Filling in the back story

The name “Caterpillar” brings to mind machines that are made mobile using revolving, oblong tracks, instead of wheels – often referred to as “crawler tractors.” What follows is a brief history of the “Caterpillar” tractor and the companies that made it.

The “crawler” type of machine was developed for use on soft ground. The weight of the “crawler” machine is distributed over a much larger surface area of tracks – allowing the machine to traverse soft strata.

One area that had problems with soft ground was the one-half million acre delta of the San Joaquin and Sacramento Rivers south of Stockton, California. The land was very rich in nutrients, but too soft for horses, and certainly too soft to support heavy agricultural equipment on wheels. Benjamin Holt, a manufacturer of agricultural machines, including large “combined harvesters” and steam tractors, lived in this area. He was keenly aware of the need for equipment that could harvest the grains grown on the delta. Holt was the president of a family-owned firm, The Holt Manufacturing Company of Stockton, California. At the time, steam tractors were widely used in the area for agricultural harvesting. In order to overcome the weight distribution problem on soft soils, the iron wheels on the tractors were extended in width horizontal to the ground. However, the wider the wheels, the less maneuverable the tractor became.

Before the introduction of steam tractors, horses or mules were used to pull the harvesters through the fields of grain. But with the development of “combined” harvesters, the machines were becoming bigger and heavier – attributable to the increased number of functions the machines performed. Accordingly, teams of horses had to struggle to pull the agricultural implements, and it became increasingly necessary to utilize steam tractors to pull the combined harvesters.

Holt was already aware of the notion of “crawler” tractors powered by steam, having seen several other tracked machines around the U.S. and Europe, and was inspired to create a similar machine at his manufacturing works. Holt’s version was first tested on Thanksgiving Day in 1904. Company engineers were instructed to remove the rear wheels off of a steam-powered steam traction engine and replace them with the tracks Holt had designed. This track-type tractor prototype underwent additional tests in March 1905. The story is that during the additional tests, Holt’s photographer, Charlie Clements, saw the motion of the track undulating between the drive sprocket and the front idler wheel, and exclaimed that the machine crawled like a “caterpillar.” Holt adopted that name for his “crawler” tractors.

Between Thanksgiving 1904 and the end of 1906, Holt had fabricated six steam-powered track-type tractor prototypes. The third prototype tractor actually became the first production machine when it was sold to a company in Louisiana that was reclaiming wetlands to grow sugar cane.

Aware of the limitations of steam power, the Holts began experimenting with gasoline-fired internal combustion engines. In 1908, production of gasoline-powered “Caterpillar” tractors began, with four produced in that year. The gasoline engines had about 40 horsepower and were styled a “Model 40 Caterpillar.” A year later, the same tractor, with a slightly larger engine, was manufactured and labeled the “Model 45 Caterpillar.”

Daniel Best was a competitor of the Holt concern. Best was a prolific inventor and had a number of patents to his name. Best had established small factories in Oakland, California, and Albany, Oregon, by 1879, where he manufactured grain cleaners and separators. In 1885, Best built and sold his first combined harvester. Because of his expanding product line and limited space at his factories, he purchased the existing plant and property of the San Leandro Plow Company in San Leandro, California. Setting up a new company, the Daniel Best Agricultural Works, Best relocated all of his production there in late 1886.

Best bought the rights to another inventor’s steam-powered tractor, and began production of steam traction engines in 1889. In 1893, Daniel Best renamed his company and incorporated it as the Best Manufacturing Company.

Competition between Best and Holt grew for many years. In 1908, Daniel Best, retiring from business, gave one-third of the Best Manufacturing Company to his son, Clarence Leo (“C.L.”) Best, and sold a two-thirds interest in the Best company to Benjamin Holt. Even though C.L. Best became president of the new Best concern, Holt had effective control.

In March 1909, the Holt concern, seeking to expand its markets in the Midwest, established a subsidiary manufacturing plant in Minneapolis, Minnesota, under the name Northern Holt Company. Benjamin Holt’s nephew, Pliny E. Holt, had been dispatched to Minneapolis to superintend that manufacturing plant. In late 1909, Pliny Holt purchased the manufacturing facility of a bankrupt firm located in East Peoria, Illinois. Another Holt subsidiary, Holt Caterpillar Company, was incorporated on January 12, 1910, and the manufacture of the Holt “45 Caterpillar” tractors was continued at East Peoria, beginning in February, under Pliny Holt’s supervision.

About ACMOC

The Antique Caterpillar Machinery Owners Club (ACMOC) is a non-profit organization with several thousand antique Caterpillar enthusiasts worldwide. ACMOC was established to assist and educate its members and the general public to appreciate the historic role of Caterpillar machinery in shaping the world. We promote the collection, preservation, restoration, display and study of products and memorabilia of Caterpillar and is related predecessors.

You do not need to be an owner of Caterpillar equipment to be a member of ACMOC, we have many members that just enjoy the history of earthmoving and the Caterpillar brand and the camaraderie of being in a Club like ACMOC. If you do have a tractor to restore, then you will benefit from the extensive shared experience of members worldwide via the online bulletin board, forums and the quarterly magazine.

Membership Benefits:

- Quarterly magazine filled with content about antique Caterpillar machines, restoration stories, general interest and historical content including technical information.
- FREE classified listings to help you buy or sell that lucrative part!
- Exclusive access to replica parts, decals and restored surplus parts from a global membership community
- Access to contacts for specialist trades and skills required to repair and remanufacture parts
- Show your passion with exclusive ACMOC merchandise
- ACMOC store discounts and specials and exclusive scale models
- Access to an ever-growing technical library including the opportunity purchase original manuals, operators and parts books
- Get connected with other members through our bulletin board and forums who have a lifetime of Caterpillar, Caterpillar dealer and real-world experience on running, repairing and restoring Caterpillar equipment
- Celebrate your common interest with many local, national and international shows, events, rallies, meetings and dinners for the whole family
- Be a part of, or form a local Chapter and make new friends, with opportunities to support a local charity or community interest
- Put your tractor to work at ACMOC Chapter organized ‘drive and dig’ days
- ACMOC is officially recognized by Caterpillar Inc.

To join

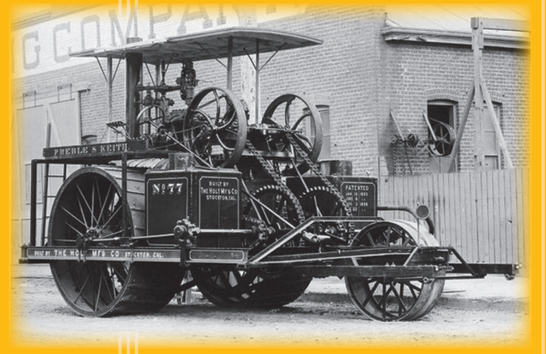
ACMOC has many levels of membership available. We hope you decide to join us by becoming a member and taking advantage of these great benefits. If you have any questions, or to join ACMOC, please contact us at 309-691-5002 or visit us online at www. acmoc.org.

Photos and editorial assistance provided by the Caterpillar Inc. Corporate Archives.

The ACMOC Historical Primer

Antique Caterpillar Machinery Owners Club

An abbreviated history of Caterpillar Tractor Co., C.L. Best and Holt Manufacturing Company



In 1910, C.L. Best left the Holt-controlled Best Manufacturing Company, and started the C.L. Best Gas Traction Co. in Elmhurst, California, near San Leandro. In 1912, C.L. started producing his first "crawler" tractor, a 70 horsepower model. Since in 1910 Holt had registered the name "Caterpillar" as a trademark with the U.S. Patent and Trademark Office, C.L. styled his "crawler" tractors "Tracklayers."

In 1911, The Holt Manufacturing Company introduced its "60 Caterpillar." In 1912, Holt introduced its "Baby 30 Caterpillar," and in 1914, introduced the "18 Midget Caterpillar," both designed for orchard and vineyard work. In 1913, Holt introduced its hugely popular "60-75 Caterpillar." By 1916, this machine became the "75 Caterpillar," the best-selling front tiller-wheeled tractor the company ever produced.

In mid-1913, Holt dissolved all of its subsidiaries and consolidated most of their operations under The Holt Manufacturing Company. This included the Aurora Engine Company and the Holt Caterpillar Company. However, the Best Manufacturing Company was shut down completely, leaving the plant in San Leandro idle.

In 1914, Holt introduced the "120 Caterpillar," essentially designed for military use to pull heavy artillery pieces. Holt redesigned its "45 Caterpillar" to run without a front tiller-wheel, the first "crawler" tractor to do so. In 1917, Holt introduced its "10-Ton Caterpillar" model, again, primarily designed for military hauling duties. This model was converted into a commercial model two years later and was produced by Holt up to 1925.

C.L. Best was known for continual changes and improvements to his products, and, at least in the West, the Best "Tracklayer's" reputation soared. Best's first "crawler" tractor, the "70 Tracklayer," had some desirable features missing in Holt's products: a liberal use of high-grade steels (instead of iron), and power-assisted steering for the front tiller wheel. In 1914, Best's "70" became the "75 Tracklayer," with the added power indicated by the model number. The Best "75" was produced through 1919.

In 1914, to counter Holt's new "Caterpillar 45" without a "tiller" wheel, Best introduced his "40 Tracklayer," also the first Best tractor without a "tiller" wheel. Since the Best "40" was lighter in weight, the 5 horsepower difference was unimportant. Best discontinued this model in 1919.

In 1919, Best introduced its "60 Tracklayer," the first big Best tractor without a front "tiller" wheel for steering. It was to become the best-known of all of C.L. Best's tractors, and was the finest large tractor then made. This was followed by the 1921 introduction of the Best "30 Tracklayer," built on the same principles as the popular "60," but about one-half the size and with one-half the power. As with the Best "60," the Best "30" met huge approval in the marketplace.

World War I brought additional business to Holt. His overseas markets and acumen with selling to governments separated him from the competition. Despite Holt's war-time sales success, the company was left in a weakened position at the close of the war. The military had contracted with Holt for the production of a total of 24,791 tractors, but, by the end of the war, only 9,771 tractors had been manufactured and the contracts with the military were cancelled. Holt had a large inventory of tractors destined for the military, but with the cancellation of the procurement contracts, Holt was left without buyers for them and the post-war depression further weakened Holt's sales prospects.

While failing to obtain a military contract during WWI, Best obtained assurances from the government that he would have all of the steel his company needed to continue manufacturing tractors for farmers during the war. This set the company up for having the commercial market advantage when the war ended. During the post-war depression, the company's sales actually increased by nearly 70 percent. In 1920, the Best company changed its name to the C.L. Best Tractor Co.

Caterpillar formed

C.L. Best and Benjamin Holt were leaders in their industry. But the fellow who next changed the landscape of "crawler" tractor manufacturing was Harry H. Fair of the bond brokerage house of Pierce, Fair & Company of San Francisco. Fair was the gentleman who had arranged financing for C.L. Best to purchase his father's shops in San Leandro in 1916. Fair was also a significant shareholder in the C.L. Best Tractor Co., and was on its board of directors. Ultimately, Fair was approached by several key Holt shareholders who wished for Fair's bond firm to handle future financing of the Holt company. Fair was engaged by the Holt company, and quickly became aware of its precarious financial condition. Fair proposed that the Best and Holt companies consolidate.

Best had the better financial status, more advanced tractor designs, and the beginnings of a better dealer group. Holt offered its world-wide reputation and name, bigger factories, a 40-year old combined harvester line, and the Caterpillar trademark. The shareholders of both companies accepted the proposal to consolidate, and in legal maneuvering that occurred in April and May 1925, the Caterpillar Tractor Co. was formed and the consolidation was effected. The Best factory in San Leandro, California, became the first headquarters location for the new company and limited production was continued at the plant for a number of years. The Holt factory in East Peoria, Illinois, became the main manufacturing plant for the company. In 1930, the headquarters was officially moved from San Leandro to East Peoria in order to fulfill the terms of the merger.

C.L. Best was named chairman of the board of directors, and Raymond C. Force, Best's attorney, was named president of the company.

The new company's first product line had only five track-type tractors – the 2-Ton, 5-Ton, and 10-Ton from The Holt Manufacturing Company's former product line and the Thirty and Sixty from the C. L. Best Tractor Co.'s former product line. The 10-Ton and 5-Ton were discontinued in 1926. In 1928, the 2-Ton was discontinued.

The first tractor that was designed and produced by the Caterpillar Tractor Co. that was not based on a previous Holt or Best model was its Model Twenty, which went into production at San Leandro in 1927 and at East Peoria in 1928. More new tractor models soon followed.

Depression, growth

At the beginning of the Great Depression, Caterpillar had a product line of tractors that included (from smallest to largest), its Ten, Fifteen, Twenty, Thirty, and Sixty. As the Great Depression deepened, Caterpillar adopted the same strategy that surviving automobile manufacturers adopted: introduce new models. Accordingly, in 1931, the company introduced the Twenty-Five and the Fifty. In 1932, the company introduced the "small" Fifteen, the high-clearance Fifteen, and the "small" Twenty. These models were, like all earlier models, powered by gasoline-fired internal combustion engines.

We digress here to relate how Caterpillar came to introduce the diesel engine to its product line in 1931, which was to revolutionize the Caterpillar tractor. In 1893 in Germany, Rudolph Diesel received his first patent on what was to become known as the "diesel" engine. As early as 1898, diesel engines were being manufactured in the U.S. A diesel engine was displayed at the 1915 Panama-Pacific Exposition held in San Francisco, and the display attracted much attention from C.L. Best and his engineer, Oscar Starr. C.L. Best was not able to use the engine at that time, although he maintained contact with George A. Dow of Alameda, California, a holder of a license to manufacture diesel engines in the U.S. Shortly after the Best-Holt consolidation into the Caterpillar Tractor Co. in 1925, C.L. Best revisited the question of diesel engines. He hired Art Rosen in 1928, who had experience with the application of diesel engines to marine uses. Between 1926 and 1932, Caterpillar spent over $1 million in engineering research and development to produce Caterpillar's first diesel engine – the D9900.

With Caterpillar's initial diesel engine development finished, the D9900 Diesel Engine was tested on the Caterpillar Sixty Tractor chassis. As a result, various changes were made to the Sixty, including beefing up the frame of the tractor to carry the heavier diesel engine, and using a different transmission that was heftier and geared down for the diesel engine. The result was a diesel tractor that, in early field tests, worked well under a heavy strain while consuming only 4 gallons of diesel fuel (oil) per hour at a cost of 4 to 7 cents per gallon. The first production models of the Diesel Sixty were sold in 1931 and then the model number was changed to Diesel Sixty-Five, with 142 having been sold in 1932 (totaling 157 tractors in the two years of production). The Diesel Sixty-Five production was terminated with the introduction of four new diesel tractor models in 1933: the Diesel Thirty-Five, the Diesel Fifty, the Diesel Seventy, and the Diesel Seventy-Five, which replaced the Diesel Seventy.

Once the diesel engine had proven itself reliable and economical, the market for gasoline-powered crawlers declined significantly. The diesel engines delivered more power for far less operating cost than the gasoline engines. For that reason, Caterpillar discontinued a number of gasoline-powered tractor models in the early to mid-1930s.

In the mid-1930s, Caterpillar also was moving toward bigger and bigger diesel-powered tractors. The move to larger tractors was initiated in response to the "New Deal" programs, wherein the U.S. government was spending huge sums of money on public works projects to increase economic activity to get the country out of the Great Depression (1929-1941). The larger implements for these projects required larger and more powerful tractors to pull them. The results of this trend were the introductions of the Diesel Seventy, then the Diesel Seventy-Five, then the RD8, and then the D8, each in its turn the largest and most powerful Caterpillar tractor built.

In road construction and maintenance, the horse-drawn pull-grader was quickly adapted for tractor work. One of the companies manufacturing graders for this purpose was the Russell Grader Manufacturing Company of Minneapolis. In 1928, Caterpillar purchased the Russell company and early in 1929, Caterpillar's product offering expanded from tractors to include road machinery – self-propelled graders, tractor-pulled graders, and elevating graders.

In April 1931, Caterpillar introduced its all-new "Auto Patrol" rubber-wheeled grader. Late that same year, the Auto Patrol was renamed as the No. 9 Auto Patrol. This machine formed the basis for all motor graders produced by the earth-moving industry.

New product lines

Entry of the U.S. into World War II in December 1941 brought challenges to the Caterpillar Tractor Co. During the war, most of the company's production capacity was devoted to military products to meet the government's needs. Fortunately for domestic manufacturers, at the close of World War II, the military did not ship the tractors and other construction equipment back from the theaters of war, but left them behind. Accordingly, manufacturing of tractors and similar machines was not adversely impacted by "war surplus" equipment, and after the war, Caterpillar shifted its production back to the civilian market.

Caterpillar was moving aggressively into the emerging earth-moving market, since that was where the money was to be made. In 1941, it introduced a rubber-tired tractor, the DW10, designed to pull scrapers and other similar implements. The advantage of this tractor over the "crawler" type was its speed in moving earth.

The DW10 was intended by Caterpillar to be a direct competitor with LeTourneau's rubber-tired scraper, the "Tournapull," which had been introduced to the market in 1938. Although the two companies worked closely together during the major portion of the war, when their marketing agreement expired in 1944, it was not renewed. This released Caterpillar to manufacture earth-moving equipment and attachments that would compete directly with LeTourneau across its product line.

In 1945, Caterpillar introduced its first bulldozer straight blades operated by cable control units. Its angle blades were introduced in the following year. Hydraulic controlled blades were offered in 1947.

In 1946, Caterpillar introduced its first pull-scrapers. These were designed to be used with the Caterpillar D6, D7, and D8 tractors, and all were originally operated by cable control units.

In 1950, Caterpillar began producing its new self-propelled rubber-tired scrapers – the two-axle, four-wheel DW20 and the single axle, two-wheel DW21 – intended to slice into LeTourneau's "Tournapull" market. In early 1961, both models were discontinued. They were replaced by the 600 series Caterpillar introduced in 1962, with seven new models.

In 1951, Caterpillar acquired the Trackson Company of Milwaukee, Wisconsin. Established in 1922, Trackson had been manufacturing side-boom pipe-laying attachments designed to specifically match Caterpillar tractors since 1936. In 1937, Trackson started supplying its "Traxcavator" cable-operated front-loading shovels for attachment to Caterpillar tractors. After the acquisition of Trackson, Caterpillar eventually made the loaders as a single unit from the ground up, introducing its first front-end tracked loaders in 1955.

Other Caterpillars with roots in the Trackson Company of Milwaukee were its pipelayers, essentially "crawler" tractors with booms on the side to handle pipe. Caterpillar replaced the concept of a pipelayer attachment on a crawler tractor with the industry's first integrated pipelayer machine, the No. 583 Pipelayer in 1955.

Caterpillar adopted several improvements to its tractors in the 1950s: the wet clutch (improving clutch life), turbochargers (increasing power), and the "Powershift" transmission (eliminating the flywheel clutch lever, the gearshift lever, and the forward and reverse levers).

In 1954, Caterpillar introduced its largest tractor to date, the D9D. Entering production in 1955, it was offered in two models – the direct-drive transmission and the torque converter drive.

Caterpillar has continued to improve its products and add new product lines to help its customers make the impossible possible. For a more detailed version of this history, please visit the ACMOC website at www.acmoc.org.