-Wheeled Geo Metro "Floats On The Road"

"I built it just to see if I could do it, and it worked out great. There's nothing like it on the road," says Randy Hinzmann, who replaced the rear axle on his 1991 Geo Metro with a single center-mounted wheel.

"People can't believe it when they see me driving down the road. They can't see any rear wheels as they approach me so the back end of the car looks like it's just floating above the road. They don't see the car's single rear wheel until they pass me."

He uses the one-of-a-kind car mainly to drive back and forth to work and to run errands, and says the conversion actually has saved him money. "I was able to get the vehicle re-titled as a motorcycle, so I save a lot on license plates and insurance," he says.

He bought the 1991 Geo Metro, which had about 160,000 miles on it, for \$150. "The Geo Metro is a front wheel drive car with no driveshaft going back to the rear end, which made the conversion a fairly simple job," says Hinzmann. "The rear wheel just follows along down the road. I just built a new mounting system for the single wheel. I used mostly stuff I already had and didn't spend more than \$300 on the entire project."

The Geo Metro has a unibody with no real frame, so Hinzmann had to beef everything up to support the single wheel. "The hardest part was making everything solid enough, because the entire weight of the car's rear end rides on one wheel. Also, I had to find a way to let the wheel move up or down freely. The wheel is mounted pretty far back, behind the car's gas tank which I didn't want to remount, so everything fits pretty tight."

He removed the car's rear axle, keeping one of the wheels as well as a brake drum and spindle. He also removed the car's rear

bench seat and cut out the spare tire well located behind it in order to make a big hole that he could work in.

An L-shaped "trailing arm", made from a 2-in. dia. steel shaft off a Deere moldboard plow, bolts onto the car's body to support the car's single rear wheel. One of the car's original rear spindles is welded to the trailing arm. The trailing arm pivots up and down on brass bushings and rides on a heavy-duty truck shock that's hinged to the trailing arm via a rubber bushing.

A horseshoe-shaped, 4-ft. wide sway bar off an older Chevy pickup is mounted under the front end of the car. It connects to the car's front suspension arms to keep the car from flopping from side to side.

He also hooked up the car's original emergency brake cable to the single wheel.

"It turned out better than I had even hoped," says Hinzmann. "After I removed the rear wheels, the car looked kind of goofy so I welded in aluminum deck plate to close up the open wheel wells. I also made a single aluminum mud flap that mounts behind the wheel. The tire sits back so far that I had to cut through the rear bumper to make room for it."

"The car is powered by a small 3-cyl. engine so it doesn't go real fast, but getting 40 mpg makes up for any lack of performance. Even with the single wheel, I can take corners at a pretty good clip. The car does lean a little on turns, but then the sway bar takes over and it feels like I'm still driving on all four wheels."

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"It lets us use a tractor to pto-drive our buzz saw," says Warren Farley, who designed an adapter to connect a belt pulley and gearbox off an old Ford tractor to the pto on his Oliver tractor.

To see the unit in action go to Farley's Youtube page: www.youtube.com/wrf121. Contact: FARM SHOW Followup, Warren

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