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Power Cart Rebuild Offers Improvements

Ralph Rice was sold on the concept of an engine-powered forecart the first time he saw one at Horse Progress Days some 17 or 18 years ago. He knew it made perfect sense on his mixed power farm. A purebred Suffolk breeder, he had the horses. He also had modern farm equipment. With the help of a friend, he got his power cart. He outlined the process

and improvements in a 2010 article in Rural Heritage. Recently, he provided a detailed update on improvements to the powercart in the February/March issue of Rural Heritage.

"Jonathan Lawton, may he rest in peace, built one for his own use and agreed to build one for me," says Rice.

Lawton had a four-wheel power cart with

rear-wheel steering, which Rice also wanted. At the time, Rice worked off the farm and use was sporadic. It might be hooked to a manure spreader or a bush hog for months. Once he retired and began using his horses for more of the farm work, some shortcomings became apparent.

"Many things worked well," says Rice. "The size and balance were perfect, and the 3-point hitch worked well. It had the raised tongue of modern carts and the Z for going from two horses to three by just pulling a pin."

The Wisconsin VH4D engine provided PTO power. However, an electric hydraulic pump drew its power from the same storage battery as the engine starter. If the battery ran low when providing hydraulic power, the engine couldn't be restarted. Also, the Wisconsin could be difficult to restart when hot from use.

The hydraulics required him to push an activation button at the same time he might be working a lever on equipment and driving the horses. Making a turn with a haybine or lifting a disc at the end of a field while turning around was challenging.

Engaging the PTO required standing up to reach the lever on the Rockford clutch, and starting the engine required hanging over the side of the platform.

Lawton had used a heavy-duty coil spring under the operator's seat. While he aimed for comfort, he created an excess of suspension and height.

"What he built was a precarious catapult affair, causing me to grab anything to hang on at times," says Rice.

Rice worked with a friend who owns a welding and fabricating shop to make the changes he wanted. They replaced the Wisconsin with a 35-hp Vanguard and went with a gear-driven hydraulic pump. The changes required reworking the pulley to the PTO shaft and adding a groove for the hydraulic pump.

"I knew it would power everything I have on the farm," says Rice. "I was told that parts are also readily available."

They lowered the frame about 16 in. The seat was replaced with one repurposed from some forestry equipment. It's 30 in. lower, safer and more secure, even featuring a seatbelt.

They also made the operator's position more user-friendly, with every control easy to reach. An improved safety rail gives him a brace bar and toe hook, should he need them.

The new/old power cart is still a 4-wheel cart with rear-wheel hydraulic steering, dual remotes, PTO and a 3-point hitch.

"My new power cart has the best features of the old, but is safer and more convenient to operate," says Rice. "The best part is, I'm sure my old buddy Jonathan Lawton would approve."

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Robot Patrols Turkey Barns

Electrical engineer Jack Kilian was creating a goose-chasing robot to keep pesky birds away from golfers when he devised the idea for a similar robot to fill a need in turkey barns.

After pitching and entering the idea in Agtech competitions, he won enough money to build his unique SMR (Sheet Metal Robot) prototype and establish Poultry Patrol.

"The SMR began with mortality picking, but this was complicated and expensive," Kilian says. "I found out what's better than a dead bird was a healthy bird. From there, I focused on getting the birds up and moving routinely for better health and development. As they get older and heavier, instead of a supplement, the robot runs around the barns as a performance-enhancer."

The SMR is electrically powered with a docking station connected to the internet. Since GPS is notoriously unstable in metal barns, a human remotely monitors the birds

and barn interior using the robot's mounted cameras.

"We drive them remotely to guarantee to the farmer that we're hitting all the spots at the right time and speed without getting stuck in a corner," Kilian says. "Our service personnel are trained to identify unusual behavior, recognize sickness, and look for issues like water leaks."

Kilian wants Poultry Patrol to become the experts on turkey movements and adjust its operation according to the turkey's response to the robot.

"We use the robot in numerous trips each day to get the birds up and stretch their legs, so they don't become sedentary for long periods," Kilian says. "We want them to stay healthy but not so active as to lose pounds."

Poultry Patrol coordinates the number of trips the robot makes with the farmer's schedule, running the patrols when the farmer leaves the barn. The service drives the robot, logs entries and gathers data. Farmers are

emailed or texted with mortality locations, alerts regarding unusual behavior or events, and infrastructure problems or issues. Kilian hopes to include sensors to identify sickness in future models.

"It's extremely hands-off for the farmers," he says. "The barn just needs to be connected to the internet for us to handle everything, including free upgrades and maintenance."

Poultry Patrol currently has a relatively small robot fleet. By the fall of 2025, it aims to have an upgraded bot and units in Illinois, North Dakota, South Dakota, Minnesota and Iowa.

The service subscription costs independent turkey farmers approximately \$7,000 per robot per year.

"Farmers should see about .02 cents per pound of value with a single robot per barn," Kilian says. "We cover all service and support, and from what we've seen so far, the turkeys and the farmers seem to love it."

Contact: FARM SHOW Followup, Poultry



Farmers are emailed or texted with mortality locations, alerts regarding unusual behavior or events, and infrastructure problems or issues.

Patrol, Jack Kilian, Coralville, Iowa (ph 715-821-1480; jack@poultrypatrol.com; www.poultrypatrol.com).



The Falcon achieves its fuel and time savings by utilizing cupped fingers that rotate at high speeds. They strip the heads of the crop and avoid processing the bulk of the crop residue.

Header Harvests Small Grains Faster

Harvest wheat and rice with Falcon stripper headers at 25% faster ground speed while saving 20% to 30% fuel over conventional combine headers. Applequist Manufacturing introduced the Falcon in 2023 for use with adapters for Deere and Case IH combines.

Adapters have since been added for New Holland, Gleaner and CLAAS variable-speed feederhouses.

"We felt there was a market for a stripper header, and at the time, the only one available was made in England," says Kale Unruh,

Applequist Manufacturing. "After only two years, we have headers running in wheat fields from Wisconsin to Montana and Canada south to Texas and in rice fields in the Mississippi Delta."

Applequist Manufacturing may be a new company, but its founder, Roy Applequist, is a seasoned veteran with over 40 years of experience in the industry, having previously owned Great Plains Manufacturing. He founded the company intending to produce a broad range of agricultural and industrial equipment.

The Falcon achieves its fuel and time savings by utilizing cupped fingers that rotate at high speeds. They strip the heads of the crop and avoid processing the bulk of the crop residue.

Processing primarily just the grain heads reduces combine wear and tear. Avoiding damp, tough straw and resulting plugging also allows harvest to start earlier and go later in the day.

The backward-rotating fingers do a better job of picking up downed crops than conventional headers do. They also leave behind more standing straw. This reduces soil erosion while retaining more moisture by catching snow and shading the soil. Less straw through the combine also minimizes the potential for matted piles of residue after harvest. This creates better conditions for no-till seeding of following crops.

The spring-mounted wheat model allows the header to flex over uneven terrain, and gauge wheels follow the contours. It's available in 32 ft., 2 in., 36 ft., 2 in. and 42 ft. stripping widths.

The rice model is rigid mounted, given the flat terrain. It's optimized for the high wear conditions of rice, with chromed edges on auger flights and paddles, as well as stainless steel wear surfaces on the front and rear hoods. Passive finger mounting makes stripping of the grain less harsh. It's available in 32-ft., 2-in. and 36-ft., 2-in. models.

Both models feature quick-change finger sections designed for easy alignment when mounting. The design also focuses on the use of minimal parts. This reduces the variety of parts carried by owners and dealers, should a repair be needed.

Each header comes with a Loup Elite Mini cab monitor for auger and rotor speed. Rotor speed can be adjusted from the combine cab.

Unruh suggests visiting the nearest dealer for pricing and availability.

"Dealers can be located on our website," he says. "We have dealers throughout the central U.S. from Montana to Mississippi and are planning to add dealers in Canada."

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