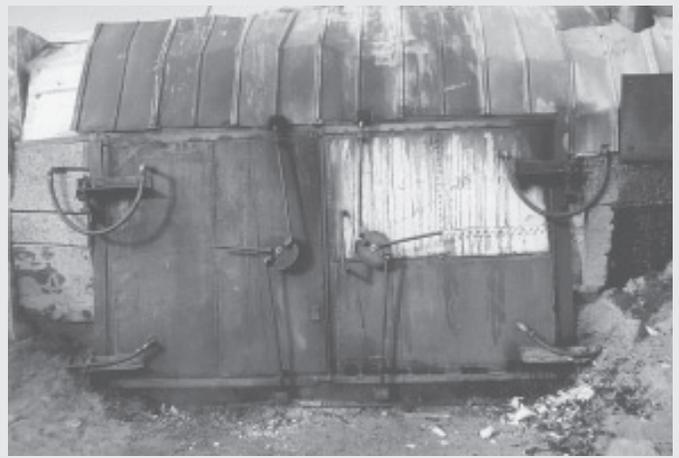




Louie Shively used a 10,000-gal. fuel tank to build this giant outdoor wood stove. Back side of stove is banked with dirt for insulation.



Stove is fitted with a pair of 5 1/2 by 6-ft. tall doors. The wide opening allows a Bobcat to dump a load of 8-ft. wooden slabs into stove and makes it easy to haul out ashes.

Giant Fuel Tank Stove Loaded With Logs By Bobcat

After buying several outdoor wood stoves over a 15-year period, Louie Shively finally decided to build his own.

"We needed a bigger one, and we wanted to be able to feed it with a skidsteer loader," explains Shively.

Tubing had already been run from the previous stoves to his son's home and three large buildings used as warehouses for their Tools & More business in central Minnesota.

Shively started with a 10,000-gal. fuel tank he bought from a local business. He and his son cut

off the bottom and used that steel and other steel they had on hand to create a double wall.

"We welded it watertight," Shively says. "That's not simple. We had a few leaks and had to drain the water out a couple of times."

There is about 3 ft. of space between the walls of the top and some walls of the 11 by 16-ft. stove. The back only has a 1-ft. space, but is banked with dirt for insulation. The Shivelys used 12-in. well casing for the stove-pipe, making a couple of Ls inside the stove to maximize heat. A square plate under the

chimney allows access to clean creosote out of the pipe. A 12-in. commercial exhaust fan on the opposite side of the stove provides the right amount of air for draft.

Each 5 1/2 by 6-ft. tall door is also water-filled to prevent warping.

"The doors are on trailer axles," Shively explains. "We turned the axle up and welded the door to it so it's on bearings and opens easily." They are sturdy enough to accommodate the weight; each door is 700 lbs. - without water. The wide opening allows a

Bobcat to dump a load of 8-ft. slabs into the stove and to bucket out ashes.

This is the first winter for the stove and it has worked well loading slabs about 3 ft. high each morning and evening. Besides slabs, Shively says it's perfect for burning stumps and other scrap wood people can't use. The stove keeps the warehouses above 40 degrees and the house above 70 degrees.

The prototype works so well that Shively plans to build one on his home site.

He estimates it cost \$7,500 to build.

Electronic Fuel-Saver Really Works, Say Researchers

An electronic fuel-saving device the size of a can of Campbell's soup may be coming your way soon. Designed for big diesel engines, the device is easy to install. Researchers say it provides up to a 20 percent boost in mileage and increases horsepower and torque while reducing emissions.

Developed by Temple University researchers, the Electra is now in final testing. According to Rongjia Tao, chair, Temple University Physics Dept., the device creates an electric field that thins fuel or reduces its viscosity so smaller droplets are injected into the engine.

"It's now in field testing. After that, we'll be taking it for SAE testing (Society of Automotive Engineers) this year, which is the holy grail of fuel evaluation," says Joe Dell, Save The World Air, Inc. (STWA), license

holder of the technology. "We hope to get the same results with this in heavy-duty trucks as we saw with an earlier generation device on a Mercedes Benz. It increased fuel efficiency 20 percent on the road and 12 to 15 percent in city driving."

One of the companies that STWA and Temple are working with has a fleet of 2,500 units. Dell estimates that if the device produces only a 10 percent improvement in fuel efficiency, that fleet alone would save \$26 million per year based on average mileage of 125,000 and recent high diesel prices.

"It's a short step from the field tests we are doing to SAE testing and then to production and sales," says Dell. "Most fuel-saving devices are snake oil. We want to be credible and take our experience to the American



Designed for big diesel engines, electronic fuel-saving device is said to boost mileage by up to 20 percent.

Trucking Association. We won't need to advertise this if it does what we think it can."

Gun Barrel Fitted With Homemade "Laser Sight"

Dim light can make it hard to fire a gun accurately, because if it's too dark you can't see the sight. To solve the problem, Ken Voigt strapped a battery-operated, carpenter's laser light onto a gun barrel.

"It lets me project a small red dot wherever I aim," says Voigt, who uses the laser sight on a JC Higgins 9-shot, 22-caliber revolver. "It's very accurate. I can use either the laser light or the iron sight and they'll both hit on the same spot."

The laser light was originally designed to clamp onto a standard carpenter's level. Voigt used a hacksaw to shorten up the body of the laser by about one third, then made a metal bracket that attaches the laser light to the bottom of the gun barrel. A short length of angle iron is glued to the top of the laser to form a V-groove, which automatically centers the laser on the barrel. Four threaded bolts secure the angle iron to an aluminum plate on top of the barrel.



Battery-operated, carpenter's laser light straps onto gun barrel. "It projects a small red dot wherever I aim," says Ken Voigt.

"I use it to keep squirrels out of my shop. It really works," says Voigt. "I bought the laser light at a local hardware store for \$30."

To make sure the laser sight is accurate, I clamped the gun in a vise and used a line level to line up the gun's iron sights with a nail head 30 ft. away. Then I adjusted it so the laser light hit right on the nail head."

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Home-Built, Pull-Type Log Splitter

"I'm too old to spend all day bent over splitting wood, so I built a pull-type vertical log splitter. I do have to lift the wood up onto a tray, but most of the wood I split is only about 12 in. in diameter, so I can lift that easily," says Loren Hegar of Milwaukie, Oregon.

The splitter rides on a pair of car wheels and is powered by a 30 hp, 4-cyl. Wisconsin engine that mounts on the tongue. The wedge is mounted on a rectangular steel frame behind the engine. The engine shaft-drives a hydraulic pump that drives the wedge.

"I share it with my brothers and sometimes other people. We pull it behind a pickup from house to house," says Hegar. "I found the engine at a junk yard, and it came without either a starter or a distributor. To solve the problem I matched the starter ring gear off a Buick 300 with a Porsche starter. I also added the distributor off a Chevy Vega.

"Both the hydraulic pump and cylinder are off a dump truck that I found at a scrap metal yard. I paid \$50 for both of them, and another \$50 for the engine. The engine came off a generator and had run out of oil, so I



"I've never found a piece of wood that it can't split," says Loren Hegar about his pull-type vertical log splitter.

had to rebuild it.

"The cylinder is really strong and can apply 100,000 lbs. of pressure. I've never found a piece of wood that it can't split."

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