

# JOHN DEERE FARM TRACTORS



A History of the John Deere Tractor



# Model GP and Specials

## Potatoes in Maine, Apples in Washington

It was a vicious circle. As tractors became more general in purpose, all-crop in execution, the branch agents and implement dealers conceived of even more specialized requirements and uses for them.

Of the twenty-three original GP tricycles, about half a dozen were assembled with narrower rear wheel rims—8in treads instead of 10s. Square holes were tapped into the steel rims, for sixteen lugs. The rear track was 68in, not 74in. These examples were customized to meet the needs of the potato growers in Maine.

Following the first six potato farm “prototypes,” the factory issued an order to manufacturing in mid-November 1929 to assemble an estimated 150 Series P tractors a year. Known as decision copy, the authorizing document was originally circulated among those who needed to know, and eventually published in the Two-Cylinder Club’s *Collector Series*, volume 1. It said:

“To meet the requirements for potato culture we will make a Series ‘P’ tractor which is similar to the General Purpose Wide-Tread tractor except change wheel tread to 68 inches by making shorter right and left quills, differential shaft, right and left brake cams and drawbar. Use standard front wheels 24 x 4 inches equipped with standard General Purpose guide bands. Use 44 x 8 in rear wheels punched so that either 24 or 16 lugs per

wheel may be used.... Power shaft and lift complete will be furnished standard with tractor, a new lift pendulum being required for the Series ‘P’ tractor....

“A new serial number plate will be used, numbers beginning with P5000.”

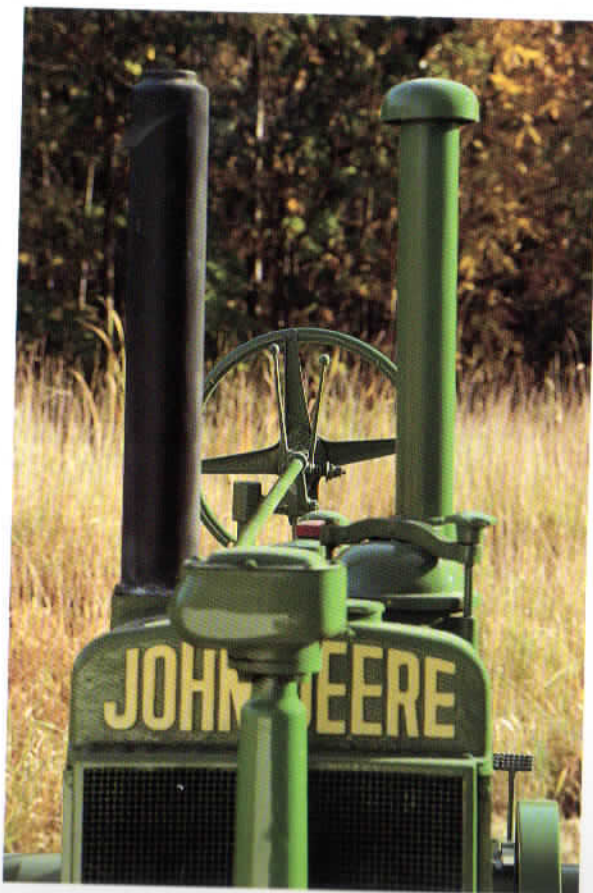
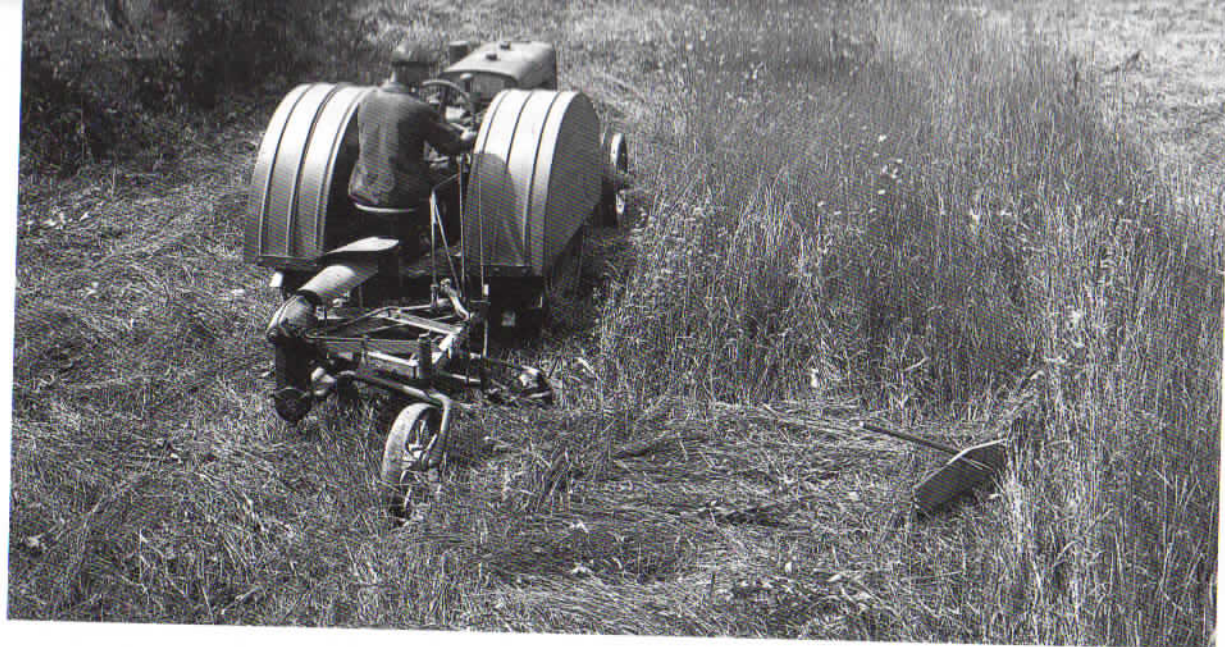
According to Two-Cylinder Club research, production reached 203 in 1930, but that was the only year the Series P was built. During its run, a new rear wheel was designed with a 3in offset, and it could be reversed on the shaft to accomplish the 68in tread width. The parallel front wheels, known as the “bedding” front end, standard on the P tractors, was retained as an option after the series was discontinued. Shipping records indicated that all 203 Series P tractors produced were delivered to branch houses or directly to farmers in the American Northeast and in eastern Canada.

Another decision copy, dated January 22, 1931, marked the end of the Series P. Again, from Two-Cylinder Club research comes the exact wording: “To standardize equipment and to continue to furnish a tractor for potato cultivation we will discontinue production of the Series ‘P’ tractor and furnish instead a Wide-Tread tractor with special offset wheels to provide the same tread as now obtained with the Series ‘P.’”

A distant 2,800 miles due west of the potato farms in Maine, one customer in Yakima, Wash-

**D**eere & Company’s General Purpose tractors appeared first in 1928 in tricycle configuration. Many had cast front wheels at the start, which were also known as “Texas wheels.” These dish-shaped wheels shed sticky gumbo soil but would clot and ball up in softer soil conditions where spoked wheels with guide bands were preferred.

The 1935 GP-O with orchard fenders mowed grass in an orchard in July, right. The Orchard version was produced from April 1931 through April 1935. Slightly fewer than 750 were constructed, first on steel wheels and then available on pneumatic rubber. GPOs weighed 4,250lb with the additional sheet metal. *Deere & Company archives*. Below, early General Purpose wide-tread tractors adopted the side-mounted worm-and-sector steering of the Model D and Model C experimentals. Steering was difficult and inaccurate no matter which front wheels were fitted. In 1932, Deere introduced “overhead steering,” which removed the slack and allowed a narrower hood for improved visibility.



ington, ordered his tractors without any wheels at all.

In 1920, when Jesse Lindeman was barely twenty years old, he moved from western Iowa to central Washington. Two years later, when his brother Harry turned twenty, he joined Jesse, and together, they started Lindeman Power Equipment Company, selling Holt crawlers and harvesters in the valley of the Yakima and Naches rivers. In 1925, when C. L. Best Tractor Company and Holt Manufacturing Company merged assets and dealers, the Lindemans missed the cut. They quickly picked up a Cletrac franchise from John Lampert in Spokane, Washington. Crawlers were a near necessity in the sandy, hilly terrain where the prevalent crop was tree-grown fruit. The Lindeman brothers found few faults initially with the Cletracs, and their company quickly became one of Washington's largest dealers.

In 1930—after adding younger brother Ross but losing brother Harry to a fatal auto accident—Lindeman became a John Deere full-line dealer. Rollin White, Cletrac's owner, had begun “tinkering” with his company and its machines, and the quality had slipped. The Deere Model D impressed the Lindemans.

“What struck us,” Jesse recalled, shortly before his death in 1992, “was that here was this wheel

tractor, this Model D, and this engine burned what we called 'stove top,' this 'fuel' that cost 6.5 cents a gallon, no tax. And all these farmers out here not only wanted that, but they had to have crawler tracks on it.

"So we just looked in our warehouse and found a used set of Best 30 tracks and rollers," he explained. Then he continued with a laugh: "It was a simple enough thing to do, but it was ugly!"

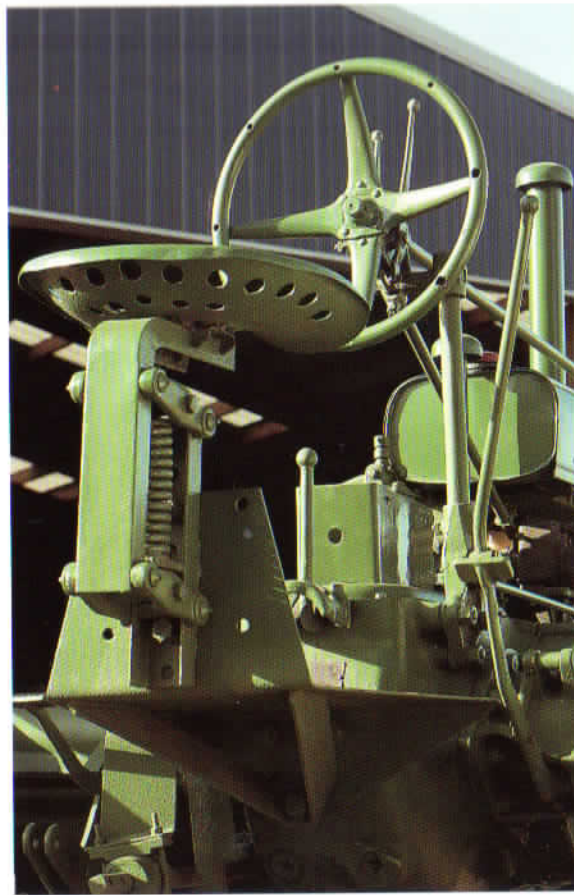
Little brother Joe did the tractor testing, up near Rim Rock at the north end of the valley. The D crawler got the attention of farmers in the region, and two more were built. Handling the tractor was a challenge. Like the Cletrac, it turned only with the use of steering brakes, or track brakes. "Which meant," Jesse said, "it didn't turn very well. Track clutches had existed on some of the earlier Best and Holt crawlers, but we hadn't figured out that adaptation quite yet."

For a short while in late 1931 and early 1932, the Deere factory assembled eight or ten Model Ds as crawlers, known unofficially as the Model DC. But the DCs continued to use wheel, or track, brakes for turning, and although this worked, it was not satisfactory. The project was shelved, and the prototypes were dismantled and rebuilt.

Ben Keator, Portland branch manager, and Pat Murphy, sales manager, came to Jesse a short while later with a new proposition. Deere & Company was interested in producing an orchard-and-grove version of its new GP. Well aware of the work the Lindeman brothers had accomplished with their D-Orchard crawler, the engineering staff in Waterloo and Moline, begrudgingly, wondered if Lindeman would be interested in performing some experimentation and development work.

"You better believe those engineers back in those wheel tractor plants were mad as the devil," said Jesse. "As one fellow put it, 'Crawler tractors back here are a dirty word.' It was something you didn't speak about." It was partly professional jealousy—the Lindemans had done the work, not the Deere engineers—and partly product orientation, as the crawlers were not considered agricultural tractors in the Midwest.

A new production GP was shipped to Yakima, where Jesse examined it and subsequently refitted it with a modified front axle and reversed the rear axle gear clusters. This dropped its overall height



nearly 7in to let it fit more easily beneath the apple trees growing in central Washington. This tractor also steered using track brakes, the same as did both the Lindeman D crawler and the Deere factory DC experiments. This system, also like the one on the Cletrac, was a handful. The differential speed made the outside track turn twice as fast as the braked inside track, so the tractor actually seemed to go faster in turns.

Five additional orchard versions were built and tested, based on the Lindeman modifications. One was shipped to southern California, and the others went to the central California coast during the summer of 1931. Successful results produced the authorization to begin regular production.

"As Deere & Company began fitting three-speed transmissions to the Model D, it was easier for a while for us to get the newer GP tractors," Jesse said. Easier to get the GPs, and easier to

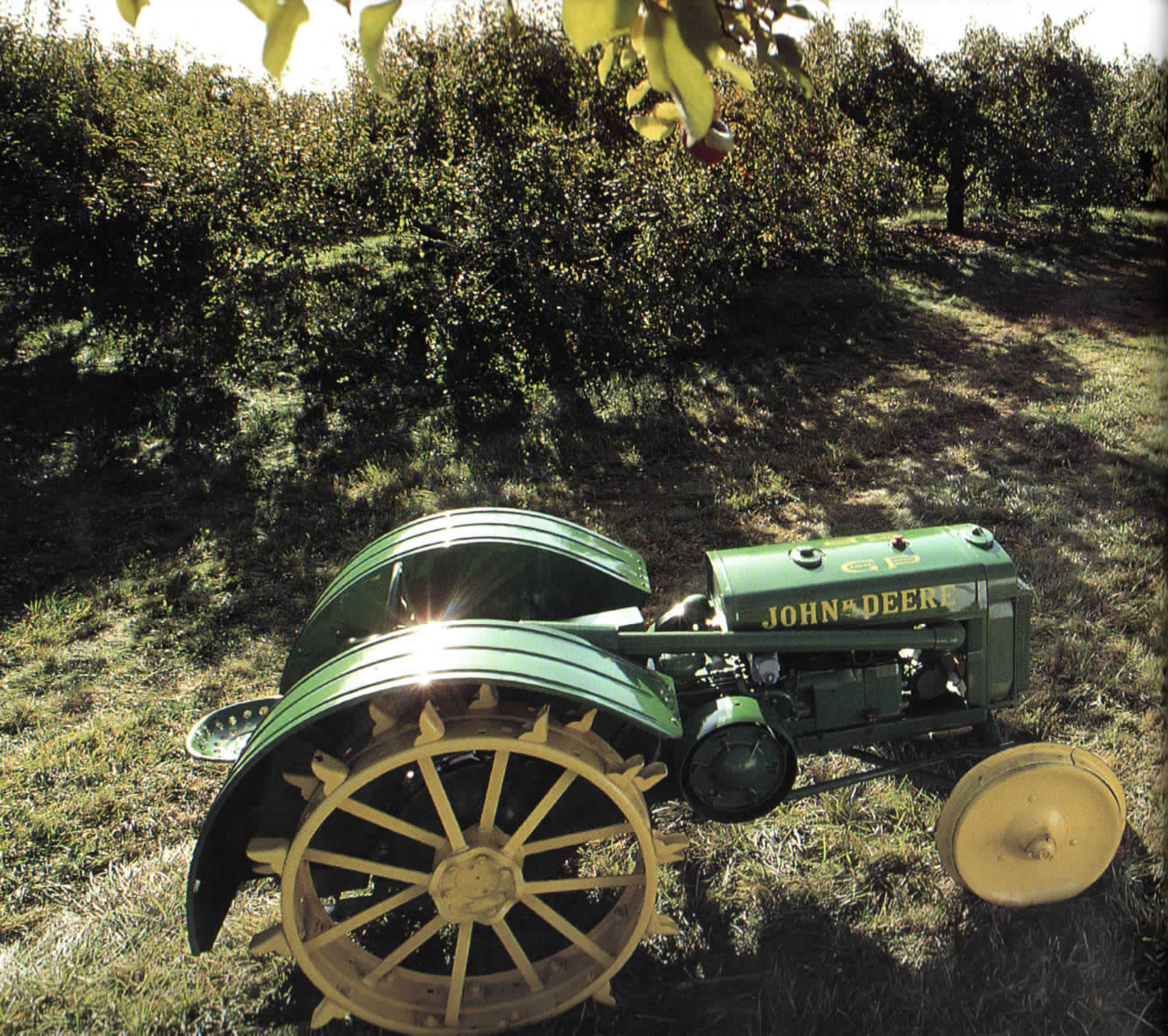
For 1933, Deere & Company offered several improvements in the GP-WT, including overhead steering. The engine, the 6.00x6.00in variant introduced in mid-1930, still rated 10 drawbar and 20 pulley horsepower at 950rpm to pull two 14in bottom plows. The three-speed transmission introduced on the Model C was carried over and provided a top speed of 4.125mph.

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—Jesse Lindeman

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adapt them to crawler tracks. “We didn’t even have to change the drive! They had a chain drive on the D-O, and we had to change it to a smaller chain sprocket. And we put the fenders on it to get under the trees.”

Other modifications by Lindeman and the factory also included an elaborately plumbed

Records indicate that 445 of the GP-WT overhead-steering models were built, starting from number 404,811, left. The large shaft holes in the frame were meant to support center-mounted cultivators, a main reason for introducing the GPs in the first place. This model, number 405,135, is part of Walter and Bruce Keller’s collection. Far left and below, this tractor started life as a GP-WT but on July 24, 1930, it was retagged: CX20, one of six experimental development tractors—only two remain—for orchard and grove use. It was sent to Hollister, California, not far from Monterey, for testing and evaluation. When it returned to Waterloo, it was renumbered again, as GP-O number 15,223, and given a 1931 manufacture tag.









intake manifold, which relocated the air filter to near the operator's right shoulder.

Once the factory development work was completed, Jesse again turned his attentions to the kind of machine his own customers needed. Twenty-four GPs were turned into GP-O (Orchard) Lindeman crawlers, some fitted with long fenders, and others with no fenders at all. The second generation of these tractors was reconfigured with steering clutches, which disengaged the drive from the inside track. When the track brake was operated as

well, this made turning effective—and safe. All but one of the GP-O crawlers were fitted, or refitted, with steering clutches. These improved machines got attention as well, from the Portland branch office for Deere & Company Plow Works. Murphy and Keator both helped Jesse get parts and helped Deere engineers get a further look at Lindeman's modifications.

"For the GP," Jesse recalled, "I made a master pattern for a one-sixth section of the new drive wheel. Then, Paul Austin [one of Lindeman's engi-

Later-model orchard tractors enclosed the rear wheels to keep branches from getting caught and being damaged, far left. But this experimental was one of the company's first efforts. Above, one of Lindeman's twenty-four GP crawlers, this is number 15,704.

Lindeman's first Model GP crawler required that he modify the front axle and reverse the rear wheel clusters to lower the overall height, right. For the sprocketed drive wheel, Lindeman made a pattern that was then molded at his Yakima, Washington, factory. Some Lindeman GP-Os had full fenders; others had partial fenders; some had none. Lindeman adapted his first tracks from a Best Model 30, then began making his own. Far right above, Lester Layher checks radiator water on his 1935 GP-O Lindeman crawler. While Deere had experimented with crawler versions of the Model D, the Yakima-based Lindeman brothers produced six D crawlers and twenty-four GP crawlers as regular production. Steering the tractor was difficult; it turned only using steering brakes. Its differential made the opposite side speed up. Far right below, Walter and Bruce Keller's 1929 Model GP number 209,856 still gets occasional use breaking ground around their Kaukauna, Wisconsin, farm. Early GPs had a short, downturned exhaust pipe; later versions offered the tall, upright pipe and muffler shown here. Behind the GP, the Kellers use a Model 4B two-bottom plow.



neers] cast one with the teeth and then went on and made a mold from that. And that was about it.

“When we got it finished,” Jesse said, “the John Deere people came out, and they were impressed. And they looked it over carefully. What happened was they said, ‘You *must* identify this as *not* a John Deere tractor. You used John Deere parts, but it’s a Lindeman.’”

Jesse laughed. “I would have done the same thing. So, we called it the Lindeman John Deere—of course, we liked the John Deere name because it sold tractors.” He hesitated for a moment. “Although, now I hear that they refer to our tractors as John Deere Lindemans.”





Jason Keller, 15, lifts the plowshares as he reaches the end of the row. GPs were two-plow rated, and the early models used Deere's 5.75x6.00in engine introduced in the Model C in 1928. The Model 4 plow was introduced in the late 1920s as a two-furrow version of the popular, larger Pony Model 5 and 6 plows.

Jesse enjoyed the honors bestowed, nearly sixty years after the fact. "Now, they paint the letters in the end plates yellow. I keep telling them we were too modest for that.

"The heck we were!" Jesse laughed. "We never thought of it!" Marketing was a foreign language to Jesse. And sales took care of themselves. The Lindeman brothers sold all they could make.

"Keator and Murphy came out one time and talked about another new tractor, a smaller one." Jesse looked out the window—a long way out the window, to that other time nearly half a century before.

"They asked if tracks could be fitted to a smaller tractor. Well, we were game." Murphy and Keator gave Jesse the sketches and drawings of the

wheeled version so that he could begin to think about the project.

"So they got us an early chassis," Jesse continued. "It had no front or rear wheel assemblies. Just driveshafts and axle bolts. We drilled not more than ten holes in that whole tractor to attach our tracks. It was just lucky!"

When he thought back to that new project, he had to laugh. With all the other work he had done for Deere & Company and on his own products as well, it was this one that would secure his place in agricultural history.

"Believe me," said Jesse, his eyes bright with the memory, "they didn't plan for any other kind of tractor adaptation when they designed their Model B. It was really just lucky!"



The General Purpose model was introduced in 1928 and was supplemented first by the GP tricycle prototypes and then the Wide-Tread—versions more suitable to row-crop applications. The Wide-Tread models continued in production through 1933, and GP Orchard models remained in the product line up into 1935.

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—Jesse Lindeman

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# Model BO Lindeman

## Variations on a Theme

“It was a really good-looking tractor,” Jesse Lindeman said seriously. “And it just looked to us as though Deere had deliberately built a chassis to take crawler tracks. No other tractor I’ve ever seen was that close from the start.” He recalled his first impressions of the Model B that was shipped out to him, as arranged by Ben Keator and Pat Murphy.

“We had our own steel foundry, and we cast our own idlers and track rollers and sprockets. And we made our own tracks, too,” he went on, “but they weren’t as nice looking as they should have been, so I drew up a plan for samples and sent them back to a foundry in Coraopolis, just up the river from Pittsburgh, Pennsylvania. And they were drop forge dies, just like Caterpillar’s.

“We copied a lot of that. Why, heat treating, for example. But, you know, I also had a pretty good acquaintanceship with a guy named Williams there [at Caterpillar], head of the manufacturing department.”

Lindeman had developed a system for the GP, and perfected it on the BO, for mounting tracks so that each time the assembler put a pin in a pair of links, the next pair was automatically lined up.

“But how to put that connecting track in? Had to be a tight fit! Couldn’t use a cotter pin; that’d work itself out pretty quick.” Lindeman grinned as he recalled the manufacturing mystery.

“Williams showed me a slick way Caterpillar did this. ‘We have a drive pin with a handle on it,’ he said. When he held it, another fellow would hit it with a heavy hammer. Had a heavy anvil behind it, set the tractor right on the anvil. Banged it right in.

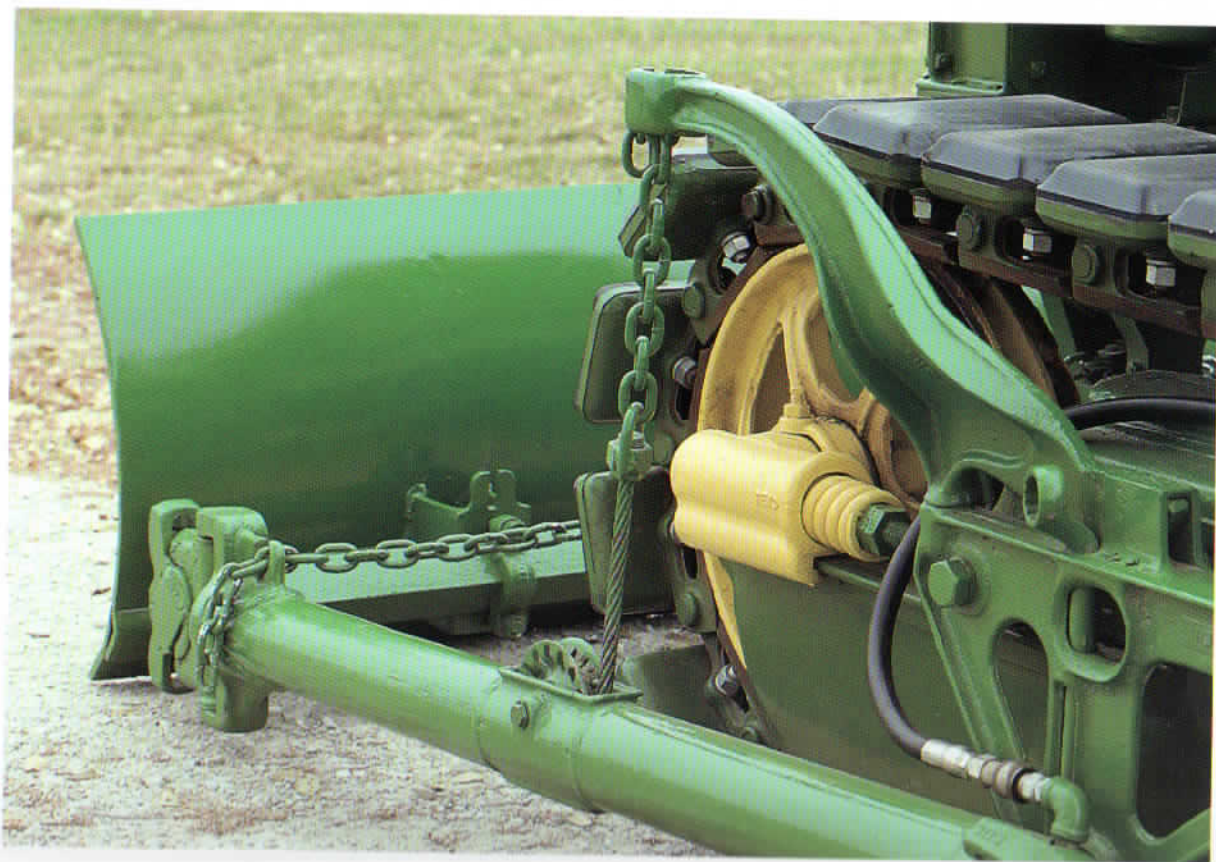
“It worked great. They had a lot of good systems. Only,” Lindeman smiled broadly, “they didn’t have the hydraulic deal. I talked to them about that, and all they said was, ‘We don’t touch hydraulics. Only people who know anything about hydraulics are John Deere.’”

Lindeman learned about hydraulics from Deere & Company—and adapted it to lift his bulldozer blade. He had previously used the belt pulley. On three tractors built for the US Army, the blade was raised or lowered by reversing the pulley direction.

“These were built for Colonel [Charles] Wiman. He was going back into the Army during World War II, and he knew the Army used the small Caterpillar D4,” Lindeman explained. “What he thought was that these little crawlers of ours could be used for construction on airfields on some of the small islands in the Pacific. It was just the right size to have it fit into an airplane at that time, and it was strong enough to drop from an airplane.”

Without much fanfare, Jesse Lindeman posed for an official photograph alongside the last of his BO crawler conversions. Manufacture began in 1939, and 1,675 were eventually produced at the Lindeman plant in Yakima, Washington. Lindeman’s conversions represented Deere’s first mass-produced efforts with crawlers.  
*Lindeman archives*

Lindeman built a dozen of his BO crawlers on rubber pads, right, intended for use in US Navy shipyards to gather iron ore scrap and slag from ship holds without sparking against the steel floors or cutting them with steel tracks. This crawler, on Deere's BO chassis number 333,787, was shipped to Lindeman mid-August 1944. It is now owned by Harold Schultz in Ollie, Iowa. Below, Lindeman made good use of Deere's on-board hydraulics with his crawlers. He used the system not only to lift or lower the blade but also to change its angle of attack. Lindeman began producing his BO crawlers in 1939 and used BO engines and transmissions. The crawlers with 10in wide steel tracks, weighed 4,420lb. A total of 1,675 were built on steel and rubber.

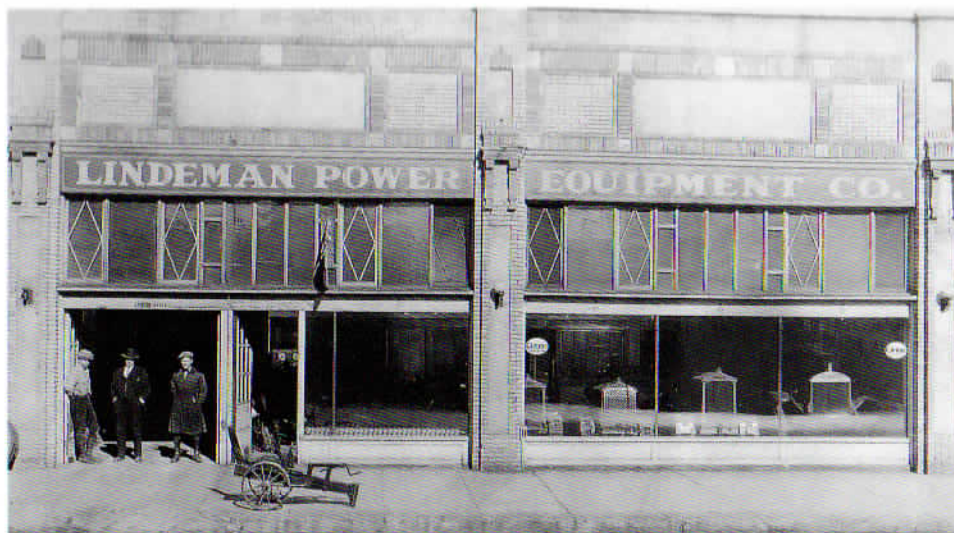




Lindeman had also developed a three-way blade for the Army test crawlers. Pulling a single pin reshaped the blade into a V-plow, a diagonal blade, or a flat bulldozer. With its PTO-operated winch, its abilities seemed far greater than its size.

"But the Colonel was a very dominant fellow," Lindeman continued. "He didn't earn his rank in the battlefield—it was just more or less awarded to him like it was to a lot of wealthy businesspeople—and they [the Army] didn't like him very much. They ended up going to Case and had them build a new, smaller crawler."

Lindeman did, however, build a dozen tractors on rubber pads during World War II. These were meant to run on pavement. But their more specialized use dropped them into the holds of ships to clean out iron ore scrap and slag. The rubber pads



**I**n 1925, the Lindemans became Cletrac dealers and moved into a former Cadillac showroom at 121 South First, above. Cletracs and a White automobile filled the showroom of Lindeman Power Equipment Company. In those days in Yakima, when calling 911, it was likely as not that Jesse Lindeman himself answered the company telephone. Right, after Lindeman's three experimental US Army tractors were rejected, two were repainted and loaned to the US Navy for evaluation purposes for the Navy's Construction Battalion, the CBs, or SeaBees. A specially produced scoop shovel gets a workout moving sand dunes. The Navy also declined the Lindeman crawlers. Far right, Jess Lindeman learned about crawlers from his friends in engineering at Caterpillar, but he learned about hydraulics from Deere.



did not cut up the steel floors of the ship's hold, as the standard steel track pads would have.

This adaptation, and Wiman's pressure on the Army to test Lindeman's BO, kept Deere & Company supplied with steel during the war. The War Production Board found itself "convinced" that Deere's crawlers were "essential materiel," and Lindeman got priority treatment, especially since Waterloo shipped chassis to Lindeman without rubber tires, a commodity in short supply due to the war.

In 1946, Deere & Company advised Lindeman and his brothers that the Model B was to be discontinued in another year. Would they be interested in working on the development of a crawler for the new Model M? When Lindeman said yes, Deere made the family an offer they could not refuse. On January 1, 1947, Jesse, Joe, and Ross sold their company to Deere for \$1.245 million.

Production of the BO crawlers ended at just 1,600 in 1947 when Deere & Company introduced the Model M. The crawler version, MC, went into production two years later, introduced for the 1949 season.

To further consolidate its far-flung subsidiaries, Deere moved all its Yakima operations to Dubuque, Iowa, in 1954. The 422 employees of Lindeman Power Equipment company had been kept busy producing the crawlers built there. At peak production, five of the \$1,360 BO Lindeman crawlers popped and clanked their way out the door every two days from the company's 10-acre Yakima factory at 1011 South Third Street.

Lindeman had built other adaptations for customers. He manufactured a wide-tread model, for row-crop adaptations. "We sold a few of the adjustable-track Lindemans," he explained. "They were built on square tubes that we used for the framework between the track and the tractor. The track was clamped on. The sprockets were on sliding shafts so we could move everything exactly out to the row-crop width.

"We just put a short shaft in for the average person. You could put in any length square shaft in there and any length sprocket shaft—within reason—and get any track width you needed."

The BO Lindeman crawlers were adjustable. Seats would go up or down, in or out. But in the

end, another technology presented a flexibility the crawlers couldn't keep match.

"In the earliest days of these crawlers," Lindeman reminisced, "they were the best way to get

around the hills in the orchards. But then, rubber tires came more and more into use, and they got better and better. That's what did in our small steel-tracked crawlers for orchard use."

It was the news story of the day, left. The headline could as easily have read "Local Family Does Good!" Near the end of production of the 1,675 BO crawlers, Lindeman employed 442 people in the various departments of his family-owned firm. The Yakima Works, as they were known after the sale, produced bulldozer blades for M crawlers and Model 40 crawlers through the years following Deere's purchase. Lindeman archives. Below, Jess Lindeman joked shortly before his death in September 1992, that collectors painted his name in John Deere yellow against the green of his crawler roller covers. When he was asked why his company never did that, he excused it to modesty. But then he laughed hard at the joke on himself: "We just never thought of it!"

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—Jesse Lindeman

Yakima Weather  
Temperature 54°  
Forecast: Partly cloudy  
with showers  
and drizzle  
today. High 54, low 41.  
Tomorrow: Partly cloudy  
with showers  
and drizzle.  
High 54, low 41.

# YAKIMA MORNING HERALD

State Forecast  
Detailed 7:30 today  
and Saturday with  
updates in minutes.  
Daily weather  
in 10 minutes.  
Price 5 cents

VOL. XLII, NO. 14

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YAKIMA, WASH., FRIDAY, DECEMBER 13, 1946

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PRICE 5 CENTS

## Deere & Co. Buys Yakima Plant

### Reclamation Educational Need Cited

Northwest Project Plans Discussed During Convention

Washington, Dec. 12.—The need for reclamation education is being stressed through the joint reclamation convention being held here today. The convention is being held at the Washington State Convention Center, which is being used for the first time in its history. The convention is being held at the Washington State Convention Center, which is being used for the first time in its history.

There will be no less than 100 speakers at the convention. The convention is being held at the Washington State Convention Center, which is being used for the first time in its history.

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### Granger Seeks Assessment Hike

Changes Sought Property Valuations Declared Too Low



Mayor James H. Bell of the city of Yakima, Wash., is shown above. The council is seeking an upward adjustment in Granger property valuations.

Granger, Dec. 12.—Taking the lead in a move expected to gain county-wide support from voters, Mayor James H. Bell today asked the county assessor to raise the assessment of Granger property in 1947 over its 1946 level with an increase of 10 percent.

The assessor, the mayor declared, had made an error in valuing the city's property. The assessor had valued the city's property at 100 percent of its 1946 value, while the assessor had valued the city's property at 90 percent of its 1946 value.

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### Farm Goals Retained at 1946 Levels

Some Increases in Production Set in PMA Schedule

Spokane, Dec. 12.—In an announcement of 1947 Washington farm production goals, the producers and marketing administrators today asked farmers to either hold production at present levels or to increase output next year.

The production of corn, the most important crop, was set at 1,000,000 bushels, an increase of 100,000 bushels over the 1946 level.

The production of wheat was set at 1,000,000 bushels, an increase of 100,000 bushels over the 1946 level.

The production of soybeans was set at 1,000,000 bushels, an increase of 100,000 bushels over the 1946 level.

Views of Major Manufacturing Concern



### Lindeman Firm Stated For Expansion

Payroll Increase Loans For Major Industry in Valley

Yakima, Dec. 12.—The Deere & Co. plant in Yakima, Wash., is being expanded to a total of 1,000,000 square feet, according to a statement today issued by the company.

The expansion of the plant is being financed by a loan from the Federal Reserve Bank of Seattle.

The loan is for \$1,000,000 and is being repaid over a period of 10 years.

The loan is being repaid by the company's operating income.

### President's Order Merges Agencies

Flaming Chosen To Head Office

Washington, Dec. 12 (AP)—President Truman today announced that he had ordered the merger of the Federal Bureau of Investigation and the Federal Bureau of Prisons into a single agency.

The new agency will be headed by a man chosen by the president.

The new agency will be headed by a man chosen by the president.

### Home County Group

Organization of Home County Group

