



Mixer truck self-loads out of bunk silos, Ag Bags or flat storage with an up-front loader. Each ingredient is precisely weighed as it's loaded.

## LOADS AND MIXES FEED AT THE SAME TIME

# He Built Self-Loading Feed Mixer Truck

"It lets me load and mix feed at the same time and automatically weighs and mixes feed ingredients into a total mixed ration that has boosted milk production," says Garr Wayment, Burley, Idaho, who modeled his home-built self-loading feed mixer after a commercially available machine.

The 2 1/2-ton all-wheel drive truck is equipped with a 30-in. wide front loader conveyor that loads silage, hay and other crops, as well as grain and protein concentrate. It conveys feed to a 7 ft. 2 in. wide, 14 ft. 9 in. long, and 6 ft. high box equipped with 4 augers and electronic scales. Two digital monitors, one located in the cab and the other outside the cab, allow the operator to control ingoing and outgoing feed weights and quantities. Wayment bought the 4-auger box from RMH (RMH Industries, Inc., 3703 South K St., Tulare, Calif. 93274 (ph 209 686-4733), but built the rest of the machine on his own using the frame of an old GI Army truck, the cab from an Air Force deicing machine, an old 350 Chevrolet gas engine, and wide 9.00 by 20.00 flotation front tires removed from a New Holland bale wagon. He uses the truck to feed dairy cattle in his 450-cow operation equipped with free stall housing.

"I built it because I wanted a feed mixer truck that could make a total mixed ration, but I didn't want to pay \$120,000 for a commercial model," says Wayment. "It took a year to build but the truck's ability to feed a total mixed ration solved my cows' stomach problems and increased milk production by 3 lbs. per head per day or 438,000 lbs. in the first year. I had been using a truck box equipped with a live floor and a single beater and cross conveyor. The problem was that the truck didn't mix feed so cows picked out their favorite feed ingredients and left the other ingredients. The unbalanced diet caused them to develop rumen problems. This feed mixer truck lets me load and mix all of my feed ingredients, including cottonseed, soybean meal, barley, beet pulp, hay, corn silage, and minerals, into a total mixed ration. Now when cows eat a mouthful of feed they get a little of everything.

"I load corn silage from a bunker silo and haylage from Ag Bags. I load the rest of the ingredients out of bins in our commodity shed. I can load 500 lbs. of corn silage per minute, 200 lbs. of small square bales (with strings removed) per minute, and 500 lbs. of grain concentrate per minute. I can unload

6,500 lbs. of feed into bunks in 12 to 15 minutes. I watch the digital monitor in the cab and when I have the exact amount of the commodity loaded, I turn off the auger and reverse the elevator chain to kick out whatever feed is left in the elevator. This makes it possible to be very accurate in measuring the amounts of feed during loading."

Wayment says he prefers a feed mixer built on a truck frame rather than a trailer frame because his farm doesn't have paved roads and driveways. "A machine with springs under it is much more flexible and will handle rough roads and driveways and isn't as likely to get stuck."

He paid \$27,000 for the box and mounted it on the frame of an old 6-wheel drive tandem axle GI Army truck, removing one of the rear axles so he could turn shorter around feed bunks. He used 4-in. sq. tubing to build a subframe that supports the box. He installed the salvaged cab on one side of the frame, then installed the radiator on the other side and mounted the engine in the middle. The loading elevator is mounted over the engine. He built it from sheet metal supported by steel tubing, with angle iron supporting a stainless steel floor.

The truck is equipped with three transmissions - one to drive the mixing auger, one on the engine, and one connected to a hydrostatic transmission to drive the truck itself. "The hydrostatic transmission consists of a hydrostatic pump and a motor that drives a 5-speed transmission coupled to a 2-speed rear axle," says Wayment. "It allows movement from 0 to 11 mph and quick shifting from forward to reverse." Separate hydraulic motors drive the chopper, elevator chain, augers, fan, and discharge conveyor. Hydraulic pumps operate the power steering and are used to raise and lower the chopper.

"If I could do it over I'd install a diesel engine for fuel economy," says Wayment. "Under a full load the gas engine runs at 2,500 rpm which causes it to burn 25 gal. per day. I'd use a heavier truck frame because the weight of the loaded box causes both the frame and subframe to bow. I installed single axles for shorter turning around bunks, but I'd install tandem axles next time to distribute the weight. The auger should be one third larger in diameter and the elevator should be one third wider to speed up loading, and there are oil leaks in the transmission because it turns backward. However, I did make some improvements



Each of the three separately-powered mower sections floats independently.

## TRAVELS AT 10 MPH AND MOWS 30 ACRES PER HOUR

# Home-Built 30-Ft. Self-Propelled Mower

"Mowing hay is a fast, easy job with our 30-ft. self-propelled mower. It travels at 10 mph and mows up to 30 acres per hour in heavy hay," says Richard Waybright, Mason Dixon Farms, Gettysburg, Penn., who uses his home-built rig to mow 1,800 acres of hay and grass each year to feed his 1,385-cow dairy herd.

The one-of-a-kind mower is powered by a 235 hp Detroit diesel engine and equipped with 28.00 by 26.00 tires. Each of the three independently-powered 10-ft. 9-in. wide mower sections consists of eight 12-in. dia. Vicor rotary discs. The three sections float independently to stay close to even the roughest terrain. The sections overlap several inches. They fold up to a transport width of 16 ft. Cutting height, controlled hydraulically, ranges from ground level to 14 in.

"It has more capacity than any commercial mower on the market. It can easily cut 250 acres per day and has already cut more than 16,000 acres," says Waybright. "Before we built this mower, we were using two 16-ft. New Holland pull-type mowers. Each one cut 10 acres per hour. Our 30-ft. mower cuts more hay and requires only one operator. Another advantage of this mower is that the low-pressure (10 lbs. psi) tires apply less ground pressure per square inch than con-

ventional mowers, reducing soil compaction."

The rotary discs on each section are powered by three separate 50 hp hydraulic motors driven by three hydraulic pumps. The frame, axles, and steering gear are from a Champion self-propelled forage harvester. Waybright shortened the frame to an 11-ft. wheelbase. He mounted truck air suspension bags between the frame and mower sections for improved flotation. "We use an air compressor to fill the air bags so that the mower can bounce up and over obstructions, instead of digging into them," says Waybright. "The rig's Sundstrand hydrostatic transmission allows infinitely variable speeds up to 10 mph. The mower can turn in a 15-ft. radius at the end of the field.

The disc knives are easily replaced by removing one bolt per knife. Steel cones, 2 ft. high and 1 ft. in dia., at the end of each section keep hay from wrapping up. Canvas shields in front of the mower keep debris from flying up onto the cab.

Waybright says he spent about \$65,000 to build the mower.

For more information, contact: FARM SHOW Followup, Richard Waybright, Mason Dixon Farms, 1800 Mason Dixon Road, Gettysburg, Penn. 17325 (ph 717 334-4056).



The chassis was salvaged from a self-propelled forage harvester. Air bag shocks let the mower bounce up and over obstructions instead of digging into them.

over the commercial model. The discharge auger is 1 ft. longer for improved reach over the feed bunks. The hydraulic cylinders that lift the elevator are mounted closer to the front of the elevator so it's easier to lift. RMH mounts their hydraulic cylinders closer to the fulcrum point so it takes more power

to lift. I installed heavier elevator chain and put the drive at the top instead of the bottom so there's less chance it'll bind if it gets loose."

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