Facts and Questions About Harrisburg Steamrollers

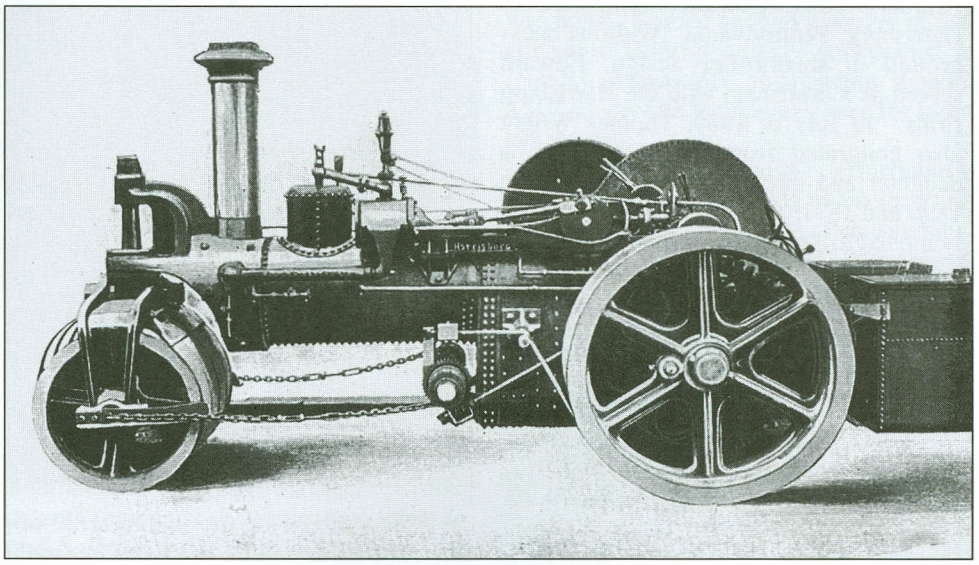
By: Raymond L. Drake and Robert T. Rhode

This article is a continuation of what we hope will become a series on early and often obscure builders of steam road rollers. Our current submission is on the Harrisburg Car Company and related firms. This manufacturer primarily built railroad cars, but a large portion of its business was devoted to the production of portable engines and steam-powered rollers. Although we have discovered many facts about steamroller production in Harrisburg, Pennsylvania, several tantalizing questions remain unanswered.

Harrisburg Car and its subsidiaries made railway cars, oil tanks, gas flues, air pipes, standpipes, heavy equipment for rolling mills, machinery for blast furnaces, boilers, compound pumping engines for water companies, portable steam engines for agricultural purposes, skid engines, farm implements, sawmills, and steamrollers. Brenda Stant, editor of this magazine, and husband Mickey own a Harrisburg Car Manufacturing Company portable and a skid engine.

For a time, the Harrisburg firms annually turned out 150 of the Paxton Portable steam engines, named for the Little Paxton Creek that cut across the plant's property, and, by the end of 1884, the factory had built 625 portables.

According to Raymond L. Drake's exceptionally rare 1894 catalog entitled The Harrisburg Double Engine Steam Road Roller (Patented), Harrisburg produced its first steamroller in 1880. This was a gargantuan roller named Jumbo, which weighed in excess of 50,000 pounds. During the gestation period of steamrollers, the conventional wisdom was that, if a 10-ton roller was good, a 20-ton roller must be twice as good. As a result, many companies that entered into the steamroller business initially built gigantic machines. For example, one of the first steamrollers in Great Britain, which was purchased by the city of Liverpool, was a 25-ton behemoth that proved to be completely impractical. These early heavy rollers were failures principally because they were too cumbersome. There were numerous reasons why huge steamrollers failed; chief among them were their penchant for crushing buried sewer and water mains, collapsing box culverts, and threatening to crash through bridges.



Here is the Harrisburg Car Company's first steamroller, called "Jumbo," which was built in 1880. This was the first American road roller to employ the three-wheel design and the so-called "locomotive," or horizontal, boiler. While such a configuration would become the standard in the American compaction industry, this machine proved to be impractical. The roller had two drawbacks: first, the massive weight (50,000 lbs.); second, the long wheelbase that made it difficult to maneuver. Despite these shortcomings, this roller was still in service as late as 1894. Photo courtesy of Raymond L. Drake and Robert T. Rhode.

Ray's catalog further states that Harrisburg began developing a line of rollers in 10-, 12-, and 15-ton sizes that were introduced into regular production in 1884. These machines can all be easily identified, in that they have a flat-top steamdome located behind the smokestack, as opposed to machines built after 1887 that had rounded-top domes. In 1887, Harrisburg improved its rollers with the addition of a double-cylinder engine. Another hallmark of their steamrollers built prior to 1890 is that these machines came equipped with coal and water bunkers that were square in contour. Furthermore, these early rollers were produced with ornate smokestack caps. Starting in 1890, the coal and water bunkers became rounded, and the smokestack cap was eliminated. Also in 1890, Harrisburg offered belly tanks for water. Harrisburg's catalogs of the period indicated that they felt these were unnecessary additions, but, if customers requested them, rollers could be supplied with belly tanks for an additional cost.

Brenda has another one-of-a-kind Harrisburg catalog entitled A System of Engines and Products of the Harrisburg Foundry and Machine Works that mentions that Harrisburg eventually considered throttle valves to be more desirable than throttling governors were.

There was a link between the Harrisburg firms and the O. S. Kelly Company of Springfield, Ohio, whose steamroller division would one day evolve into the Buffalo-Springfield Company, the industry leader. Builders of steamrollers collaborated in establishing sales territories in the 1890s. Companies entering into these agreements included O. S. Kelly, the Buffalo Pitts Company, and Harrisburg Car. Virginia D'Antonio and Tom Wright have found that an ancestor, Thomas Wright, was born in Lincolnshire, England, in 1838 and, by the early 1860s,

was employed as an engineer. Thomas' eldest son, Edward T., was born in 1865. By 1870, Thomas was employed at Tasker's works in Andover, Hampshire. In 1873, he was a manager at the world-renowned Aveling & Porter works in Rochester, Kent, and Edward was an apprentice engineer there. Aveling & Porter steamrollers were among the earliest successful rollers in world history. In February 1889, Edward immigrated to Harrisburg, Pennsylvania. With his background in steamroller design, Edward served as a draftsman with the Harrisburg firms. In July of 1889, Thomas Wright also emigrated from Rochester with a daughter and three other sons. Between 1890 and 1891, the extended Wright family moved to Springfield, Ohio, where they became associated with O. S. Kelly.

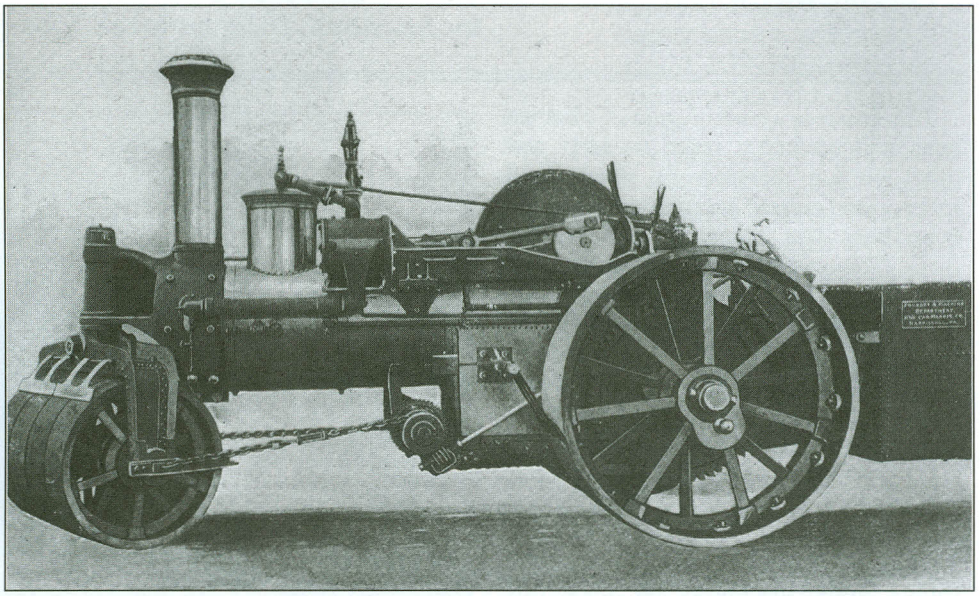
Martin E. Hershey, a designer who improved Harrisburg rollers, filed for his three-wheel steamroller patent on February 18, 1891, and the patent was granted on July 28, 1891. Edward Wright filed for his patent on March 23, 1891; the patent was granted on December 29, 1891; and Wright assigned the patent to the O. S. Kelly Company. The close timing of these dates indicates that Harrisburg and Kelly were racing neck-and-neck to manufacture the nation's most marketable steamrollers. Wright's and Hershey's designs and improvements were incorporated into upgraded rollers that were introduced in 1892.

About 1893, Harrisburg brought out a canopy for its rollers that was half-length, affording protection to the operator and having a V-pitch toward the center. Harrisburg produced America's first practical three-wheel roller, which was followed shortly thereafter by highly successful machines built by Kelly and by Buffalo Pitts. These were the earliest locomotive-style rollers produced in this country.

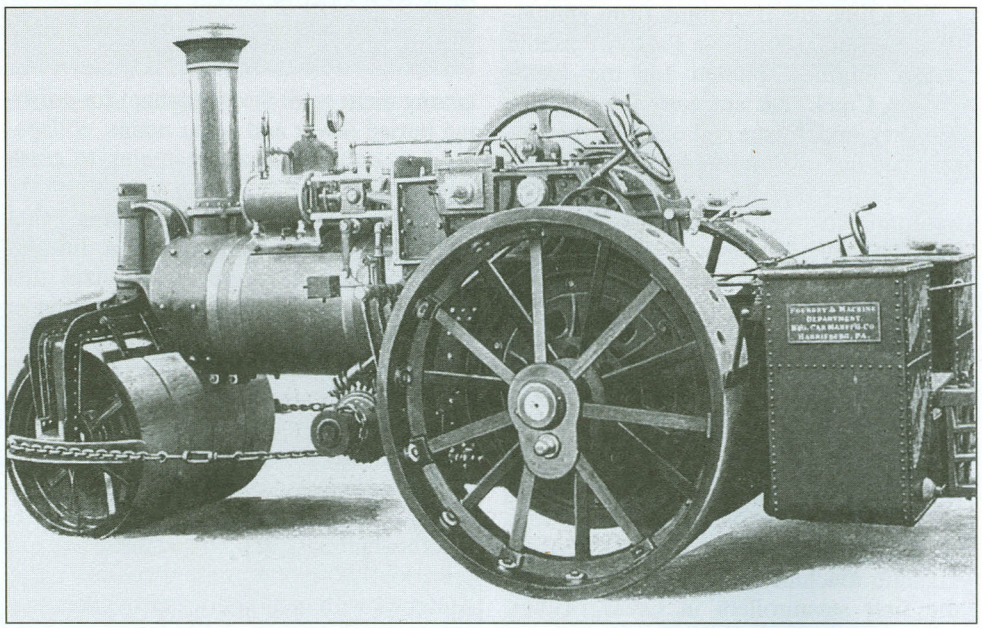
In the late 1800s, Charles Longenecker was another famous engineer who contributed to the design of Harrisburg rollers. Around 1895, Longenecker became employed at the Russell Company and contributed to the design of steamrollers bearing the Russell marque. Longenecker became vice president of the Weston Engine Company, which began in 1896. This firm built stationary engines and eventually evolved into Ingersoll Rand. Having worked together in the late 1880s at the Harrisburg Car Company, once again Wright and Longenecker collaborated in the design of the "New York" steamroller in late 1905 and early 1906.

A web site (http://www.midcontinent.org/rollingstock/builders/harrisburg1.htm) adds these items to our facts about the Harrisburg Car Manufacturing Company and the Harrisburg Foundry & Machine Company:

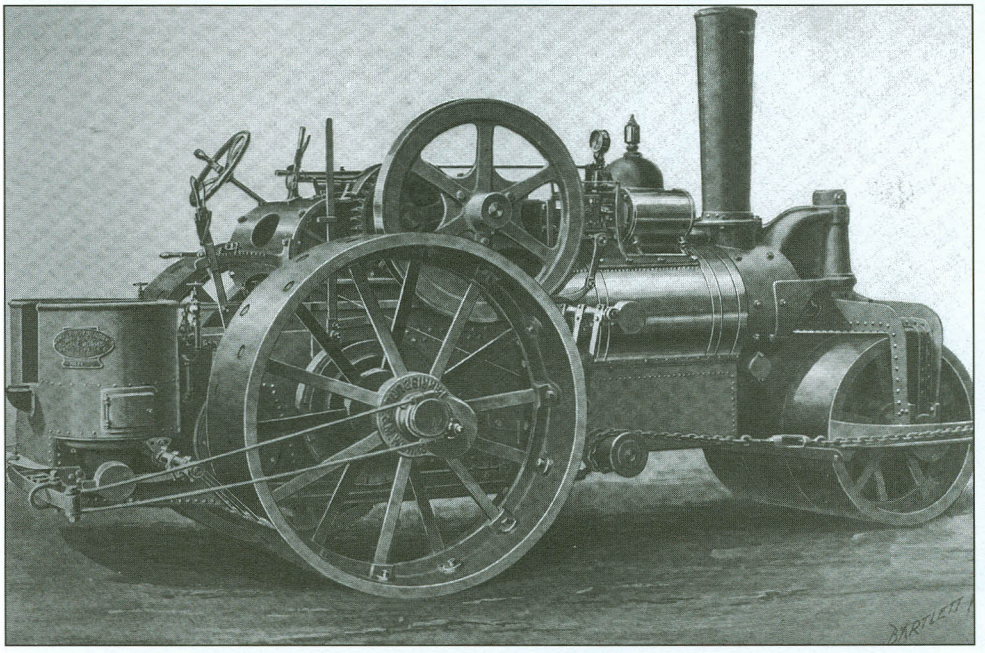
"David Fleming, a former teacher and newspaperman and an attorney who in 1847 became Chief Clerk of the Pennsylvania house of representatives and who served in the state senate, established a railway car manufacturing business at Harrisburg.



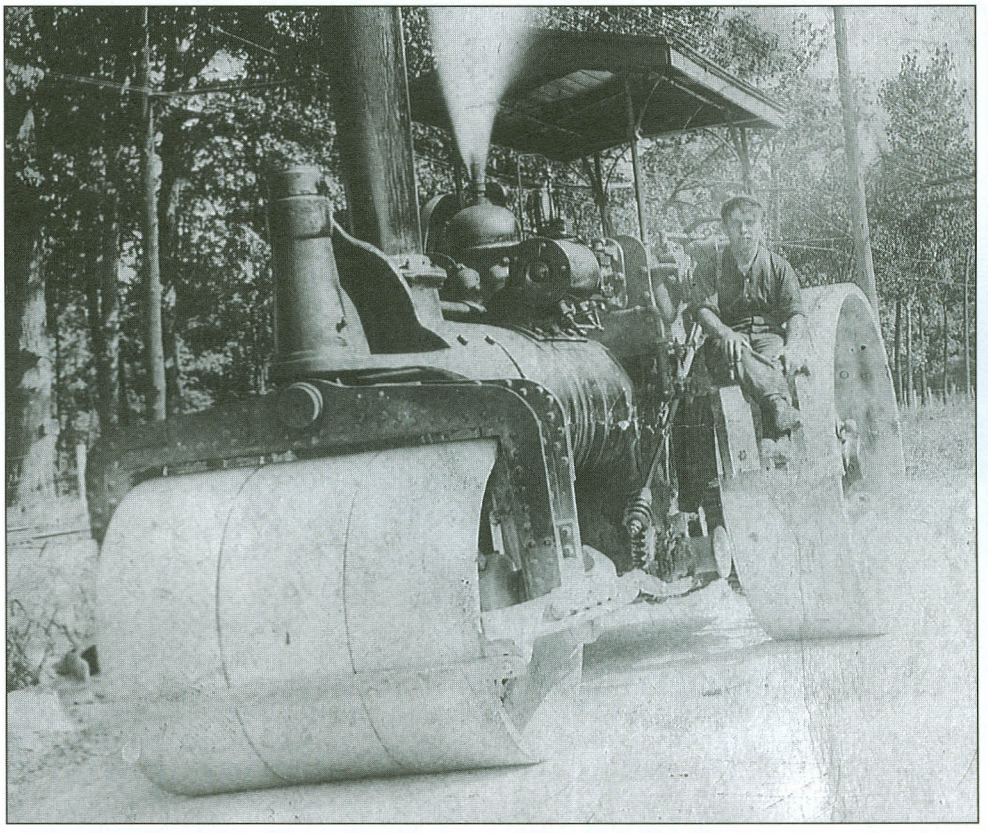
In 1884, Harrisburg introduced three new models in 10-, 12-, and 15-ton sizes. As with the 1880 model, these machines had single-cylinder engines. The reduced weight along with a shortened wheelbase made these rollers a great improvement over "Jumbo." An easy way to identify the pre-1887 Harrisburg rollers is that the steamdome had a flat top. A builder's plate that was attached to the bunker stated that the Foundry and Machine Department of the Harrisburg Car Manufacturing Company produced these rollers. Photo courtesy of Raymond L. Drake and Robert T. Rhode.



In this 1887 picture, the rounded steamdome that is usually associated with Harrisburg rollers can be seen. This year also marked the firm's abandonment of the single-cylinder engine in favor of the more efficient two-cylinder model. Also at this time, the wheelbase was further shortened to make these rollers more maneuverable. The builder's plates on these machines were identical to those of the 1884 models. Photo courtesy of Raymond L. Drake and Robert T. Rhode.



One notable difference in the 1890 Harrisburg roller was the elimination of the ornate smokestack cap. Another important change was that the rear coal bunker and water tank were of a semi-rounded design. Additionally, a belly tank for extra water storage was located under the boiler. While Harrisburg claimed that such tanks were, in their opinion, unnecessary, they could be ordered at an additional cost. Finally, the casting around the hub of the driver wheels gave the manufacturer's name as the Harrisburg Foundry and Machine Works. Photo courtesy of Raymond L. Drake and Robert T. Rhode.



This photograph depicts a Harrisburg steamroller working in central Ohio in 1908. As this machine is equipped with a canopy, which was introduced about 1893, this roller was probably built after that date. The taller kingpin housing indicates that this is probably a 12-ton model. Photo courtesy of Raymond L. Drake and Robert T. Rhode.

"William Calder, Jr., who in 1851 became manager of his father's stage line, formed a joint stock partnership with Fleming, Jacob M. Haldeman, Augustus Heister (associate county judge), William Murray (lumber merchant), Elias Kinzer, Thomas Wilson (machinist), and Isaac G. McKinley (newspaper editor).

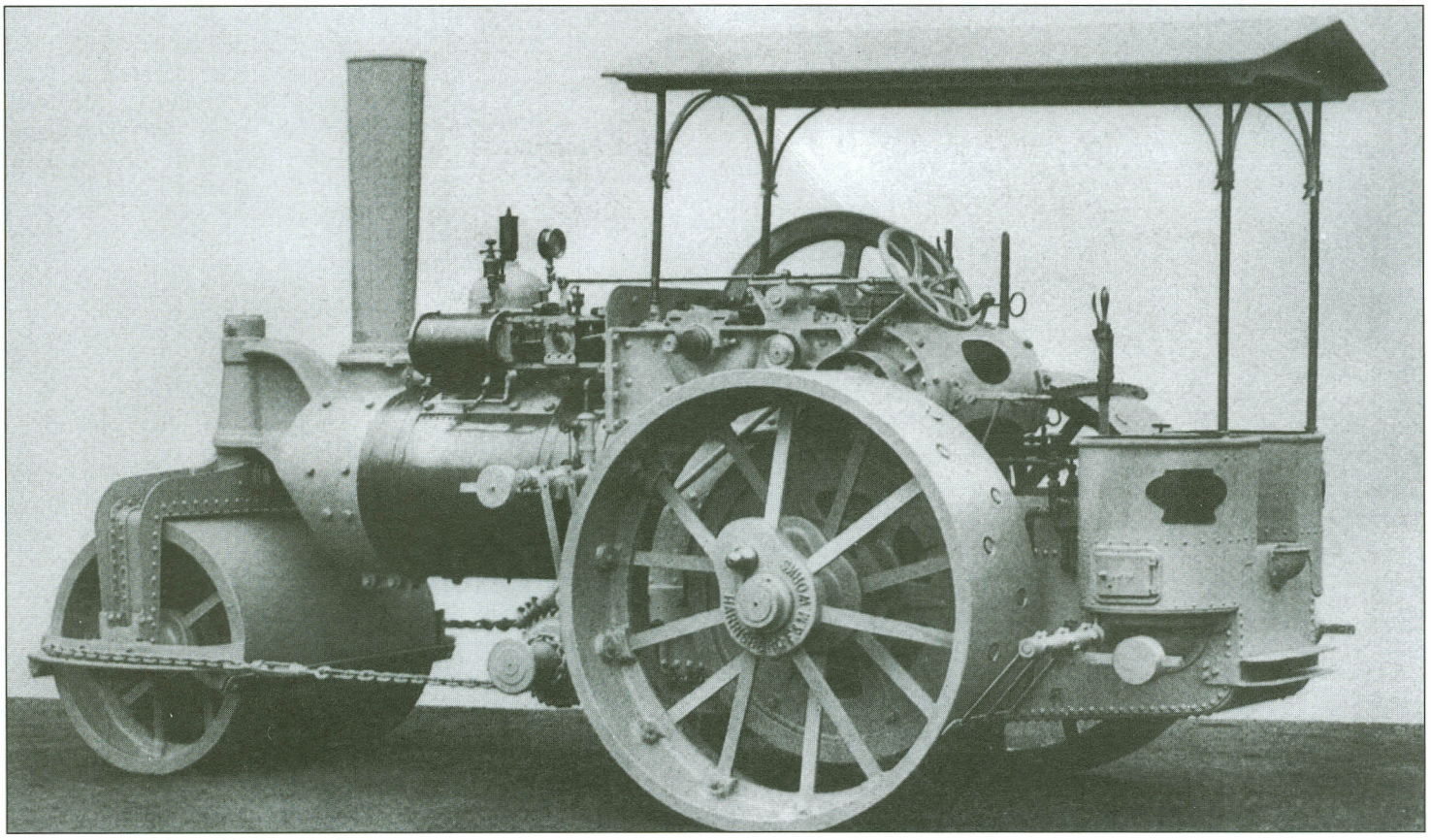
"William T. Hildrup, an experienced railway car builder who had just initiated his own car business at Elmira, New York, was hired. Named general manager of the company, Hildrup quickly constructed a foundry, planing mill, and machine shop in a "U" shape with the opening used for lumber storage.

"Gerald G. Eggert (Harrisburg Industrializes: The Coming of Factories to an American Community, Pennsylvania State University Press, 1993) describes a report in the Harrisburg Morning Herald of May 19, 1855, that said, " . . . the firm made passenger, mail, baggage, box, cattle, platform, coal, and hand cars. Its annual capacity was from 300 to 500 eight-wheel cars. Eighty-four or so employees performed all stages of work, from blocking out the raw materials to painting and decorating the finished cars. Ten men worked in the wood-turning machine shop, where they used the latest equipment to rough out lumber, sawing, planing, drilling, and mortising it. Thanks to their machines, they were able to do the work of 100 ordinary mechanics. Thirty workers in the wood-turning shop finished the rough timbers and shaped them into cars. Meanwhile, in the foundry, a dozen employees made a variety of hardware castings, including wheels. Another dozen in the iron machine shop finished and polished the castings. Twenty blacksmiths and a handful of patternmakers, painters, and the like completed the labor force."

"During the Panic of 1857, orders for railroad cars dried up, buyers could not pay for completed cars, and the company went into debt. The partners found other employment for the workers, who built bridges, railway stations, and farm implements.

"During the Civil War, business boomed because Harrisburg became, in Eggert's words, "one of the nation's busiest centers for amassing troops and supplies and forwarding them to the eastern front." The Harrisburg Car Works built rolling stock and army wagons.

"In 1863, the company was reorganized and incorporated. Three of the original partners took offices in the new corporation: William Calder, William T. Hildrup, and David Fleming.



This photograph shows the machine that was displayed at the 1893 Columbian Exposition in Chicago. The picture is of remarkable quality and clearly shows many of the finer details of this roller. The wheel-hub casting continues to present the manufacturer's name as the Harrisburg Foundry and Machine Works. Photo courtesy of Raymond L. Drake and Robert T. Rhode.

"At the conclusion of the Civil War, many railroads began to build their own cars, and Harrisburg ceased to erect passenger cars. The railroads soon discovered it was cheaper to buy cars than to build them, and business again boomed for Harrisburg. After the war, Harrisburg initially produced nothing but freight cars. Then, with the advent of the Pennsylvania oil boom, there came a demand for tank cars, which Harrisburg proceeded to supply.

"In the late 1860s, the firm expanded its machine tool business in a separate works known as the Harrisburg Foundry & Machine Company.

"A newspaper reported on April 25, 1872, that "a very spectacular fire destroyed the huge sprawling plant of the Harrisburg Car Works at Ninth & Herr Streets with a loss of $600,000." Insurance covered the bulk of the loss, and legend has it that Hildrup sketched up plans for a new works that night and began building a new plant the next day.

"A history of the Harrisburg Steel Corporation says that the rebuilding took six months to the day. Hildrup reportedly gave his men a week's vacation and left on a trip, only to be greeted by a telegram saying the new "fireproof" machine shop and foundry buildings had burned down. He returned immediately and had them rebuilt in less than two weeks. The new works had a total of nineteen fireproof buildings.

"Eggert gives the following statistics for the rebuilt works: "Included were a large office building with a drafting room, a blacksmith shop where 125 persons worked at 46 forges, a machine shop [with] about 100 employees . . . , a foundry employing 50 molders and 90 other workers to turn out 120 railroad-car wheels a day, a framing shop where another 100 workers prepared lumber for the construction shops, two car-building shops in each of which 100 employees turned out 7 flatcars daily, a shop that made 6,000 bolts a day, and various warehouses, paint shops, car repair shops, and drying buildings."

"The rebuilding left Harrisburg deeply in debt, and the Panic of 1873 hit hard. The company had debts totaling $600,000. The banking house in New York on which it depended for operating funds suspended business. Car orders ceased. During 1875, Harrisburg laid off employees, and the works stood idle.

"In 1878, Harrisburg began to sign long-term contracts for materials. Car orders increased.

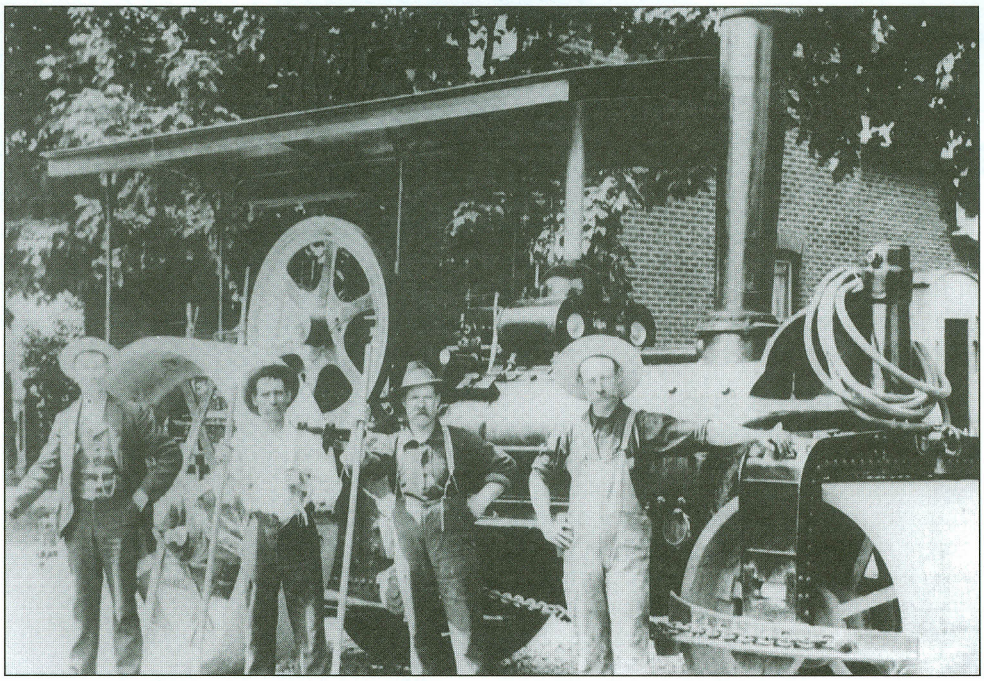
"In 1881, Harrisburg Car Works produced 3,402 cars and had orders for 2,630 more.

"By the end of the 1880s, meat packers had perfected the art of preserving beef. Harrisburg responded by building refrigerated boxcars.

"The financial difficulties of the 1880s left the company with little in assets other than outstanding orders. By 1893, the company was in bankruptcy court, never to emerge.

"Never to emerge" is wording that represents the common knowledge found in many published reports of Harrisburg Car's demise, but our research has shown that the company may not have ceased in that year. We now put forward this information, which has recently come to our attention. Brenda has a handbill advertising the sale of the real estate of the Harrisburg Car Manufacturing Company on November 10, 1899. Does this date imply that the car company lasted beyond 1893, the year that most sources give as the ending date?

How long did Harrisburg firms contin-



Here is a picture from Canada of what is believed to be the last surviving Harrisburg steamroller. It was a 12-ton model. What distinguishes this machine is its unusual full-length canopy. Period literature from the Harrisburg firms makes no mention of such an option. This roller was in service until 1958, when, sadly, the town that owned it chose to have it cut up for scrap. Photo courtesy of Raymond L. Drake and Robert T. Rhode.

Besides steamrollers, the Harrisburg Car Mfg. Co. also built skid, portable and traction engines. This 5x8 skid engine, mounted on a wagon running gear, was built in Harrisburg, PA and spent its working life powering a basket factory in Delaware. It is shown powering a groundhog thresher at the Eastern Shore Threshermen show near Federalsburg, MD. Photo by Brenda Stant.

ue to manufacture steamrollers? We know that rollers were built for many years after 1893. By revealing that, in 1900, there were around three hundred Harrisburg steamrollers in operation, Brenda's catalog proves that the firms' road rollers were still under construction in that year. Harrisburg displayed steamrollers at the St. Louis Exposition in 1904, and Harrisburg rollers are listed in compaction industry documents for several years after that.

Ray happens to possess most of the shop records for the Kelly and Buffalo-Springfield companies, which reveal that Kelly assembled Harrisburg rollers at the Springfield factory. Why did the Kelly-Springfield Road Roller Company (which was a spin-off of the O. S. Kelly firm) build seven Harrisburg 10- and 12-ton steamrollers from June 16, 1904, to February 7, 1905? This fact is a mystery wrapped in an enigma, although we wonder if Edward Wright might have had something to do with it.

Did Harrisburg build traction engines? There has long been a rumor that the Harrisburg firms produced such engines and that one of them still exists in Pennsylvania. We ask readers to let us know if there is any truth to this long-standing claim.

We invite anyone with information about the Harrisburg firms to share with us and with readers of Engineers and Engines any details that may help solve the mysteries that continue to surround the Harrisburg steamrollers.

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Contact steam enthusiast and steamroller authority Raymond L. Drake at (719) 689-3000; e-mail: raymond88@earthlink.net