FEATURED MODEL
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John Deere WA-14 and WA-17

An interesting alliance with FWD-Wagner

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Above: Possibly for the first time ever, four John Deere Wagner tractors were together at the Peister ranch in Lowistown, Montana. All of the tractors are JD WA-14s except for the one at far left, which is a WA-17. The WA-17's previous owner added the FWD on the grill.

Below: JD WA-14 and WA-17 tractors have two serial number tags, one from FWD-Wagner and one from John Deere.
In what some argue was a brilliant piece of industrial strategy, John Deere entered into an agreement with FWD-Wagner for exclusive rights to sell the WA-14 and WA-17 articulated four-wheel-drive farm tractors on the eve of the first day of 1969. Still reeling from poor 8010 (8020) tractor sales, John Deere was without a marketable high horse power four-wheel-drive, although a new articulated tractor was being planned for release in the early '70s. The alliance with FWD-Wagner superficially appears to have been a stopgap measure undertaken by John Deere to maintain a marketing presence in the four-wheel-drive market, but some think there may have been more to it.

Agricultural historians argue that John Deere entered the big tractor market too early with the 8010 in 1960; however, Wagner Tractor Co. had already been successful in the niche for several years by then. According to an article in the January 1994 issue of Green Magazine, John Deere produced 100 8010 tractors from 1960-1961, but the company didn't finish selling them all until '65 or '66. On the other hand, Dave Curtis, one of the first Wagner distributors for Montana, the Dakotas and Canada, says that Wagner Tractor, Inc. sold more than 350 articulated four-wheel-drive tractors from mid-1957 to 1960. FWD-Wagner delivery, records indicate that several hundred more tractors were sold from the early '60s to 1968. John Deere's 8010 wasn't very different from the Wagner tractors, so it is perplexing that John Deere didn't carve out a more significant market.

Right: Melinda and Bruce Pester still use this John Deere WA-14 for much of their several thousand acres of fieldwork.  
Below: John Deere WA-17 flanked by two WA-14 tractors near Lewistown, Montana.  
Below right: An easy opening hood makes access to critical engine service points a breeze on the WA-14 and WA-17 tractors.
Above: Bruce Pester’s WA-17 has no problem pulling this 58 foot Flexicoil toolbar.

share with the 8010 in spite of its early mechanical difficulties.

John Deere’s contract with FWD-Wagner gave them an effective and proven product and bought them a place in the market. It also killed the Wagner agricultural tractor line and future competition from FWD-Wagner for Deere’s introduction of the 7020 and 7520 tractors in the fall of 1970 and spring of 1971, respectively. Whether the contract was written with malice toward FWD-Wagner may never be known, but it is interesting to consider how that agreement came to be.

Elmer Wagner’s great idea

By 1949, Elmer Wagner, one of seven brothers from the Portland, Oregon area had developed a functional, articulated, four-wheel-drive industrial-vehicle prototype. This development was part of an ongoing process of design and engineering that the Wagners employed throughout their diverse business ventures. According to Peter Simpson in his book Ultimate Tractor Power, Elmer’s prototype was partially inspired by some piece of machinery that he had seen in Europe during his tour of duty.

The Wagner brothers were no strangers to innovation and invention. One of their early inventions was a mobile concrete mixing machine designed to aid the burgeoning construction industry in the Pacific Northwest. That venture, known as Mixermobile, was the foundation for several lines of equipment with names like Tractormobile, Scoopmobile, Wagner Mining Scoop, Dozermobile, Logermobile and many others. It is nearly impossible to trace all of the Wagner related lines to 2004, but many of them are still being manufactured through
Allied Wagner and Atlas Copco Wagner. Companies such as Pacific Car and Rail (PACCAR), Westinghouse Air Brake Co. (WABCO), Raygo, FWD and Eagle Crusher have all owned, or still own, production rights to some machinery with the Wagner name.

In 1954, seven Wagner brothers—Bill, Guy, Eddie, Walt, Harold, Irvin and Elmer—teamed up with J. Burke Long to form Wagner Tractor Co. Inc. This enterprise was focused principally on agricultural markets and it further developed Elmer's articulated joint system, which was ultimately patented as the Pow-R-Flex Coupling. Drawbacks to rigid frame four-wheel-drive systems that Elmer noted were axle oscillation control and the weakness of steering knuckles on live axles. Elmer's articulation joint allowed the front and rear halves of the tractor to oscillate as complete units, without driveshaft or axle shaft binding or interference with the steering hinge. Early Wagner literature claimed that with the Pow-R-Flex joint, all four wheels would keep power to the ground no matter how rough the terrain or short the turn. Obviously that claim was a slight exaggeration, but the machines were capable of an 18-20 inch oscillation depending on the tractor model.

"I took delivery of several of the

Left: 1965 FWD-Wagner WA-14 with John Deere dozer owned by Junior and Lorri Norberg of Bushnell, Nebraska. The tractor continues to serve the Norbergs well.

Below, left: The WA-14 and WA-17 tractors have a dash that looks very much like a vintage Peterbilt truck's. All gauges and switches are within easy reach of the operator.

Below: The massive dropbox and power divider in the WA-14 and WA-17 was one of the few Wagner-produced components in the tractors.
first Wagners off the line in late ’54 and they had some problems,” Dave Curtis said in explaining how the machines went through a rapid evolution at the beginning. Initially Timken axles without secondary gear reduction, Waukesha or Buda engines and steering joint vibration caused some problems for the fledgling company. “We helped design a different driveshaft bearing mount for the hinge in our own shop,” Dave added.

Wagner Tractor ultimately chose Cummins engines as the standard power plant because they proved reliable and economical under the grueling labor of field work. The Timken axles were replaced with Clark Mfg. units designed to carry more weight. With planetary gear-reduction in the hubs, the Clark axles solved some clutch and minor driveline problems, too. The proven Fuller transmissions used by Wagner were pressure lubed and cooled, which forestalled any failures due to overheating.

Wagner Tractor went into full production in 1955 and shortly thereafter embarked on a Why a Wagner Tractor for the Farm marketing campaign. Attractive literature coupled with aggressive field demonstrations of three agricultural models, TR-6, TR-9 and TR-14 with 105, 120 and 150 horsepower at the flywheel, respectively, were effective. Through the campaign, Wagner made significant headway into large dryland and irrigated farming regions, replacing crawler tractors in states such as California, Montana, North Dakota, Colorado and Nebraska. Wagner also enjoyed early success in Manitoba and Saskatchewan, Canada.

By 1959, Wagner introduced a fourth agricultural model, the TR-24 with a Cummins NHS-6-BI 743 cubic inch displacement 300 horsepower diesel—clearly winning the horsepower wars until matched by International’s 4300 rigid frame four-wheel-drive in 1961.

Executives at John Deere were aware of the Wagner machines and even sponsored their own test of a Wagner TR-9 and a two-wheel drive Case “LA” in 1956. “John Deere hired me to demonstrate a TR-9 with a four cylinder Cummins,” Dave Curtis explained about how the famed Wagner/Case showdown showed on a ranch south of Chester, Montana came to be. The Case was a model “LA” powered by a four cylinder Detroit two-cycle diesel and both tractors were putting out about 110 horsepower. “Both machines were equipped with speed and slippage gauges and both were hooked to 24-foot chisel plows,” Dave continued. Dave said that the tractors performed similarly on relatively flat ground, but on the rougher hilly ground, it was a different story. “At one point, my guy just started up a hill with the plow in the ground and he never stopped, to the amazement of the [John Deere] group,” Dave said with a big smile. “Of course, the Case didn’t even come close to getting up the hill.”

**John Deere’s Wagner knockoff**

At its debut in the fall of 1959 in Marshalltown, Iowa, John Deere’s new concept—an articulated four-wheel-drive model 8010 wheel tractor—was literally amazing to onlookers. Unlike so many of John Deere’s mainstay products, this fantastical machine hadn’t been built in the way John Deere typically built things, but that was not emphasized in the presentations. The 8010 offered larger farmers 200-plus flywheel horsepower and dedicated four-wheel-drive. The green behemoth weighed in fully dressed at over 20,000 pounds and had a top speed on the road of 18 miles per hour. The 8010 was available with an optional three-point hitch. Spectators at the field day were awestruck when the monster of a machine was coupled to a mounted eight-bottom plow. Marketing materials indicated that the massive 5,000-pound plow and other “giant capacity tools” were no sweat for the hitch.

A closer look at the 8010 shows many similarities in concept and actual design to the Wagner tractors of the day. Perhaps the inevitability of that observation stems from the fact that the 8010 was the only other production articulated four-wheel-drive tractor around in 1959—so they would have to look similar.

Like the Wagner, the 8010 consisted of front and rear drive units connected by an oscillating joint and hinge, much like Eddie Wagner’s Power-R-Flex joint. Like the Wagner, the 8010’s engine, transmission and operator’s station were all built into the front of the tractor. All of these details continue to be principal characteristics of articulated four-wheel-drive heavy equipment today, but in 1959, the concept was pretty much exclusively Wagner Tractor’s.

Like the Wagner tractors, the 8010 was built of components from the trucking and heavy equipment industry. John Deere chose the proven two-cycle 6-71E six cylinder Detroit diesel engine to power the 8010, ostensibly because of its success in transportation and stationary power applications. With over 200 horsepower at the flywheel, the 8010 was fitted with a heavy-duty clutch, Spicer nine-speed transmission and Clark 13,500 pound capacity axles with planetary gear-reduction at the hub. Westinghouse airbrakes on all four corners provided ample stopping power for the beast.

The 8010’s styling was all John Deere and it was considerably more sophisticated than that of the 1959 Wagner tractors. The 8010 most noticeably lacked the heavy front bumper and had shorter, more refined and angular fenders with integrated steps. Fuel tanks were placed behind the operator’s station and cabs were optional on both the 8010 and Wagner.

Wagner enthusiasts tell the story of how John Deere hired a former Wagner engineer to work on the 8010 project. Although purely conjecture, similarities in the joint between the front and rear halves of the different makes of tractors and many other characteristics do give pause for consideration.

**Wagner in the ’60s**

Wagner Tractor, Inc. was sold to the Four Wheel Drive (FWD) Corp. in 1961. FWD was a manufacturer of heavy-duty off-road vehicles and road maintenance trucks such as four-wheel-drive snowplows and snow blowers. In that same year, a new lineup
of FWD-Wagner agricultural and industrial models was released. These machines, including some all-new models, generally resembled the earlier Wagner Tractor Co. machines, but with updated styling. In ’61, the WA-6, WA-14 and WA-24 replaced the earlier TR models. The WA-4 and WA-17 were new introductions at that time. By ’62, the WA-6 was dropped in favor of the WA-4. The popular 100-120 horsepower WA-4 was offered with a three-point hitch, but the WA-14, WA-17 and WA-24 were still principally wheat land tractors with high capacity hydraulics and unsurpassed pulling power.

FWD-Wagner’s WA-14 and WA-17 tractors proved popular with large scale growers in the regions already well served by the Wagner brand. Both tractors were initially powered by 773 cubic inch Cummins engines, which were later replaced with the N885-CI Cummins, making either 220 or 280 horsepower in the WA-14 and WA-17, respectively. The engine was turbocharged in the WA-17. Both models used the Fuller Roadranger 910 RTO transmission with pressurized lubrication and oil cooler. The chain driven drop box and oscillating hinge were FWD-Wagner and the axles were FWD brand with planetary gear reduction at the hubs. Initially, WA-14 and WA-17 tractors had an angled front bumper and rounded grill frame, which were retained until they were restyled in late ’68 for the 1969 model year.

FWD-Wagner’s 1961 brochure squarely takes on the John Deere 8010 with the following language:

*Leadership cannot be copied.*

FWD-Wagner experimentation preceded competition by five years. Competition finally awakened to the fact that FWD-Wagner was right all along. Now some are belatedly trying to copy FWD-Wagner features, but it will be difficult to catch up. Our mistakes are behind us. In product engineering, the company with the head start ... stays ahead.

Although John Deere is never mentioned specifically in that statement, it was the only other competitor at the time; the Steiger brothers had perhaps four machines built by them and Versatile was still a few years away from its first articulated four-wheel-drive.

Wagner tractor enthusiasts generally agree that either Wagner Tractor Inc. or FWD-Wagner filed an infringement lawsuit against John Deere over the 8010, although no documents proving that have yet surfaced. FWD-Wagner magazine advertisements often included the language: *Where machines are originated...not imitated.*

Clearly the issue of copycat competitors remained at the forefront through the late ’60s. Whether John Deere’s abandoning the 8010 had anything to do with litigation is pure speculation, but it is also interesting to note that International Harvester’s first big early ’60s four-wheel-drive, the 4300, was a sales disaster too.

**Clear as mud**

FWD-Wagner launched a redesign of its agricultural tractors in late 1968. These tractors had more angular grills, modern hoods and front bumpers that were massive and straight. By then, the machines offered big farmers comfort, power and high capacity hydraulics. However, they were still component built and largely mechanically unchanged from 10 years prior. For FWD, the Wagner tractor line had begun to run its course although it obviously still had significant market-share value.

The details leading up to the John Deere arrangement with FWD-Wagner are murky at best. Some say that it involved a courtship of sorts. Some say that it involved a means to settle the lawsuit that may have been filed. Still others say that it was just a pragmatic business decision for both parties. We may never really know how or why it all came about, but it would be hard to imagine how such a one-sided business deal could ever be struck.

Agriculture historians generally accept that a contract, for up to 100 tractors, was presented to FWD-Wagner by John Deere on Dec. 31, 1968. That contract evidently stipulated that John Deere could terminate the deal at will, no matter how many tractors were actually purchased. The contract also is said to have included a no-compete clause, which prevented FWD-Wagner from selling any four-wheel-drive, articulated agricultural tractors for five years after the contract was terminated.

If indeed those were the terms of the contract, it is difficult to imagine how FWD-Wagner management...
Several of the 50 or so original John Deere Wagner tractors are still in daily service or private collections, but many have yet to be found. Although Wagner always mailed by the 1st of the month, delivery date can vary from month to month.

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