Home-built tractor's Cummins diesel engine, rated at 700 hp, was scaled down to 425 hp.

"Biggest Yet" (425 hp) In Two-Wheel Drive

Two Canadian wheat farmers on the plains of Saskatchewan wanted a big tractor, but they didn't want to pay $100,000 for it. So, they built their own.

The result is one of the "biggest yet" in 2-wheel drive tractors. "We knew we could make it work if we could get big enough rear wheels for traction," says Greg Honey, who built it with his brother Glen.

Their giant tractor is powered by a Cummins V-12 diesel engine. "It was rated for 700 hp, which we scaled down to 425," Greg told FARM SHOW. "The advantage of the extra horsepower is that the engine develops extra torque and is easier on the clutch. With all this power we can start up at idling speed with the cultivator in the ground."

The tractor measures about 19 ft. long, 19 ft. wide and 12 ft. high. It easily pulls a 59 ft. wide field cultivator at 5 to 6 mph.

The Honeys found the large tires and rear end they needed for the 425 hp. "2-wheeler" in a used Clark dozer. Its rear tires measure 3 ft. wide and stand 8 ft. high. They are not weighted with a ballast and carry only 8 to 9 lbs. pressure.

The rest of the components of the tractor are a 13-speed transmission, home-built front axle with standard 23.1 by 26 in. front tires, two 135-gal. fuel tanks, and a modern cab.

All the parts are carried on a frame built of two steel plates 19 ft. long, 2 ft. wide, and 2 in. thick. Each plate weighs 3,200 lbs.

"We're especially proud of the cab which is big, dust-free and quiet," says Honey. "It's equipped with air-conditioning, radio and tape deck, plus a monitoring system. A digital speedometer tells us how fast we are going, and an acre meter tells us how many acres we've planted and our rate of planting per hour."

It took about four months to build the big tractor which they call the "Honey Bee". All the work was done last winter in their farm shop, and the tractor was ready to roll for spring work. By the end of the 1979 cropping season, it had seeded and cultivated about 10,000 acres.

All the parts for the "Honey Bee" cost about $40,000, and the end product is a tractor that would cost $100,000 commercially, the Honeys point out. They might build another one this winter, but they aren't planning to get into commercial production.

For more details, contact: FARM SHOW Followup, Greg and Glenn Honey, Box 82, Bracken, Saskatchewan, Canada SON OGO (ph 306 293-2735).

Trail Blazer automatically couples to implements.

Trail Blazer Power Unit

"This concept is the result of a long search for a better way to combine tractors and implements," explains A. P. Balzer, veteran farm equipment manufacturer and inventor of one of the slickest systems we've seen for self-propelling a wide variety of pull-type equipment.

Called the Trail Blazer, it's a fully hydraulic power unit which features automatic on and off coupling to pull-type equipment, converting it into a highly-maneuverable, self-propelled unit. Its guiding wheels are also the drive wheels. Consequently, drawbar pull is always in the direction of travel. It features 180° steering, making it extremely maneuverable. Ground speed (infinitely variable) and pto speed are independent of each other.

Power for the prototype unit is provided by a 30 hp. gas engine. In hooking up to a pull type baler, mower, rake, swather or other pull type equipment, the automatic hookup is rigid, as opposed to the conventional "hinge pin" hookup with tractor drawbars and pull-type equipment. Without leaving the seat, the driver automatically couples or uncouples the Trail Blazer unit to a pull-type implement in 30 seconds or less.

For moving between implements, a rear tricycle wheel on the power unit is swung into position. When hooked to an implement, this wheel swings up and out of the way.

For more details, contact: FARM SHOW Followup, A. P. Balzer, Box 191, Mountain Lake, Minn. 56159 (ph 507 427-3173).

"OUTPERFORMS 4-WHEEL DRIVE UP TO 350 HP"

A Champion for Two-Wheel Drive

While tractor makers around the world have turned to 4-wheel drive to utilize the engine power available in today's large agricultural tractors, a young enthusiastic engineer and tractor maker in Australia crusades strongly for the 2-wheel drive configuration.

He's Carl Upton, of Uptons Engineering, a country manufacturing firm in Southern NSW. He believes, up to a point, that 2-wheel drive tractors will do everything and more than 4-wheel drive. That point is up to 350 hp!

What's the secret? Carl says there is none: "It's just a matter of weight — plenty of it in the right place — and tires big enough to accept the load at reasonable wheel slip performance."

Well, if it's weight you want, the 2-wheel drive tractors built by Carl Upton are not lacking. How does an operating weight in excess of 51,000 lbs. for a 2-wheel drive sound? Admittedly, we are talking about a 350 hp. tractor (gross engine) but that's considerably more weight than is found in many of the big 4-wheel drives.

Upton has been custom building big tractors for some years and is adamant that four drive wheels are not needed for tractors under 350 hp. Many tractor men would argue about that and are skeptical about Carl's philosophy and his claims that he can build tractors up to 350 engine hp that have lower wheel slip than 4-wheel drives and higher drawbar efficiency.

The rear half of Upton's 350 hp. 2-wheel drive tractor is constructed from 4 in. thick plate steel and the bare chassis weight is 6 tons, with main front chassis members constructed from 15 by 6 by 1½ in. channel.

Another example of the massive weight and strength built into the Upton machine is the 350 gal. fuel tank which has a floor made from 2⅜-in. plate with the balance of the construction utilizing 1 in. plate. Weight of the fuel tank empty is 3 tons.

The drawbar itself weighs 1,500 lbs. and is made from 6 by 4 in. plate and is contained within a 4 in. plate frame. The pull is taken on a 3 in. dia. hardened steel pin.

For tires, Upton used earth mover tires, measuring 33.5 by 33 by 20 ply which have a circumference 20% greater than the 30.5 by 32 agricultural tires commonly used on big 4-wheeled drives.

Upton believes that any 2-wheel drive tractor should carry most of its weight on the rear drive wheels. The Upton tractor puts this into effect with static weight of 20% on the front and 80% on the rear, and the long (3.9 meters) wheelbase helps stabilize weight transfer and provide a smooth ride. When the tractor is under load, dynamic weight on the drive wheels can be as high as 88% of the total vehicle weight.

The tractor's drive axle has a capacity of 65,000 lbs. and the planetary gearing incorporates guided needle rollers and nitrided gearing. Reduction ratio is 4.32:1.

The driving head assembly is an Eaton 23121 series with a 6.17:1 ratio. Overall ratio is 26.65:1. The axle is wholly of Australian design and manufacture, excepting the Eaton driving head.

An exclusive feature of the cab control layout is the method of mounting the throttle pneumatic gear shift valve and parking brake valve on the side of the swiveling seat. This permits the operator to control tractor