

Paul Butler converted a Club Car 6-passenger, electric-drive golf cart into this "big bale cart" that handles big square bales weighing up to $800~{\rm lbs}$.



"It lets me move big bales from my hoop buildings into my feedlot without making a lot of noise and fumes," he says.

Electric-Powered "Big Bale Cart"

Paul Butler wanted a machine to move big square bales from his hoop buildings into his feedlot without making a lot of noise and fumes. So the Malta, III., organic farmer converted a Club Car 6-passenger, electric-drive golf cart into a one-of-a-kind "big bale cart" that handles bales weighing up to 800 lbs. effortlessly.

"For years we had been making small square bales and elevating them into the hay mow where young people stacked them, but we couldn't always find help. So we switched to big square bales," says Butler. "However, the big squares presented a problem. We had already invested in a used telehandler for stacking the bales in the hoop buildings, plus grabs mounted on front of loader tractors to pick up bales in the field and place them on racks, but we needed a new system for feeding the bales."

They started with an unmotorized wagon they could pull with a mower or ATV, both of which were too noisy for use in the barn. They ultimately came up with the idea of a self-propelled cart powered by an electric motor. And the best way to start, they decided, was to buy a large golf cart.

The finished bale cart measures 11 ft. 2 in. long and 4 ft. wide and is powered by the

golf cart's electric motor and rear-wheel-drive system. A deck made from 2 sheets of 1 3/8-in. thick plywood sits on a 2-in. angle iron frame that supports a vertical wall at the back end. The operator sits on front of the deck and uses the golf cart's repositioned steering wheel and foot pedal controls. The cart's original floorboard, located 2 1/2 ft. below the deck, is used to store the battery and hold 5-gal. buckets of corn and oats.

Butler uses a skid loader to load the bales onto the cart and then drives into his sheep feedlot and places the hay into feed bunks, then scatters shelled corn and/or oats on top of the hay.

The deck sits about 3 ft. off the ground. A Digistar electronic weigh scale mounted on back of the cart shows the bale's weight and also lets Butler know when the right amount of hay has been fed. The scale can be quickly moved out of the way when not needed.

"The scale is clamped to a metal tube that fits inside another tube fastened to the back wall, and is located high enough so the operator can see it above the bale. Whenever the scale isn't needed, we can turn a valve to let the scale down so that it's protected behind the wall," says Butler.

He reworked the front part of the golf

cart's frame to reposition the steering wheel vertically and moved the foot pedal controls farther forward. He left the battery in back, enclosing it in a wooden box that sits on the golf cart's original frame underneath the deck. The box keeps dust off the battery.

Butler says he used as many original parts from the golf cart as he could. "We removed all the plastic shrouding but kept the lower frame and beefed up the axles. We also welded in new material to lengthen the frame by 18 in.," he says. "The bale cart still has the golf cart's original controls and operates just like the golf cart did, including activating the cart's 'beep beep' safety alarm as it backs up."

He also strengthened the rig's suspension by mounting larger springs over the golf cart's original springs. "The deck is supported by angle iron to keep it from sagging under the weight of the bale," says Butler.

"We use it all year long for a variety of jobs. It's really handy," says Butler, who credits his helper Richard Donnelly for most of the planning work. "We use it to feed bales to sheep and to horses that we board on our farm, and also to weigh big plastic tote bags of organically grown seed that we sell locally. The electric motor has a lot more torque than



Electronic weigh scale mounted on back of cart shows bale's weight.

a gas motor so it has no trouble handling an 800-lb. bale. A big bale provides a lot of traction, so it'll go through deeper snow than you'd expect."

He says he runs the cart about a half hour each day and has to recharge the battery only about once a week.

"We paid \$5,600 for the golf cart. We already had the weigh scale and the plywood, which Donnelly's brother got from a local warehouse," notes Butler.

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"Shredlage" Forage Units Promoted By Claas

A few years ago FARM SHOW reported a new technology that chops corn as "shredlage" (Vol. 36, No. 1). Class recently promoted the shredlage concept at the Ohio Farm Science Review, displaying an attachment for forage harvesters that processes corn plants in a different way.

The idea behind shredlage is to slice the plant in longer pieces and rip the stalk lengthwise to create increased surface area and boost digestibility. Promoters say the result is improved effective fiber, better packing, and a greater exposure to the inner cells of the plant for increased microbial activity.

Shredlage, LLC, located in Oskaloosa, Iowa (ph 641 660-2066; www.@shredlage.com) and Claas recently entered into a licensing agreement to sell Shredlage processors that fit Claas Forage harvesters.

They Spread Liquid Manure On Growing Crops

Cuff Farm Services in New York has expanded testing on a liquid manure application system that works in fields with growing crops without damaging them. "We've been in the manure handling business for many years and have learned it's almost impossible to apply product in growing crops," says Stan Cuff, company president. "We've worked hard to develop a machine to do that, and we think this product will uniformly apply liquid manure without burning leaves so farmers can use it during the growing season."

Cuff and his operations manager, Grover Alcock, designed and built the mechanized liquid spreader that delivers it's liquid payload through a 120-ft. wide boom that rides above the growing crops. Manure is discharged almost at ground level through twentyfive 1 1/2-in. dia. vertical hoses. The boom is carried through the field by an irrigation reel. Cuff says their patented device can apply liquid manure at about 400 gal. per min.

Cuff and Alcock tested their invention in the summer of 2014 on a field where corn plants were 7 ft. tall. The large dairy and crop farm where they ran it was satisfied with the results and wants to use the machine again this year. Their company has also tested it in Ohio for the past 2 years where it's being considered for grant funds to subsidize manufacturing, as well as additional testing on several farms in 3 states. The machine is on it's 3rd set of design changes and Cuff says they're almost to the finish line.

"We're very confident that our distributor has a place in manure handling and application," says Cuff. "The ideal time to use it is when fields and conditions are dry, so the liquid immediately soaks in and can be absorbed by growing crops. Applying liquid manure in the summer lets us target nutrients to the crop during the growing season and also reduces the time pressure on spring and fall applications," Cuff says.

Cuff Farm Services has more than 200 clients in several states.

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