He Built ANearly Perfect Replica Of America's First Car

By Jim Ruen, Contributing Editor

Bill Eggers' Duryea is nearly an exact replica of the first car built in the United States. Charles and Frank Duryea built one in 1893, now in the Smithsonian. He made 50 of them in 1894, his first production year. A replica based on an 1893 model was built by a trade school in Massachusetts. Eggers used it as his base.

"Being a school, they were able to get all the specifications from the Smithsonian," says Eggers. "I took lots of pictures of it and all kinds of measurements."

Eggers started with the chassis, fashioning it from 1 1/8-in. steel. Cross framing and other structural members were made with 1 by 1 and 1 by 2, 1/8-in. wall steel tubing to reduce the weight.

Eggers fabricated all the leather upholstery, including a windbreak and fold-down top. Side panels are lacquered wood with brass fixtures. He added a walnut and brass luggage rack, common with early automobiles. Headlamps are working oil lamps, typical of buggies of the day.

The original Duryea was built on a single-horse buggy frame with leaf springs and buggy wheels. Eggers ordered wheel hubs and wheel rims from Amish suppliers and then milled and shaped the wheel spokes to fit. He also fabricated the 3-leaf springs, which were standard to buggies at the time.

While the original Duryea had no brakes, Eggers outfitted his with a drum brake with a pedal in front of the driver. Other exceptions to the original include the engine and a hydraulic drive. The Briggs and Stratton engine was selected for its vertical shaft, as the original Duryea also had a vertical shaft engine.

"The Briggs and Stratton lays in the engine cradle like the original did," says Eggers. "It turns the hydraulic pump that pressurizes the hydraulic lines to a spool valve beneath the seat."

The Duryea's mechanical transmission had 2 forward gears and, reportedly, a haphazard reverse. The hydraulics provided a forward/reverse shuttle with a single speed forward. A steel box under the seat serves as a hydraulic oil reservoir.

Eggers fabricated a lever for the spool valve that looks like a transmission shift lever. The hydraulic fluid travels to a hydraulic motor on an independent shaft ahead of the rear axle. A chain sprocket on the shaft drives a sprocket on a rear wheel.

A matching sprocket and chain drive on the other rear wheel are connected to a matching independent shaft. A large wooden spool mounted on the shaft serves as a brake drum. The brake shoe is controlled by linkage to the pedal and by a lever in front of the operator.

"One rear wheel drives the car while the other rear wheel provides braking," explains Eggers.

Two brass reservoirs to either side of the engine provided water and gas storage on the original Duryea. Eggers fabricated one as a dummy tank (air cooled engine) and uses the other for gas. Fill spouts rise just above the surface of the rear storage rack. A walnut panel hinged to the rack can be lifted for access to the engine.

The Duryea used a tiller to control the tie rods on the front axle using a modified kingpin design. Instead of mounting the hub to a pin riding in a forked beam axle, Eggers fabricated large and slightly smaller C-channels out of 1 1/8-in. steel bar. He connected them with bronze bushings and welded the steel front axle ends to the outside of the larger C's. Spindles were welded to the inside of the smaller C's. Arms welded to the small C's attached to the tie rods.

Bill Eggers' Duryea is nearly an exact replica of the first car built in the U.S. "I can travel up to 10 mph, which is faster than I care to go with the primitive steering," he says.

The tiller has a throttle grip for the driver's hand. Lifting the tiller on the original shifted between first and second. With only one gear forward, Eggers bypassed that function. However, he did add a kill switch for the engine on the steering tiller shaft.

"I can travel up to 10 mph, which is faster than I care to go with the primitive steering," says Eggers. "I'm now working on a second Duryea that will use a transmission from a Harley Davidson and a clutch from a 3-wheel service car."

Check out a video of Eggers' Duryea at FARMSHOW.com.

Contact: FARM SHOW Followup, Bill Eggers, 70 Bartholomew Hill Rd., Goshen, Conn. 06756 (ph 860 491-3047, 9 a.m.–5 p.m. EST; www.williameggersmotorcycles.com).

She Rides High On "Big Wheel Trike"

Ruth Blackburn has a bicycle date once a month at the Western Antique Aeroplane & Automobile Museum (WAAAM) in Hood River, Ore. Perched on a high-wheel tricycle with a 5-ft. tall front wheel, the 88-year-old rides above other participants driving around the museum grounds in old Model T's and on motorcycles and tractors, while old planes circle above.

Though there are older, original bicycles in the 2 1/2-acre museum, Blackburn's is truly unique.

"My husband (Keith) made it from the ground up. It's such a treasure to be able to ride it now," she says.

The Blackburns collected and displayed old farm equipment and lawn tractors, and Keith was a mechanic for logging and IH farm implements. He used some of his available parts, including a kick-start Maytag washing machine engine, to surprise Blackburn with a high-wheeled tricycle for Christmas in 1986.

His design was a modification of the English penny-farthing two-wheel bicycle. Keith added a third wheel and powered it with the Maytag engine. When Blackburn asked why he made the wheel 5-ft., he said that was how much steel he had.

"In 1987 I rode it in 34 parades. It was fun," Blackburn recalls.

After Keith died, she continued to kick start the engine and ride the bicycle by herself. She retired it for a few years when the engine wasn't running quite right. Then acquaintance Dale Nichol offered to fix it up.

"It runs beautifully," Blackburn says, and though she could do it by herself – Nichol helps her start the bike for the museum rides held every second Saturday of the month from 10 a.m. to 2 p.m.

WAAAM is a "living museum" that likes to "exercise" its flying and driving collection. Treasures include dozens of old airplanes that date back to 1917, automobiles, farm and military equipment and other vehicles such as Blackburn's tricycle. WAAAM's reputation is growing, and more than 400 airplanes showed up this year for the annual Hood River Fly-In the weekend after Labor Day.

Though her tricycle is on loan, Blackburn donated many items to the museum when it opened in 2007. "There's no show-off like an old one," laughs the 88-year-old Blackburn.

Contact: FARM SHOW Followup, Western Antique Aeroplane & Automobile Museum, 1600 Air Museum Rd., Hood River, Ore. 97031 (ph 541 308-1600; www.waaamuseum.org).

At 88 years old, Ruth Blackburn likes to ride around on this high-wheel tricycle. "My husband Keith made it from the ground up. It's such a treasure to be able to ride it now," she says.