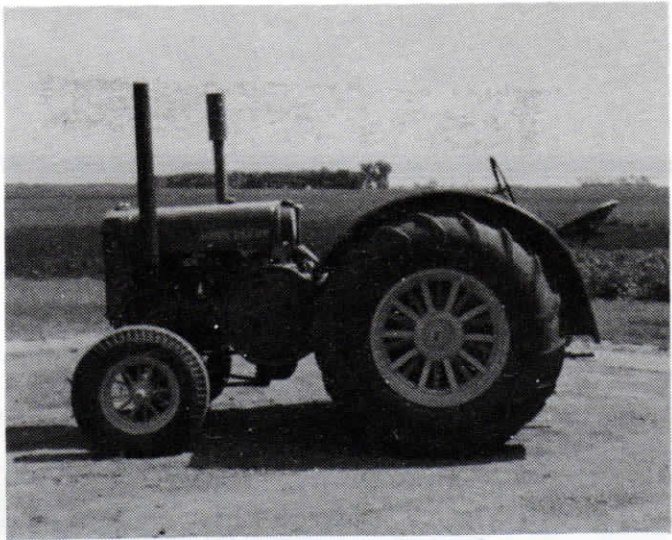


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GREEN MAGAZINE



This 1938 D is owned by Mark Sirjord of Bejou, Minnesota. He also enjoys antique tractor pulling.



A History of the John Deere INDUSTRIAL EQUIPMENT DIVISION

The date of John Deere's start in the industrial equipment business is open to interpretation. It could be said that the log wagons sold by the Portland, Oregon, branch in 1909 marked the beginning. A truck designed by Joseph Dain, Sr., in 1916 was considered for inclusion in the product line until 1919, but was never marketed. The main feature of this truck was the Dain Friction Drive. It was powered by a Velie engine manufactured by Charles D. Velie of Moline, a grandson of John Deere and a director of Deere & Company at the time. A Waterloo Boy tractor was used by the city of Moline, Illinois, to pull a road scraper in 1920. A hard-rubber tire version of the "John Deere Industrial Tractor"; it was officially adopted as the "DI" in 1935 and remained in production until 1941. Industrial tractors were used in the late 1930's to pull graders and road sprinkling wagons, and as power sources for belt-driven saws and winches in the logging business. Also during the 1930's, the Lindeman Power Equipment Company of Yakima, Washington, was using John Deere engines and drive-trains in its line of small

crawlers, for which Lindeman made the undercarriage.

But realistically, it's more reasonable to point to December 1946, when Deere & Company acquired certain assets of the Lindeman company and began producing its own line of crawlers. Those early crawler tractors were used mainly for agricultural applications, but gradually Deere developed a distinctly industrial line of equipment intended for construction and forestry industry users. This history will trace the significant moments along the way to the present, when John Deere stands as one of the five leading industrial equipment companies in the world.

Awareness of industrial applications (in fact, a catalog of "industrial" equipment was published in 1937) had led the company to offer Waterloo tractors designated "AI" and "BI" as industrial versions of the 23.52-belt horsepower "A" and 14.25-belt horsepower "B" models of the late 1930's, and the "LI", an industrial version of the 12.93-belt horsepower "LA" of 1941. The 1937 "L", John Deere's first utility tractor, was intended for work that did not require

the power of larger tractors in the line; at 9.27 belt horsepower and with an offset engine that increased visibility, it was a handy machine for grounds maintenance. The "LI" was the first of the "I" series tractors with pneumatic tires instead of the hard-rubber tires used on the "DI", "AI", and "BI".

Ground was broken in June 1946 for the Dubuque Tractor Works, destined to become the company's largest single manufacturing facility and primary industrial equipment factory. Maurice A. Fraher, who had supervised the building of the plant, managed production there until 1952, when James D. Wormley became manager.

The first Model "M" agricultural wheel tractor was produced at Dubuque in April 1947 and shipped to the Arizona farm of company President Charles Deere Wiman. Willard H. ("Nurdy") Nordenson, chief engineer at the Dubuque Tractor Works, was responsible for designing the "M" as well as the earlier "L" series. Work on the "M" began at the Moline Tractor Works, where Mr. Nordenson served as both chief engineer and manager. The Moline Tractor Works was formerly the

Velie plant. An industrial version, the "MI", bore little resemblance to its pre-World War II forebears. It had 18.21 belt horsepower and its rounded corners and streamlined appearance showed the influence of Henry Dreyfuss and Associates, a New York design firm that began sculpturing Deere machinery in a distinctive style that first appeared in 1939 with the "A" and "B" model updates. (Dreyfuss began with the "B" in 1937 and has remained a design consultant for John Deere ever since.)

The opening of the Dubuque factory and the acquisition of Lindeman, which gave Deere entry into the crawler field on its own, were roughly coincident with the introduction of the "MI". These three events, coming as they did within a period of about eighteen months, launched Deere on a course of machine development that would lead to a separate industrial equipment division, although that was not known at the time.

The small, three-roller "MC" crawlers (1947) had 18.89 belt horsepower and were thought of essentially as machines for agricultural use. They were used first in the western vineyards, and later in agriculturally-oriented light earth-moving. But those uses on the farm — contouring, improving drainage, and so on — caught the interest of some customers who were not farmers, and the crawlers started turning up on construction jobs and in the woods. Some farmers, especially in the East, actually started the movement toward forestry applications by using the crawlers to skid logs in woodlands on their farms. (There was even an advertising slogan at the time that said, "The woods are full of them.") Other farmers found them handy for working between trees in orchards. Their interest in the small crawler's possibilities did not go unnoticed. Expansion of the Dubuque

factory was planned before the year was out.

In 1949 a tool carrier made in Yakima, the model "1000", was offered for use on either end of the "MC" crawler — in front, it carried a bulldozer blade; in back, it served as a hitch for a plow or other implements. By May 1952, the first three items of allied equipment were cleared for use on the small crawlers, a posthole digger and two winches, increasing the MC's value in the forest. In the summer of 1952, the model "40" tractors were introduced, and another winch, log cart, rear scoop, post driver and sprayers from allied manufacturers were cleared to expand the market for "40" wheel and, especially, "40" crawler tractors. At this time the model "61" angling dozer blade was also offered for both the 20.14-horsepower "40" and the earlier "MC" crawlers, turning them into more versatile bulldozers.

The 22.86-horsepower "40U" wheel tractors were introduced in 1954. In addition, by this time there were six attachments manufactured by Deere (the "61" angling blade brought out in 1952 plus the new "80" rear-mounted blade and "20" rear-mounted scoop, "TP26" rear-mounted forklift, "47" cutter bar mower and "LFI" road maintainer for distributing salt and cinders), and 10 pieces of allied equipment. The Allied Equipment Program was extended in 1955 in order to expand the usefulness of John Deere tractors in light industrial and logging fields; the program now included backhoes, pumps, generators, trenchers and winches. Late in 1955, the 30-horsepower "420" crawler, with a choice of four- or five- roller track, replaced the "40".

Things began happening rapidly in 1956. It was an important year for a number of reasons. Fifty different allied items were cleared for use on the "420"

wheel and crawler tractors — loaders, dozer blades, rippers, backhoes, small scrapers, pumps and various other tools which caught the attention of contractors and firmly established John Deere in the industrial equipment business. A five-speed transmission and direction reverser were among the improvements made on the "420" crawler. The 21-horsepower "320U" and 30-horsepower "420U" wheel tractors and "430" crawlers broadened the product line. The model '90" loader was available for use on the "430" crawler.

In 1956 the company projected that farm populations would decline, the size of farms would increase, and the result would be a need for more productive machinery. Research and development costs representing about three percent of sales reflected this analysis. The tractors for "light industrial use" represented a small portion of the company's business, but they were nonetheless beneficiaries of a unique corporate character that encouraged all involved in the enterprise to peer ahead, examine the situation, and make reasoned judgements, without fear of failure. A company policy guaranteed the individual his "right to fail"; that also granted him the freedom to try. With the encouragement of this birthright, the Industrial Division came into being.

Separate records for industrial sales were kept for the first time in 1956; in that year the company sold \$11 million worth of machines intended for the construction, public works and forestry markets. If history is reckoned in terms of financial progress, 1956 marks the beginning of the Industrial Division. Industrial equipment was no longer an offshoot of the farm machinery business, but a separate entity with sales

records to document its legitimacy.

John Deere industrial tractors made their Chicago Road Show debut at the International Amphitheater early in 1957. Of the 15 John Deere tractors that were shown, only one had a piece of John Deere equipment mounted on it (a dozer blade); the rest were shown with allied equipment. Up until this time, Deere had been using backhoes and loaders made by Henry, Davis, Shawnee, Pippen, Gearmatic, Hancock, Wagner and Sherman on its products; after 1957, Deere made its own, although other types of attachments continued to come from allied suppliers.

These machines were painted green and yellow, some "industrial" yellow, one was Omaha orange, and another — a backhoe loader — was red. M. Stanford Barker, a retired senior product manager who was there, recalled that it was "the most colorful display in Chicago".

Also in that year, the first strictly industrial dealership agreements were written, before November 1, 1957, only agricultural dealer agreements were written. In late 1957 and early 1958 the first straight industrial dealers were appointed. Other dealers who sold industrial equipment handled farm machinery as well; these were called "combination" dealerships. At this time Deere had about 3,000 dealers in North America. Each branch house was asked to designate someone to be responsible for industrial equipment sales.

At the same time, an important development was brewing at the John Deere Wagon Works in Moline: the nucleus of an industrial factory organization was being formed. Six people were involved: Philip S. Mumford, the factory manager; Dale V. Walline, industrial sales manager there; John L. French, an engineer from the Harvester Works

who headed a group of three other engineers brought over from the Spreader Works — Wayne Kellums, Charles Termont and Albert Van Auwelaer. Those three men began working on industrial product designs; Mr. Kellums on bulldozers, Mr. Termont on loaders for wheel tractors, and Mr. Van Auwelaer on backhoes. This constituted the first industrial engineering group. A year later, the Wagon Works was dedicated to industrial products, and renamed the John Deere Industrial Equipment Works.

These milestones signaled that "Deere & Company was in the industrial equipment business for keeps and a factor to be reckoned with," as President Ellwood F. Curtis put it in a 1974 speech.

In 1958, the first John Deere wheel and crawler tractors designed specifi-

cally for industrial customers and painted "industrial" yellow rolled down production lines at the Dubuque factory. These tractors were the 35-horsepower "440IC" with a John Deere gasoline engine and the GM-diesel powered "440ICD" crawlers, and the 35-horsepower "440I" wheel tractor, which had evolved from the "MI" and "40U" models, and was offered with either a John Deere gasoline engine or a GM diesel. Also introduced were the "831" loader for use on the "440" crawler. It was the practice at that time to refer to this machine as the "831 crawler loader", although that model number applied only to the loader itself; the vehicle was the "440" crawler. Attached items such as loaders and backhoes carried their own model number in those days, posing some confusion for us today when we see



Grading with an early (circa 1926) industrial D. Note hard rubber tires.

pictures from that period. Introduced too, were the "430" wheel tractor, the "70" and "71" loaders for wheel tractors, the "50" (center-mounted) and "51" (five-position) backhoe attachments with 13 1/2-foot digging depth, the "300" sideboom, a brush and rock rake for bulldozers, a scarifier, several tool bars with ripping and subsoiling shanks, and a buck scraper.

A spirit of curiosity and determination to make machines better had been kindled a century earlier, when John Deere corrected a partner who chided him for putting so much effort into improving his product, by saying, "If we do not improve our product, someone else will." Now the budding Industrial Division took this credo as its own and began what would become the most successful record of innovation and achievement in the history of heavy

equipment design. As this history unfolds, we will see the evidence of that record state and restate the company's commitment to research and development, without lapse or compromise. For those who are inclined to date history by milestones in design engineering, 1958 should be remembered as the year of the first all-hydraulic bulldozer, the Model "64". That bulldozer was mounted on a John Deere "440IC". Also in that year, the Hancock Self-Loading Scraper, developed by a company in Texas, was hitched to a John Deere "820" diesel tractor.

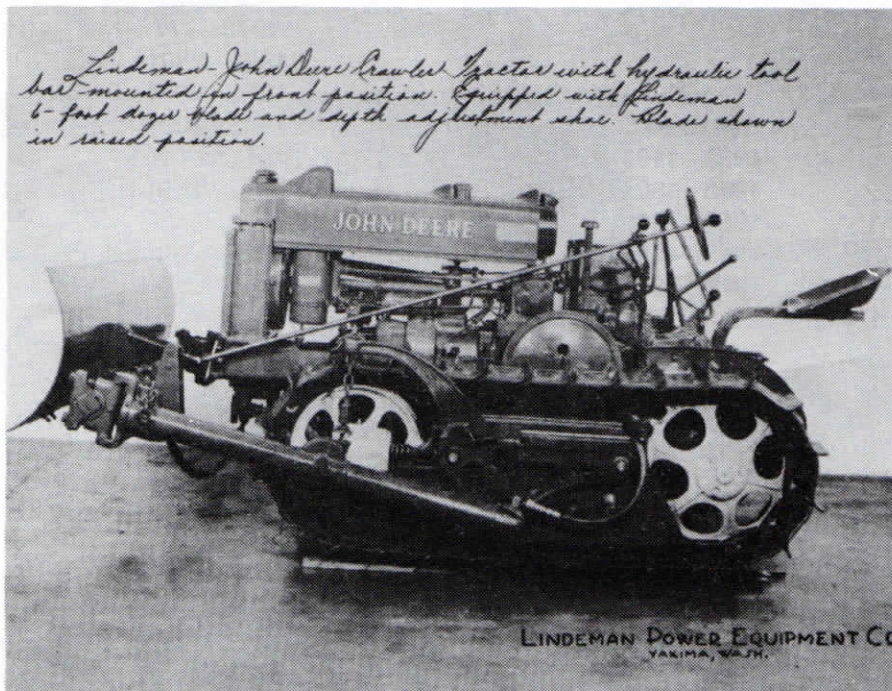
The first issue of "Pay Dirt", produced by the Advertising Department for industrial dealers as a source of sales and product information, appeared in October 1958. Its name was changed to "Spill Sheet" with the January 1959 issue, and it continued publication until

1971.

In November 1958, the name of the John Deere Wagon Works in Moline was changed to the John Deere Industrial Equipment Works, under the continuing management of P.S. Mumford, who had been manager of the Wagon Works since 1955. During this year the first new buildings built specifically for the manufacture of industrial equipment were completed at the Industrial Equipment Works. This added 117,000 square feet of floor space. In 1959, another 83,500 square feet were added, followed by 53,000 in 1960 and 274,600 in 1961. By 1967, total manufacturing space at the Industrial Equipment Works was 528,300 square feet.

Also in 1959 a marketing policy was established under which a straight industrial dealer was to be located in any metropolitan area large enough to support a profitable operation, and combination dealerships were to fill in between these "key" dealers as necessary for market penetration. A five-year dealer development plan was instituted by each branch to assure orderly advancement toward a sound dealer organization. By the early 1970's, the practice of writing contracts for construction, utility, or forestry machines, or various combinations, had begun, and combination dealerships decreased.

The John Deere "400" elevating scraper was attached to the 75-horsepower "840" tractor in 1959. The scraper was still an "attachment" for a separate prime mover; the first self-propelled elevating scraper — the John Deere "5010" — would come four years later. Other attachments added to the line that year were the "300" sideboom, "230" cable plow, and "800" log fork for crawlers. Written by Brian Alm, Deere and Company, Moline, Illinois. Special thanks to Jack Kreeger, Omaha, Nebraska.



A John Deere BO Lindeman crawler with dozer blade.