

## Robot Mower Lets Inventor Stay Inside On Hot Days

Glen Jones' home-built remote control lawn mower lets him sit inside in air conditioned comfort while cutting the grass on hot steamy days.

"It doesn't take a genius to make one, but I couldn't tell anyone how to do it," Jones says. "This thing started out as just a toy to play around with but it's become very useful to me."

He explains that his first attempt at an automated lawn mower "was more of a robot." It used a computer chip that he could program so it would follow alongside where he had previously cut a square. But after about two rounds, it "would take off into the bush."

A friend calls his latest mower "Robogoat". He started with a cheap Murray lawn mower with a 42-in. cut and 14 hp engine that cost about \$1,100.

Jones installed a reversible 12-volt motor to run the steering wheel through a pulley and belt system. He used another 12-volt motor to control forward and reverse on the hydrostat transmission.

He uses a remote control transmitter and receiver from a toy car, in combination with two relays and a servo for each of the two channels (steering and forward/reverse). Jones says these parts cost about \$150.

"I already had an old broken video camera that the recording feature didn't work on, so I mounted it on the lawn mower. This video is transmitted back to my television in the house with an off-the-shelf router device that's normally used for networking one computer with another. It cost about \$150," Jones

explains. "This is what allows me to watch the lawn mower on the television as it cuts grass."

The router can send video about 500 feet, so when the picture starts to get snowy, Jones knows it's time to turn the mower back toward the house. His control box is good for 1,000 feet.

"I mow about three acres using this remote control system. It's become so useful that I also mow out in my pasture because I land my airplane there," he says. "I have 'picture in picture' television so I can actually watch TV while remotely mowing the lawn - I can be mowing on the little picture and watching the ball game on the big one."

Sometimes Jones admits that he has to go out and rescue the lawn mower, "but not too often."

"I live along a busy highway and I've stopped using it in the ditch along there because it causes trouble. People are worried when they see a driver-less lawn mower, and they stop," he explains. "Actually, the ditch is the area where I would most like to use this lawn mower, so I'm making a mannequin to put on the tractor so it looks like someone's driving it."

Jones says he particularly enjoys the mower when it's 100 degrees or hotter outside.

Total cost for this robot mower was about \$1,400.

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Jones mounted a video camera on his riding mower. Video is transmitted back to the TV in his house with a router device normally used for networking computers together.



Jones watches the mower on TV and controls it with a toy car transmitter.



He installed a reversible 12-volt motor to control the steering wheel through a pulley and belt system (left). Another motor controls forward and reverse on the transmission.



Table is designed so two operators can cut firewood at the same time, one at each end of table, without having to bend over. The operator cuts through log at every space between the timbers.

## Back-Saving Firewood Cutting Table

Often the simplest ideas turn out to be the best ones. That's the case with this firewood cutting table built by Donald and Mark Sears of Redwood, N.Y.

"It eliminates the need to bend over while cutting firewood, and also prevents chainsaw kickback," says Donald.

The table is designed so two operators can cut firewood at the same time, one at each end of the table. It measures 6 ft. long by 4 ft. wide and mounts on a base made from 16-in. channel iron. The table's surface is about 4 ft. above the ground and consists of a series of five 8-ft. long, 8-in. sq. timbers spaced about 6 in. apart. The timbers are bolted to a pair of larger wooden beams bolted crosswise to the base.

A forklift is used to pile logs onto the table. To cut a log into firewood length, the operator cuts through it at every space between the timbers. A series of 6-in. high wooden pegs, or stops, keep the cut logs from accidentally falling onto the operator's feet. Once the log has been cut, the operator pushes it over the side of the table.

Once all the logs have been cut into fire-

wood length, a tractor is used to pull the table out of the way, making room for a log splitter which minimizes the handling of wood.

"We built it five years ago and it still works great. I don't know why I didn't think of it a long time ago," says Sears. "Two men can easily cut 35 face cord of wood in an 8-hour work day. Yet even after a full day's work I don't have any back pain. The timbers are spaced on 16-in. centers which is just the right length for firewood. The empty space between the timbers makes it impossible for a chainsaw bar to come in contact with anything but wood."

A local machine shop built the base for about \$500. "We made a cardboard pattern for the welder to follow. We used our own sawmill to cut the timbers," says Sears.

"We made the table's surface 8 ft. long because that way both operators can reach to the center of the table and pull the logs toward him," he notes.

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Juhl's "single tooth" rock digger mounts on the tongue of his pull-type rock picker.

## Retractable Digger Tooth Mounts On Rock Picker

Ivan Juhl used the beam off an old moldboard plow to make a "single tooth" rock digger that mounts on the tongue of his pull-type rock picker.

"It lets me dislodge rocks that are too deep for the rock picker to pick up," says Juhl, who mounted the hydraulic-operated attachment on his Otto rock picker. "I drop the digger under the rock, then back up and lift it out, leaving the rock on top of the ground."

The beam, or standard, is off an old Deere 3-bottom plow and originally had a moldboard bolted onto it. He flipped the beam upside down so that what was originally the

top now serves as the tooth. He welded a short pipe with reinforcement on the inside curve of the plow beam and then inserted another pipe through it and through the rock picker's tongue to form a pivot point. The top part of the beam - where the moldboard was originally attached - connects to a hydraulic cylinder that's anchored on the rock picker's tongue.

He beefed up the digging tooth by hard surfacing with his welder.

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Beam off an old Deere 3-bottom plow is free to pivot and is connected to a hydraulic cylinder that's anchored on rock picker's tongue. "It lets me dislodge rocks that are too deep for the rock picker to pick up," says Juhl.