Three-Wheeled Sprayer Built From Old Combine, Pickup Parts

George Kulyk, Wadena, Sask., took the engine, rear tires, and planetary drive front axle from a 1966 Massey Ferguson 410 combine and put them together with the rear end, transmission, and power steering from a 1974 Chevrolet 3/4-ton pickup to build a three-wheeled, self-propelled sprayer equipped with an 800-gal. tank and a 60-ft. boom.

Kulyk built the sprayer frame from 4 by 6-in. rectangular tubing and used the combine's front axle as the sprayer's rear axle. Power is supplied by the combine's Chevrolet 292 cu. in. 6-cylinder engine. Kulyk installed the 4-speed pickup transmission upside down so the planetary drive on the axle would turn the rear wheels forward. The combine's 18.4 by 26 rear wheels mount at the back of the sprayer and a single 16.00 by 16.00 flotation tire, removed from an old Cockshutt combine, supports the front of the sprayer. Kulyk widened the axle 2 ft. so the spray tank would fit between the wheels. The cab was salvaged from a late 1960's White 4-WD tractor. The boom's five 12-ft. sections are supported by the torsion bar suspension system from a 1968 Plymouth car, as well as springs and shock absorbers.

"I built it because I wasn't happy with sprayers on the market," says Kulyk. "Most of them use 40-year-old technology that doesn't provide accurate enough application rates, and their ground-driven piston pumps don't provide enough constant nozzle pressure to maintain a good spray pattern. My sprayer uses a double overlap with 20-in. spacings and the thorough coverage allows me to reduce herbicide use by one fourth. If one nozzle isn't working properly, the nozzle beside it ensures at least 50% coverage. The cab offers excellent visibility because it's high off the ground and the booms are only 10 ft. behind me. I have a clear view of the boom from either side window. The boom always stays level because the torsion bar suspension system keeps it from rocking back and forth. The springs and shock absorbers that connect the boom to the parallel linkage behind the tank allow the boom to ride smoothly even on rough terrain. The combination of torsion bar suspension system, springs, and shock absorbers allows me to spray at speeds up to 15 mph. Under ideal conditions I can spray up to 100 acres per hour. The booms ride only 30 in. off the ground, reducing drift and providing better herbicide coverage. Filters on both the intake and pressure sides of the pump, as well as in the boom, keep the nozzles from plugging up. I haven't plugged a nozzle in five years and electronic boom controls allow me to adjust boom height right from the cab."

The booms are controlled by three Delavan electric solenoid valves - one valve for the center 12-ft. section and one valve for the two 12-ft. sections on either end. They can be adjusted from 30 to 60 in. high and can be folded in or out in less than a minute to a transport width of 14 ft.

Kulyk built his own foam marker by borrowing a belt-driven air pollution pump removed from a 1981 Chevrolet Suburban, and an old hot water tank. The foam marker is controlled with two ball valves controlled from inside the cab. "The pollution pump doesn't drain the battery like an electric compressor and supplies more than enough air to handle the 6 to 8 psi working pressure of the foam marker. It allows me to spray up to 400 acres with one 25-gal. fill of foam," notes Kulyk.

The sprayer pump is driven by a pto shaft running off the transmission. It operates at 1,150 rpm to spray 90 gpm at 40 psi.

Kulyk spent $7,500 to build the sprayer.

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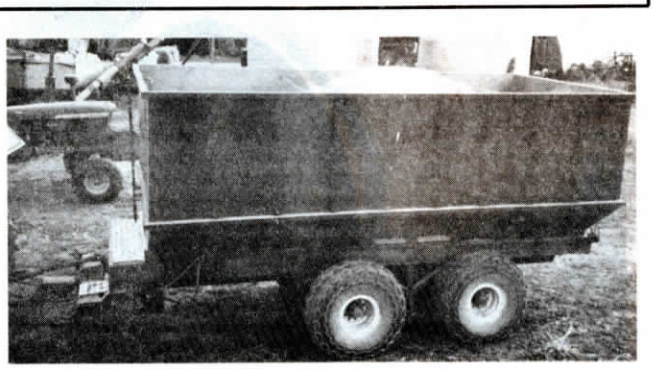

"Loader Ladder" Makes Paint Jobs Easy

Myron Sorensen didn't like climbing up wobbly ladders when he painted barns, so he welded steel rungs along one of the arms on his Dual front-end loader. The rungs lead to a 12-ft. long, 2-ft. wide scaffold mounted on the bucket of the loader.

"Painting on ladders isn't very safe and you always have to stop and move the ladders," says Sorensen. "I tried painting while standing inside the loader bucket, but I couldn't paint a wide enough swath. Also, if I was painting alone I always had to use a ladder to climb up into the raised bucket. Now I just drive the tractor up to the barn, climb up the loader arm and start painting. By raising the bucket 15 ft. and using an airless paint sprayer equipped with a spray nozzle mounted on the end of a 15-ft. long pipe, I can paint a 30-ft. tall barn without even using a ladder. The modified loaders also worked great for installing gutters on our two-story house."

Sorensen used 1 1/2-ft. lengths of angle iron to make the ladder rungs. The rungs extend 6 in. on either side of the loader arm. To make the platform he bolted two 3 by 12 planks onto an angle iron framework that's bolted to both ends of the bucket. He bolted more angle iron onto the back side of the bucket to make a safety railing.

"Next time I might use 16-ft. long planks so we could paint an even wider swath," notes Sorensen, who locks hydraulic valve levers to secure the loader in the "up" position.

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650-Bu. Grain Cart Built From Frames Of Combines

Roger Cohrs, Glencoe, Minn., built a 650-bu. tandem axle grain cart using the frames from a pair of big pull-type pea combines.

Cohrs welded together the hitch and front half of the frame from a Hamachek pea combine and the rear half of the frame, including the tandem axles, from an FMC pea combine. A pto shaft operates an unload auger, which runs along the bottom of the hopper, as well as a hydraulic pump. A hydraulic cylinder at the rear of the hopper controls a series of sliding plates over 8-in. wide openings that alternate with solid floor above the auger. By flipping a hydraulic lever, Cohrs slides the plates back and forth to control the size of the openings and grain unloading speed.

"We pull the cart with our 125-hp International 1066 tractor. We paid $150 for each combine and spent a total of less than $600 to build the entire grain cart. A comparable-size commercial cart costs about $7,000. It works better than a conventional grain cart because it does a better job of controlling auger unloading speed."

The FMC combine was equipped with a hydraulic cylinder on each 18.4 by 16.1 tire which allows Cohrs to raise or lower each side of the hopper from the tractor. "We can raise the cart 3 ft. above the frame which allows us to unload grain into openings too tall for a conventional grain cart."

The frame members are 4 by 8-in. tubing with 3/8-in. sidewalls. Cohrs welded 8-in. sq. tubing across the frames to tie them together. "Everything from the front of the wheels back is the FMC combine frame," says Cohrs. "We didn't use the entire FMC frame because it widened toward the front and the hitch was too high for hookup to the tractor drawbar. The Hemachek combine didn't widen in front and its hitch was the right height for hook-up."

He used 2 by 4 steel tubing to build the framework for the 20-ft. long, 9-ft. wide, 8-ft. high hopper and covered it with 14 ga. sheet metal. The sliding plates are welded to a 1 1/2-in. dia. sq. shaft that's connected to a 3 by 8-in. hydraulic cylinder at the rear of the hopper.

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