

Ivan and Roy Zimmerman mounted spring-loaded sensors on the snout of their Deere 3940 2-row forage harvester. Sensors deflect when hit by stalks of corn sending a signal to hydraulic tongue positioner which moves harvester back on center of row.

## ROW GUIDANCE SENSOR KEEPS PULL-TYPE FORAGE HARVESTER ON THE ROW

# Self-Steer System For Deere Chopper

"It automatically keeps our forage harvester on the row and cost less than \$20 to build," say Ivan and Roy Zimmerman, Denver, Penn., about the home-built row guidance system they added to their Deere 3940 2-row, 38-in. row pull-type forage harvester.

The Zimmermans patterned their system after a commercial guidance system that wasn't available for their chopper model. Spring-loaded sensors mounted on the snout of the harvester deflect when hit by stalks of corn. This sends a signal to the hydraulic tongue positioner, which moves the harvester back on the center of the row.

"Our system keeps the harvester from slipping off the row and eliminates the stress of always having to look back, even on curving rows," says Roy. "The tongue automatically moves as much as 24 in. from side to side. Even when making a sharp turn at the end of the field, the harvester always stays on the row."

"We bought the forage harvester used. It already was equipped with a bank of 4 hydro-electric valves and a hydraulic tongue swing cylinder. The 4 valves, operated by switches mounted on a control box on the tractor, are designed to control the forage harvester's deflector, header height, spout, and feed rolls. The tongue swing is designed to be operated by a second hydraulic valve and dual outlet on the tractor. However, we didn't have a second valve nor did we want to spend the money on one. So we disconnected the valve that controls the chopper feed rolls and used the extra valve to power the tongue swing cylinder. We seldom use

the feed rolls while chopping so it's no bother to operate them manually for sharpening. The tongue swing valve is controlled by a pair of microswitch sensors mounted on the chopper snout."

Zimmerman notes that he actually disconnected both the feed rolls and deflector valve controls. He uses the feed roll valve to run the deflector and the deflector valve to run the tongue swing because the feed roll valve didn't have enough pressure to operate the tongue swing.

The row sensors consist of a pair of 1 1/2-in. wide, 1/8-in. thick, 3-ft. long flat spring steel springs removed from the head of an old Allis-Chalmers forage harvester. One end of each spring bolts to the front end of the harvester's snout. A microswitch mounts on each side of the snout and is wired to the valve controlling the tongue. When the spring deflects against stalks of corn, it causes the microswitches to send signals to the hydraulic tongue positioner which automatically moves the harvester back on the center of the row.

A 3-in. long rubber piece on the ends of both steel springs eliminates any clattering noise. Zimmerman notes that the curvature of the springs is critical so that they won't bounce in and out between stalks. His springs have an 8-in. long "flat spot" that runs against the stalks. In narrower rows the flat spot might have to be 12 in. long if plants were spaced further apart within the row.

Contact: FARM SHOW Followup, Ivan Zimmerman, RD 1, Box 408, Denver, Penn. 17517 (ph 215 267-2459).

## LEAVE AN EASY MARK TO FOLLOW

# Old Planter Markers Make Nifty Spray Boom

"We were having trouble with skips and overlaps when spraying. We had a set of markers from an 8-row White planter and decided to try to make a sprayer out of them," says Lloyd Conner, who farms with his sons Wendell and Dale.

The men mid-mounted the marker arms on the frame of an older Allis Chalmers tractor and ran sprayer hose out to the ends of the arms. At the ends of the booms they ran a brace up from the marker disc to support an added piece of boom that keeps the spray line parallel to the ground.

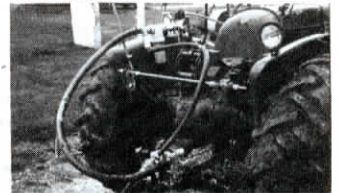
The marker arms are raised and lowered by steel cable that runs through a series of pulleys to the rocker arms at the back of the tractor. Raising the rocker arms folds up the marker arm booms.

Spray power is provided by a pto-powered pump. A spray tank trails behind the tractor on a 4-wheel trailer. "We just leave 30 in. between the marks when spraying and we cover everything. Makes spraying much easier and the cost was minimal compared to a commercial spray rig," says Lloyd.

Contact: FARM SHOW Followup, Lloyd E. Conner, Rt. 2, Box 625, Yorktown, Ind. 47396 (ph 317 759-5759).



Conner mounted White planter marker arms on an old Allis Chalmers tractor.



Marker arms are raised and lowered by steel cable that runs through a series of pulleys to rocker arms at back of tractor.

## ADJUSTABLE CENTER SECTION BOLTS IN PLACE

# Add-On Kit Lengthens Case/IH Combine Axles

A new adjustable center section for rear Case/IH combine axles makes it easy to keep wheels off ridges to avoid knocking them down at harvest.

Phillip Grothen, A-G Manufacturing, says that in addition to helping protect ridges, his add-on axle widening kit also provides increased stability, allows more room in back for residue spreading equipment, permits the use of larger tires, and makes steering easier.

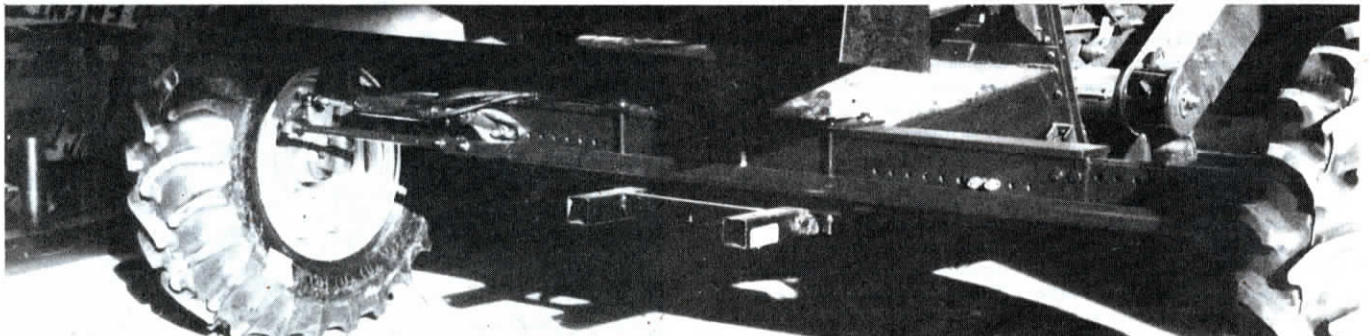
Designed for 1660 to 1680 combines as well as older 1400 series IH machines, the kit lets you adjust rear wheel track width from a minimum of 120 in. to a maximum of 148 in. in 4-in. increments.

"It eliminates the headaches of broken axles when farmers try to widen factory-built center sections that weren't made to be

widened to the maximum. The center swivel shaft on our axle kit is constructed from solid 4-in. material. The support section is made of 3/4-in. thick plate. It's a bolt-on kit. The only modification is to the tie-rod. We supply a tie rod lengthening kit with every axle kit," says Grothen.

Sells for \$590, not including installation. "We recommend that buyers have a local dealer install the kit since it requires a 10-ton floor jack and a good cherry picker to lift the center section, which weighs about 560 lbs.," says Grothen, who adds that Deere and Deutz/Allis already offer a factory-built wide axle option on their combines.

For more information, contact: FARM SHOW Followup, Phillip Grothen, A-G Manufacturing, Rt. 1, Box 16A, Juniata, Neb. 68955 (ph 402 751-2580).



Center swivel shaft on the axle kit is constructed from solid 4-in. material. The support section is made of 3/4-in. thick plate. The only modification is to the tie-rod.