



Home-built, all-wheel-drive 6-wheeler has an all-steel body and rides on six 30-in. high, 10-in. wide wheels.

## He Built His Own 6-Wheeler

Larry McLees says his home-built, all-wheel-drive 6-wheeler can handle just about anything and go anywhere.

The Anderson, S.C., man built the machine with the help of his friend Larry Strickland. It has an all-steel body and rides on six 30-in. high, 10-in. wide wheels. Power is supplied by a Honda 650 2-cycle motorcycle engine that drives a hydraulic pump. A pair of hydraulic motors are used to chain-drive the wheels.

"It can go places where a 4-wheeler can't go because of the 6 large tires, which can carry a lot of weight and won't sink in mud or snow. It'll even float in water," says McLees.

His first step was to bend 22-ga. steel plate to form a 2-piece body, which mounts on a frame that he built out of channel iron and 10-ga. sheet metal. "The machine is made entirely of metal, with no fiberglass," says

McLees.

Steering is controlled by a pair of levers, one for each side of the vehicle. "I can turn around on a dime by putting one side in forward and the other in reverse," says McLees. A pair of valves are used to control the speed. Top speed is about 15 mph.

"The 2-cycle motorcycle engine has about 50 hp. I may replace it with a 4-cycle engine to get more torque," says McLees.

A pair of gas tanks mount up front, while a hydraulic reservoir and electronic fuel pump mount under the seat. It's equipped with 2 fishing boat seats.

"I already had most of the parts including the engine. I probably spent less than \$1,000 to build it," notes McLees.

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A pair of hydraulic motors are used to chain-drive wheels.

## Portable Water Filtration System

If you have a cabin or remote worksite with no drinking water available, you'll be interested in this mobile water filtration system developed by electrical engineer Jon Dufendach. The certified water specialist has designed and built water filtration systems of all sizes for the past 14 years. His CampWater water treatment systems are in use throughout the world.

"We started building large water systems for mining companies here in Alaska, but soon saw the need for small portable systems that could be carried on a small plane or helicopter," says Dufendach. "Mission workers in remote areas learned about us. Now we mostly sell our smaller units to missionaries and to some farmers and ranchers. They've been used in emergency situations here and around the world."

CampWater systems vary from a hand-powered, 2 gal. per min., cyst filtration system to custom-designed, built and installed systems producing up to 20,000 gal. per day. Options include single or multiple stage filtration; carbon, membrane and nano-filtration filters; ultra violet and chlorine disinfectors; pretreatment systems that use ozone and filtration; and reverse osmosis for heavy metals and concentrated salts. Systems

can be modified to treat almost any type of contamination.

One thing that sets CampWater systems apart is their turnkey operations. All that's needed is power to run the pump. Solar, battery and hand-powered systems are available.

"Just throw a hose in the water, hook up the power and start pumping," says Dufendach.

Units mount inside a heavy-duty aluminum frame. Their size, however, can be deceiving. His largest portable unit is the FUV20C. At 26 by 24 by 47 in., it's small enough to fit in a small plane, yet at a flow rate of 25,000 gal. per day, big enough to provide water to a large village.

After visiting missions using his products, Dufendach realized the need for clean water. He responded by setting up and training manufacturing affiliates. One in Colombia builds units for that country and others in South America. A second in Florida assembles them for Haiti and other impoverished areas in the Caribbean Islands. One in Georgia services the southeast U.S., Mexico and Peru. Another affiliate is in Missouri, and one will soon be operating in Ontario.

"We're starting one in Mombasa, Kenya to

## Simple Water Cover Seals Top Of Silo

"I use water on top of a plastic cover in my silo to help preserve silage quality," says Pennsylvania dairy farmer Jesse Fisher. "Before I used this method to seal the top of the silage there would be almost a foot of spoiled silage. We were hauling away several manure spreaders full that weren't any good. That was a waste of good corn silage. With this sealing method there's hardly any waste at all."

Fisher uses a conventional plastic cover that's 4 ft. larger than his 14-ft. dia. silo. Before Fisher puts the cover in place he spreads the pile smooth, with the sides about 12 in. higher than the center. He mixes a small amount of salt with the silage around the outside edge near the wall, then he lays the plastic cover on top of the pile. The plastic is held in place with J rods spaced about 3 to 4 ft. apart around the wall. The J rods, made of 1/4-in. metal rod, are 3 ft. long with a 4-in. bend to form a J at one end. A flat washer is welded about 2 in. down from the pointed end. The rods hold the plastic in place and against the wall, about 2 ft. above the top of the silage.

After the plastic and J rods are in position Fisher covers the plastic with water to a depth of 18 to 24 in. "The weight from about 2000 gal. of water seals that plastic tight and packs the silage in the process. The depression in the center of the silage pile puts more water weight in the center so the pile settles evenly," Fisher says.

When he's ready to use the silage, Fisher siphons the water off the top with a water hose and removes the plastic to reveal fresh silage with no mold damage. "We've used this method for 10 years and it always seals the pile completely, packs it down evenly and keeps spoilage to a minimum," says Fisher. "We know for a fact that we're saving 5 percent of our feed due to less heating and storage loss, which is worth a lot of money. The silage is very consistent and very palatable because it ferments more uniformly."

Fisher lives in an area of Pennsylvania that can have some real cold weather in January, but he keeps the doors closed and says there's enough warmth from the silage pile to keep the water from freezing.



After silo is filled with corn silage, it's sealed with an oversize plastic cover pressed down with water 1 to 2 ft. deep.



Plastic is held in place with 3-ft. long J-rods spaced 3 to 4 ft. apart around the silo wall.

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"Just throw a hose in the water, hook up the power and start pumping," says Jon Dufendach about his mobile water filtration system.

build units for Africa," says Dufendach. "I'll be training some young men to manufacture and distribute systems that produce up to 3,000 gal. per day."

In addition to missions, mines and farms, CampWater units are popular with entrepreneurs. Dufendach cites people who buy a unit and sell safe drinking water to

neighbors and area schools.

Prices start at \$800 for the HPF2 with hand pump. The powered FUV2C sells for \$5,000.

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