

Scrap-Built Loader Tractor

"Be very methodical and take it step by step," advises Jack Lessie, Thayer, Ind., who built a 4-WD, hydrostatic loader tractor from the ground up using scrap iron and salvaged parts.

"I first made a scale model out of wood with moving parts. It was extremely helpful in working out design problems and allowed me to make several changes that would have been much more difficult to make once I started building the actual loader," says Lessie.

The loader is advanced in design with articulated steering and a sophisticated self-leveling boom. Its professional finish and paint job—complete with a model name stenciled to the side—make it look like it could have just rolled off the sales lot of a major farm equipment manufacturer.

The engine is a rebuilt 198 cu. in. Hercules industrial compressor engine. It drives a hydraulic pump and motor that were stripped from a used cement mixer (it was used to spin the mixer). The hydraulic motor powers a transfer case that drives a shaft powering the two axles, which were salvaged along with the transfer case from an industrial loader. A hydraulic cylinder runs along the left side, almost in line with the driveshaft, and is connected to the steering wheel to steer the hinged tractor. The tractor is also hinged to oscillate up and down over obstacles.

Lessie fitted the tractor with a self-leveling boom of his own design so that he could haul wood and other materials in the bucket without spilling his load. The 1-yard capacity buc-



ket stays level at any height.

The tractor has a low and high range. In low it'll travel from 0 to 3 mph. In high range, it'll travel at speeds up to 12 mph. It's equipped with lights for road travel.

The loader, which weighs about 8,000 lbs., is fitted with 12 by 16.5 8-ply tires mounted on Chevrolet truck wheels which are about the only parts he bought new. To make the glassed-in cab, he obtained a cab off an old combine and cut it down to size. He cut and bent all the sheet metal in his own shop, using salvaged scraps for everything possible. One job that he couldn't handle was the bucket, which he hired out to have rolled to shape. It took him about 3 years to complete the project.

"I've got about \$4,500 into it. A comparable tractor, purchased new, would have cost about \$40,000," says Lessie, noting that he uses it for moving dirt, snow, manure, hauling wood, and many other chores. Lessie says it was the second loader tractor he's built.

Contact: FARM SHOW Followup, Jack D. Lessie, Box 8, Thayer, Ind. 46381.



4-WD Articulated Tractor

"My husband built a 4-WD articulated tractor last winter and I'd like to surprise him by running a story about it in FARM SHOW magazine," says Ruth Stuber, Redcliff, Alberta.

"He built the tractor totally from scratch over a period of 4 months for about \$1,000. The frame consists of pieces of 2 by 8-in. and 3 by 3-in. channel iron. The engine is a 250 cu. in., 6-cyl. Chevrolet that's fitted to a 4-speed Chevrolet transmission. A 2-speed heavy-duty Timken Rockwell transfer case controls a pair of 2-speed Eaton rear ends that drive the wheels. The drive is mechanical.

"The tractor's articulated steering consists of two 2 by 16-in. hydraulic cylinders and a 6 gal. per minute hydraulic pump. The pump is belt-driven off the front of the engine.

"The main hydraulic pump is also belt driven off the front of the engine. This pump operates a dozer blade up front and six outlets at the rear of the tractor. The rear-mounted fuel tank came from a 175 International swather.

"The tractor weighs 3½ tons without fluid in the tires or wheel weights. We put 8 tires on it in the summer but only 4 in the winter, fitted with chains. We use it mainly for snow removal, grading, harrowing, and seeding. The 6-cyl. engine has plenty of power and starts well during cold Alberta winters.

"The only thing the tractor still needs is a rear 3-pt. hitch. It's on the drawing board."

Contact: FARM SHOW Followup, Steve Stuber, Box 730, Redcliff, Alta. T0J 2P0 (ph 403 832-2438).

HELPS EXPLAIN PRINCIPLES OF ANTIQUE ENGINES

"Tractor" Shows How Old Engines Work

"More and more people come to threshing bees and engine shows with little working knowledge of the machines they see. They're impressed with the size and noise but can't really appreciate the skill, hard work and knowledge that goes into restoring and operating these old engines," says Dick Wenkel, St. Paul, Minn., who built a pedal-powered "training tractor" that demonstrates some of the principles that drive many old antique tractors.

The tractor is an approximately ½-scale pedal-powered antique. Wenkel collected parts from junked equipment, including manure spreaders, potato diggers and even

some stuff from his wife's sewing basket. The wheels came from an old corn planter and the heavy flywheel is the pulley from a water pump.

The frame was riveted together and welding kept to a minimum so that construction would closely resemble "real" antiques. The "engine's" crankshaft turns about three times as fast as the pedals. The "transmission" consists of a chain drive from the pedal to a counter shaft with a small pinion gear which meshes with a large internal ring gear on the rear axle. The transmission gears the pedal shaft down 7 to 1 on the rear axle. The ground speed, which is about 1½ mph., can be varied by



Pedal-powered tractor moves slow and ponderous, just like a "real" antique.

changing the sprocket on the pedal shaft. The pedal shaft sprocket is held with a set screw which can be loosened to allow the tractor to be used for belt work, just like an old time model. Wenkel also built a scaled-down saw that can be driven by the tractor.

The tractor's overall length is 6½ ft. and its width 3-1/3 ft. Height is 3½ ft. and it weighs 280 lbs. Like antique tractors, the model designation 15-30

means 15 drawbar horsepower and 30 hp. on the belt.

"It handles like old tractors, slow and ponderous. The horizontal screw and its chain steering forces the driver to anticipate corners. It has enough size and weight so that it's not a toy," says Wenkel.

For more information, contact: FARM SHOW Followup, Dick Wenkel, 1825 Fairview, St. Paul, Minn. 55113 (ph 612 373-1660).