Beer cut off part of bus and mounted a 700-gal. fiberglass tank on frame. Note tall 38-in. tractor tires on back.

Old Bus Makes Great Field Sprayer

When Dan Beer, Syracuse, Indiana, decided to build a self-propelled sprayer, he went looking for a combine he could convert.

"There just weren't any available - at least not at a reasonable price," he says.

He talked to a member of his local school board, though, who told him about a virtual gold mine of retired school buses.

"He encouraged me to try to use one of those old buses," Beer recalls. "So I bought one that seemed to be in good condition for $900."

He sold the original duals for $300 and fitted the bus with longer 38-in. tractor tires. He had to make centers for the wheel to fit the bus's 10-bolt hubs. He made them out of a 1/2-in. steel plate.

Beer cut the bus body off behind the first row of passenger seats, leaving one window behind the driver's seat. Then he cut off the rearmost section of the body and welded it on the back of the front section he saved.

"I was using a little sprayer with a John Blue ground-driven pump. We put that up on the frame of the bus, complete with its 700-gal. fiberglass tank. We located the ground drive wheel for the pump so one of the bus tires would run it," Beer says.

Even with the sprayer and tank mounted on the back of the bus frame, there was still quite a bit of room left. "We mounted a 300-gal. water tank on the frame and still were able to cut off about 3 ft. of the frame at the back.

"With these big tires on the back, people often ask how we get along with tire ratio and the transmission. The bus transmission has a 'granny' low gear, so we get along fine as long as we're going forward. I have to tell you, though, that in reverse it's a little fast and I have to ride the clutch a little in order to control it when I'm backing up," Beer says.

He uses a 60-ft. boom that hangs on the bus frame between the cab and the spray tank.

The boom is made of 2-in. sq. steel tubing, with a 1-in.sq. tube behind it, to give him a place to mount the nozzles without having to change the way they mounted. Each boom section mounts to the frame with a hinge that is made so he can position the boom sections at three different heights.

To hold the boom horizontal when it's unfolded, Beer attached lengths of chain to the boom about 8 ft. from the end of the boom. They run to an upright brace on the bus.

The boom hinge swivels so when the boom is folded back, the front section of the chain tightens first and pulls the boom up, so it rides above the back tires.

He used 2-in. sq. tubing to make the boom, which has a 1-in. tube behind it where nozzles mount.

Each boom section mounts to frame with a hinge that's made so he can position boom sections at three different heights. Note 300-gal. water tank on frame.

While pump is ground-driven, he has an electric solenoid switch that can shut off the nozzles and still allow him to keep the lines pressurized.

To spray under the bus, he mounted nozzles on the back bumper.

While the pump is ground-driven, he has an electric solenoid switch that can shut off the nozzles and still allow him to keep the lines pressurized. That way he can build pressure and maintain it. "If I need to build up a little pressure, I can just speed up," he says.

A big advantage of using a bus is the ride. "It's sprung for a smooth ride, so I can operate at 20 mph across the field if I want, and the boom stays fairly level," he says.

Contact: FARM SHOW Followup, Dan Beer, 3468E 1300 N., Syracuse, Ind. 46567 (ph 219 457-4633).

"It took several tries to get it right, but now we hardly ever see a puff of anhydrous behind our toolbar," says Nick Reed, who attached lengths of twisted chain to knives.

Chain Keeps Anhydrous in the Soil

Sealing side-dressed anhydrous in the soil has long been a problem for no-tillers, especially in damp soils and the firmer soils in no-till fields.

Nick Reed, who farms with his brothers Paul, Kevin and Ken near Washington, Iowa, solved the problem with a simple length of chain.

"It took several tries to get it right," Reed says, "but now we hardly ever see a puff of anhydrous behind our toolbar."

The Reeds are long-time no-tillers. They open up the soil for just two reasons: to plant and to sidedress nitrogen fertilizer once the corn is up. While they like the economics of anhydrous, they didn't like the losses they assumed were occurring when they saw the wispy trails of anhydrous behind their rig.

To keep soil disturbance to a minimum, they run a knife between every other row. That meant using higher injection pressures of 50 to 70 psi.

Reed points out that the high pressure itself is enough to blow soil away from the injector and make it more difficult to seal.

His first step in solving the problem was to add a second delivery tube to each injector. By running two hoses from the manifold to each injector and using two separate tubes, they could put on the same amount of anhydrous at half the pressure.

He added covering discs behind the injectors to bring loose soil back over the slit. When the discs were set at the recommended distance behind the injector knife, some anhydrous was escaping before the discs could do their job. When he moved the discs forward to cover the slit closer to the coulter, they couldn't recover enough of the soil loosened by the injector to cover the slit. Of course, they could have run the covering discs deeper, but that opened up too much soil and ruined the chemical barrier created by their surface-applied herbicides.

Reed decided to go underground. He reasoned that filling the open slit just above the anhydrous knife outlet was better than working the soil on the surface. Just how to do that was a bit of a challenge, but eventually, he settled on a length of twisted chain fastened to the knife two inches above the outlet in the anhydrous. The twisted chains he used are crossbars from a set of salvaged road grader chains. He used a longer straight link from the side chain on the same set of chains to attach the twisted chain to the knife. To do this, he cut the end off the straight link, inserted the link on one end of the twisted chain, and then welded both sides of the straight link to the knife.

Photo shows how chain attaches to shank. Note two anhydrous tubes on knife.

He says the links in the twisted chain, which are wider than the anhydrous injector, fill with soil as they drag through the soil behind the knife. This seals the area right above the anhydrous outlet so it spreads into the soil instead of vaporizing and shooting up to the surface through the open slit.

Reed says the drag chain, which is fastened at just one end, should be at least 1 ft. long. At the same time, it should be long enough to extend back behind where the covering discs are doing their job. That way they've covered the slit back over before the chain has completely passed by.

With the chain and covering discs in place, Reed says you can run at shallower injection depths and increase field speeds (he's been running at 9 to 11 mph this year) while still doing a good job.

Contact: FARM SHOW Followup, Nick Reed, 1774 270th St., Washington, Iowa 52353.