



"Blade-And-Boom" Tractor

"I think it's handier to use than any tractor on the market because it can do so many jobs," says Karl Darge, Mankato, Minn., about his "blade-and-boom" tractor that's equipped with a front and rear-mounted blade, as well as a rear-mounted boom and winch.

The one-of-a-kind tractor also is equipped with a hand-held sprayer that Darge uses to spray apple trees as well as for weed and mosquito control.

"I needed a garden tractor and looked at commercial ones, but they cost too much money," says Darge, who built his tractor in 1982. "I use the 5 1/2-ft. wide, 16-in. high front blade for pushing dirt, and in the winter I replace it with a 22-in. high blade for pushing snow. I use the 5-ft. wide, 12-in. high rear blade to scrape snow off my blacktop driveway and to push out tree stumps. It has a lot of downpressure because it's mounted on a 3-pt. hitch. The boom is really handy. I built it in two sections. One 30-in. long section is permanently mounted and is hollow. I can slip either an 8 ft. long boom or a 15 ft. long boom into it. By mounting a 2 by 6-ft. scaffold and 'hold-on' hoop on the end of the 8-ft. long boom I can stand on it to paint my house or to pick apples. I fill 5-gal. pails with apples and let them down with a rope. I use the 15-ft. long boom with the winch and 100 ft. of cable. It works great for shingling roofs. I built a platform that hooks onto the end of the cable and holds three bundles of shingles at a time. The tractor has tremendous power for its size because it's geared down. I can drive at fast idle against a tree and all four wheels will spin, but the engine won't kill."

Darge built the tractor's frame from 3 by 3-in. sq. tubing. He narrowed up the axles from a wrecked 1966 4-WD Ford Bronco and installed a 4-cyl., 1,700 cu. in. engine, 4-speed transmission, and hydraulic clutch salvaged from a rolled-over 1973 Toyota car. The running gear and transfer case are from the Bronco. There wasn't room to run a driveshaft between the transmission and transfer case so Darge installed a no. 60 drive chain between them. He left the transfer case in low range to reduce the gear ratio. He removed the Bronco's front axle lock-out hubs and replaced them with solid lockups to provide permanent 4-WD. The front differential was damaged so Darge replaced it with the front differential from another Bronco and welded a pivot pin to the top of it that allows the axle to pivot from side to side. The Bronco's front and



rear differentials both had 4:11 gear ratios, but the replacement front differential had a faster 3:50 gear ratio so to make up for the difference Darge mounted 15-in. tires in front and 32 in. tires at the rear.

The 30-in. long permanent boom is fastened by a 1-in. dia. pin to the base of the tractor cab and is raised and lowered by a hydraulic cylinder. The winch, powered by a hydraulic motor, is mounted below the cylinder. Darge installed a Bronco front axle lockout hub on the side of the winch spool and uses it to lock or unlock the spool.

He built the snow blade from 10 ga. sheet metal and the other two blades from 16-in. dia. well casing split lengthwise. Front blade is controlled by a hydraulic cylinder which allows up and down movement. Rear blade is mounted on a 3-pt. hitch which is raised and lowered by a hydraulic cylinder. Another cylinder is used to pivot the rear blade from side to side. There are three hydraulic controls - one for the front blade, one for rear blade, and a universal one that can be used to operate winch, boom, or rear blade.

To use the sprayer Darge mounts a 15-gal. tank on the tractor's front grill and a screw-type Bendix washing machine pump on the right side of the tractor. A fan-driven belt operates the pump which sends spray solution through a 50-ft. long garden hose equipped with a nozzle.

Darge built the cab from 3 by 3-in. sq. tubing and sheet metal. A rollbar runs down the center of the cab and the hood tilts forward for access to the engine. He welded lengths of angle iron on the permanent boom and the 8-ft. long boom to



Army Truck Axle Gives Combine 4-WD

Missouri farmer Carl Dodd converted his 1976 Gleaner M combine to 4-WD by replacing the rear axle with the front axle off a junked-out 2 1/2-ton Army truck and connecting it to the combine's transmission.

Dodd used a front-end loader to lift up the rear of the combine to remove the old axle and slide the new one in. He widened the truck axle by 2 ft. so the rear wheels would follow in the tracks of the front wheels, then welded the centers of the 20-in. truck wheels inside 13.9 by 26 combine wheels salvaged from a Deere 45 combine. A 24-in. long pipe welded horizontally across the center of the truck axle allows it to pivot sideways.

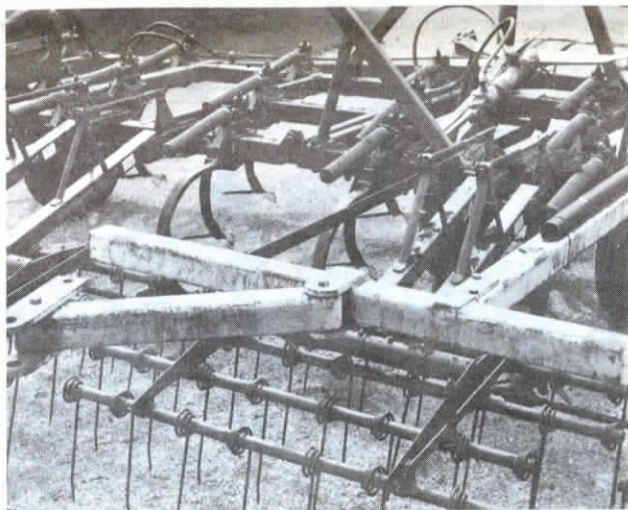
"I built it in the fall of 1985 which was so wet I couldn't get into fields to harvest," says Dodd. "It cost only \$700 to build versus a commercial 4-WD hydraulic assist which would have cost \$7,000. Since I installed the truck axle I've replaced the combine's gear-driven transmission with a hydrostatic transmission. The combine's original rear axle did turn

sharper and was lighter. To compensate for the wider turning radius I just make an extra pass along the ends of fields. When harvest conditions are dry I replace the Army truck axle with the combine's original rear axle."

The front drive wheels on the modified combine are bigger than the rear wheels so Dodd had to find a way to synchronize them. He mounted a gearbox removed from an old pull-type Allis-Chalmers 66 combine on the frame between the transmission and right front wheel. A 1-in. dia. shaft runs from the gearbox to the rear axle. A roller chain connects the end of the shaft to the transmission brake drum. Dodd installed a small sprocket on the transmission brake drum and a larger one on the end of the shaft in order to slow the rear axle down.

He bolted the combine's 9-in. hydraulic steering cylinder to a steel plate that he welded to the truck axle tie rod.

Contact: FARM SHOW Followup, Carl Dodd, Rt. 1, Leonard, Mo. 63451 (ph 816 762-4460).



Rear-mounted swing hitch lets Huff transport two drills behind the cultivator.

He Drills, Tills In One Trip

"I've farmed successfully for 35 years and don't use any herbicides on wild oats thanks to this planting rig I put together," says Robert Huff, Edmonton, Alberta.

"I pull three 9350 Deere Hoe Press Drills behind a 30-ft. cultivator with a rod weeder on the back row of shanks (you can see the rod weeder drive wheel at left in photo). A 4-bar mounted harrow attaches to the back of cultivator. The drill

hitch runs straight back from the tractor drawbar over the top of the cultivator.

"I wait until wild oats reach the 2-leaf stage and then I seed and cultivate the weeds out in one pass. It results in very clean crops."

To transport cultivator and drills, Huff drops off one of the 10-ft. drills and swings the other two drills 5 ft. to the left by pivoting and then repinning the swing hitch (see foreground of photo). Cultivator wings fold to a 20 ft. transport width.

Contact: FARM SHOW Followup, Robert C. Huff, Rt. 6, Box 246A, Edmonton, Alberta T5B 4K3 Canada (ph 403 472-6202).

create a ladder that lets him climb down from the scaffold onto the top of the cab, then down steps on the side of the tractor.

Contact: FARM SHOW Followup, Karl Darge, 108 Bittersweet Lane, Mankato, Minn. 56001 (ph 507 388-8331).