



West had the thin steel wheels on his bean walker built at an Amish buggy repair shop. He says he runs the machine across rows of soybeans with virtually no damage.

## "NO DAMAGE" WHEELS LET HIM DRIVE CROSSWAYS THROUGH FIELDS

# Thin-Wheeled Buggy Cuts Across Bean Rows

You've never seen a bean buggy like this thin-wheeled buggy built by Ralph West, Kokomo, Ind., who wanted a machine that would let him "walk" crossways through bean rows - traveling in any direction - without doing damage.

West raises soybean seed so he wanted his fields as clean as possible. The problem with most bean buggies, he says, is that they had to run the full length of the row before they could be turned around to get at weeds

in adjoining rows.

When West first got the idea for a thin-wheeled bean buggy, he asked an Amish neighbor to run his horse and buggy back and forth through one of his bean fields. After the buggy was gone, he checked the field and found almost no damage. The narrow wheels simply passed through the rows.

To build the wheels, West went to a Amish buggy repair shop and had 36-in. dia. rims rolled. He welded dish centers made of 11 ga. steel to the rims and made them convex shaped by screwing a piece of threaded rod into the center of them to push them apart. Once the wheels were formed he took them back to the shop to have rubber tires put on the rims.

"I originally wanted to use regular buggy wheels but the bearings in them weren't heavy enough. These wheels work perfectly because they're strong yet small enough to slip through the crop with almost no visible damage. They've got good traction, too. I've had no trouble in slick or muddy conditions," West told FARM SHOW, adding that he's run the machine through beans as tall as waist-high with no problem. A slender crop divider made out of steel rod is mounted just ahead of each wheel to help part the crop.

The 3-wheeled, 6-ft. wide buggy is designed to straddle 3 18-in. rows. It turns in a 12-ft. radius and the operator steers it with his feet. Power is provided by an 18-hp. twin-cylinder Briggs & Stratton motor (West says a 5 hp. motor probably would have provided enough power) driving a garden tractor rear end and a VW transaxle that chain-drives both rear wheels, mounted on VW hubs and brakes. The buggy's fitted with a centrifugal clutch and a hand throttle. West says when he's spot spraying, he holds a spray wand in one hand and the throttle in the other.

The buggy's fitted with a 2.5 gal. spray tank and a 12-volt electric spray pump. West can cover 50 acres a day with the rig. He raises 130 acres of seed beans in narrow 18-in. rows.

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Jensen liked the threshing ability of his 1980 Belarus combine but he had trouble with the drive train and other components. Using salvaged Gleaner parts, he built this "like new" machine.

## "HAS THE BEST FEATURES OF A BELARUS AND GLEANER"

# He Built His Own Combine

"I built my own combine for \$10,000, saving about \$90,000 on the cost of a comparable new one," says Perry Jensen, Churchbridge, Sask., who merged the threshing mechanism of his 1980 Russian-built Belarus SK-6 combine with the hydrostatic drive axle, 4-speed hydrostatic transmission, tires and rims, unloading auger and entire hydraulic system from a wrecked 1977 Gleaner L-2 combine.

"It has all the best features of both the Belarus and Gleaner. We bought the Belarus combine new in 1981 and used it for four years before deciding that we either had to make some changes on it or trade it in," says Jensen. "The V-6 diesel engine was fuel efficient and the combine had good threshing capacity due to the dual 60-in. cylinders, long straw walkers and sieves. However, the clutch and variable 3-speed transmission caused me endless trouble, especially in heavy swaths. It would never travel at the right speed but was always either too fast or too slow. I usually combined in first gear, but in heavy swaths I couldn't slow down so I had to use the clutch constantly, which caused the belts to stretch and the feeder auger to plug up. The gears shifted hard and I couldn't turn sharp enough on corners. In addition to the drive train, we also wanted to improve the hydraulics, unloading auger, grain tank capacity and cab visibility.

"A new Belarus would have cost \$100,000 so I decided to rebuild the old one. I paid just \$2,650 for a junked Gleaner which was wrecked when it rolled off a semi. Its power train was still intact but was surrounded by crumpled sheet metal and threshing parts. I gambled that the hydrostatic drive and transmission would still work, and they did. The new drive train alone solved so many problems in heavy swaths that I can hardly believe I'm using the same combine. Now I usually combine in third gear, and can slow down to a crawl in every gear except fourth. The hydrostatic transmission is also more fuel efficient and uses less horsepower than the Belarus transmission."

To install the new hydrostatic drive, Jensen pulled out the Belarus drive train and reversed the tires and rims on the Gleaner axle which added 10 in. of clearance to allow it to fit under the Belarus. He bolted a

6-in. I-beam along the top of the axle in order to keep the combine at the proper height. The Belarus transmission was driven off the right side of the combine, but the Gleaner transmission was driven off the left side. To solve the problem, Jensen installed a belt-driven shaft which runs from the engine through the cleaning fan's air chamber to the hydrostatic transmission. He also installed the Gleaner's hydraulic system using the original oil pump, reservoir and cylinders. "The Belarus hydraulic system worked at low pressure, causing the steering and header lift systems to work slowly. The Gleaner's hydraulic system uses high pressure so it responds much faster," notes Jensen.

The next step was to install the Gleaner's swing-down unloading auger. "The unloading auger on the Belarus was so low it just cleared our tandem grain truck," says Jensen. "The Gleaner's swing-down unloading auger easily reaches over the truck. Also, we couldn't turn sharp enough on corners so we installed the Gleaner's hydraulic steering cylinder which has a longer stroke than the Belarus. We also placed the tie rod on the other side of the axle, making it possible to turn a 90° corner without using the wheel brakes."

Next, Jensen went to work rebuilding the Belarus cab, substituting the Gleaner's floor pan, seat, and overhead console. The operator originally sat between two grain tanks and entered the cab from the rear, next to the motor. Jensen extended the cab 2 ft. forward for a better view of the header, and joined the two grain tanks together to boost capacity from 80 to 120 bu. He cut off the front cab panel, as well as part of the tapered side panels and roof, and installed the Gleaner's floor, welding 2 extra ft. of sheet metal in front of it. He replaced the rear door with sheet metal and built a side door in the cab. He also put tinted glass in the cab, and lined it with insulated padding to reduce the noise level.

Jensen sold the Gleaner's engine for \$3,800 and other parts of the combine for \$500.

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Vol. 13, No. 4, 1989

**Publisher and Editorial Director** - Harold M. Johnson  
**Editor** - Mark Newhall  
**Associate Editor** - Bill Gergen  
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**FARM SHOW** is published bimonthly for \$11.95 per year (\$14.95 in Canada and foreign countries) by Farm Show Publishing Inc., P.O. Box 1029, 20088 Kenwood Trail, Lakeville, Minn. 55044. Second class postage paid at Lakeville, Minn., and Madelia, Minn. POSTMASTER: Send address changes to FARM SHOW, Box 1029, Lakeville, Minn. 55044 (ph 612-469-5572). Single copy price is \$2.00 (\$2.50 Canada). Publication No. 470870

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JULY-AUGUST, 1989