



## 4-WD Articulated Dump Truck

"It'll go anyplace a bulldozer will go and is the slickest machine I've ever used around trees," says Edward Bowen, Union Springs, N.Y., about the 4-WD articulated dump truck he built from a 1962 Ford F-350 dump truck, a 1978 Chevrolet Chevette engine equipped with an automatic transmission, a front-wheel drive Chevrolet Citation 4-speed transmission, and other miscellaneous parts.

"If I can get the front bumper between trees, I can get the whole truck through - no matter what the angle - because it's articulated and the rear wheels follow in the same tracks as the front ones," says Bowen, who built the truck last winter for less than \$100.

He removed the Ford truck's cab, engine, transmission, and front axle and cut the frame in half. He removed an 18-in. section from the middle of the frame and replaced it with a pivot assembly from a 2 1/2-ton Army truck. He replaced the front axle with the rear axle from an old Dodge pickup that had the same gear ratio as the truck's existing rear axle. He mounted the Citation transmission directly behind the Chevette's automatic transmission under the front half of the truck and made a drive shaft that connects the two transmissions together and also goes to the differential housings on both axles. The drive shaft is equipped with a center bearing and universal joints on each side where the frame articulates.

"Everyone told me the Chevette's 4-cylinder, 97 cu. in. engine wouldn't have enough power, but power isn't a problem," says Bowen. "The engine has 63 hp at 4,800 rpm's. I can haul two 4 by 8-ft. cords in the 2-yard dump box and go right up steep banks with a full load. I also use it to haul dirt. I usually keep it in third gear and the automatic transmission automatically shifts when it needs to. I can shift into fourth gear and go 35 to 40 mph on the road. I use a two-way hydraulic lever

to steer. The articulation point pivots 50 degrees so I can turn in a circle and leave only one set of tracks. The truck still has the original 8 by 17.5 tires, with dual snow tires on back and regular tires on front. I put chains on the front tires in mud and snow. I welded pegs on the front bumper so the truck can be pulled out if I get stuck. However, I've never had to use them.

"I had been using an old 4-WD pickup in the woods, but I always caught the rear wheels on trees while turning. When the engine blew up I decided to build my own truck."

The pivot assembly consists of a 2 1/2-in. dia., 1-ft. high kingpin that pivots on a double tapered roller bearing. A pair of double-acting hydraulic cylinders, one mounted on each side of the frame, provide pivot power. The cylinders are powered by a power steering pump off an old Chevy truck. The two hoist cylinders are now powered by an electric starter motor that belt-drives the truck's hydraulic pump. Bowen pushes a button to start the electric motor, then flips a lever mounted behind the seat to activate the hydraulic pump and raise the hoist.

He used sheet metal to build the truck's front hood and mounted "toolbox fenders" on each side. He cut an old pickup-mounted toolbox in half, closed the ends up, and mounted one half on each side of the hood. "I use them to store chain saws, gas, oil, chains, etc.," says Bowen. He mounted a pair of tractor lights inside a short length of well casing to make the headlights. The casing protects lights from being damaged by trees and branches.

The two-passenger seat was borrowed from an old school bus, and the gas tank, mounted under the driver's platform, was salvaged from an old baler.

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## Quick-Tach Universal Bucket Mount

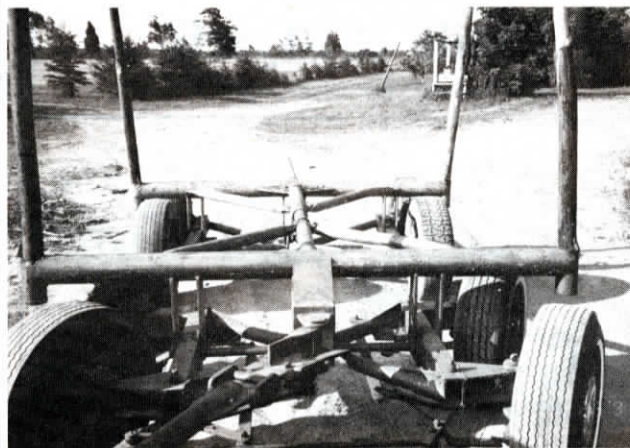
"I have five different buckets and I wanted an easier way to attach them to the Oliver 558 loader on my Deere 1630 tractor. Some of the buckets had a round back side that I didn't want to alter so I made a quick-tach plate that attaches directly to the loader cylinders and lift arms," says Fred Dunlop, Stayner, Ontario.

Dunlop used 1/2-in. steel plate to make the quick-tach plate. He used 3/8 by 3-in. angle iron and 1/2 by 3-in. flat bar to

attach the plate to the lift arms. He welded four small pieces of 1-in. steel bar to the front side of the plate. The two upper pieces are notched to slip into the buckets where the cylinders previously attached while the bottom two pieces have holes for pins to attach to lift arms.

He spent about \$50.

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## 8-Wheel "Automatic Steer" Wagon

You've never seen anything like this "automatic steer" 8-wheel wagon built by New Brunswick farmer Curtis Steeves who used two sets of steerable wheels in front and two sets of non-steerable wheels in back. All 8 wheels mount on walking beam axles, and each front steerable wheel mounts independently so wagon can turn easily even under heavy loads.

Steeves uses the wagon mainly to haul logs and gravel.

"The combination of eight wheels and 4-wheel steering lets me haul loads weighing up to three times as much as conventional wagons this size can support," says Steeves. "I've used it to haul 10 yards of gravel weighing 20,000 lbs. A conventional 4-wheel wagon this size can carry only three or four yards of gravel."

"The steering system works something like the steering on big cement trucks that have four steerable wheels up front. Each wheel has its own kingpin, and rods connect all four wheels together. Walking

beam axles on each side allow one wheel to go up and the other to go down even when turning."

An extendable gear pole allows wagon length to vary from 8 to 15 ft. long.

Steeves uses a front-end loader to load logs onto 8-ft. wide crossbars at the front and rear of the wagon. The logs are contained by four 4-ft. high stake posts made from 4-in. dia. steel pipe. Steeves converts the wagon to haul gravel by laying 14-ft. long, 2 by 8 wooden planks across the wagon bed and then adding sides. To unload gravel he uses a steel bar to tip each plank on its side, allowing the gravel to fall through.

He used 3 by 4-in., 3/8-in. thick angle iron tubing to build the walking beam axles and 1 1/2-in. dia. steel pipe to build the gear pole braces.

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## Kitchen Sink Funnels Waste Oil Into Portable Storage Tank

A Nebraska farmer says his inexpensive portable waste oil storage tank saves him a lot of time. He mounted an old kitchen sink on top of an 80-gal. wheeled tank. Oil drains by gravity from the sink into the tank.

Mike Stewart, who farms near Lincoln, salvaged the tank from an old cement truck (it held wash-up water). To drain oil out of the tank, he hooks up an air compressor to a regulator mounted on the tank. Oil is pushed out through a hose into a 55-gal. barrel. He sells the waste oil to a local machine shop.

"It works much better than trying to pour waste oil into a funnel on top of a barrel and can be moved anywhere inside my shop," says Stewart. "I simply dump a bucket of oil into the sink, then turn the bucket upside down on the sink's drain-



Photo courtesy Jacques Country

board to get all the oil out. The sink's drain hole strainer keeps oil pan plugs from falling into the tank. The tank's pressure relief valve doesn't allow more than 100 psi inside the tank so we feel it's completely safe."

Stewart welded brackets onto the top of tank in order to mount the sink. He mounted 6-in. caster wheels on brackets that are welded to bottom of tank. A platform on one end is used for storing buckets once they're drained out. A clear plastic hose "sight gauge" on one end of tank lets Stewart monitor level of oil.

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