



Roger Hade widened the front axle on his Deere 4640 to 120 in. and turned the rear wheels around so they'd also be spaced 120 in. apart.

ALL FIELD TRIPS MADE IN THE SAME TWO ROWS

"Stretched" Tractor Axles Reduce Soil Compaction

Roger Hade, Harcourt, Iowa, and Kelly Blair, Dayton, Iowa, "stretched" the axles on their 4640 Deere tractors to 120 in. to reduce soil compaction between rows.

Hade, who uses 12-row equipment, makes all of his field trips in the same two rows out of each twelve. Blair, who uses 8-row equipment, makes all of his field trips in the same two rows out of each eight. Both farmers worked with a local machinist, Vern Bower of Payton, Iowa. Bower made extension brackets that form a box around the front axles and replaced the existing tie rods with longer ones. To widen the rear axles to 120 in., the farmers simply turned both wheels around so the convex side of each hub faces the tractor and mounted them at the ends of the axles.

"From planting up to harvest, we make all our field passes in the same two rows," says Hade, who has used his controlled traffic system for three years. "We plant on 30-in. spacings and use a 12-row planter and cultivator, but we harvest with a 6-row combine. We plant and place fertilizer in the same place every year. During planting we also band herbicide over the row. We apply Lasso with a 30-ft. field cultivator with marker arms to guide the planter, which I pull with the 4640 tractor in the same tracks. We knife anhydrous ammonia into every other row on 12 rows and never put a knife in a compacted row. We also widened the axles on our 4-WD Deere 8630 tractor. We use it in the fall to deep place fertilizer on 30-in. spacings and rip every 15 in. to wipe out compaction from wheel tracks. We also use it to pull our field cultivator."

According to Hade, the controlled traffic does reduce soil compaction. His penetrometer readings show the equivalent of 43 1/2 lbs. psi to 58 psi in the wheel tracks, compared to less than 29 psi in the rest of the field.

Blair, a ridge farmer, uses all 8-row equipment so he compacts only two out of eight rows. He's used his system for the past two years. "Ridge farming results in fewer passes and no wheel tracks in the rows because you never work the ground diagonally. We wanted to further reduce the number of wheel tracks to reduce between-row compaction. Our 8-row combine straddles four rows and the tires can't be brought in, so we widened the tractor's axles and switched to



Kelly Blair widened his tractor axles so they'd match the width of his combine wheels. He uses all 8-row equipment and always runs in the same two rows.

single tires so we can go in the same wheel tracks made by the combine. Studies indicate that duals squeeze the sides of the ridges enough so that the row between the duals shows the effects of soil compaction. By switching to single tires we're squeezing only half as many rows and the opposite side of each squeezed row has a free root system. We've found that once rows are compacted by the combine, further compaction is limited and much less horsepower is needed the following spring on compacted rows than on non-compacted rows. I've never compared yields while combining, but an eyeball look of the crop last year convinced me that non-compacted rows showed more vigor and yield potential. Another benefit of wide axles is that they stabilize my 40-ft. wide sprayer.

"There is a risk to widening the axles in that Deere won't honor their warranty on modified axles. However, I feel confident the axles will hold. I wouldn't want to pull a heavy load behind a tractor with widened axles, but there's no problem pulling a planter and cultivator. If I fall behind cultivating, I can use my International 2 plus 2 4-WD tractor to pull a second cultivator. The 2 plus 2 does pack another two rows, but its axles aren't built as strong as the Deere 8630 so I haven't widened them."

Hade says he has his local Deere dealer check the bearings and axles every year. "We haven't noticed any undue wear."

Hade and Blair also double up on field trips to limit compaction. "I spray poste-



Kamen strips the truck of everything but the chassis which he cuts to match the length of whatever gravity box wagon he plans to use.

Old Truck Converted To "Pulling Wagon"

"Converting old trucks into pull-type wagons gives you most of the benefits of hauling grain with a truck but without paying for a truck license and insurance," says Don Kamen, Farmington, Minn., who custom builds "truck wagons" by mounting conventional gravity wagon boxes on the shortened-up frames of old junked out single axle trucks.

Kamen strips the truck of everything but the chassis, which he cuts to match the length of whatever gravity box wagon he plans to use. Then he bolts the box onto the chassis and mounts a telescopic hitch on the front axle.

"The truck suspension and tires provide these wagons with several benefits over conventional gravity box wagons equipped with flotation tires," says Kamen, who so far has built four "truck wagons" using International, Chevrolet and Dodge trucks. "Truck tires are built heavier than flotation tires so you can pull a 'truck wagon' at greater highway speeds. Flotation tires often blow out when pulled at highway speeds, and replacing them is expensive. The rear axle is equipped with duals which help stabilize the wagon, and springs on the rear

axle create a 'rocking bolster' effect that allows the wagon to ride smoother. Removing the springs from the front axle reduces sway so the wagon won't tip over easily."

Truck tires are taller than flotation tires, which provides more unloading clearance, notes Kamen. "The unloading spout is about 2 ft. off the ground compared to about 1 ft. on a conventional gravity box wagon. It's much easier to clear the hopper on a grain auger."

Kamen first came up with the idea for building "truck wagons" when he replaced the bed of an old Chevrolet truck with a gravity wagon box. He used the rig to fill the fertilizer hoppers on his planter. The idea worked so well that when the truck's engine failed, he stripped away everything but the gravity box and chassis, which he converted to pull-type.

Kamen says the truck frame can also be equipped with a flat deck to haul liquid fertilizer nurse tanks. He says it costs about \$400 to make the conversion.

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Kamen removes the springs from the front axle to reduce sway.

merge herbicide and apply granular insecticide in the same pass," says Hade. "When I switch to narrow rows for soybeans, I remove the box and replace the tie rods with shorter ones." Blair cultivates and sidedresses corn at the same time. He also bands liquid nitrogen and herbicide while

planting. On beans, he spot sprays postemergence grass killer in a band while cultivating.

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