



This aerial photo, taken in 1953, shows the wood stave silo on the John Day farm near Randolph, Minn. The silo burned down the next year.

Wood Stave Silo Photos Are Peek At The Past

At one time wooden stave silos were quite common across North America, but there aren't many of them left. John Day of Randolph, Minn., recently sent FARM SHOW photos taken long ago of a wooden silo under construction on his farm, and of the finished silo.

The construction photo dates back to 1915 and shows the silo being constructed inside a circular scaffold. A 45-ft. extension ladder is propped against the scaffold. The finished silo photo was taken in 1953.

"I've never seen another photo of a wooden silo under construction," says Day. "I got the photos from my cousin, who found the photos when he was cleaning out some stuff in his house."

"The silo was 14 ft. in diameter and 35 ft. high and was put up by the Champion Silo Company, but I don't know where they were located. At the time the silo was built, wooden silos were the new kid on the block. My grandfather put up the silo at one end of his barn and used it to feed his dairy cows. When the barn burned down in 1954, the silo went with it."

They used individual tongue and grooved wood staves, 2 in. thick, to build the silo. The boards were pressure-treated with creosote to resist silage acids. The staves were reinforced by metal hoops — 5/8-in. threaded steel rods — spaced 2 to 3 ft. apart. The silo sat on a concrete and rock foundation but had a dirt floor. At one time, Day had a wrench that was used to tighten the nuts on the hoops when they got loose, but it got lost.



Photo above was taken in 1915 and shows the silo being constructed inside a circular wooden scaffold.

"It looks to me like the scaffold was made from nailed-together 2 by 4's. It looks kind of flimsy, and I don't think it would ever be allowed now — OSHA would shut you down before breakfast," says Day.

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Spike Wheel Tractor "Walked" Through Fields

The spiked wheels on a Fageol tractor were designed to "walk" over fields, loosening the soil rather than rolling over it and compacting the soil. In reality, the wheels often dug down to the frame and spun hopelessly. The farmer had to hitch up a team of horses, pull the tractor out and finish the work with the horses.

At least that's the story John Boehm heard when he purchased an early 20th Century Fageol from a previous owner. John E. Kiley said that his father only used it to disk his almond orchard. Apparently the original owner, Kiley's great-uncle, didn't use it much either.

"I think they just left the tractor in the barn, which is why it shows such little wear. It was easy enough to get it running. I installed new hoses, cleaned the carburetor and magneto, and changed the oil," says Boehm, who collects, restores and sells tractors and parts (specializing in high clearance row crop Deere tractors) and raises English walnuts near Woodland, Calif. He heard about the

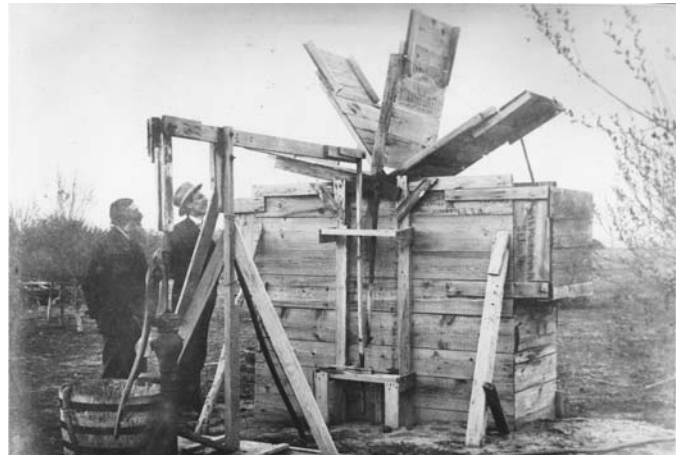
unusual Fageol parked along a freeway and purchased it for the asking price after recognizing its rarity.

The Fageol tractor was patented in 1915 by Rush Hamilton of Geyserville, Calif., after he put spike wheels on the front of an orchard tractor.

By 1918, Fageol Motors was manufacturing a 4-wheel tractor with spike wheels on back. It weighed 3,600 lbs., had a ball and roller bearing transmission, Lycoming 4-cylinder engine, and one forward and one reverse gear. It had tiller steering and a huge filter air cleaner for the California dust. Its design included distinct jagged vents on the hood.

There was no clutch, which stumped Boehm. He was forced to read the directions.

"To start the tractor moving with the motor running, take the operator's seat. Place both hands on gearshift lever bar. Press both [steering] clutch pedals down as far as they will go, then to go into forward gear, push right hand forward and pull with left. Allow the clutches to come up evenly and tractor



Barbour photo provided courtesy of the USGS
Paddle wheel windmills used big wooden paddles, with the lower half boxed in. Only the paddles in top half of the rotation were exposed to the wind.

Paddle Wheel Windmills Powered Water Pumps

Paddle wheel windmills once held their own on the prairie, according to T. Lindsay Baker. The editor of the Windmillers' Gazette (www.windmillersgazette.com) has chronicled their work pumping water in windy, dry land areas. One pump featured in a recent article pumped water to livestock for more than 40 years.

Baker credits the late professor Erwin Hinckley Barbour of the University of Nebraska for much of what is known about the homemade wind machines. Barbour and his students travelled the Great Plains states in the last years of the 1800's, taking photos and interviewing farmers who built them.

Baker quotes Barbour's description of a common paddle wheel as "...a stationary mill, consisting of four or more paddles fastened to a horizontal axis set squarely across the direction of the prevailing wind with the lower half boxed in."

Traditional windmills are designed to efficiently gather power from the wind throughout their rotation and to always rotate into the

wind. Paddle wheel windmills were by their nature much less efficient. Only the paddles in the top half of the rotation were exposed to the wind, or they would have stalled out.

The windmills varied in size according to need and available materials. Barbour described a "baby jumbo" with paddles 2 1/2 ft. by 3 ft. that could pump 10 gpm from a 60-ft. deep well in a 16 mph wind. By contrast, a "jumbo" windmill outside Lincoln, Neb. had four, 4 by 9-ft. blades covered in used burlap coffee bags.

Inefficiency was counterbalanced by low cost and simplicity. Paddle wheel windmills could be built by anyone, anywhere, for a few dollars in used boards and parts.

Baker describes Barbour's efforts as "... searching for interesting ways that ingenious people solved ordinary problems using materials readily at hand."

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Spiked wheels on Fageol tractors were designed to "walk" over fields, without compacting the soil. But in reality, the wheels often dug down to the frame and spun hopelessly.

should get away in a straight line."

"The secret appears to be in grinding the gears together as quickly as possible," Boehm says. He's learned how to drive the tractor quite well and takes it to the California State Fair and other shows.

Production ended in 1922. Fageol found more success in building buses and trucks and eventually became Peterbilt Motors. Co.

With so few Fageol tractors around, they're very expensive. Boehm recalls a tractor (that didn't run) selling in the \$15,000 range in 2008.

Boehm says he has other vintage tractors for sale, but he's keeping his Fageol.

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