Rauch and Lang Carriage Company
W. 25th St. and Monroe Avenue
Cuyahoga County
Cleveland
Ohio

Photographs and
Written and Historic Data

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ADDENDUM
FOLLOWS...

The Baker Motor Vehicle Company
The Rauch and Lang Carriage Company
The Baker R & L Company
HAER OH-11B

NAME: The Baker Motor Vehicle Company; The Rauch and Lang Carriage Co.;

LOCATION: Cleveland, Ohio

DATE OF SETTLEMENT: 1853

PRESENT OWNER: Baker Raulang

PRESENT USE: Light manufacture

SIGNIFICANCE: Rauch & Lang the oldest company in Cleveland auto industry; Baker the oldest electric auto manufacturer in the nation. Their merger led them to become the largest producer of electric vehicles in the world.

HISTORIAN: Tom Fisher

The Baker Motor Vehicle Company
The Rauch and Lang Carriage Company
The Baker R & L Company

The Baker Motor Vehicle Company and The Rauch and Lang Carriage Company have a long and related history. Rauch and Lang was the oldest company in Cleveland's automobile industry, while Baker was the oldest electric automobile manufacturer in the nation. When the two companies merged, they became the largest producer of electric vehicles in tha world.

The history of the Rauch and Lang Carriage Company begins with Jacob Rauch, a German blacksmith who operated a wagon repair shop on Pearl Straet (W. 25th Street) in Cleveland.[1] At the time of its founding in 1853, Rauch's company provided repair work for coaches on the Cleveland-Cincinnati stage line.[2] Jacob's son, Charles Rauch, joined the firm in 1860, becoming expert in the making and repairing of expensive carriagas. By 1878, The Rauch Carriage Company dominated the high-priced wagon and carriage businass in Ohio.[3]

On January 8, 1878, Charlea E.J. Lang joined the Rauch company. Born in Cleveland and originally a real-estate promoter, Lang bought a 1/4 interest in the firm, causing its name to change to the Rauch and Lang Carriage Company in 1884. In 1888, Charles Rauch and Charles Lang organized a stock company with a $100,000 capitalization.[4]

Tha following year, the company built its first permanent

factory. It hired Cleveland architect, Andrew Mitermiler to deaign a four-story factory with offices and a showroom facing Pearl Street. The 32 foot by 64 foot building cost $5,400. Its four floors stood 65 feet tall. The structure had packed wooden floors, timber beams and columns, wooden double-hung windows, brick bearing walls, and large ground-floor show windows set between brick and stone piers. Those piers contained forced-air heating ducts connected to a fan unit in the basement. The Rauch and Lang Carriage Company later extended the building to a depth of 112 feet and constructed a nearly identical structure across an adjacent alley. A tunnel connected the two buildings.[5]

In 1900, Rauch and Lang built a large, four-story body and wood-working factory south of the existing buildings. That structure, with Charles Rauch's name and the completion date inscribed in the parapet, employed the same mill construction and brick bearing wall system. Because it functioned as a factory, the 1900 building had less ornament on its facade and larger window areas on its upper floors.

Rauch and Lang may have had automobile manufacture in mind when constructing the new factory, for the company began producing electric cars in 1904.[6] The company had good reason for choosing electric automobile production. In 1904, electric cars outsold steam and gasoline automobiles.[7] High society also favored electric cars, raising the hopes of the Rauch and Lang company

that its expensive carriage customers would switch to its expensive automobiles. The idea worked. In 1905, The Rauch and Lang Carriage Company made 50 electric cars.[8] In 1907, the company expanded its capital stock from $75,000 to $250,000, and bought The Hertner Electric Company to supply its electric motors.[9]

The year 1907 also marked the beginning of a major building program. Along W. 26th Street, directly behind its existing factory, Rauch and Lang built a new four-story, 112 foot by 64 foot plant. Designed by The Osborne Engineering Company, the building differed from the earlier factory only in its use of 15-inch steel girders to support the floors. A three-story elevated bridge connected the structure to the rest of the plant. In 1907, The Osborne Engineering Company also built an adjoining two-story power plant and machine shop. Similar in its construction to the new four-story factory, this structure had a five-bay fscade and a central gabled skylight. A tunnel connected the power plant to the older buildings across a 16 foot alley.[10]

These two additions increased Rauch and Lang's production capacity to 500 vehicles per year in 1908. Yet, demand continued to outpace the supply. For every 500 cars produced, the company received 800 orders.[11]

That situation brought more changes in 1909, when the company increased its authorized capitalization to $1,000,000.[12]

The Rauch and Lang Carriage Company also doubled its production capacity to 1000 cars with the completion of more buildings. Osborne engineers matched the four-story 1907 addition with an identical 112 foot by 64 foot structure, connected to the earlier plant by two, three-story elevated bridges. In 1909, Osborne also designed an extension to the two-story machine shop, adding three bays to the south. This extension had three saw-tooth skylights supported by timber trusses.[13]

Despite this expansion, the buildings as well as the manufacturing methods of The Rauch and Lang Carriage Company had changed little from its wagon-building days. As late as 1910, the company still called its workers "artisans," refusing to "sacrifice (its) former standard of style and efficiency" in the face of mass production.[14] That standard of efficiency required 90 days for the completion of each car, including hand-rubbing the bodies and covering them with 24 coats of paint.[15] That standard also kept Rauch and Lang primarily a body building firm, contracting with suppliers for its engines, tires, and most of its machined parts. The new buildings reflected that carriage building tradition. Except for their use of steel girders to accommodate the heavier loads of the automobiles themselves, the two assembly buildings constructed in 1907 and 1909 had the same mill construction, the same floor area and ceiling height, even the same architectural treatment as the company's carriage plant.

The Rauch and Lang Carriage Company remained conservative

in its merchandising as well as in its manufacturing methods and facilities. In 1912, when the industry had moved toward the large-scale production of medium-priced gasoline automobiles, Rauch and Lang decreased the number and increased the cost of its electric limousines, "the Car of Social Prestige."[16] The company could afford to take that approach because it was not immediately affected by the shrinking electric automobile market. Its sales continued to grow, and so did its plant.

In 1911, The Osborne Engineering Company added a 90 foot by 30 foot, four-story extension to its factory at a cost of $6,500. In 1913, another engineering firm, George S. Rider and Company, added a much larger addition to the north of the existing plant. This four-story structure, 134 feet long and 111 feet wide, had the same mill construction, steel girders, and brick bearing wall treatment as the earlier buildings. It differed only in its configuration, with two set-backs enclosing single-story spaces with sawtooth and gabled skylights.[17]

The company must have been optimistic about its future. Its 1913 addition had an end elevator shaft and knock-out brick panels to accommodate further construction to the north. Yet, that construction never came, for in June, 1915, The Rauch and Lang Carriage Company merged with its major competitor in the electric automobile field, The Baker Motor Vehicle Company.[18]

The history of The Baker Motor Vehicle Company begins in 1867, the year its founder, Walter C. Baker, was born and the year his father, George Baker, moved to Cleveland with Thomas W. White to form the White Manufacturing Company.[19] Twenty-three years later, in 1890, George Baker left White to organize The Cleveland Machine Screw Company.[20] Walter Baker graduated from Case School of Applied Science the following year and worked in his father's ball-bearing company.

After seeing the automobile displayed at the World's Columbian Exposition in 1893, Walter built his first electric vehicle, the electrobat.[21] At the same time, Walter Baker's interest in ball-bearing technology led to his founding of The American Ball Bearing Company in 1895 with his brother-in-law Frederick R. White. The company made bearings for automobile and carriage axles as well as for electric motors and steering knuckles.[22] As the company's chief engineer, Baker developed the first full-floating rear axle while conducting ongoing experiments with electric automobiles. In 1898, he produced his first electric runabout. That same year, Baker helped organize The Baker Motor Vehicle Company, with his father-in-law, Rollin White as president; Fred White as treasurer; and himself as vice-president and engineer.[24]

The Baker Motor Vehicle Company produced its first vehicle for sale in 1900. That car weighed 550 pounds, had a 10 cell battery, a rear axle bevel gear, and Baker's patented steering

knuckle.[25] Thomas Alva Edison bought Baker's first production model as a show of support for his friend and as a symbolic gesture toward what both men hoped would be a bright future for electric automobiles.[26]

In March, 1900, The Baker Motor Vehicle Company moved to a new plant of Jessie Street (E. 69th Street) north of Centrsl Avenue, Located behind The American Ball Bearing Company's wood-framed plant on Clarkwood Avenue, the Baker factory had five floors, 135 feet long and 40 feet wide. Much like the Rauch and Lang plant built that same year, the Baker factory had brick bearing walls, packed wood floors, paired double-hung windows, and an exterior elevator shaft. Next door stood a single-story, wood-frame structure of about the same dimensions.

In November, 1900, Baker exhibited at the first New York Auto Show. The runabout attracted much attention, for the automobile was the first shaft-driven vehicle and the first battery-powered vehicle to be publicly shown.[27] In 1901, the Baker runabout won a silver medal for its performance at Buffalo's Pan American Exposition.[28] That same year, Baker built what many consider the first stream-lined car, the Torpedo, successfully racing it until a 1902 crash which killed one person and led to Baker's arrest for homicide.[29] Although later acquited, Baker began, with that crash, a growing sentiment against automobile racing.

In 1903, as both The American Ball Bearing Company and

The Baker Motor Vehicle Company prospered, The Corlett Engineering Company prepared plans for a joint plant on a site along the Lake Shore and Michigan Southern Railroad tracks near Cleveland's Edgewater Park. Each company had its own factory, sharing a common rail siding and shipping dock. Although of slightly different size, the two buildings shared the same structural system and architectural treatment.

The American Ball Bearing Company moved into its side of the plant in 1904. The building has a single-story factory area, 200 feet square, and a three-story office building attached to the front, 200 feet long and 40 feet wide. The Baker Motor Vehicle Company factory, completed in the early part of 1906 after a several month delay in the shipment of its yellow pine atructural timber, maintains the 1904 factory's dimensions. The factory area stands 200 feet square, containing 80 structural bays, 20 foot by 25 foot on center. The basement doubles the number of bays, making them 10 foot by 25 foot on center. There, brick piers with stone capitals support chamfered bolster blocks which, in turn, support one foot-square timber beams. The main factory level has diagonal tongue and groove flooring laid on top of a solid 6 inch wooden sub-flooring. One foot square timber posts support Howe trusses with timber compression and metal tension members. These trusses support continuous saw-tooth skylights which run the entire width of the factory. The end brick bearing walls, containing segmentally-arched double-hung windows, angle in

at the factory's northwest corner in response to the curve of the exterior rail siding.

The two story office wing at the front of the property originally had a third story, demolished after a roof-top water tank burst. Timber beams span the structure's 40' foot width. Its facade has segmentally-arched windows and a brick corbelled cornice with a large brick and stone round-arched entrance. Directly behind that central entrance stands a freight elevator which has access to both the offices and factory.

At the rear of the factory, through a segmentally-arched brick wall, stands a 180 foot by 40 foot craneway. This single-story space has a continuous gabled skylight supported by wooden truases resting on brick corbels. Although the crane no longer exists, the large doorways which gave accesa to the railsiding on one side of the plant and the lumber storage and drying yards on the other, still stand.

Behind the craneway, through another series of brick arches, atanda a second three-story building, 180 feet long and 34 feet wide. Unlike the front office wing, thia structure has a central fow of timber columns along its entire length. A central stairway and freight elevator provides access to the upper floors. The building's heavy construction, as well as its location next to the craneway, suggest that it once served aa a storage facility for raw materiala and parts. At one point, the second floor also contained a drafting room.

As with The Rauch and Lang Carriage Company, the specific manufacturing methods of The Baker Motor Vehicle Company have gone unrecorded. The company did double its production level to 800 cars in 1906, not an unexpected increase since the new plant more than doubled the older plsnt's size.[30] The company also continued to buy most of its parts from suppliers after 1906, suggesting that the new Baker factory served mainly as an assembly plant for purchased components. The generous amount of storage space in the building's basement and rear wing support that idea. A final reason for the lack of information on the manufacturing methods of Rauch and Lang or of Baker might rest with the electric cars themselves. Electric vehicles were the simplest automobiles to produce. Their battery engines were built almost entirely by outside suppliers while their bodies remained much like carriages in both size and strength. The lack of manufacturing information might simply reflect s lack of interest in Baker's methods, methods that probably differed little from the hand-crafted assembly process used in building carrisges.

By 1908, The Baker Motor Vehicle Company had "the largest (factory) in America devoted exclusively to electric carriage manufacture." Its building had "the most modern and approved architecture - light, convenient - (and) equipment of the most modern devices."[31] Yet, the factory proved inadequate in meeting the demand for electric vehicles. The company had a 300% increase in business in 1909, forcing it to keep the plant in operation 24 hours a day.[32]

In 1910, the company began producing its first electric trucks and in 1912, its first electric patrol wagons.[33] Although both vehicles were immediately popular, their sales gradually declined as owners realized the inconvenience of frequent rechargings and of slow hill-climbing speeds. The Baker Motor Vehicle Company addressed those problems by constructing several recharging stations in the major stations. Its largest opened in 1910 at E. 71at Street and Euclid Avenue, near Cleveland's wealthy ease side.[34] Baker hoped to have recharging stations at every major intersection, an idea scoffed at although eventually realized by the gasoline automobile producers and the oil companies.[35]

In 1912, Baker, like Rauch and Lang, reacted to the growing dominance of medium-priced gasoline cars by emphasizing the elegance and expense of its electric vehicles. That year, Baker began using the Louis XIV style on its car interiors, calling its vehicle "The Aristocrat of Motordom."[36] In 1914, the company went even further, hiring a French fashion designer to make its decorating decisions.[37]

Wisely, The Baker Motor Vehicle Company battled the gasoline automobile producera with mechanical innovations as well. In the 1890's, an inventor named Justin Entz developed an engine which uaed a gasoline generator to drive an electric motor. Manufactured by the Pope Electric Vehicle Company until its failure in 1907, the Entz engine remained out of production until Walter Baker bought the patent rights in 1912.[38] The R. M. Owen Company in

New York City began producing the engine for its Owen Magnetic car under Baker's license.[39] By 1915, The Baker Motor Vehicle Company decided that it needed a new product to give it a competitive edge on gasoline auto companies. As a result, Baker merged with The Rauch and Lang Carriage Company and The R. M. Owen Company to form The Baker R & L Company with a capitalization of $2,500,000.[40] Soon after the nerger, General Electric invested in the company, raising its authorized capitalization to $5,000,000 and placing three General Electric representatives on the Baker R & L board.[41]

Continuing in its manufacture of electric vehicles, the company's first Owen Magnetic cars went into production in December, 1915.[42] The former Baker plant manufactured the engine and chassis for the Owen Magnetic. The former Rauch and Lang plant made Baker R & L electric cars as well as bodies for the Owen Magnetic. The New York Owen plant became a service center for the Owen Magnetic while General Electric's Fort Wayne plant made the car's electric unit.[43]

The Entz engine proved difficult to manufacture, making the Owen Magnetic, in 1918, the third most expensive automobile in the nation.[44] America's entrance into World War I saved The Baker R & L Company from impending failure. The company's war work included the manufacture of electric bomb handlers and lift trucks.[45] Recognizing the potential of the electric lift truck field, The Baker R & L Company ceased its production of the Baker

R & L electric and the Owen Magnetic cars in mid-1919.[46] It reorganized later that year as The Baker Raulang Company, manufacturing electric lift trucks at the Baker plant and assembling the truck bodies at the Rauch and Lang plant.[47] The latter plant also continued its production of automobile bodies for other companies.

In 1922, Baker Raulang added a 112 foot by 69 foot machine shop extension at the Rauch and Lang factory. At the Baker plant, the company added a 63 foot by 39 foot brick boiler house in 1923 and a single-story, 191 foot by 54 foot dry kiln in 1924.[48]

Body manufacturing ended at the Rauch and Lang factory in 1948.[49] Baker Raulang probably sold the plant at that time. Many smaller companies now occupy the factory which, except for the replacement of the original machinery and the demolition of one of the original 1889 buildings, remains intsct.

The prosperity of The Baker Raulang Company, both as an independent producer and as a subsidiary of The Otis Elevator Company sfter 1954, resulted in the addition of several large steel-framed structures east of the original Baker plant. All of the original equipment and machinery has been removed. The factory now contains several smaller manufacturers after the recent departure of The Baker Materials Handling Corporation to more modern facilities.

The history of The Rauch and Lang Csrriage Company snd The Baker Motor Vehicle Company typifies the history of electric automobile manufacturers generalls. What makes them unique is

their merger and later survival as an electric vehicle producer up to the present.

(Baker, Rauch and Lang) Footnotes

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3. Wager, Golden Wheels, p 213.
4. The Book of Clevelanders, The Burrows Brothers Company, Cleveland, 1914, p 160.
5. Cleveland Building Permits, Building Department, Cleveland City Hall.
6. Wager, Golden Wheels, p 214.
7. Ibid.
8. Ibid.
9. Ibid., p 215.
10. Cleveland Building Permits, Cleveland City Hall.
11. Wager, Golden Wheels, p 215.
12. Ibid.
13. Cleveland Building Permits, Cleveland City Hall.
14. Charles Rauch, "The Necessity of Excellent Automobile Body Building" Cleveland Town Topics, Cleveland, February 19, 1910, p 20.
15. Wager, Golden Wheels, p 215.
16. Ibid.
17. Cleveland Building Permits, Cleveland City Hall.
18. Wager, Golden Wheels, p 215.
19. Ruth Franklin Sommerlad, "Baker," Unpublished Ms., Crawford Auto-Aviation Museum Library, Cleveland, March 11, 1964.
20. John W. Love, Business Editor, "A Builder of Auto Industry was Late Walter C. Baker." The Cleveland Press, April 27, 1955, p 59.
21. R. Thomas Willson, The First Hundred Years, 1853-1953, The Baker Raulang Company, Cleveland, 1953, p 13.
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23. Sommerlad, "Baker" Crawford Library, Cleveland, 1964.
24. Wager, Golden Wheels, p 206.
25. Sommerlad, "Baker" Crawford Library, Cleveland, 1964.
26. Wager, Golden Wheels, p 206.
27. Sommerlad, "Baker" Crawford Library, Cleveland, 1964.
28. Wager, Golden Wheels, p 206.
29. Ibid.
30. Ibid., p 208.
31. The Baker Motor Vehicle Company, Sales Brochure, Cleveland, 1908.
32. Wager, Golden Wheels, p 210.
33. Ibid., p 212.
34. Ibid.
35. Ibid.
36. Ibid.
37. Ibid.

38. Wager, Golden Wheels, p 143.
39. Ibid.
40. Ibid.
41. Ibid
42. Ibid.
43. Ibid.
44. Ibid.
45. Willson, First Hundred Years, p 33.
46. Wager, Golden Wheels, p 145.
47. Ibid. p 218.
48. Cleveland Building Permits, Cleveland City Hall.

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