

Home-Built Sprayer Looks Factory-Built

By Mick Lane, Contributing Editor

Dennis Cotter, Osceola, Wisconsin, says using a tractor to spray crops was costing him a lot of money.

"We had a tractor mounted boom with side saddle tanks and it all worked fine," he says. "But with about 3,000 acres of corn and soybeans, we were putting 400 hours a year on a \$150,000 tractor with front wheel assist. All those hours were eating into the trade-in value of the tractor. And if we didn't want to knock down a lot of the crop, we had to take off the duals. It was a lot of work and a waste of a valuable machine."

Cotter solved his problem by making his own self-propelled sprayer from a 1984 PixAll sweet corn picker.

"It's an articulated machine with the engine in the rear, the harvesting unit in the middle and the picker head on the front," he says. "I got it from a junkyard for about \$2,000."

Cotter stripped off the corn picker and harvest unit and then had a friend use a computer assisted design (CAD) program to determine how he should position the tank and cab on his soon-to-be sprayer.

"The program said we needed to have 60 percent of the weight on the rear axle and 40 percent on the front," Cotter says. "I figured if we put the cab and fuel tank up front and the spray tank over the rear axle, that would do it."

Cotter wanted the wheels spaced at 120 in. on center, and intended to use high narrow

tires on it, so he took measurements and sent the specs to Hanson Tire and Wheel, Austin, Minnesota, to have wheels and hubs made to fit the Pixall axles. "They designed and manufactured the hubs and wheels and delivered them to me with new tires for just \$4,500," he says.

He also wanted a modern cab on his machine. "The cabs on their newer machines resemble those on Deere combines, so I bought a cab for it that was salvaged from a 9500 Deere combine," he says.

In his shop, he moved the PixAll fuel tank from the rear of the frame and mounted that on the front axle. Then he made mounting brackets that allowed him to put the 9500 cab on top of the fuel tank.

He mounted the 460 6-cyl. Deere engine from the PixAll behind the cab, using the old engine mounts. "We just moved everything forward," he says.

He measured the two-point hitch that mounted his old 60-ft. Demco hydraulic fold boom on the tractor and duplicated that on the back of the old Pixall frame. Not only was he able to use the old boom, he used the sprayer pump from the old system, too.

The next step was mounting a 1,000-gal. poly tank behind the engine.

Once that was done, he added electric over hydraulic controls salvaged from a 3960 Deere forage chopper to allow him to fold/unfold, raise/lower, and control the nozzles on three sections of the boom, all using the



Dennis Cotter built his own articulated, self-propelled sprayer from a 1984 PixAll sweet corn picker.

buttons that were in the 9500 cab. "All we had to do was change the labels on the controls," he says. Solenoids even allow him to shut off spray to the nozzles on both ends of the boom to prevent overspray on field ends.

The Pixall picker had four wheel drive, but the operator had to get off the machine to lock them. "We automated this with a kit designed to open and close the feederhouse on a Deere combine, using small electric motors. We mounted the motors so they'd operate the levers. It works great."

Cotter added ladders and walkways to give him access to all areas of the sprayer. When

he was through, he painted everything in John Deere colors. "One guy who saw it asked where he could get a John Deere sprayer like it," he says.

Cotter figures he spent about \$23,000 to build the sprayer. That includes the Pixall, \$4,000 for the cab, \$4,500 for the new wheels, hubs and four new Firestone 14.9 by 42-in. tires. And both windshields.

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"Chopped" Garden Tractors Rebuilt For Heavy Work

Guys who chop motorcycles to make them something more than came off the factory floor have nothing on Loren Arledge. He chops garden tractors to customize them and builds his own loaders, backhoes, trenchers, forklifts and other implements.

What's remarkable about the several tractors that Arledge has built and rebuilt is the quality. He takes the time to do things right. "It took five years to build a backhoe," says Arledge, who also put a loader on the tractor. "The loader is Allis Chalmers. They said it couldn't be mounted on the Cub, but I did it."

The secret to how he hangs such heavy implements on garden tractor frames is the way he holds 4-in. channel irons to the bottom of the frame. On the 160, they form the base for both loader and backhoe. At the back end of the tractor, an upright frame mounted to the base supports the cylinders and arms. Sections of 4-in. pipe form the arms of the backhoe, and hydraulic cylinders on the sides of the frame push outriggers into the ground. This lifts the wheels off the ground, stabilizing it during a dig.

Arledge organized the control valves for the various cylinders in a row on top of the rear uprights. To access them, he adapted his seat so it would swivel around. This allows him to face the backhoe and rest his feet on the outrigger cylinders.

To mount the loader, Arledge welded a 4-in. sq. tube across the channel irons bolted to the frame and midway between the front and back wheels. Support braces also extend to the front end of the tractor frame.

The channel iron supports also extend out in front of the tractor frame. A 10-in. channel iron welds across them just ahead of the tractor. A 3 by 10-in. plate is welded to it and provides a base for the hydraulic pump. The oil reservoir is attached to a side arm of the loader.

Even after all of that, Arledge wasn't done. "I put duals on the Cub to carry the backhoe by welding pieces of steel tubing to the back wheels and then welding plates on them to

bolt the second set of wheels."

Another one of his tractors is a Cub 122 with a dozer blade and tracks. He used an International rear end with a creeper gear, perfect for slow turns when pushing a big load.

He first beefed up the frame with 4-in. channel iron. To make room for the tracks, he had to extend the wheels away from the sides of the Cub. Arledge found front and back axle hubs from a car that matched up to the Cub Cadet axles. He also extended the axles to make room for cog gears beyond the wheels. A chain from the rear drive cog gear carries power to the front axle, making the Cub all-wheel drive. Original disk brakes on the front axle controlled by levers on each side and regular foot brakes on the rear allow Arledge to pivot the dozer as needed.

The tracks themselves are made from 2-in. angle iron welded to 2-in. iron plates to form treads.

On another project, Arledge took parts from two tractors and built an articulated one. In another case, he rebuilt a garden tractor to attach to a trencher.

He also took parts from two tractors and extended one frame 10 in. so he could install a V-8 engine. He had to fashion a new frame around an old car radiator and make a new hood to fit the engine and hold an air cleaner and carburetor. He kept the transmission and drive train from the original Cub Cadet.

"When we hooked up the transmission, we realized we had three gears reverse and one forward," says Arledge. "The Cub drives forward, but the V-8 drives backward, so I had to reverse the pinion gear."

Arledge also bolted a plate to the V-8 flywheel and bolted the clutch plate to that to keep it from flying off.

"We don't run it fast," he says. "I have a screw on the floorboard that keeps the throttle from going down too far. It would be dangerous to run it wide open."

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Loren Arledge chopped up and rebuilt a Cub Cadet in order to fit it with a backhoe and loader.



Another one of his tractors is a Cub 122. He fitted it with a dozer blade and tracks.



He made this tractor by taking parts from two tractors so he could install a V-8 engine.



This articulated tractor was also built from two tractors.