

*The Society of
Automotive
Historians*

AUTOMOTIVE HISTORY REVIEW

PROPERTY OF
ANTIQUE AUTOMOBILE CLUB OF AMERICA
LIBRARY AND RESEARCH CENTER, INC.
HERSHEY, PENNSYLVANIA
SUMMER 1981 - ISSUE NUMBER 13



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A PUBLICATION OF THE SOCIETY OF AUTOMOTIVE HISTORIANS, INC.

From the Editor

Our front cover picture of George Dorris and A.L. Dyke does not relate to any of the articles in this issue but instead will help to bring home the subject of my comments. Messrs. Dorris and Dyke helped to make St. Louis, Missouri one of the minor centers of automobile manufacturing and built cars under their own names at the very beginning of the century. Dorris cars enjoyed a fine reputation for many years. Mr. Dyke is better known, in fact world famous, for his practical "Encyclopedias" on the care and construction of automobiles, books which have influenced generations of automobilists and which still can be found in many of our personal library collections, than for his cars. But he may be said to have founded the "kit car" industry as well, offering a wide range of components and home-assembly kits through magazine ads.

These two men drove this 1902 St. Louis car in the Wisconsin Centennial Tour of the Michigan Region, Veteran Motor Car Club of America, in the summer of 1948. The car shows some modern modifications in the interests of comfort and safety and performed well for its builders in this several hundred mile outing forty six years after its manufacture. Many participants on the tour became acquainted with these pioneers and were fascinated by the stories they had to tell. Did any one make notes or in any way record the reminiscences of these men? Unfortunately, although it is hard to believe now, tape recorders were not available then, and I have not heard of any determined interviewer with an historical bent who sat down and put the story on paper.

We have allowed far too many participants in the early years of the automobile to pass on without leaving a record of their personal experiences. In 1948 very few of us paused to realise that when we listened to people like George Dorris and A.L. Dyke we were listening to history. Now that we do, it is too late to recapture the stories of so many of the early ones.

It is not too late, though, to record many important figures who came later and are still with us. As SAH members we have an obligation to continuously record automotive history. We have an oral History Committee ready and willing to assist any member in seeing that these stories are recorded. Every one of us knows of someone who should be interviewed. Let's not put it off until it is too late.

We have received several notes regarding the touring car picture on the inside front cover of number 12. Our dependable experts Dave Brownell, Walter MacIlvain and Ralph Dunwoodie agree that most of the car is a 1925 Chevrolet, but only Ralph took a shot at identifying the wheels which all assume are not normal. Dave asks if the wheels and the "apparent" front wheel brakes could be a studio modification, while Walter suggests that the car is an export model. Ralph says the wheels are a style made by Budd. During the 1926—31 period several makes used them or offered them as optional equipment including Nash, Dodge and Chrysler, and suggests that use of this wheel could conceal a lack of front brakes.

Jerry Gebby has offered additional information about the racing car pictured on the inside front cover of AHR #10. The caption called it a Stearns-Knight at Indianapolis in 1913. Jerry says that although the radiator carried the white outline which was a Stearns feature and the owner-driver and entrant, Robert Pennebaker was the Stearns dealer in Memphis, Tenn., the car was actually entered as the Pennebaker Special. While the engine was listed as a Knight, Jerry says he has always felt that this may not have been correct owing to the relative newness of the Knight engine in this country. The car was withdrawn before the race began. Credit for the photo should go to the Indianapolis Motor Speedway which supplied it to Jerry.

A quick investigation by the editor tends to reinforce Jerry's suspicions about this engine. Specs. for the car given in *Motor Age*, May 29, 1913 list cylinder dimensions of 5.126" by 5.375" and displacement of 443.50 cu. in. while the weight of the engine is given as 812 pounds. If these figures are to be believed this is no Stearns-Knight engine. On the other hand the account twice states that the car is equipped with a Knight engine and calls R.H. Pennebaker an "amateur sportsman who has built a special car for this race."

Not even a magician would be able to alter the bore and stroke of a Knight engine, so where did Mr. Pennebaker get a Knight engine of this size, if he did? Do I hear a reply from our Knight experts?

Some corrections and additions are in order concerning the Michigan material in issue #12. We slipped up in providing captions and credits for the illustrations on pages 16 and 17. On page 17, the excellent photograph of the restored Michigan should have been credited to the Henry Ford Museum, courtesy of John Conde. The Museum no longer owns the car; who has it now? The upper advertisement on page 16 is from *The Automobile*, May 7, 1904 and the late date probably accounts for the increased price quoted. The lower ad was included to illustrate the company's transition from vehicle manufacture to component production. It was reproduced from *The Automobile Trade Directory*, January 1908. The Michigan engine photos came from the CATJ article describing the 1905 cars. The Relay truck material on page 19 came from *Transmission Topics*, Fall 1972. All of these items are from the collection of the author, James C. Petersen, whose name we spelled incorrectly on page 15. It should also be noted that the first description of the little runabout in *Cycle and Automobile Trade Journal*, April 1903 pictured it in fenderless form and gave its name as the Blood. Our apologies for these purely editorial slip-ups.


Fred Roe

BACK ISSUES OF AUTOMOTIVE HISTORY REVIEW

Expect for numbers 2 and 8, all numbers from 1 to 12 are available from the SAH at the editor's address. The price is \$2.00 per copy, postpaid. The first six issues are indexed in number seven.

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Front Cover: George P. Dorris, left, and A.L. Dyke with the one cylinder 1902 St. Louis car of their manufacture. Photo taken in 1948 on the Wisconsin Centennial Tour.

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Steaming Through New England With Locomobile

By L.J. Andrew Villalon and James M. Laux

Comments about mechanized mass production as a unique American contribution to industrial development are as commonplace as they are misleading. Misleading because they ignore earlier European examples such as printing from movable type, shipbuilding in seventeenth-century Holland, the mechanization of textile manufacturing in Britain in the late eighteenth century, musket production in France about the same time, quantity output of pulley blocks for the Royal Navy during the Napoleonic Wars, and efforts in various nineteenth-century European cities at mechanized bread baking. The common feature in all these cases is that the manufacturer perceived a very large market for identical copies of the same product.

On the heels of these precedents, Americans seem to have done more than others with mechanized mass production in the nineteenth and twentieth centuries, especially with metal articles such as firearms, sewing machines, typewriters, and automobiles. To typify these achievements Henry Ford and the Model T, introduced in October 1908, are usually cited. One cannot deny the accomplishments of Ford, his associate James Couzens, and their engineers, but several other firms in the American automobile industry perceived a mass market and made thousands of cars for it before Ford did. The Buick 10, a small and cheap four-cylinder car offered first in 1907, found a big market before Ford's T. Olds from 1902 and Cadillac from 1903 produced thousands of cars annually while Ford was having problems starting his firm. Even earlier, the Electric Vehicle Company had proposed to have 1,600 of its heavy and expensive electric cars built by the Pope bicycle and automobile factory in Hartford in 1899—1900. This scheme failed because the machines were faulty and the market wilted. But a demand for lightweight and inexpensive cars did exist. Neither Olds nor Buick nor Ford first demonstrated this in the United States; the Locomobile Company of America did, with a small steam car of which it sold some 5,200 from 1899 to 1903. By this performance Locomobile illuminated the possibilities and made it easier for the rest. Sprouted in the Boston region but rooted in Bridgeport, Locomobile also reminds us of the New England beginnings of the American automobile industry.

EARLY STEAMERS IN BOSTON

The Locomobile story begins in the late 1890s in the Boston region with three Yankee tinkerers: George E. Whitney and the twins F.O. and F.E. Stanley. George Eli Whitney was born about 1862, attended the Massachusetts Institute of Technology for a time, and then worked in machine shops and engaged in the manufacture of small marine engines in the 1880s and 1890s. He began building steam-powered carriages in East Boston in 1895—6.¹ His first weighed only about 700 lb fully loaded and although later Whitney steamers were heavier this prototype set the standard for other New England

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steam cars—light in weight and simple in mechanism—in contrast to most European steamers which tended toward massiveness. Whitney made some half dozen more steamers in 1897—8 and organized the Whitney Motor Wagon Company in 1897 to manufacture them in quantity. This enterprise did not succeed. It appears that Whitney lacked both capital and production experience. A grand nephew of Eli Whitney of cotton gin fame, he cast himself in the role of inventor, not businessman. In 1899 he travelled to England and France with one of his cars, aiming to sell a licence to a manufacturer there. Many years later Whitney claimed he met an American car manufacturer in Paris and made a sale,² but before pursuing this we must examine some other elements in the steam car story.

The Stanley brothers came from Maine where they were born in 1849. Perfectly fitting the stereotype of the eccentric Yankee inventor, F.E. Stanley in 1875 began to produce photographic dry plates in Lewiston. As this enterprise prospered F.O. Stanley joined the business and in 1888 they moved it closer to the market, locating it in the Boston suburb of Watertown, with a Newton post office address. (Many writers have mistakenly assumed that the factory itself was sited in Newton.) In 1896 F.E. Stanley saw an early automobile—it is not clear whether it was steam- or petrol-powered—and challenged himself to make a better one. He aimed at a weight of some 600 lb so as to achieve rapid speeds and to use the flimsy bicycle-type pneumatic tyres of the day. But the Stanleys were not equipped to make many of the parts themselves and they had to buy most of them from specialist shops in the region. Their first steamer may have operated late in 1897. It raised little stir and the brothers went on to develop a new model. It used an engine manufactured by the Penny Machine Shop of Mechanic Falls, Maine, weighing just 32-1/2 lb. The steam boiler, frame, suspension, chain transmission, and general lines of the Stanley closely resembled the Whitney car but it weighed less, somewhat under 600 lb loaded.³

When the Mechanics Fair in Boston opened in October 1898 it exhibited four automobiles. Two were electric, one offered by the Pope Company of Hartford, soon to become a major producer under the name of Electric Vehicle Company, and the other by Andrew L. Riker of New York City, ultimately a key figure in the present narrative. Another was a petrol-powered tricycle of which the French manufacturer, De Dion-Bouton, had sold thousands in Europe, and finally one operated by steam, but it was neither a Whitney nor a Stanley. Some days after the opening a Whitney carriage appeared. Then, for the parade on 9 November from the Mechanics Building to Charles River Park for races and other activities, F.E. Stanley showed up in his machine. He did not take part in the races but did demonstrate his car in an exhibition spin. His time for two miles, 5 minutes 19 seconds, was comparable to the 1,200 lb Whitney and the French tricycle. The Stanley vehicle did win the hill climbing event, going up a 36-1/2 per cent gradient without trouble.⁴

The Stanley brothers decided to take advantage of public enthusiasm aroused by the exhibition and prepared to

manufacture a batch of their steamers, perhaps 100 of them. The Mason Regulator Co. of Boston reported in December 1898 that it was making the engines for these cars and two months later the Stanleys said they had received orders for 85 cars.⁵ To undertake this new activity the Stanleys moved into a former bicycle factory adjacent to their photographic business in Watertown. The financial means and reputation as serious businessmen they had gained from the photographic enterprise appear as crucial elements in their success when contrasted with Whitney's failure to begin quantity production. They could order 100 sets of parts for a new and untried contraption and be taken seriously.

The Stanley steamer at this point employed a two-cylinder, 3-1/2 hp engine with steam generated by a 14-inch boiler in which the heat rose through 298 small copper tubes. A petrol burner raised steam in this boiler. A delicate device, its fuel was kept under about 20 lb pressure with a hand pump. The water tank held some 12—14 gallons, enough for a 15-mile trip. A chain transmitted power from the engine to a differential on the split rear axle. The frame was of bicycle tubing with a pair of elliptical springs in the rear and one transversely across the front. A tiller controlled the steering and the wire spoke bicycle-type wheels had two-inch tyres.⁶

That the Stanleys late in 1898 undertook to manufacture up to 100 cars was almost unprecedented in the United States. There were only a few other widely scattered automobile makers at this point—in the mid-west Alexander Winton was the largest with an output of 22 in 1898—but only the Pope Company made more than a few dozen (electric) cars in this year. Another basic decision of the Stanleys, to make small, lightweight, and inexpensive cars, also set an important pattern for the earliest period of American motor car manufacturing.

George Whitney also tried again to get into production, in 1899 licensing a firm located in Portland, Maine, and Lawrence, Mass., that made shoe manufacturing equipment to construct steamers on his designs. This move brought some confusion, however, because his licensee was the Stanley Manufacturing Company, operated by Frank F. Stanley. Although this concern did not make many cars and later they received the name McKay, two Stanley firms making similar steam cars at almost the same time in almost the same place do muddy the waters for the historian, not to mention contemporaries.⁷

WALKER AND BARBER

For a time, nevertheless, one of the Stanley companies left the automobile business and gave birth to two new firms, Locomobile and Mobile. This development of 1899 came largely through the efforts of two intriguing figures from America's great age of industrialization, the magazine magnate John Brisben Walker, publisher of the *Cosmopolitan*, and the asphalt paving king Amzi Lorenzo Barber. In F.O. Stanley's reminiscences he tells how the connection began one morning in February 1899 when he arrived at the steam car works in Watertown to find the New York magazine publisher waiting on the doorstep with an offer to buy into the company.⁸

John B. Walker, then 52 years old, had enjoyed a career fascinatingly varied and productive. Born near Pittsburgh in 1847, he attended a preparatory school in Washington, D.C., and when he was 16 at the height of the Civil War in 1863 he entered Georgetown University. Two years later, the war over, he went to West Point, a not unexpected move for a young man with military forebears on both sides of his family. In 1868 Walker withdrew from the Military Academy so as to accompany J. Ross Browne, the new U.S. Minister to China, where he remained for two years.

Returning to the United States in 1870, Walker entered iron manufacturing and other business ventures in West

Virginia and quickly made the first of several fortunes, but the panic of 1873 wiped him out and ended this phase of Walker's business life. He then became a journalist, accepting an offer from the *Cincinnati Commercial* to write on economic issues. This led to a job as managing editor of the *Pittsburgh Telegraph*, and in a few weeks Walker went on to fill the same position with the *Washington Chronicle*. He remained with it for a few years until the paper folded in 1877.

Once again out of a job, John Brisben Walker took Horace Greeley's advice and headed west. He determined to apply irrigation to arid western lands. Eventually he bought up hundreds of acres near Denver and successfully raised alfalfa. More profitable were his speculations in Denver real estate and soon he amassed his second fortune. In 1889 Walker moved to New York and bought the ailing *Cosmopolitan Magazine*, a monthly begun three years earlier and owned for a short time by U.S. Grant, Jr. A 'great editor,' Walker made the *Cosmopolitan* profitable and achieved a circulation of 300,000 by 1898. In 1895 he moved the entire publishing operation from downtown New York City to Irvington, a suburban community a few miles up the Hudson. The new *Cosmopolitan* buildings were designed by Stanford White, a socially prominent architect who later became the victim in the notorious Harry Thaw murder case. Walker loved to promote himself but he also engaged in a variety of public endeavours including a free correspondence school call the *Cosmopolitan University*.⁹

Alert to new opportunities, Walker took the motor car seriously from the beginning. *Cosmopolitan* publicized early automobiles and in 1896 he offered \$3,000 to the car that would perform most creditably in a run of over 26 miles from New York's City Hall Park to Irvington. Although badly mismanaged, this affair, won by a Duryea petrol car, did generate the publicity that Walker wanted.¹⁰ Nearly three years later Walker decided to enter the automobile business himself. Apparently not interested in petrol power nor in the electric cars that did attract the interest and money of some New York capitalists, Walker opted for steam. In February 1899 he went up to the Boston area to see the Stanleys. When he offered to buy a half-interest in the fledgling enterprise they were astonished.

Had he said he had come to buy a half-interest in our wives, I doubt if we would have been more surprised. We told him we didn't know as we had what might be called an automobile business, and we certainly did not want a partner; that we had difficulty enough in getting along with each other, and we did not want to increase our trouble by taking in a third party.¹¹

Walker pressed his case, emphasizing his ability to publicize the steam car, but the twins could not be budged. He left, 'greatly disappointed.'

The more Walker thought about the idea the more he liked it and after two months he returned to Watertown, re-appearing at the factory in mid-April with an offer to buy out the entire business. The Stanleys were not eager to sell so they set a figure they thought would send Walker away again, \$250,000. 'Exactly the figure I had in mind, a quarter of a million,' smoothly replied the publisher. The Stanleys signed, foreseeing an enormous profit, for they had invested less than \$20,000 so far. Further negotiations provided that for \$10,000 Walker received a ten-day option to buy the firm. F.O. Stanley quickly brought a steamer to Irvington, driving it from Watertown to Providence and taking ship from there to the metropolis, where he and Walker could demonstrate it in an effort to attract capitalists to supply the \$250,000. Prospects included George and Edward Gould, sons of the famous Jay Gould, and William Rockefeller. But the financiers kept saying no. The option was about to expire when a man whom Walker had known in Washington over 20 years earlier and who now

was a wealthy neighbour living just a mile down the river at Ardsley, Mr Amzi Lorenzo Barber, entered the picture.¹²

A Vermonter, born in Saxton's River in 1843, Barber was the son of a forceful Congregational minister and spent most of his early years in Ohio. He entered Oberlin College at the age of 19 in 1862 and graduated five years later. After only a few months' post-graduate study at Oberlin's theological seminary, Barber encountered General O.O. Howard, head of the Freedmen's Bureau and currently developing the new university in Washington, D.C., named after himself and designed to provide higher educational opportunities for blacks. Barber joined Howard's new university and taught there for four years. His youthful idealism seems to have faded and shortly after his second marriage Barber left Howard in 1872 and entered the real estate business with some of his wife's relatives. Soon prosperous, in 1876 he witnessed an experiment that sharply changed his career. In Washington, the city authorities put down an asphalt pavement on Pennsylvania Avenue as a test venture. Grasping the possibilities of this innovation, Barber plunged into asphalt paving. The Barber Asphalt Paving Company enjoyed gratifying success. By 1892 it had paved streets in some 30 cities and dominated the industry. A master stroke was Barber's conquest of the world's major source of natural asphalt, the Pitch Lake on the island of Trinidad. In 1888 he negotiated a lease with the British government to exploit the 114-acre lake for 42 years. In 1894 he tightened his grip on the supply side of the industry when he purchased the company controlling the Venezuelan supply of asphalt.¹³

Now, in May 1899, Amzi Barber was Walker's last chance for financial support in his steam car venture. According to Stanley, who was driving, the asphalt king took his test ride and did not hesitate; he immediately decided to invest. He paid Walker \$250,000 for a half-interest in the business, which made it possible for Walker to fulfil his commitment to the Stanley brothers. The new partners purchased from the brothers all steam car patents pending, the Watertown factory, and all automobiles in the course of manufacture. The Stanleys agreed to refrain from the independent production of steam cars before 1 May 1900, and furthermore signed on as general managers of the new company.¹⁴ Walker and Barber launched their firm on 17 June 1899, forming a West Virginia corporation named the Automobile Company of America, capitalized at \$2-1/2 million, with its office in New York City. Less than a month later the firm changed its name to Locomobile Company of America when it found that another concern had already pre-empted its original name. In October 1899 it raised its capital to \$5 million. Public announcements indicated that Barber would serve as president, Walker as vice-president. In addition, a key figure entered the story, Samuel Todd Davis, Jr., Barber's son-in-law, who would function officially as treasurer.¹⁵

Born in Washington, D.C., in February 1873, Davis attended the Columbian College Preparatory School there and in 1891 matriculated at Rensselaer Polytechnic Institute in Troy, New York, the oldest engineering school in the country after West Point. He graduated with a civil engineer's degree in 1895 and entered Barber's asphalt business. For a year Davis lived in Port-of-Spain as an executive of the Trinidad Asphalt Co. In 1897 he married Amzi Barber's daughter, Lorena. When Barber entered the infant automobile industry in 1899 his son-in-law came along enthusiastically.¹⁶

MOBILE

The first major steps the new automobile men took were away from each other. Barber and Walker split. Walker's plan had been to move the factory from Watertown to his own neighbourhood where he could watch affairs closely. In the spring of 1899 he negotiated to purchase a site at Kingsland

Point in Tarrytown, a few miles north of Irvington. Walker, a self-made man who ran the *Cosmopolitan* as an absolute autocrat, had several sons whom he may have wanted to place somewhere in the management of the company. To Barber, another self-made man but less flamboyant, with a son and a son-in-law interested in the new venture, it may have looked like trouble to remain hitched to Walker and his large family with the factory in Walker's backyard. The issue came to a head shortly after 6 July 1899 when Walker closed the deal on the Kingsland Point property of 600 acres for \$165,000. On 19 July the *Horseless Age* announced a Barber-Walker split with Barber keeping the Watertown factory and the Locomobile name while Walker retained the Kingsland Point estate with a new name, Mobile Company of America. Both companies had equal rights to use the Stanley patents and designs and the services of the Stanley brothers.¹⁷

Walker moved at breakneck speed to catch up with Locomobile, already in production at Watertown. On 14 July 1899 he broke ground for his new 'model' factory, designed by Stanford White to be 300 ft by 50 ft, and three stories high. Although the local builders Dinkel and Jewell rushed construction to finish in November, it took longer to find equipment, supplies, and to train labour. Only in March 1900 did Mobile turn out a completed automobile. Engines and wooden bodies had to be bought but most of the rest of the car was manufactured in this plant.¹⁸ Walker promoted his car vigorously and sold it at \$650 through nearly 70 sales outlets.

LOCOMOBILE

Barber, like Walker, and several months ahead of him, moved quickly in 1899 to increase output of Locomobile's small steam cars, weighing only 400 lb empty and priced at \$600. As a first step he expanded operations in the Boston area. Manufacture of boilers and final assembly remained at the Watertown factory and Mason continued to supply the engines, but already in July he had obtained the Humber bicycle factory in Westborough (east of Worcester) to make the running gear. Then early in 1900 Locomobile leased the facilities of the Speirs Manufacturing Company in East Worcester and appointed its head, J.C. Speirs, superintendent of all Locomobile manufacturing operations. Speirs' company had once made bicycles. It now specialized in forgings and engines (replacing Mason) for Locomobile cars, although it is not clear if it had its own foundry.¹⁹

Speirs took over his managerial post from the Stanley brothers, originally general managers but who faded quickly from the picture, for by September 1899 they had ended their connection with Locomobile.²⁰ One can assume that they found it intolerable to work for other people. One specific issue they may have objected to was the company's redesign of their car that was going to make it heavier, and they probably opposed Barber's fundamental decision to move the firm away from the Boston area.

Sometime in 1899 or 1900 George E. Whitney began to work for the Locomobile Company as a design engineer. Several decades later Whitney declared that he and Barber had met in Paris in 1898 and made some sort of financial arrangement.²¹ Whitney's date of 1898 could not have been correct but such a meeting may have occurred in August 1899 when both men were in Paris promoting their steam cars. Whitney did soon join the Locomobile staff although after the company left the Boston area he remained there until late in 1902. If Whitney did join Locomobile in the late summer of 1899 this appearance of a rival may have been another reason for the Stanleys to cut their ties with the firm.

Barber and his son-in-law Samuel Davis sought to concentrate production of Locomobiles in one place, and that place was not Boston but much closer to Barber's and the company's headquarters in New York City. They found the



From the 1900 Locomobile catalogue: Stanhope Model, Style No. 3, with victoria top, \$900. A more deluxe version of the most popular type.

Credit: Connecticut State Library

new location in Bridgeport, Connecticut, through the good offices of Dr I.D. Warner, of the Warner Brothers Corset Co. of that city. They acquired 40 acres on Long Island Sound next to Seaside Park (most of whose land had come to the city from local hero P.T. Barnum), with railway and water transportation immediately available. Bridgeport, a city of 71,000 people, had several favourable features: metal working and carriage-building shops to supply materials as well as skilled labour, and it was a convenient distance—50 miles—from Manhattan by rail or water. The latter may have had a particular significance, for Barber was an ardent yachtsman. He could not wait for the new factory to be built before getting away from Boston so he found still another disused bicycle factory in Bridgeport and leased it as a temporary site for assembly of Locomobiles previously carried on a Watertown.²² Such assembly began in March 1900, after an estimated 600 of the machines had been built at the earlier location.

The new Bridgeport factory began to rise in November 1900, allowing some production activities to be transferred there from the Westborough and Worcester facilities in the following March. It was soon finished and Locomobile centralized all manufacturing in the new plant by June 1901, by which point nearly 3,000 of the cars had been sold. The company may have been turning out about 150 cars a month in its makeshift quarters. The main factory building, constructed of brick and steel, comprised two wings, 208 and 300 ft long, making an L-shape, each wing 54 ft wide.²³ It had four floors and a basement, supplying 127,250 ft² of floor space. Smaller one-floor buildings housed a power plant, forge, testing shed and (water) pump house. Among early automobile factories the extent of Locomobile's floor space was second only to the De Dion-Bouton works in suburban Paris. Contemporaries considered the new factory a modern facility but we can see it as old-fashioned, reminiscent of New England textile mills with its long and narrow wings of four floors. Originally the steam engines in the power house drove machines in the other

buildings by shafting but this outdated system was quickly abandoned in favour of generators to supply electric current for large motors to drive shafts and belts in each section of the factory. Presumably a separate motor for each machine was thought too large an investment. The company generated its own electric power because at this period the electric utility in Bridgeport supplied electricity to its customers for lighting only, and them only during the hours of darkness.²⁴

Descriptions of the factory reiterate that the company carried on most of the manufacturing processes in the plant. It did not have a foundry so it probably bought its engine castings from outside. Its wooden bodies and wire spoke wheels also came from outside suppliers. The tubular steel frames for Locomobiles were welded together in the forge shop and then whisked all the way to the fourth floor of the main building for painting, as were the wooden bodies. Boilers and burners were made on the first floor, water and fuel tanks on the third. Machine shops occupied parts of the first and second floors. Engine assembly and testing occurred on the third floor and final assembly on the second. This kind of factory arrangement was traditional, with different parts made in separate shops and moved from floor to floor on three lifts, ultimately to the final assembly operation where each car was put together by a group of men at a fixed station. One finds no attempt at continuous flow assembly, nor was this needed, it seems, for an output of 15 cars was considered a very good day's work and most days it fell far short of this figure.²⁵ All engines were thoroughly tested in the factory and after assembly the cars also received long test runs along the paths of Seaside Park. Such extensive testing suggests some difficulties in manufacturing and a lack of completely interchangeable parts.

LARGE-SCALE PRODUCTION

The Locomobile company from 1899 to 1901 was outstanding among all the other firms in the young industry for its large-scale production of low priced cars.

Estimated Production of Locomobile Steam Cars

Year	Authors' estimates	Serial numbers
1899	600	1—1,200
1900	1,600	1,200—2,800
1901	1,400	2,800—4,200
1902	1,100	4,200—5,300
1903	500	5,300—5,800
Total	5,200	

Sources: Authors' figures are derived from the company's claims made in advertisements, copies of which are found in the Locomobile Collection, Bridgeport, and from *Cycle and Automobile Trade Journal* (August 1901), 14; *Horseless Age*, X (21 May 1902), 612; and *Automobile Topics* (12 July 1902), 354, (13 Sept. 1902), 1007. Serial numbers of the cars, compiled by Herb Ottaway and Hayden Taliaferro, are reported in *Horseless Carriage Gazette* (May—June 1977), 28. Company claims would be expected to magnify rather than minimize production; serial numbers assigned to a given year are not necessarily the same as actual production in that year.

Its production far outpaced the results of other domestic companies. The Electric Vehicle Company may have made as many as 1,500 of its Columbia electric cabs and passenger cars from 1899 to 1901 in Hartford but this effort with heavy and expensive machines had little success. This company's problems contrasted with the sales success of the light steam cars were instructive. Another object lesson, the small, French one-cylinder De Dion-Bouton petrol car introduced late in 1899, sold about 3,000 units up to 1902. Some of these (200 ?) were exported to the United States in these years, call-



Samuel T. Davis, Jr. drove this model, called the "Locoracer" in races sponsored by the Long Island Automobile Club, November 1901.

ed Motorettes, and sold at \$850 and up. The next large American producer, Ransom E. Olds, began making his successful Curved Dash one-cylinder petrol runabout in Detroit only in 1901, turning out some 425 in that year and some 2,500 in 1902. Its price began at \$600, then rose to \$650. In Kenosha, Thomas B. Jeffery made 1,500 Rambler cars—also one-cylinder petrol runabouts—in 1902 at \$750, and after these came Cadillac and Ford in Detroit in 1903 with production of 1,895 at \$750—900 and up to 500 at \$850, respectively.²⁶ These four large mid-western producers quickly followed the trail blazed primarily by Locomobile and Mobile which by 1901 had clearly demonstrated the reality of a large market for small, cheap cars.

Where did Locomobile find buyers for some 5,200 motor vehicles? The firm sought out clients with a vigorous marketing effort headed by J.A. Kingman, a college classmate of Samuel Davis, who emphasized the car's simplicity, reliability, and low price. Some buyers found that it was neither simple nor reliable, but with its low price it took advantage of the considerable publicity that had spread along with horseless vehicles since 1895. In comparison with petrol cars in 1900, when about 1,000 were manufactured in the United States, the Locomobile moved without apparent effort, with none of the vibration and little of the noise associated with that alternative. It had none of the problems of changing gears or worn out clutches. It could do wonders on short hills. Locomobile advertised heavily in a wide variety of publications, from *The Black Cat* and the programme of an international yacht race to the *North American Journal of Homeopathy*, the *Montreal Star*, *Savannah Morning News*, and *San Francisco Call*.²⁷ It publicized its machines in auto shows, races, and stunts such as climbing Mount Washington in New Hampshire and Pike's Peak in Colorado. It established several branch sales agencies and recruited many dealers not just in its own region but from coast to coast. Late in 1899 it superseded its standard model no. 1 with an improved no. 2, which weighed 640 lb empty and cost \$750. This car replaced the lightweight Mason-built engine with a much sturdier one of its own (Whitney's ?) design made in Speirs' factory in Worcester. Its water capacity was raised to 21 gallons, the steering tiller was moved to the side, and comfort and safety were increased by many other improvements.²⁸ Other models soon accompanied this new standard type for a total of six by March 1900, including a Locosurry weighing 800 lb empty,

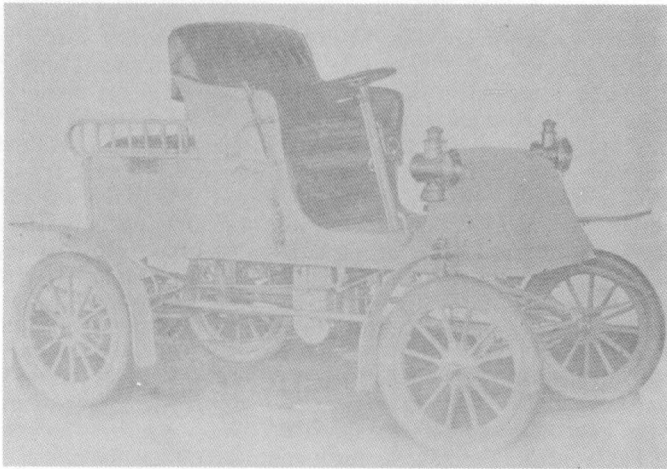
seating four, and priced at \$1,200, and a racing motorcycle with two saddles.²⁹ Although the company continued to sell its cheapest car for \$750 for as long as it made the steam type (except for a few months in 1901—2 when it sold at \$850), most of its other models betrayed a tendency toward more substantial and higher priced cars.

Locomobile eagerly sought foreign markets. A few Canadians imported Locomobiles in 1899 and in October of that year some American bicycle interests formed the National Cycle and Automobile Company Ltd to make Locomobiles in Hamilton, Ontario. It began to assemble these cars and presumably made some of the components but in the summer of 1900 the Canada Cycle and Motor Company, owned by Canadians, bought out the National concern. It continued to make and sell Locomobiles until 1902.³⁰ Already in the summer of 1899 A.L. Barber and F.E. Stanley had visited Europe, arranging for Locomobile agents in London and Paris. While these steamers never caught on in France or the rest of the Continent, in Britain they found a receptive market. In the spring of 1900 one took part in the 1,000 Miles Trial, a reliability demonstration run by dozens of cars from London to Edinburgh and back. Several months later another Locomobile was driven from one end of Britain to the other, 981 miles, a journey that almost wore the machine out, and certainly tired the driver who had to pour a reported five tons of water into the water tank during the trip.³¹ Nevertheless, a strong advertising campaign and the avid British demand for imported cars led to the sale of some 400 Locomobiles by 1903.³²

Locomobile's sales of thousands of cars while other American firms had trouble making and selling dozens or hundreds actually disguised serious flaws and problems.³³ The 1899 models were flimsy, with frequent failures of bearings, sprockets and chains. Sturdier construction added weight which reduced the car's already low fuel economy. To heat its boiler it burned more petrol per mile than the typical petrol car of the period. To start the car when cold one had to warm up separately a petrol vaporizer or 'firing iron' to get the burner to operate, and then get up steam in the boiler. Ordinarily it took about half an hour to manage the entire process, and then there was always the chance that the wind might blow out the burner. While driving one had to watch the water gauge on the boiler and alter the rate of water feeding into the boiler when necessary. Miscalculations were common and burned out boilers occurred frequently. One also had to pump air into the petrol tank to keep its pressure up. Despite rumours, Locomobile boilers never blew up but some of the cars burned when the burners back-fired and set the car on fire. This particular feature made insurance companies reluctant to cover these cars. Boilers might fill up with scale and the cars could not be operated reliably in temperatures below freezing. One of the most glaring faults was high water consumption, about one gallon per mile. The water supply even for a 20-mile trip would weigh about 160 lb. A possible solution was a closed system, sending the exhaust steam back to the water tank after running it through a condenser. The French steam cars made by Leon Serpollet and the American White steamers from 1902 employed condensers. But the engines used on the Stanley, Mobile, and Locomobile cars required copious lubrication and in a closed system this oil would foul the condenser and boiler. Locomobile did increase the size of its water tanks, a 1902 touring car carried 47 gallons, but the greater weight reduced the car's efficiency. Without redesigning the engine so as to adopt a condenser the only way to solve the water consumption problem would be to change the motive power itself, to shift to petrol engines.

NEW POLICIES

Although we do not have complete sales figures for the



Later Locomobile steamers were heavier and began to resemble contemporary American mid-engined gasoline cars in appearance. This dos-a-dos model with wheel steering was pictured in *The Automobile*, June 27, 1903.

Locomobile Company these may have become somewhat discouraging late in 1901, after the opening of the new factory. Total production in 1901 probably failed to reach that of 1900, although the automobile industry nationally continued its rapid expansion. In this situation the company took three steps to protect itself. It prepared a new gamut of models for introduction in the spring of 1902, it filed suit against another steam car producer for patent infringement, and it decided to investigate the possibility of adding a petrol car to its line. These steps all accompanied the rise of Samuel Davis in the company for he became president of Locomobile as 1902 opened, Amzi Barber becoming chairman of the board.

To investigate the petrol engine option Davis and Barber turned to a prominent electrical and automotive engineer, not a mid-westerner but a New Yorker, Andrew L. Riker. Now 33 years old, Riker was largely self-taught, although he had spent a year at Columbia College. In 1888 he had established the Riker Electric Motor Company and in the mid-1890s began making a few electric cars. In June 1899 he formed the Riker Electric Vehicle Company operating from Elizabethport, N.J. Riker sold this concern to the Electric Vehicle Company of Hartford in December 1900, becoming vice-president and superintendent of the larger firm.³⁴ Already the Hartford company was in serious technical and financial trouble and Riker, apparently persuaded by his own long experience that electrical power was not the answer, began experimenting with petrol cars. In August 1901 Electric Vehicle alerted its agents that it had in preparation some two- and four-cylinder petrol machines for delivery in October.³⁵ These announcements were premature and may have been issued by Riker without the assent of President George Day, ill and away from his office during much of 1901. In any event Riker did drive a new two-cylinder petrol model in the September 1901 New York to Buffalo Endurance Run. Designed not as a horseless buggy but on the French style developed by Emile Levassor, it had its engine with two vertical cylinders in front. This car had difficulties in the Run and Riker withdrew from the competition north of Albany. In December 1901 he also withdrew from the Electric Vehicle Co. which did not pursue development of his petrol machines.

No matter, Riker had known Amzi Barber and Samuel Davis for several years through participation in races and on automobile committee work. When he was 27 years old Davis had been elected the first president of the National Association of Automobile Manufacturers in December 1900 and Riker sat on its board of directors. They got together quickly and Andrew Riker joined Locomobile in January 1902 as the company agreed to finance his further development of a two-

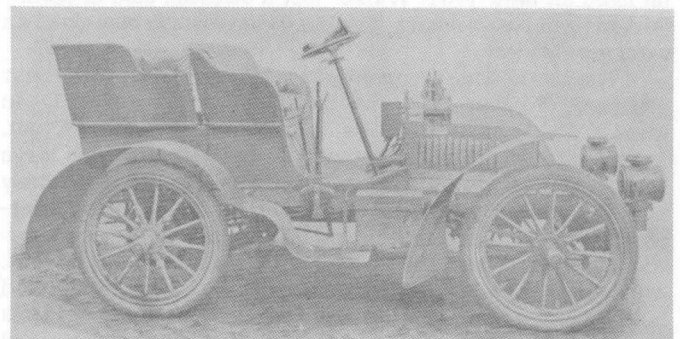
cylinder petrol car; a decision to manufacture such a machine might come later.³⁶ To protect current sales of its steam cars Locomobile tried to keep Riker's activities quiet and he carried them on at the Overman Automobile Company in Chicopee, Mass. This firm had earlier made some experimental petrol cars and were currently producing the Victor steam car in small numbers. Locomobile made an unpublicized alliance with Overman in January 1902.

The interest in petrol cars and in Andrew Riker did not at all mean that Locomobile had chosen to abandon steam. At the very time that Riker was beginning his duties with Locomobile the firm acted vigorously to protect its steam car business by bringing suit against the Stanley brothers for patent infringement. The Stanleys had left Locomobile in September 1899 but they continued their experiments with steam cars. By early 1901 they bought back their property and equipment in Watertown from Locomobile for just \$20,000 and they offered a new and improved steam car for sale in the winter of 1901—2. They hit a snag, however, for Locomobile now controlled George Whitney's patents and it claimed that the new Stanley infringed on one of them, granted to Whitney on 3 July 1900, for which he had made application as early as 30 April 1897. When an amicable agreement between Locomobile and the Stanleys could not be reached, Locomobile filed suit in January 1902. Later in the year it brought similar suits against the White Company of Cleveland and other steam car manufacturers. As it turned out, this affair did not grow into another Selden case which had so exercised the petrol car makers. The Stanleys solved their problem by thoroughly redesigning their car—most notably they adopted transmission by gears rather than chain—and eventually they bought all the steam car patents owned by Locomobile.³⁷ The Stanleys made steam cars for many years thereafter, usually about 500 or 600 per year, gradually improving the design and adding weight, finally adopting a condenser in 1915. The company went out of business in 1924 after having produced some 14,000 steam cars since 1901.³⁸

To appeal to the market Locomobile had to do more than enforce its patent rights. In the early spring of 1902 it began introducing new model steam cars to replace the types it had manufactured for about two years. In its most striking innovation it almost completely abandoned the earlier buggy design and on all but one of the seven 1902 models placed some of the mechanism under a box on the front end of the car, in this way imitating the best European petrol car designs. Artillery wheels with 3-1/2 inch tyres were mounted on most of the new models and on some of them buyers could specify a steering wheel rather than a tiller. Water tanks held from 30 to 47 gallons and prices ranged from \$750 to \$2,400.³⁹ Locomobile offered 'a car for every pocketbook.' It also offered steam car components, including engines, to other manufacturers.

By August 1902 the company also found Riker's petrol car worthy of adoption, decided to manufacture it, and made Riker a vice-president with 1,000 shares of Locomobile stock.⁴⁰ Within weeks the public learned the news. *Automobile Topics*

A.L. Riker's gasoline car designed for Locomobile was pictured in *The Automobile and Motor Review* as early as September 27, 1902.



reported in late September that Locomobile soon would offer two- and four-cylinder petrol cars designed especially for touring (where the steamers' thirst for water often proved an embarrassment). Riker had designed heavy and expensive cars, about 2,000 lb in weight with a \$5,000 price tag on the four-cylinder model.⁴¹ Deliveries began in November.



Factory of the Locomobile Company as seen from Bridgeport harbor.

STEAM IN TROUBLE

By the end of the summer of 1902 the petrol car may have become not only another product for Locomobile but a possible way out of financial difficulties. The market for steam cars, at least those made by Mobile and Locomobile, was evaporating. Looking back some 13 years later, J.B. Walker of Mobile summed up the two major problems of this type of car as the 'necessity of filling its water tanks every so many miles—fifteen or twenty—with the regularity that one must water a horse. The other was the constant danger to the careless driver of having his boiler burnt out, through neglect in turning on his pumps at the proper time.'⁴² As these negative features became known to prospective buyers many turned to other makes. Those still interested in steam cars could buy a better one in the Cleveland-built White (introduced in 1901) with a semi-flash boiler and condenser, or one of the new cars made by the Stanley brothers. Those considering petrol could now choose from the low-priced models offered by Olds (from late 1901), Rambler (1902) and soon a variety of others. One of Olds' first advertising slogans alluded to the complexity of the steamers: 'Nothing to watch but the road.' A correspondent to the *Horseless Age* revealed the disaffection from Locomobile and Mobile cars by 1903 when he remarked that 1900 or 1901 models of these types could be acquired for \$100 or \$200.⁴³

After some consideration of a possible shift to petrol cars the Mobile Company gave up, closing its doors early in 1903 after selling up to 600 steam cars altogether from 1900.⁴⁴ Within a year Maxwell-Briscoe bought the Tarrytown plant to make petrol cars, in turn selling it to Chevrolet in 1915. John B. Walker also sold the *Cosmopolitan*, to Hearst in 1905, and a few years later retired to alfalfa farming in Colorado where he lived on until 1931. Walker lost a sizeable sum of money with his gamble on steam, but Barber apparently sustained an even greater loss.

The Locomobile Company operated in the red for the year ending 31 August 1902 and the situation grew worse.⁴⁵ In March 1903 Amzi Barber's money and credit ran out. Locomobile earnings did not appear to have offset his large outlays for designs and patents to the Stanleys and to Whitney and for the new Bridgeport factory. Other personal expenditures may have aggravated his position. In sum, he needed financial relief. He appealed to his brother-in-law J.J. Albright of Buffalo, with whom he had once been associated in Washington, D.C., real estate development. In March 1903 Albright agreed to endorse some Locomobile commercial

loans in return for collateral comprising various of Barber's securities and properties.⁴⁶ From this point Barber seems to have dropped out of active Locomobile management and in 1904 he returned to the asphalt business until his death in 1909. As Barber gave up the moneyman's role Albright took it on and became the leading stockholder in 1910. Actual management of Locomobile devolved upon S.T. Davis, Jr and Andrew Riker, with the latter in charge of engineering and production. In 1903 the company disposed of an estimated 500 steam cars and just 77 of the new petrol type. It lost money again, but in 1904 production of petrol models rose to 199 with steamers down to a handful; the company declared a profit.⁴⁷ The steam era had ended for Locomobile.

LOCOMOBILE'S LATER HISTORY

To gain publicity and sales for its petrol cars Locomobile raced them, following the line of many European makers of powerful and expensive machines. In 1908 it gained a lustrous triumph when one of its racers won the Vanderbilt Cup Race on Long Island, the first domestic winner of the premier American auto race. This victory and healthy sales in these years repaired the company's finances. In 1912 it entered the truck market with a large 5-ton model. This branch of production grew to major proportions once the European war broke out. Britain, France, and Russia bought Locomobile trucks and in 1916 the United States Army began using them on the Mexican expedition. In this year the company gave the name Riker to its trucks (Davis had died suddenly in 1915, a serious blow) so as to preserve the Locomobile name for its fashionable and non-commercial passenger cars. Output of cars had to be cut in 1917 and 1918 to concentrate on trucks, as well as to prepare for manufacture of Liberty aircraft engines and to work on a heavy tank.

The success and profits Locomobile enjoyed during the war did not continue long into the post-war period. In 1920 the company joined the Mercer and Simplex automobile companies in a new group organized by Emlen S. Hare, a former Packard executive, and called Hare's Motors. Hare's vision was to manufacture quality cars in quantity and sell them at substantially lower prices than hitherto. Whatever the merits of this approach, it had little chance of success, for the post-war recession of 1920—1 set in and the market for Hare's Locomobiles and Mercers faded away. The industrial group collapsed and a grievously weakened Locomobile regained its independence in August 1921. As its business did not improve Locomobile went into bankruptcy in 1922. William Crapo Durant, now building a new automobile empire after being ousted from General Motors for the second time, bought Locomobile for only \$1,750,000. This sum allowed about 35 cents on the dollar for the company's creditors.

The Bridgeport factory resumed production but never did well. Durant directed it to make some medium-priced cars as well as expensive models but used the Locomobile name on both. The factory also turned out parts for other Durant cars. Death throes began early in 1929. By March Locomobile production had stopped. The management struggled fitfully, engaging to overhaul Paramount taxicabs during the summer of 1929 while preparing a new Locomobile model for the fall, but the Crash then erased this dream and put a final end to Locomobile.

CONCLUSION

However impressive Locomobile's elegant petrol cars may have been, in the sweep of automobile history in the United States its little steam cars of 1899—1903 had a much greater impact. The thousands of these models that buyers snapped up showed the reality of a large market for cars despite the

wretched roads that inhibited inter-city driving. Their low price, in the \$600—\$850 range, put them within the means of ordinary professional men and the middle class generally. Other manufacturers soon moved into this market on the heels of Locomobile with thousands of small petrol cars and the American automobile boom was under way. We have found no evidence that the Locomobile added anything significant to production methods despite its relatively high output. Its production was not large enough to require innovations in methods so as to avoid heavy investment in new plant or to overcome shortages of skilled labour.

Walker and Barber chose a steam-driven car when they entered the business. This seemed wise enough in 1899, when American petrol cars appeared crude and unreliable. In France, the leading area of automobile development at this time, steam already had lost out to internal combustion but most Americans did not know this and those who did may have considered the French precedent irrelevant. In a few years Americans did find that steam propulsion, given the current state of technology, could not do as much and caused more difficulties than petrol engines. A more careful design of the early Locomobile to make it sturdier, simpler, and safer to operate might have enabled it to survive longer but Walker and Barber at first kept the original Stanley design on the market. The new Locomobile models that began to appear at the end of 1899 corrected or mitigated some of the earlier faults but improvement seemed to come faster in the competing petrol cars. By 1902—3 this type's advantages even converted Locomobile's management.

When Locomobile turned on to the same road as its mid-western rivals and switched to petrol it completely abandoned the low-priced field where it had disposed of so many cars through an extensive dealer network. It chose to appeal to the wealthy with elegance, quality, and high price. It seems as if Davis and Riker, young engineers, preferred a strategy emphasizing technical excellence as against the policy of Walker and Barber, older and experienced businessmen, who had tried to appeal to a mass market. It is possible that if Locomobile had continued in the low-priced market with its petrol cars it might have competed successfully with the mid-western companies and kept New England as a centre of this industry. However, its decisions and the earlier one of the Pope Company of Hartford to go to electric cars, a dead end at this time, meant that the industry would shift westward.

NOTES

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¹Deborah Cozort (Asst Archivist at M.I.T.) to authors, 14 July and 11 August 1978; *Horseless Age*, I (March 1896), 17—18; II (Dec. 1896), 5; and II (April 1897), 13. A recent survey of steam car history can be found in G. Levine, *The Car Solution: The Steam Engine Comes of Age* (New York, 1974).

²Bridgeport Post, 18 Jan. 1925; Bridgeport Lift, 17 Dec. 1932.

³*Horseless Age*, III (Oct. 1898), 44; *American Machinist*, XXI (1 Dec. 1898), 897—8; F.O. Stanley quoted in T. Derr, *The Modern Steam Car* (Newton, Mass., 1932), 45—6.

⁴*Horseless Age*, III (Nov. 1898), 12—16.

⁵*Horseless Age*, III (Dec. 1898), 22, and (Feb. 1899), 18.

⁶H.L. Arnold, 'Some American steam-driven motor vehicles,' *Industries and Iron*, XXVII (2 July 1899), 2.

⁷Stanley Manufacturing Co. records in the Baker Library, Harvard University. *Horseless Age*, IV (19 April 1899), 24, and later issued in 1899.

⁸Derr, op. cit., 48.

⁹F.L. Mott, *History of American Magazines*, 4 vols. (Cambridge, Mass., 1930—57), IV: 35, 480—91.

¹⁰*Horseless Age*, I (June 1896), 5—6, 12—13.

¹¹F.O. Stanley quoted in Derr, op. cit., 48.

¹²*Ibid.*, 48—53; J.B. Walker in *Motor* (Feb. 1916), 52.

¹³J.B. Severance, 'Amzi Lorenzo Barber,' *Oberlin Alumni Magazine*, V (June 1909), 341—3.

¹⁴F.O. Stanley quoted in Derr, op. cit., 53.

¹⁵State of West Virginia, 'Certificate of incorporation of the Locomobile Co. of America,' copy made 17 November 1976; *Horseless Age*, IV (21 June 1899), 10.

¹⁶Bridgeport Post, 1 Sept. 1915.

¹⁷*Horseless Age*, IV (19 July 1899), 12.

¹⁸*Horseless Age*, VI (4 April 1900), 18—19; J. Canning and W.C. Gross, *History of the Tarrytowns* (Harrison, N.Y., 1975), 139.

¹⁹*Worcester Magazine*, XI (May 1908), 91—2; *Horseless Age*, IV (19 July 1899), 12, and V (14 Feb. 1900), 13; Bridgeport Post, 26 Jan. 1900.

²⁰*Horseless Age*, IV (20 Sept. 1899), 20.

²¹Bridgeport Life, 17 Dec. 1932.

²²Bridgeport Post, 25 Jan. 1900; *Horseless Age*, V (14 Feb. 1900), 13.

²³This description is drawn from *City of Bridgeport, Building Permits* 6094, 6161, 6162, 6163, 6234; *Automotor Journal* (Oct. 1901), 21; *Cycle and Automobile Trade Journal* (August 1901), 14—16; and *Automobile Topics* (August 1901), 563—70.

²⁴E. Danenberg, *The Story of Bridgeport* (Bridgeport, 1936), 67—8.

²⁵Annual production in 1901 is estimated at 1,400, or an average of under five per day.

²⁶The figures are stated or suggested by W. Greenleaf, *Monopoly on Wheels* (Detroit, 1961), 65—74; J.B. Rae, *American Automobile Manufacturers* (Philadelphia, 1959), 68—70; J.M. Laux, in *First Gear* (Montreal, 1976), 30, 212; G.S. May, R.E. Olds (Grand Rapids, 1977), 136, 187; T. Mahoney, *The Story of George Romney* (New York, 1960), 255; G. Brigham, *Serial Numbers of the First Fifth Years*, 5th ed (Marietta, Ga., 1974), 93; W.C. Leland and M.D. Millbrook, *Master of Precision* (Detroit, 1966), 69, 72; A. Nevins, *Ford*, 3 vols (New York, 1954—63), I, 231, 240—1, 246, 288.

²⁷Locomobile Collection, Bridgeport Public Library.

²⁸C. Fige, in *Horseless Carriage Gazette* (May—June 1977), 29—31.

²⁹Automobile Collection, Connecticut State Library, Hartford; Locomobile Collection, Bridgeport Public Library.

³⁰H. Durnford and G. Baechler, *Cars of Canada* (Toronto, 1973), 52, 84, 230—1.

³¹Lord Montagu of Beaulieu and A. Bird, *Steam Cars: 1770—1970* (New York, 1971), 95.

³²M. Sedgwick in G.N. Georgano (ed.), *Complete Encyclopedia of Motor Cars* (1968), 349.

³³An excellent account of the technical aspects of the Locomobile is in Montagu and Bird, op. cit., 96—107; issues of the *Horseless Age* in 1901 and 1902 frequently carry letters and articles on steam car problems and advantages.

³⁴A.L. Riker papers, Manchester, Conn.

³⁵Electric Vehicle Company, *Bulletins* 46 and 47, in A.L. Riker papers.

³⁶The contract is in the A.L. Riker papers.

³⁷*Horseless Age*, VII (13 Feb. 1901), 32, IX (29 Jan. 1902), 151—3, X (24 Sept. 1902), 327—8; and *Motor Age* (3 Jan. 1907), 27.

³⁸See C.C. McLaughlin, 'The Stanley steamer: a study in unsuccessful innovation,' *Explorations in Entrepreneurial History*, VII (1954), 37—47; and R.C. Sprague, Jr., 'The Stanley steam cars,' *Antique Automobile* (Jan.—Feb. 1977), 30—41.

³⁹Automobile Collection, Connecticut State Library, Hartford; Locomobile Collection, Bridgeport Public Library.

⁴⁰Letter from Amzi Barber to Andrew Riker, 28 August 1902, A.L. Riker papers.

⁴¹*Automobile Topics* (27 Sept. 1902), 1078—9; *Horseless Age*, X (1 and 15 Oct. 1902), 368—9, 434.

⁴²*Motor* (Jan. 1916), 73.

⁴³*Horseless Age*, XII (8 July 1903), 46.

⁴⁴Canning and Gross, op. cit., 140.

⁴⁵Locomobile Collection, Bridgeport Public Library.

⁴⁶Samuel T. Davis papers, Ardsley on Hudson, New York.

⁴⁷Brigham, op. cit., 59; Locomobile Collection, Bridgeport Public Library.

The Imponderable Ingredient in the Holden Recipe

By Austin Maxwell Gregory

Although it has come to be accepted that General Motors had been appraising the possibilities of car manufacture in Australia for several years, a view which has been given credence by the account of the Holden beginnings as given by Alfred P. Sloan in his classic work, "My Years with General Motors," there is more to it than that.

While there is now enough evidence to support the contention of the then Managing Director of General Motors—Holdens, L.J. Hartnett, that this appraisal took the form of the pushing coming from Australia and Hartnett in particular, and the resisting coming from the U.S.A., both from G.M. Overseas in New York and from the top echelon of management itself, it would be wrong to assume that this line of discussion is in any way an attack on the credibility of Sloan. Hartnett agrees, even if reluctantly, that the Sloan account is not incorrect if the terms of reference are drawn so that the proposition was argued within the various committees and groups of the Corporation. If, however, the lines are drawn as between the U.S.—based decision makers on one hand and the management of General Motors—Holdens and the Australian Government of the day on the other, then a different picture emerges. Thus the point which has to be emphasized is not one of making Sloan out to be incorrect but to demonstrate that he is, by omission, deficient on this particular matter.

That Hartnett's role in the gestation of the Holden car is absent from the Sloan story is perhaps not to be wondered at. It is no secret that the dour tory, Sloan, had difficulty with the young Hartnett charger whom he found "hard to handle." As we shall see later Hartnett had no difficulty in working with

*Alfred P. Sloan, Jr.
(in earlier times)*



Sir Laurence Hartnett,

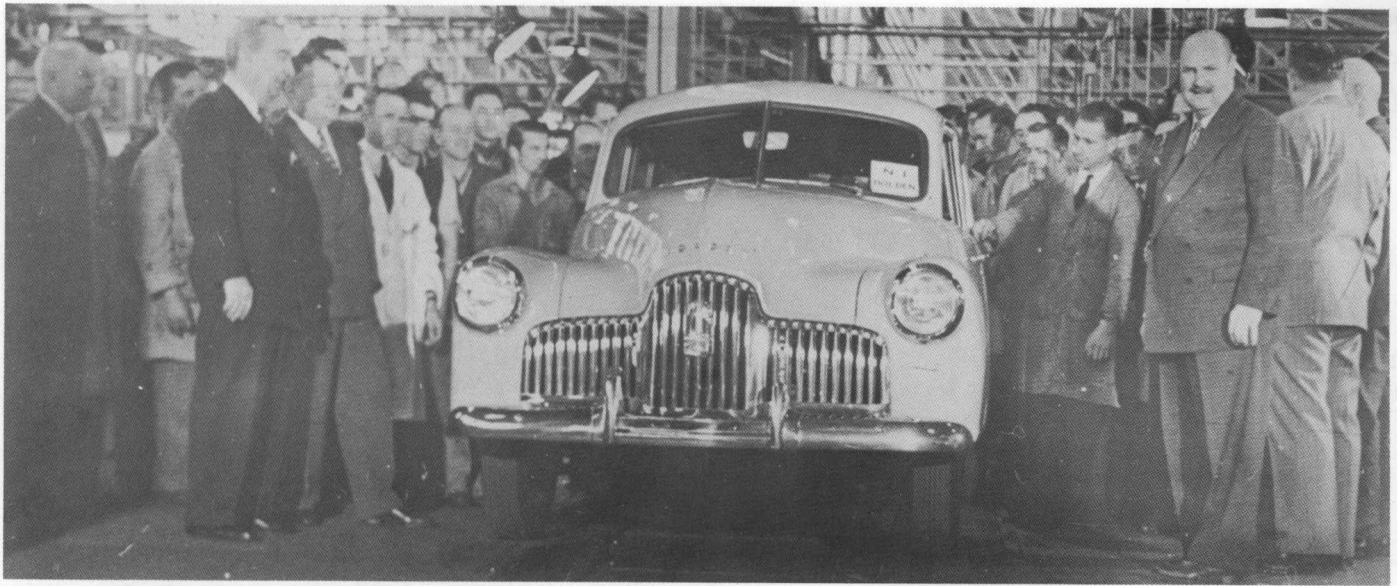


socialist regimes in Australia during WW II and afterward which only served to reinforce Sloan's opinion. This opinion had solidified in 1935 when Hartnett had, with typically long-range vision and unconcern for procedural niceties, become a key figure in the formation of the Commonwealth Aircraft Corporation and had pledged General Motors—Holdens to a stake in it—without any prior consultation or approval from the G.M. hierarchy. As is set out in Hartnett's own story, "Big Wheels and Little Wheels," chief Sloan was beside himself with rage no doubt prompted by G.M.'s earlier unhappy experiences in aviation. That Hartnett was not summarily dismissed was more a function of sheer luck and the flanking maneuvers of sympathetic executives who recognised his abilities in the Overseas operations rather than on the merit of the matter. Here we observe that with Hartnett there was a complete reversal of the maxim that "what is good for G.M. is good for the U.S.A." His guiding theme was obviously that what was good for Australia was good for General Motors—Holdens. Frank S. Daley, who joined General Motors (Australia) in 1931, about the time of the takeover of Holden's and knew, respected and worked with both men, saw them as being tireless workers with tremendous ability but with vastly different views and philosophies. Doubtless while Sloan would have tended to regard G.M. as being an end in itself, Hartnett would have seen it as a means to an end. The end, of course, being to build his own car.

After rising quickly through G.M. Overseas Operations, from having been a Buick salesman in Singapore, then through the Indian Regional office, G.M. Nordiska in Sweden, and Vauxhall, where he had been part of the team which raised output from 17 to 2,500 units per week and launched the successful Bedford truck, Hartnett arrived in Australia in 1934 to take over the management of General Motors—Holden's. The effects of the great depression were still being felt, the outfit was losing money all the way and efforts to weld the recently merged Holden's Motor Body Builders and General Motors (Australia) assembly operations into an efficient cohesive unit had not achieved much success. As Frank Daley expresses it, Hartnett's great ability was to communicate effectively with all people involved with a task and to draw out a consensus which had everyone satisfied that the chosen course was ideal. Thus the streamlining and integration of the total operation was achieved and Hartnett turned his attention to that matter which he is quite happy to admit was of such importance with him as to be almost an obsession—to build a car.

Several studies were carried out at General Motors—Holden's to examine the feasibility of such a course of action, the first taking place as early as 1936, when R.L. (Bill) Abbott, then a young fellow in the engineering department, was given the task of dismantling a standard model Chevrolet, itemizing all the bits with a part number, material of manufacture and weight so that the necessary sums could be done. Nothing came of this nor of another which Bill Abbott recalls was done in 1939 and settled on a design target of about 3 litres engine size and 2,800 lbs. weight. A still later study, heavily influenced by a detailed study into the amount of money available to be expended on motoring by the average Australian, called for a still smaller car and this was to be realized in the Holden. Thus there were three separate design studies carried out wholly on the initiative of General Motors—Holden's management before any pressure was ever exerted higher up to get the project off the ground.

Although the particular skills required to profitably produce car bodies on a small volume basis had long been



The first Holden car coming off the assembly line at Fisherman's Bend, Melbourne, Australia in 1948.

mastered at Woodville, South Australia, first by Holden's and refined in the thirties by General Motors—Holden's, which is alone about 50% of the total car cost, it was the experience of wartime production of such items as guns and engines which dropped the final piece of the jigsaw into place. The story of the remarkable efforts made in the manufacture of anti-tank guns, torpedos, optical gunsights, armour plate steels, etc., all against impossible time limits, is told in Hartnett's book and in a G.M.—H. publication "War Record." General Motors—Holden's were prime contractors for several such programs, as they were in the production of the D.H. Gipsy Major aero-engine, the four cylinder radial torpedo engine and the Detroit Diesel 6-71 engines used in the Gray Marine application. Although stated by G.M. to be the most difficult unit in their program at that time to manufacture, these engines were able to be made successfully in Australia after a totally new cast iron foundry was brought into operation at Fisherman's Bend, Melbourne, in 1943. This modern foundry was the final piece needed to complete the range of facilities required for complete car production by General Motors—Holden's in Australia.

Top management of G.M. was far from convinced about the economics of such a move and several major dealers were hostile to any change in the franchise system then in force. The newly appointed Regional Director, Henry Phillips, was also cold to the idea and even sought outside assistance in his attempts to deter Hartnett from his intended course. He asked A.H. (Bob) Chamberlain to use his long association with Hartnett help his cause. Bob Chamberlain was at that time with his brother making moves to introduce their successful line of Chamberlain farm tractors and was associated with the motor industry as suppliers of pistons from their Rolloy operation. Bob Chamberlain had also worked closely with Hartnett during the war, spending much time in the U.S.A. with the joint British—American tank design team under the auspices of the Department of Munitions Production, of which Hartnett was Director of Ordnance.

Hartnett says that he felt rather alone at that time with his idea and there is no doubt that it would have foundered then if there had not been in power a Government dedicated to the proposition that Australia should have its own car. As he

puts it, the Holden owed its existence to three men who were, apart from himself, Prime Minister J.B. Chifley and the head of the Department of Post-War Reconstruction, John K. Jensen. Although it must be pointed out that moves had been made prior to the war by the then Conservative Government, this initiative had run into a dead end. The Labour Government under Chifley was, however, emphatic that Australia was going to make a car of its own even if it meant setting up a nationalized enterprise to achieve this end. This, then, was the shape of things when Hartnett went to the U.S. to sell the idea to G.M. Overseas Division. Now while all the boys at this crucial meeting knew that if they were to give the thumbs down to Australian car manufacture there was every chance that Hartnett might well have gone back to Australia to head up a Government backed plan to produce a car, this pressure was not overt and the decision to go into the project was taken on the basis of Hartnett's well-reasoned proposals. His standing within the Division was also a factor, for not only was he Managing Director at General Motors—Holden's but he was on the Board of Vauxhall Motors and had been for some time Regional Director for the area.

The subsequent decision of the G.M. Finance Committee not to fund the scheme could well have put the whole issue in jeopardy if the Australian Government had not given the plan its blessing and thus encouraged the Australian banks to raise the necessary funds. The rationale of the Finance Committee refusal can be read in either of two ways. Either it was a last ditch stand to prevent the project going ahead or a calculated move which implied in effect that if Australia has the funds to produce a nationalized car, then let them use those funds to do one for General Motors—Holden's.

The imponderable, concerning that particular ingredient, is to what extent the unspoken threat of having a Government concern as a competitor, with Hartnett at the helm, on the Australian market influenced the decision which led to the announcement, thirty-two years ago, of the car named Holden.

A notable absentee at the unveiling was Laurence (Larry) Hartnett, C.B.E., who had been gone from the service of G.M. since the beginning of 1947. Relations between him and the head office had become more strained as time went on with a clash over the numbers of U.S. personnel who should come to Australia being a principal factor. Under the tax-waiving pro-

continued on page 13

The Harmer~ A Forgotten Automobile

By G. Marshall Naul

The Columbus (Ohio) Automobile Club held its first annual Race Meet on July 4, 1903. The program for this event (which was reprinted by Dick Brigham some years ago) lists Perry Okey, who built cars under his own name, as Secretary-Treasurer of the Club and Oscar Lear as a member of the race committee. Lear was Columbus agent for Cadillac but later built the Frayer-Miller car. These names are familiar to historians, but the name of Frederick S. Harmer, listed as assistant clerk for the club and as central Ohio agent for the American Tubular Wheel Co. is not recognized as that of an automobile builder. His car is so obscure as to have escaped all lists of U.S. makes known to me. This short article contains all the information found to date on the car.

Harmer worked for The Oscar Lear Automobile Company sometime between 1903 and 1906. He was thus familiar with air-cooled engines and applied for a patent on December 14, 1905 to cover an air-cooled engine with overhead valves at 45° to the cylinder axis. However, this patent (No. 1, 012, 635) was not granted until December 26, 1911. This period of six years was unusually long for that period and indicates considerable interference with existing patents or prior art.

First mention of Harmer as an automobile designer is found in *Horseless Age* for July 4, 1906 where it is noted that Edward Born and Thomas Curtin planned to manufacture an air-cooled car of his design. On October 1, 1906 the *Columbus Dispatch* proclaimed "Harmer's Engine Is Great Success" at the head of a column of print covering the roadster which Harmer intended to manufacture. And the *Ohio Sun* of Columbus on Oct. 14, 1906 gave some details of the Harmer car. Its engine was a four of 24 hp, cooled by a 14 inch diameter fan directing air on finned cylinders without jackets. There was a three-speed selective transmission and shaft drive. Right hand drive was used and there were semi-elliptic springs front and rear, 42" and 48" long respectively. Wheelbase was 96 inches, tires 32 x 3-1/2 and road clearance 10-1/2 inches. Expected speed was about 40 mph. These details appear to agree with the appearance of the roadster shown in the photos, which seem to have been taken at the same time as the one used with the account in the *Ohio Sun*. The engine was described as a "Harmer-Curtin" air-cooled "motor." The car was to be built by a new company to be formed mainly by stockholders of Curtin-Williams Automobile Co. of Columbus. *Horseless Age* Nov. 4, 1906 reported that this company had made no plans to manufacture the automobile on which they had been experimenting.

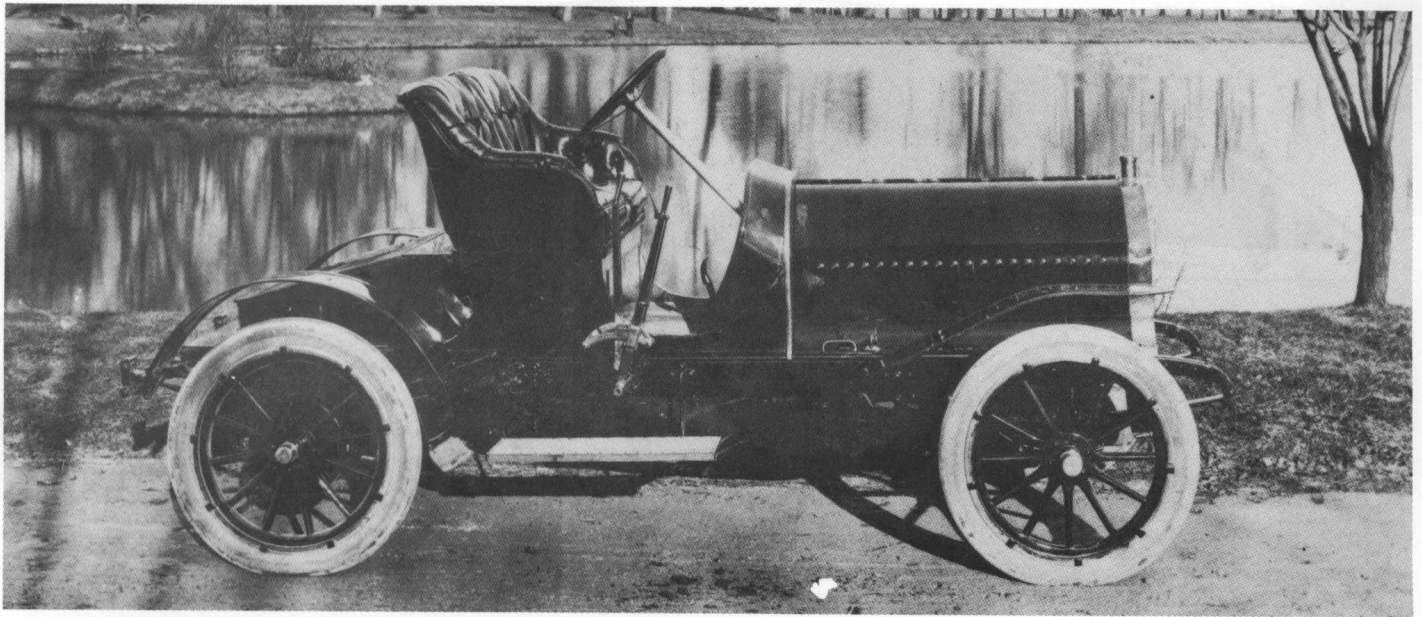
The Harmer Motor Car Co. was finally incorporated in Columbus on July 5, 1907, capitalized at \$100,000, with Frederick S. Harmer the only incorporator of note. In *Horseless Age* Aug. 1, 1907 it was claimed that touring cars of 40 hp were to be built as well as the 25 hp roadster. Later on Aug. 22, 1907 there was a report that the Harmer Motor Car Co. of Toledo (sic) was looking for a factory in which to build cars. F.S. Harmer was then president of the company.



Frederick S. Harmer proudly sits behind the wheel of the roadster bearing his name. (Credit: Ohio Historical Society)

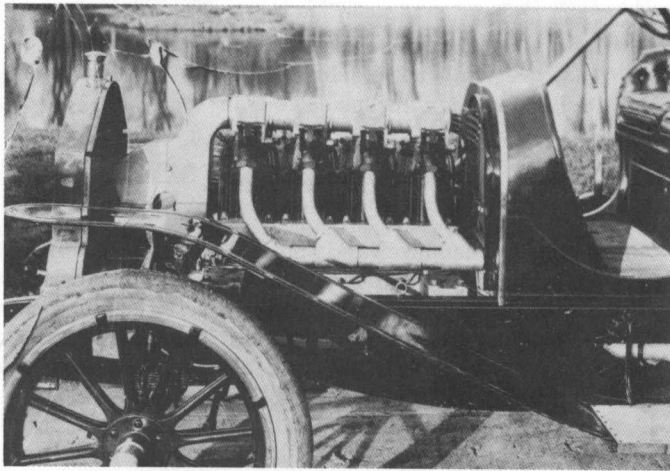
The Columbus City Directory for 1908 does not mention the Harmer Motor Car Co., and Frederick S. Harmer is listed as "draftsman" at the same address he occupied in 1903. No further trace of Mr. Harmer has been located and it is likely that the photographs are of the only Harmer roadster ever constructed. The photo of the touring car is listed by the Ohio Historical Society as a Harmer automobile but the differences in construction are sufficiently numerous to make this identification improbable. It obviously had a six-cylinder engine which was water-cooled, shaft drive and full-elliptic springs at the rear. Has anyone an idea of the identity of this much larger car?

Editor's note: Possibly the delays Mr. Harmer encountered in getting his car produced in Columbus and in having his patent granted were because of conflicts with the Oscar Lear interests, already established in making overhead valve air-cooled cars in Columbus and not likely to look kindly upon a former employee's attempt to compete with them. This might explain the water-cooled six-cylinder car as well, which Harmer could have built to give his company a potential product not so similar to Lear's. It could have been the 40 hp touring car mentioned by Horseless Age.

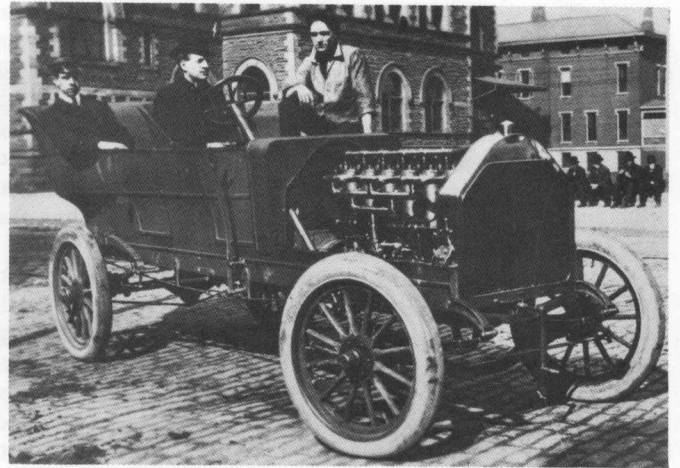


A side view of the long-hooded Harmer roadster. (Credit: Ohio Historical Society)

Exhaust side of the Harmer engine. Exhaust valves appear to be at 45° to the cylinders and to be actuated by push rods and not an overhead camshaft. Vertical cooling fins are visible on the cylinders. (Credit: Ohio Historical Society)



This six cylinder touring car is said to be a Harmer but positive confirmation is lacking. The passenger in the rear does seem to be Mr. Harmer. (Credit: Ohio Historical Society)

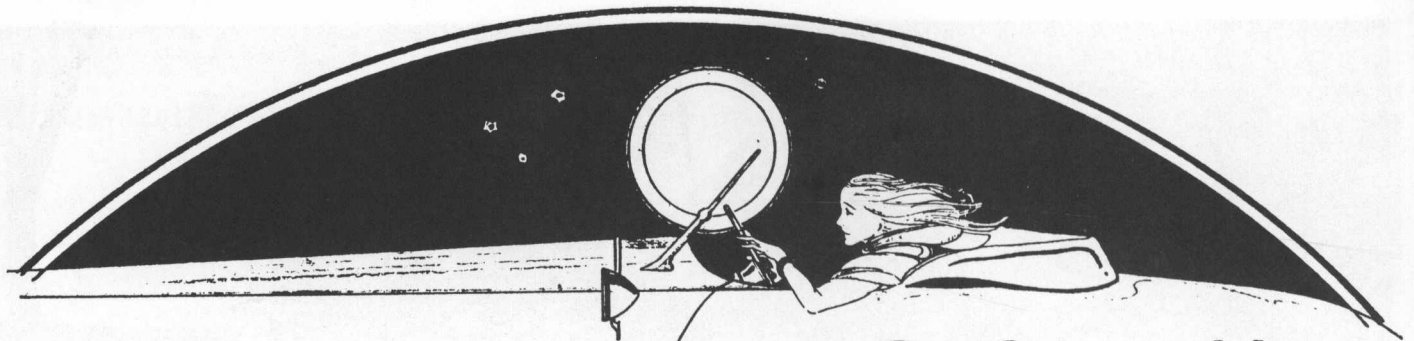


continued from page 11

visions, which had been extended when an initial reluctance had been shown by engineering and development staff to travel to Australia, then everyone wanted to come. Hartnett, in an effort to retain faith with the Government, had taken a firm line on the matter. Finally, when the U.S. design teams had completely taken over all the initiatives, including that of body design and sheet metal work which had been specifically reserved as an Australian area of responsibility due to the particular local knowledge and expertise with small volume work under the terms of the General Motors—Holden's submission to the Government Car Manufacturing Plan and the agreement between General Motors—Holden's and General Motors Overseas in New York, Hartnett felt that Australian participation in the total operation had been debarred and on that matter of principle he felt it necessary to resign.

As to the matter of whether or not there was this measure of expertise in the building of motor bodies in the context of

the Australian situation involving low volume by Detroit standards, local market preferences and the qualities of indigenous materials, perhaps it would be advisable to set out the position of Holdens Motor Body Builders. In the 1920s Holden's had grown to the stage where they were making the lion's share of bodies in Australia and were stated to be the largest such operation in the British Commonwealth. After the merger with General Motors (Australia) this position was retained and a great deal of work continued to be done for makes other than the G.M. family. The peak of diversity came in 1934 when 78 different body types were made in volumes ranging from 18 to 4,000 units. In 1937, for Plymouth, they produced their first all-steel turret top sedan for which task equipment for multiple welding had to be designed and developed. However, in 1938 after G.M. went to this form of construction they advised General Motors—Holden's that the Government should be brought to a realization that it would no longer be practical to make motor bodies in Australia. Perhaps in this matter there may be seen a preview of events to later happen in regard to complete manufacture.



COACHWORK

Custom Coach Designs by Patony Inc.

By Shelby C. Applegate

The drawings in John Peckham's article "Designer? Dreamer? Delightful!" (AHR #11) rang a bell and sent us digging, hopeful of solving a mystery that has plagued us.

Several years ago, my husband, Howard, was in Boston and bought an old two post album with gold lettering on the cover, "Custom Coach Designs by Patony INC" containing 35 tipped in black and white plates. We were both struck with a similarity of style when we saw John's article. When we dug into our files and compared the drawings we found no similarity of artist signature, ours containing only initials. There is no other identification in the album other than the cover and the initials on each plate.

This designer is more advanced and sophisticated than Tewksbury. These cars are more stylized with no hard, square edges and a continual flow of clean lines. Each body style represented in the illustrations is dealt with more than once. The main variations are hood louvres, skirted or unskirted fenders, side mounts, the number of rear mounted spare tires. Every drawing has the same hood treatment. Doors have rounded corners, and often a front to back slant. The front fenders sweep back to the doors which curve upward and back carrying the design cleanly over the rear fender in a graceful curve. There is no interruption, no jarring halt, no distraction from the overall design lines of the cars. Even the negative space under the fenders is an integral part of the overall design.

Credit: Applegate Collection

There is no doubt this designer was an accomplished artist, but who was he? The initials look like GJ. What was Patony INC? Was this person or company from Massachusetts or did the album just happen to end up there? Did GJ design cars for any companies besides the mysterious Patony?

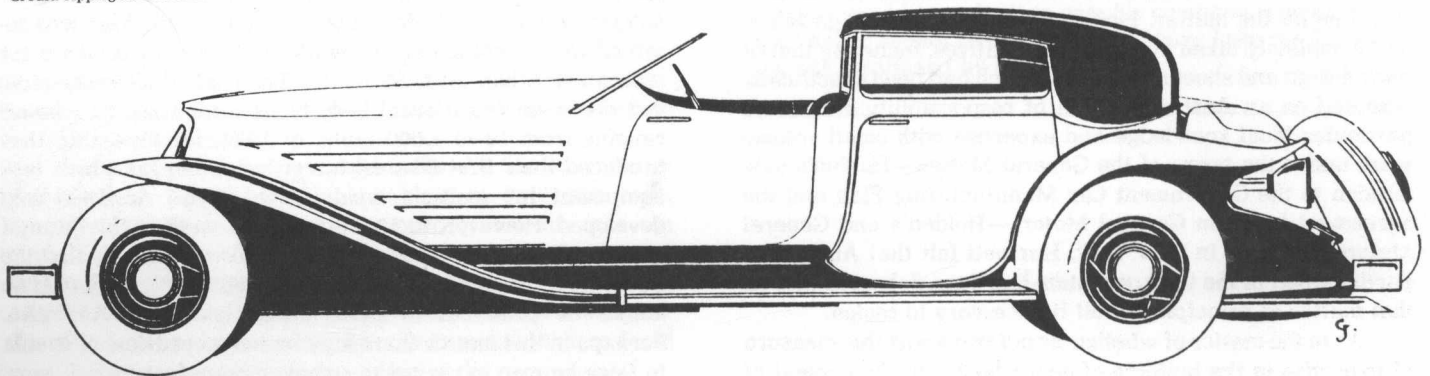
Since we can't solve John Peckham's mystery and he didn't solve ours, can anyone solve both?

THE SOLUTION TO SHELBY'S MYSTERY . . .

Can be found in the March and June 1980 issues of *The Classic Car*, published by the club of the same name. The new editor of this magazine is Wellington Everitt Miller who has spent a lifetime in automotive design. With great historical acumen he collected and preserved in his formidable library a great deal of contemporary material on styling.

Mr. Miller has reproduced in these first issues under his editorship five drawings of L-29 Cord designs by Jack Gerrity which are unmistakably from the same hand as the album owned by the Applegates. In addition there are photos of the car used in the *Topper* movies and of Gerrity himself who designed it, and some notes on Gerrity's career and how Mr. Miller happens to own the L-29 drawings.

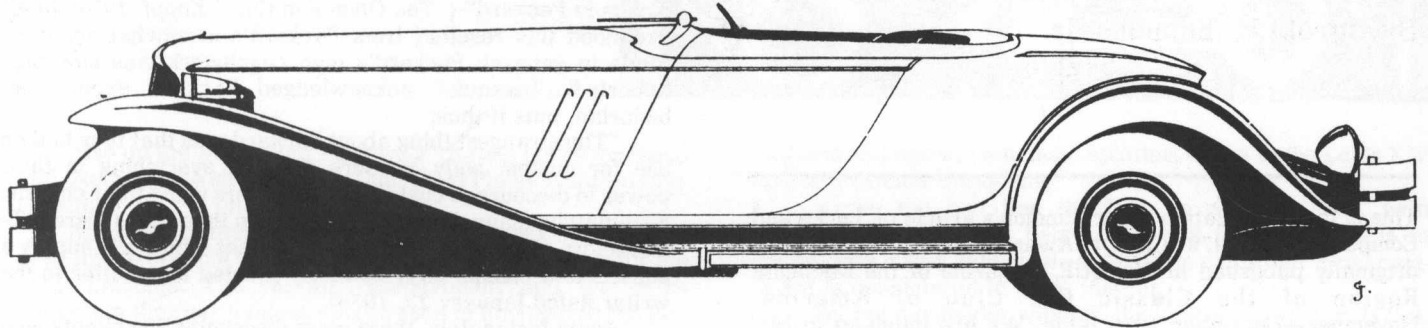
This stylish town car and the unusual runabout are unfinished radiator version of very similar styles with L-29 Cord radiators which are reproduced from Mr. Miller's originals in The Classic Car.



Exact references are *The Classic Car*, March 1980, pp 14 and 17, and June 1980, pp 8, 9, 11, 13 and 15. This is fine original historical background on a relatively unknown stylist which should be read by anyone with an interest in the subject.

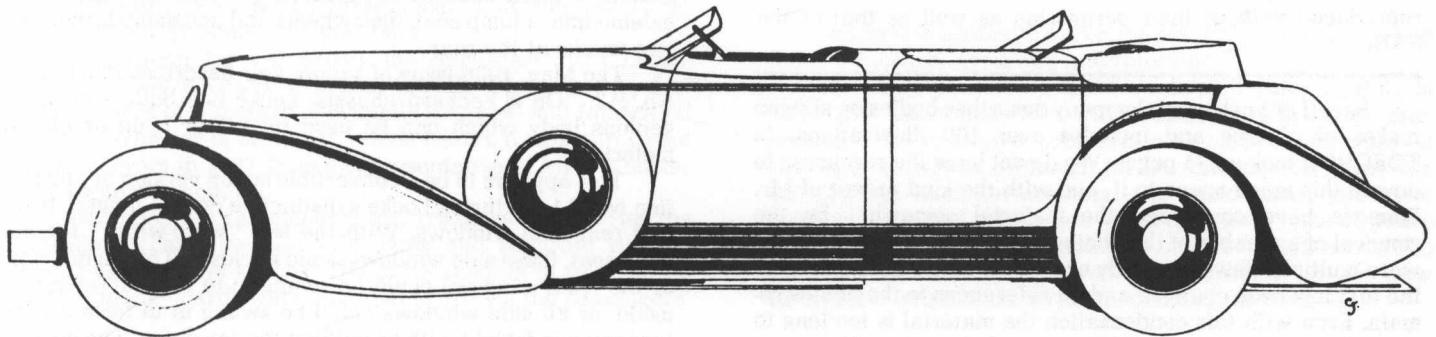
Seventeen of the Gerrity L-29 drawings also appear in the

L-29 Cord book by Dan Post, *Without Tribute to Tradition*. In this book Gerrity's first name is given as Anthony. Perhaps the explanation is that this was a middle name which he sometimes used, and perhaps Patony was his fabrication to use in some presentations. (F.R.)



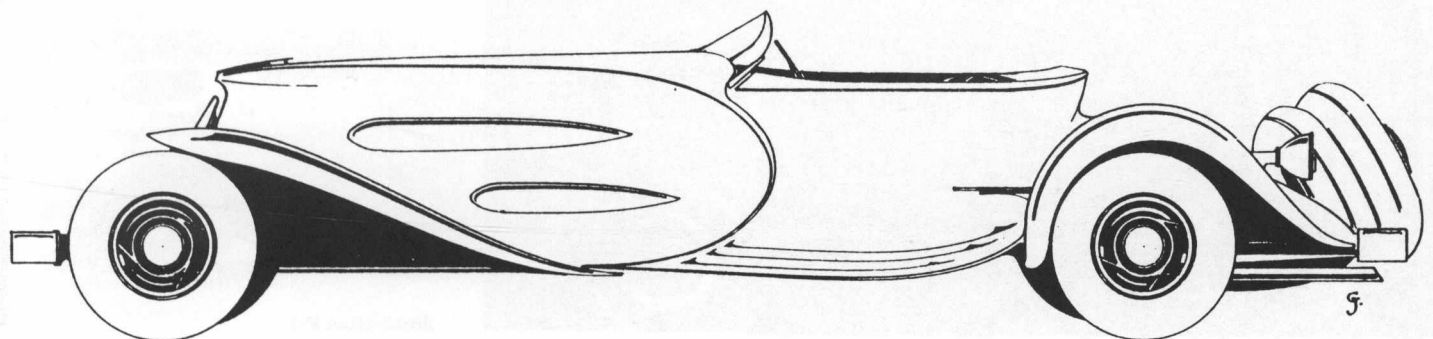
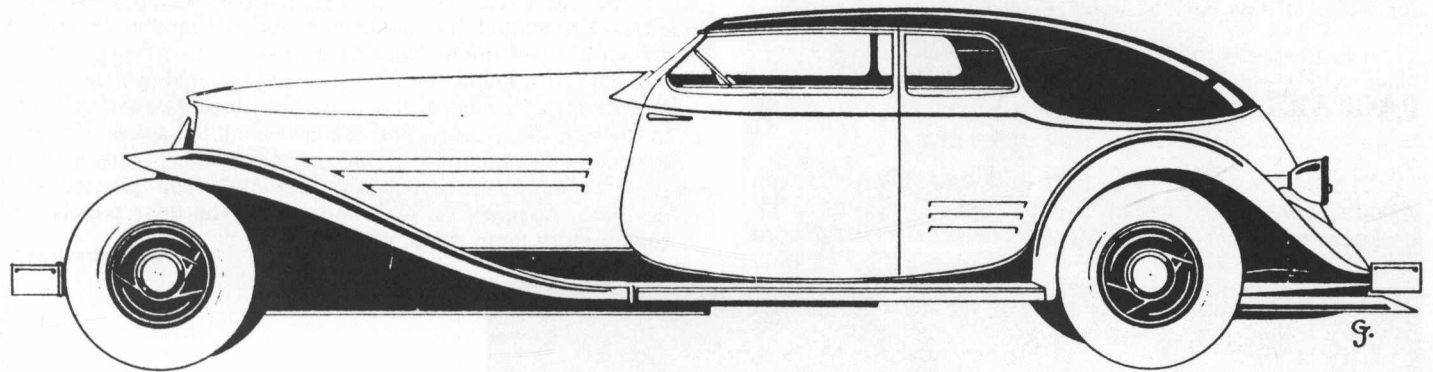
Many of the drawings in the Patony album have a curious unfinished look where the radiator should be. This one, however, shows a radiator design of L-29 Cord style. Jack Gerrity apparently was

prepared to apply appropriate radiator shapes and other details to his basic drawings to suit whatever manufacturer he was approaching.



The full skirted fender styles on this dual cowl phaeton suggests that either Gerrity was far ahead of his time or that some of these drawings were created at a later date than the L-29 designs.

The fast back closed car style is advanced but bodies of this type preceded full skirted fenders.



Locke & Company

During the Classic Car Era,
1925—1932

By Harold H. Emmons, Jr.

This is the continuation of Mr. Emmon's article on Locke and Company, the 1979 Cugnot Award winner, which was originally published in TORQUE, magazine of the Michigan Region of the Classic Car Club of America, November—December 1978 issue. We are indebted to Mr. Emmons, L. Kirk Walters, former editor of TORQUE, and the Publications Committee of the Michigan Region CCCA, for permission to use this material, which may not be further reproduced without their permission as well as that of the SAH.

Part II of Locke and Company describes bodies on sixteen makes of chassis and includes over 160 illustrations. In TORQUE it took up 34 pages. We do not have the resources to devote this much space to it, and with the kind assent of Mr. Emmons have condensed the material somewhat by the removal of a number of the photographs, but only where there were multiple views of a body or several detail shots. None of the text has been changed and all references to the photos remain. Even with this condensation the material is too long to be included complete in this issue and the rest will appear next time. We do not like to run serials or break up material and apologise for the need to do so in this instance. Readers who desire to see the full version can write the Michigan Region CCCA at 1929 West Lafayette Ave., Detroit MI 48216 for a copy of this back issue of TORQUE.

PACKARD

It seems appropriate to start Part II of this Article (on specific Locke-bodied marques) with Packard, since the oldest Locke-bodied car in existence appears to be the 1910 Packard

"30" Limousine belonging to Dr. Orland Wiseman of California. This rare car is upholstered in Cordovan leather and is completely original throughout. Apparently to satisfy the particular client's tastes, Locke designed and fabricated the body with curved plate glass rear corners—most unusual in an era of either solid, leather or fabric corners. This client seems not to have opposed being seen while being driven about.

As noted author Richard Burns Carson puts it "Locke & Company of New York was the rarest contributor of custom bodies to Packard" ("*The Olympian Car*," Knopf, 1976). In all likelihood this resulted from Packard's somewhat smug attitude in general: Packard's own coachwork was superior. Robert E. Turnquist, acknowledged Packard expert and historian, puts it thus:

"The strangest thing about Packard was that they had no use for custom body builders and did everything in their power to discourage custom body builders using their chassis. Fortunately, many dealer ships which in those days were called factory distributors were the only ones who could supply a chassis to a custom body builder." (quoted from letter to the writer dated January 23, 1978).

Again fortunately, there were discriminating clients who preferred Locke design and execution. *Illustration No. P-1* is a Locke blueprint for a Touring Sedan on 1926—1927 Packard Standard Eight chassis. It featured a 2-piece V-windshield, sidemounts, a jump seat, disc wheels and accommodations for two trunks at the rear.

The May, 1926 issue of *Vanity Fair* describes *Illustration No. P-2*: "On a Packard chassis, Locke has built a most ingenious body which can be used for either open or closed motoring."

This appears to be a convertible sedan version of *Illustration No. P-1*, featuring Locke's distinctive double-hinged, front and rear side windows. With the two "wind-wings" for the front seat, these side windows could enclose all of the interior, or the front windows could be swung in to form a Town Car mode, or all side windows could be swung in to form a rear tonneau windshield with or without the top down. The sweeping cowl and belt line mouldings, sidemounts, wire wheels, and well-proportioned trunk created a debonnaire appearance for a marque otherwise at that time noted for its dignified, conservative lines.

For the 1926—1927 Packard 8, Model 343, Locke designed and executed the handsome and distinctive Brougham shown in *Illustrations No. P-3 and P-4*.

The cowl lights, the forward-swept coaching style striped moulding at the rear of the cowl, the window reveals painted in the light body color, and the rear-mounted spare accented the clean, pleasing flow of the body lines. Noteworthy also are the interior features: divider window, deep pleated seat cushions, tasteful use of broadlace on the door panels and rear factory jump seats.

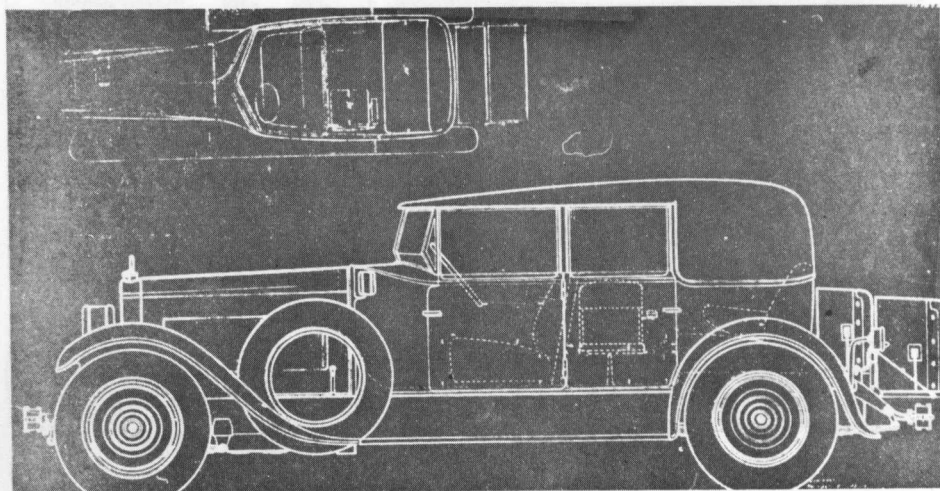


Illustration P-1

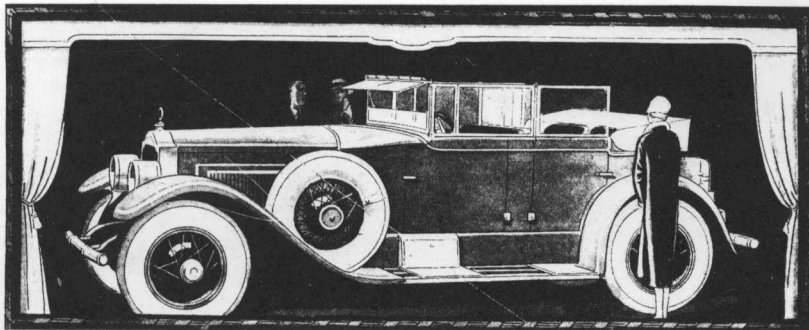


Illustration P-2

Also on the Model 343 Packard 8 chassis Locke designed and executed the sleek, sporty Dual Cowl Phaeton shown in Illustration No. P-5 and P-6.

Apparent in Illustration No. P-5 is the speedboat-cockpit cowl line to become so outstandingly developed further for the open Lincolns. The locking compartment and the extra pockets in the rear tonneau can be seen in Illustration No. P-6.

Just in passing, the street sign in the background reading "Leighton Ave." Illustration No. P-6 indicates that the photo was taken across the street from the Locke & Company shops in Rochester, N.Y. which were located at the corner of Leighton and Greenleaf at that time.

Illustration No. P-7 shows the handsome 1929 Locke-Town Car on Packard 8, Model 633 chassis owned by Mr. Peter Myers of Michigan. Originally designed and fabricated for L.P. Webster of Newport, Rhode Island, it was purchased by Mr. Myers in 1977 from a representative of Mrs. Webster in Newport Beach, R.I.

Equipped with sidemounts and trunk rack, it carries the traditional carriage-style side lights and separate running board lights in the aprons. The extra fenders in front of the rear running boards were intended to protect the passengers'

ingress and egress from mud, splatter, etc., a la the Louis XIV Lincoln French Brougham.

Above the belt line the body is painted black, with Brewster green, dark, below. The belt line moulding is in black with a fine light single stripe. The chauffeur's compartment is upholstered in black leather.

Behind the divider window, the interior upholstery is flat, stretched gray broad-cloth also used on the two jump seats. There are gray shades on all of the windows.

This rare and attractive automobile appears to be wholly original.

Pictured in Illustrations No. P-8 and P-9 is indeed a unique Classic Packard, presently in California.

On either a 1933 or 1934 Packard Twelve chassis is mounted a Locke body for a 1927 rumble seat Roadster. Surprisingly, the ensemble with dual side mounts and trunk is strikingly attractive. Although further information about this car has not been forthcoming, one could easily speculate about the love and admiration of the man who, some 45 years ago, might have been so attached to his 1927 Roadster that he had the Locke body removed and installed on his new 12-cylinder acquisition. Greater love hath no man, etc.

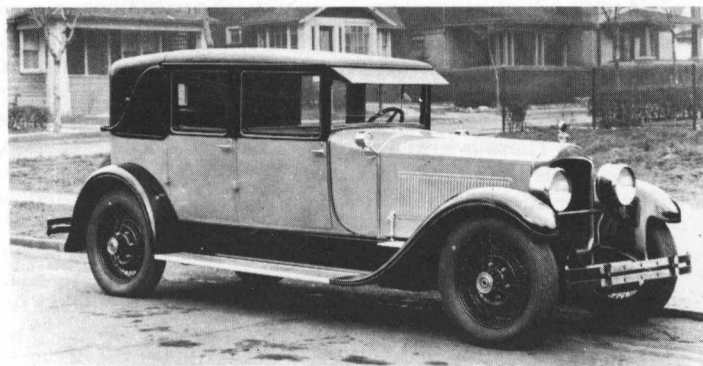


Illustration P-3

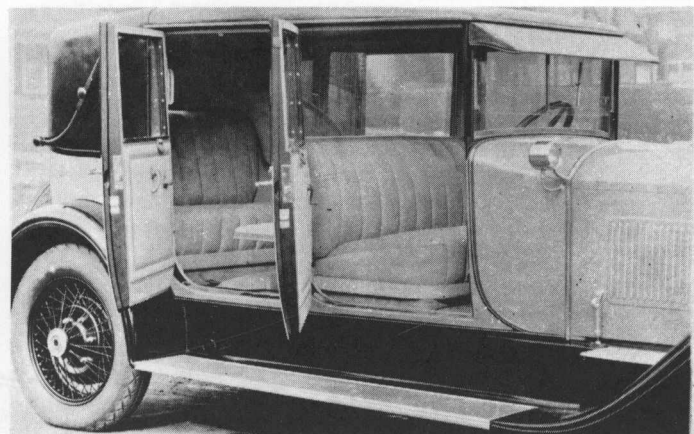


Illustration P-4

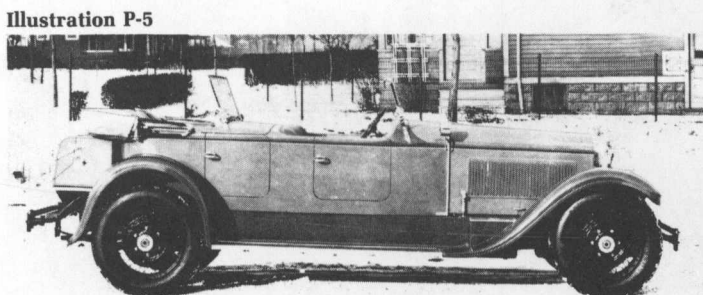


Illustration P-5

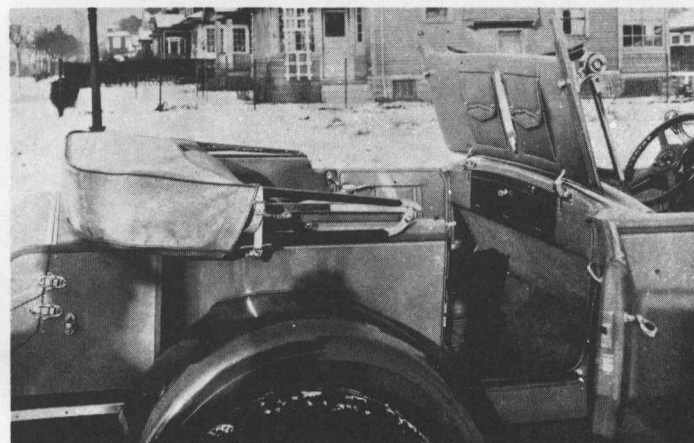


Illustration P-6

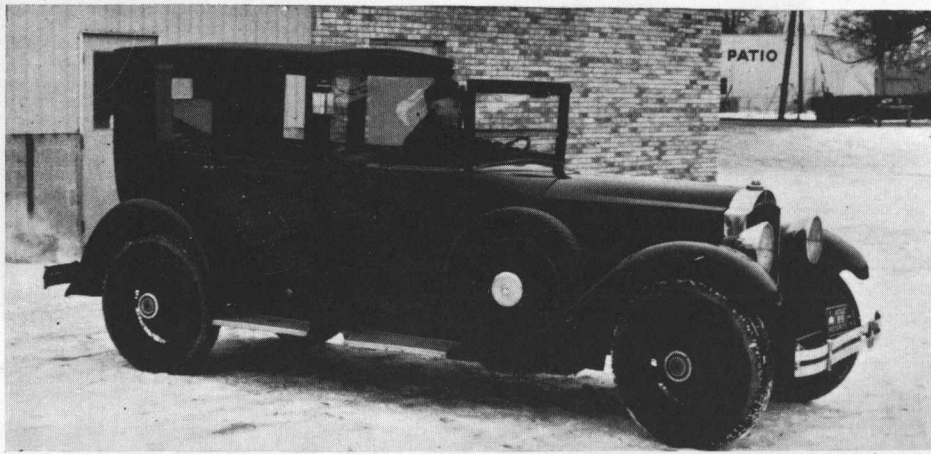


Illustration P-7

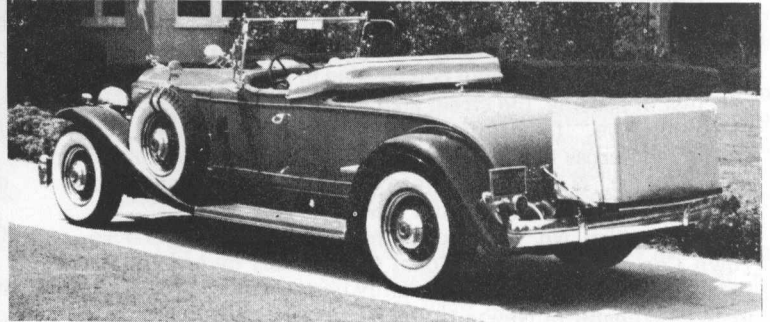
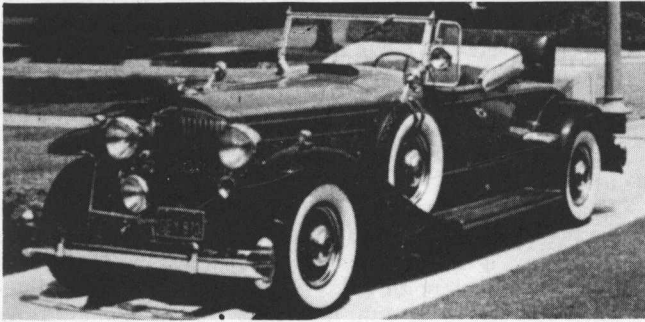


Illustration P-9

ROLLS-ROYCE

The second-oldest known existing Locke designed and fabricated body is mounted on a Rolls-Royce chassis, so it seems appropriate to start this section with the late Mr. Louis Consolini's 1912 Silver Ghost Limousine, shown in *Illustrations No. R-R 1 and 2*.

Mrs. Consolini of Connecticut and her son, John F., of New Jersey, have also graciously furnished me with the accompanying pictures of the car and descriptions *Illustrations No. R-R 3 through 6*. This car is still in its original state after 66 years of what obviously has been tender, loving care.

The car was originally designed and fabricated for an Army Air Corps Colonel Lee of Lime Rock, Connecticut, from whom Mr. Consolini acquired it in 1930. Its chassis is No. 2103 with the 6-cylinder 6L engine. It was electrified in 1915

in Washington, D.C. The upper body is varnished natural wood, the lower body between the belt line and bottom being aluminum finished as are the fenders in light tan. The hood is polished aluminum. The chauffeur's section is upholstered in black leather (restored). There is a divider window between the front and rear, and there are shades on all windows. A speaking tube system affords communication between the chauffeur and passengers; and there is an electric cigar lighter (spring-loaded reel type) and ash tray in a box on the rear wall. There is also a jump seat in the passenger section, facing to the center. The interior is entirely finished in a beige plush fabric, plaited and with occasional buttons. All window fittings are brass.

The handsome 1921 Rolls Oxford Tourer *Illustrations No. 7, 8 and 9* belongs to Mr. Raymond E. Prizer of Pennsylvania.

Locke and Company designed and fabricated this car for

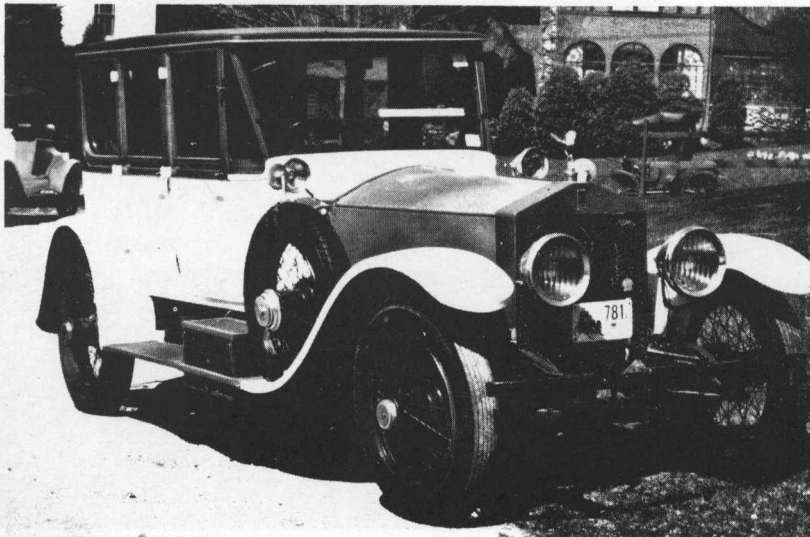
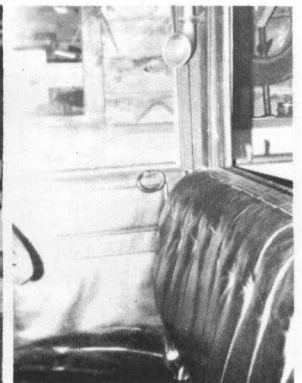


Illustration R-R 1

Illustration R-R 5

Illustration R-R 6



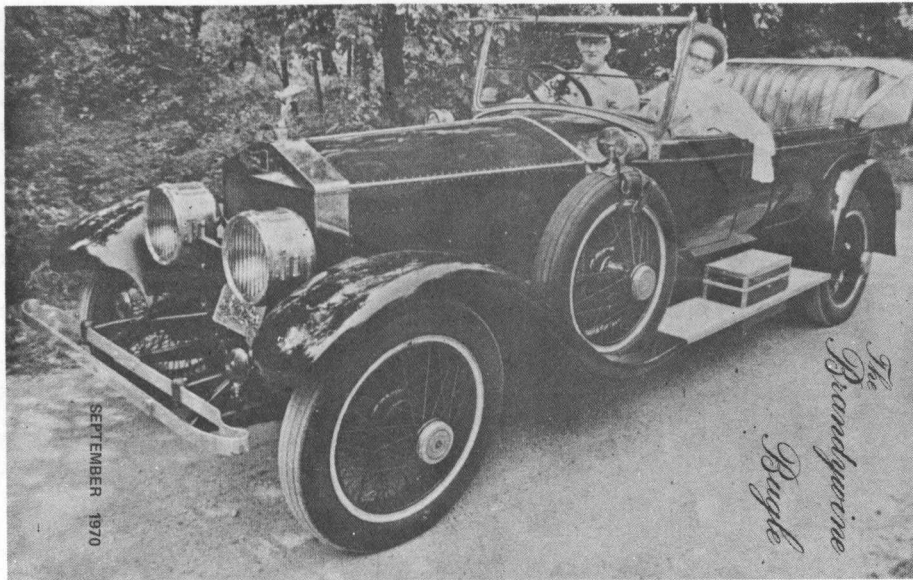


Illustration R-R 7

a doctor in Keene, New Hampshire. His widow donated it to a local teachers' college as a contribution to science. So, the head of the science department partly restored it ending up by selling it to Mr. Prizer in 1958. In the succeeding 20 years Mr. Prizer has replaced some of the leather, has had a bit of mechanical work done, and he and Mrs. Prizer have driven it happily 23,000 miles on tours, meets, etc. It is Model 63 AG, Serial No. 21075. Exterior and interior color is dark Brewster green, the striping medium gray and the leather dark brown. The top (as replaced by Mr. Prizer) is a tan Haartz-type, and the car has been a consistent trophy winner.

Locke consistently exhibited its bodies on Rolls chassis in the immediate pre-Classic era. For example, in the 1923 New York Importers' Show of the Foreign Automotive Association at the Hotel Astor, Locke showed two Rolls: a non-collapsing Sedan-Limousine and a seven-passenger Brougham. At the 1923 New York Automobile Salon at the Commodore and Astor hotels, Locke presented a Berline featuring a hinged arm rest which folded back into the "squab" (an innovation at that time). *Illustration No. R-R 10* is a photograph of this car's interior. A special two-tone Connolly leather was used throughout in the driving compartment and up to the belt in the passenger compartment. Wiese suede broadcloth was used for the wall and head lining. The exterior was painted a greenish gray.

At the 1925 New York Auto Salon, Locke exhibited a special Rolls Silver Ghost Convertible Sedan, shown in the Lazarnick photograph *Illustration No. R-R 11*.

This handsome and elaborate Rolls is now owned by Mr. Richard J. Scarsella of New York *Illustrations No. R-R 12 and 13*.

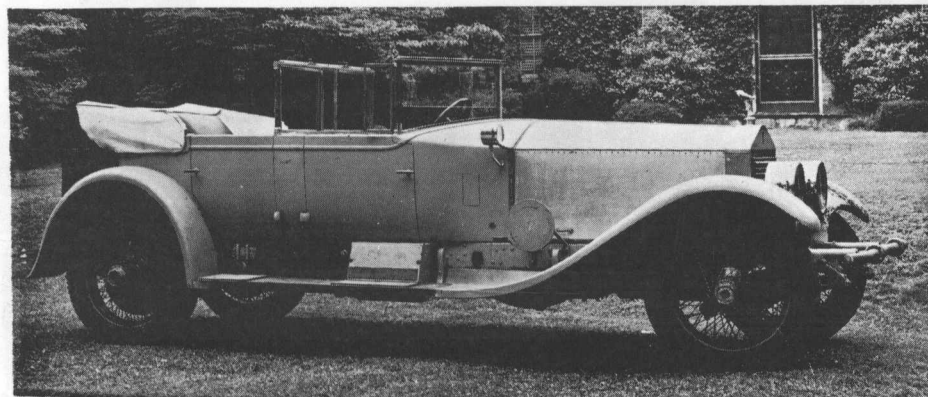


Illustration R-R 12

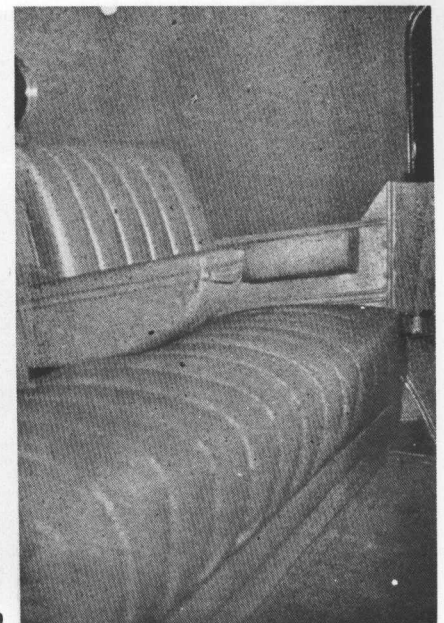


Illustration R-R 10

An attractive, smoothing effect was created by the sweep of the belt line moulding starting at the point of the V-windshield, following the windshield line to the front door, curving down to the usual belt line position and then continuing around the body. Mr. Scarsella wrote me that this body was designed and fabricated purely on speculation "and at the time young engineers just blew their imaginations." "They fashioned the free-swinging windows which could enclose the rear compartment entirely or be positioned to enclose the front completely," and, when swung inside, would serve as a divider window between front and rear. *Illustrations No. R-R 14 and 15* are Locke presentation photos showing different positions of the top and windows.

The driver's compartment is shown in *Illustration No. R-R 16* with the unusual V-dash following the windshield lines, and

Illustration R-R 14

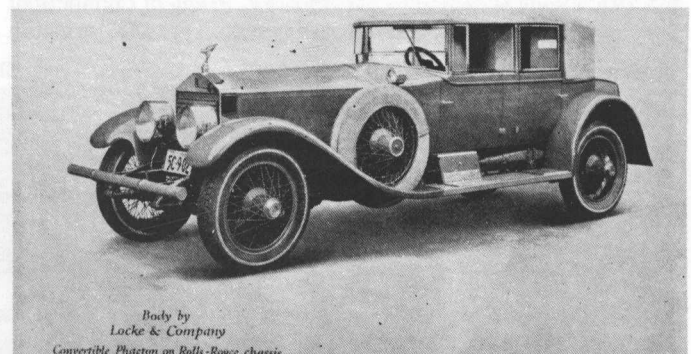
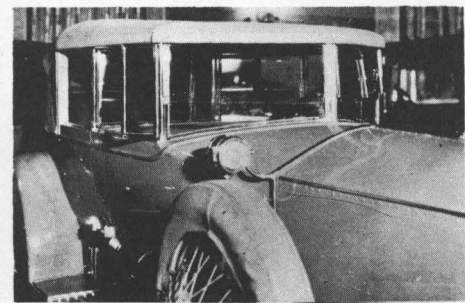


Illustration R-R 14

Illustration R-R 12

Illustration R-R 11



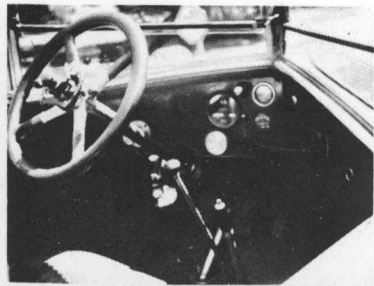


Illustration R-R 16

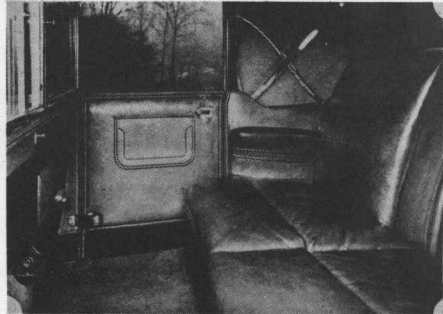


Illustration R-R 17

Illustration No. R-R 17 shows the rear interior in an ad for American Leather Producers, Inc., suppliers of the leather.

Mr. Scarsella further wrote that this car ultimately became so much more expensive than Locke had anticipated that it was hard to sell. It made the rounds of the Salons, and finally in November of 1925 it was purchased by a Mrs. Ogilvie, a wealthy matron in Philadelphia, who used it as her "afternoon car."

The body is all aluminum trimmed with German silver accessories such as headlights, door handles, cowl strip, radiator shell, radiator hood hinge, rivets and hubcaps. The hood is polished aluminum. The body is painted in beige with luggage brown fenders and chassis, and tan top, trunk cover and sidemount covers. The interior is genuine saddle-colored cowhide, finished as shown in *Illustration No. R-R 17*.

In 1928 Locke & Company designed and fabricated the striking Convertible Sedan on the P-1 Springfield chassis shown in *Illustrations No. R-R 18, 19 and 20*.

This Rolls is owned by Mr. James F. Bragg of Connecticut and was originally designed and fabricated for Mr. Jeremiah

Illustration R-R 19

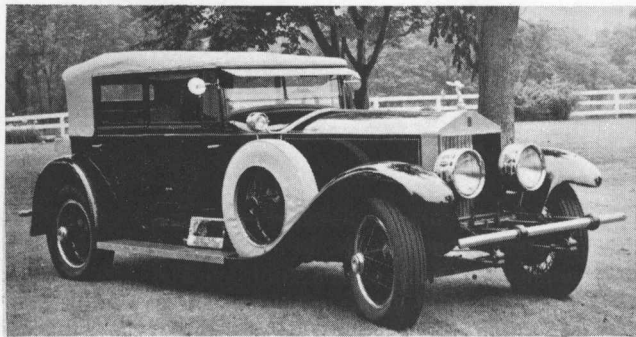


Illustration R-R 21

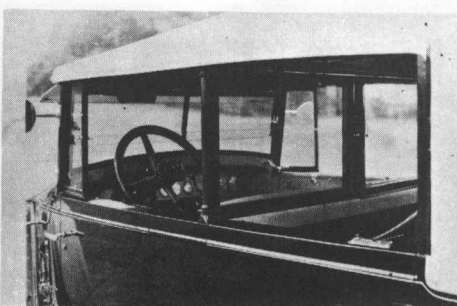


Illustration R-R 20

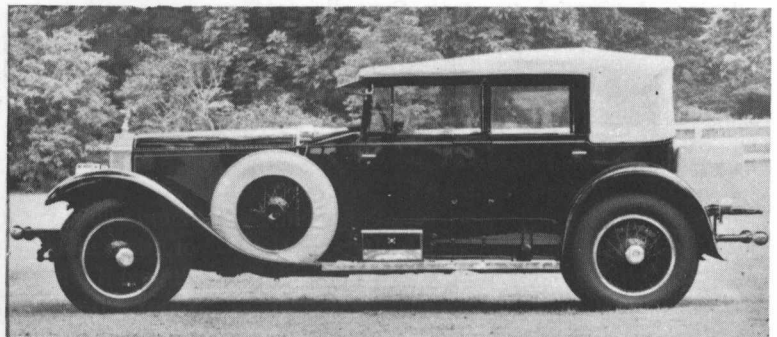


Illustration R-R 22

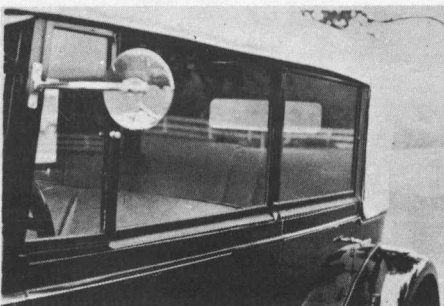


Illustration R-R 23

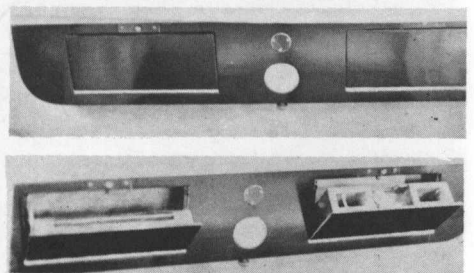


Illustration R-R 24

Millbank. When Mr. Bragg acquired it several years ago it had been sitting in the lower level of a carriage house, completely wrapped in sheets pinned together. Conditions of high humidity had rusted the pins and stained the original tan top. The leather was hard, and the fittings were so discolored as to be unrecognizable until laboriously cleaned and polished. The original leather and paint were gray-green and the single body stripe a darker green. The carpet was a matching gray-green, as was the wood cabinet in the back of the front seat. Fittings were silver plated. Mr. Bragg has completely restored this rare car following the original designs and patterns but using black paint on the exterior and brown leather inside. The top material is comparable to the original.

Illustration No. R-R 21 shows the body with the dual hinging and all windows folded in to create a tonneau windshield effect. *Illustration No. R-R 22* shows all windows closed, front and rear. *Illustrations No. R-R 23 and 24* show the cabinet with the smoking set on the right, the clock in the center and the vanity case on the left.

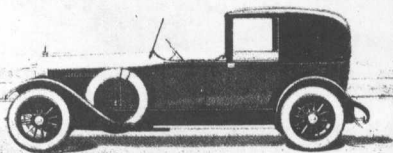
LINCOLN

When Henry and Edsel Ford bought Lincoln at the bankruptcy sale in Detroit in early 1922, outbidding by far anyone else, the Lincoln was an engineering and mechanical gem. It was actually custom built from the ground up and widely celebrated by all but the market. The "pre-WWI Cadillac" styling of the Lelands was a definite negative influence upon the car's acceptance. This was already apparent to Edsel Ford, known as a true gentleman of impeccable taste, so he promptly set about to remedy it. He made the rounds of several of the custom body builders in the United States, including Locke & Company, requesting new designs for introduction just as the Classic car era was about to begin.

Already Locke had had considerable experience with the Lincoln chassis, having designed and fabricated several for individual clients as well as having exhibited at the various Salons in the early '20s. The exclusive New York City distributor of Lincoln, Fuller-Luce, Inc. (successor to York Motors), widely advertised the Lincoln Cabriolet *Illustration No. Li-1* which was described in the October—November 1924 issue of "The Lincoln" as follows:

LINCOLN

MOTOR CARS



Individuality

THIS CABRIOLETTE WAS DESIGNED AND BUILT ESPECIALLY FOR FULLER-LUCE, INC., BY LOCKE & CO. FOR THE AUTOMOBILE SALON. IT CAN BE DUPLICATED WITH YOUR OWN SELECTION OF UPHOLSTERY, APPOINTMENTS AND FINISH FOR \$9,419.

FULLER-LUCE, Inc.

Lincoln Distributors
217 WEST 87th STREET
NEW YORK

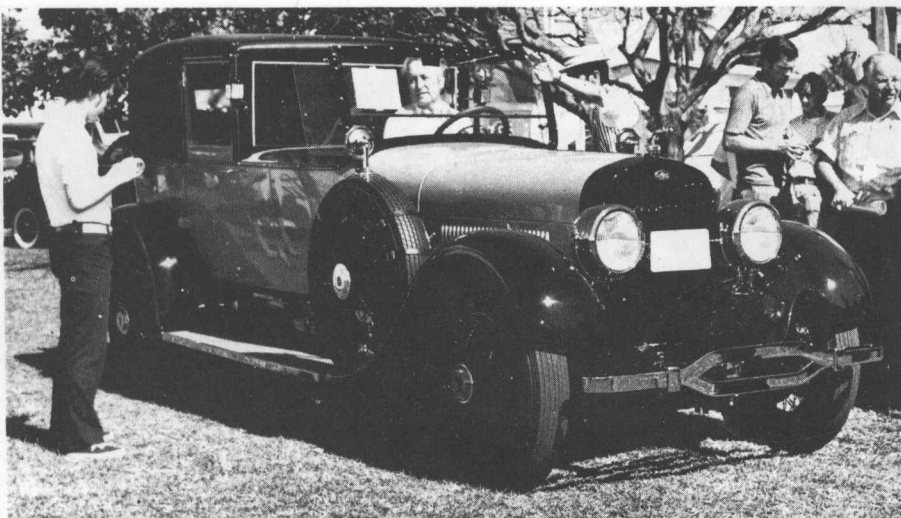


Illustration Li-3

Illustration Li-1

"A Cabriolet, by Locke, with needlepoint upholstery—One of the most striking of all the cars in the Salon (New York City, 1924—1925) will be a non-collapsible Cabriolet designed by Locke. This stunning car, especially in its upholstery and exterior color scheme, shows the tendency of the present day to forsake the ultra-conservatism which has been the rule since the rugged psychological restrictions of war-time.

"Its fabric, imported from France and especially woven for this car, consists of seat coverings in 3-cushion effort, of delicate French tapestry in indistinct flower design with brilliant and exquisitely worked flower medallions in all three of the cushion backs. The carpet is in a tasteful gray to match, while the side walls and ceiling are clothed in castor shade De Luxe broadcloth from abroad. The fittings on the inside are of bronze in a special design which is extremely graceful. There are two auxiliary seats, one of the Rothschild type facing the side and the other of the Kellner type facing backward. This latter is entirely concealed in the upholstery when not in use.

"The car itself, while not as severe in tone as the Town Car, nevertheless reflects the formality of this type of vehicle. The body is in Ocean Blue with beige brown lightstriping on the door panels, mouldings and wheels. The top and front seats are in black leather and the fenders and under parts are in black . . ."

The November—December, 1925, issue of "The Lincoln" pictures and mentions the non-collapsible Cabriolet by Locke, the only known example being the one now in the Henry Harper—Kenneth Pearson collection in Illinois, shown in *Illustrations No. Li-2 and Li-3*.

Carrying Serial No. 28517, this car was specially built for the 1925 New York Auto Show in November of that year and the Chicago Auto Show at the Drake in early 1926. It is fitted with side lights, side mounts and trunk, and has an open chauffeur's compartment with removable leather top and side curtains. There are two jump seats; and the exterior is done in light gray with black fenders, wheels, aprons and under-carriage. Thorough and meticulous restoration have earned this car many coveted trophies.

Illustrations No. Li-4, Li-5, Li-6 and Li-7 are interior views of this car. Note-worthy are the rich broadcloth upholstery, the colorful broadlace on the door panels, clock and vanity case, smoking case, and mike for speaking tube to the chauffeur visible in *Illustrations No. Li-5, Li-6 and Li-7*.

Also in the Harper—Pearson collection is the 1926 Roadster, body by Locke, Serial No. 38239, Locke No. 1322, Body Type 151, with side mounts, rumble seat and golf club

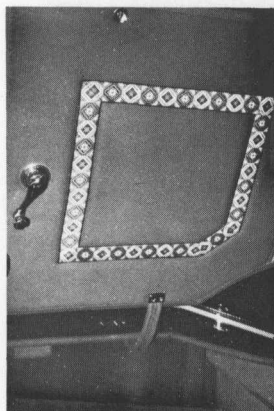


Illustration Li-5



Illustration Li-6

compartment, done in two-tone gray and black, *Illustration No. Li-8*.

In its present state of almost "cream puff" beauty, thanks to the traditional Harper—Pearson thorough and meticulous restoration, it belies its rugged and active past. Originally it belonged to a Princeton University student (imagine its effect on his social life!) and in the early '30s it was purchased by a Captain residing in Maine who drove it regularly until 1946 when, with over 200,000 on the odometer, it was left in a field behind the Captain's barn until 1956. Thereafter it passed through several hands until Kenneth Pearson acquired it in 1965. By 1967 the restoration was completed and the car has become an envied trophy winner in meets and tours literally all over the country. *Illustrations No. Li-9 through Li-13* show different aspects of this outstanding vehicle.

In 1926 Lincoln Motor Company's custom model program burst into full bloom with a line of twelve special order designs exhibited at the 1926—1927 New York, Chicago and Los Angeles shows and salons. The history of art was divided into twelve periods, each represented in the styling and decor of one of the special order models. The handsome catalogue in color on simulated parchment was entitled "Travelogue of Art and Transportation Down Through the Ages" and described the purpose as follows:

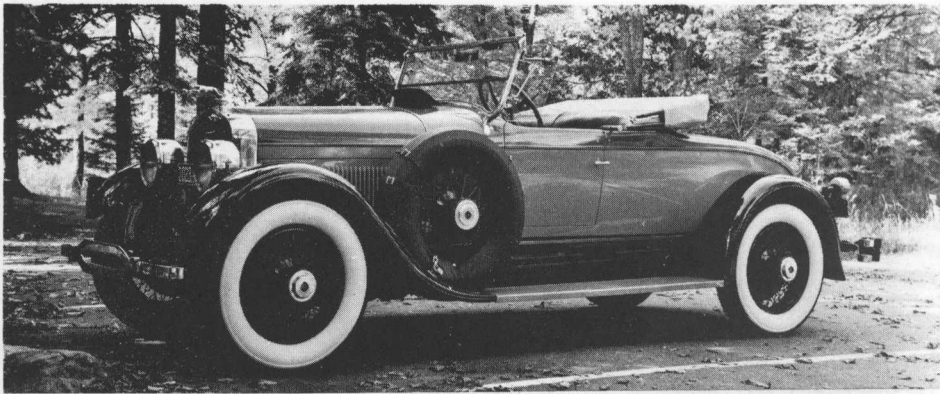


Illustration Li-8

"Beautiful adaptations of the world's greatest art styles to motor car excellence are described and depicted in the following pages. The influence of period design, authentically interpreted in the treatment of these exclusive custom bodies, is the consummation of refined motor car magnificence."

Locke & Company designed and fabricated two of the twelve: the Louis XIV, and the Georgian.

The Louis XIV, a Lincoln French Brougham, is shown in *Illustration No. Li-14*, the Locke design No. 121 D1, and *Illustration No. Li-15*, a photograph of the actual car.

Particularly noteworthy on the exterior of this car is the French canne treatment below the belt line in the rear of the body and the separate S-curve fender protecting the step in the rear, or passenger section, from mud, etc. The catalogue has these comments:

"The Sun King himself, had he lived in the age of motor cars, would have approved this French brougham, by Locke, which is indeed regally magnificent. The graceful sweep of the body, finished in Maintenon blue and Chateau cream-buff, commands the admiration of all beholders. Exterior gorgeousness is matched by opulence within: French gray broadcloth is upholstered in the tufted manner that prevailed in the days when Louis XIV decreed the styles."

Around the borders one can see the canne treatment described in the first part of this article; and the tasteful use of broadlace on door panels, assist strap and bottoms of seat cushions can be seen in *Illustration No. Li-16*.

The Georgian, a Lincoln Landau Limousine, while much



Illustration Li-10

more sedate than the Louis XIV, is quite representative of its period. "A subtle refinement of the Georgian style is splendidly exemplified by this lordly limousine by Locke" reads the Salon catalogue description. The body panels and wire of the wheels were finished in Wedgwood green, deep. The window reveals and striping were in Wedgwood green, light, while the upperworks, fenders and aprons were in black. The front compartment was trimmed in black leather. The rear compartment seats were upholstered in a specially woven tapestry supplied by Wiese and known as Wedgwood frieze pattern in Wedgwood green and white. A broadcloth to blend was used in the walls and headlining. Hardware was by Gorham in bronze. Identical pattern broadlace was used on the door panels and assist straps. *Illustration No. Li-17* shows the exterior of this car and *Illustration No. Li-18* the interior.

At about this time Locke submitted design No. 80 C for a convertible phaeton, reminiscent of the body styling of Mrs. Ogilvie's "afternoon car," the 1925 Rolls Silver Ghost pictured in the Rolls section of this article in *Illustration R-R 11* through R-R 17. This design appears as *Illustration No. Li-19* and *Li-20*, showing two different top and side window positions.

Locke design No. 122 D1 *Illustrations No. Li-21*, also submitted at about this same time, appears to be a modified version of the Georgian with a collapsible rear section.

No actual production information has been located on the above two designs.

One of the most popular Locke designs in the period starting with 1927 was the 5-passenger Sport Phaeton in two ver-

Illustration Li-20

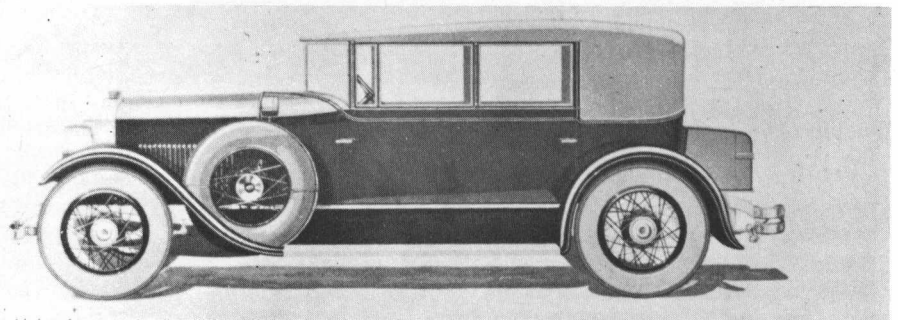


Illustration Li-21

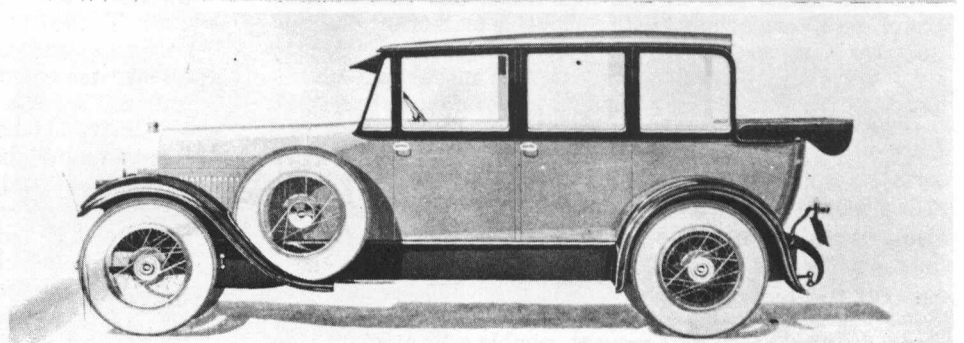
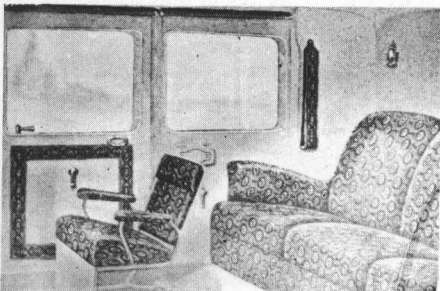


Illustration Li-18



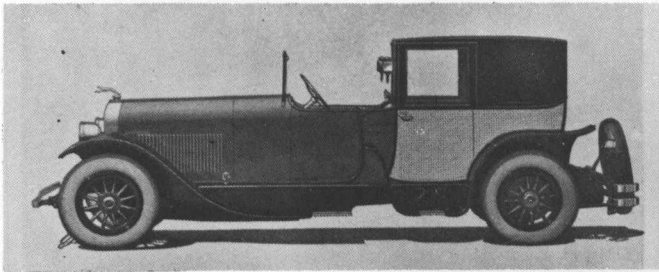


Illustration Li-15

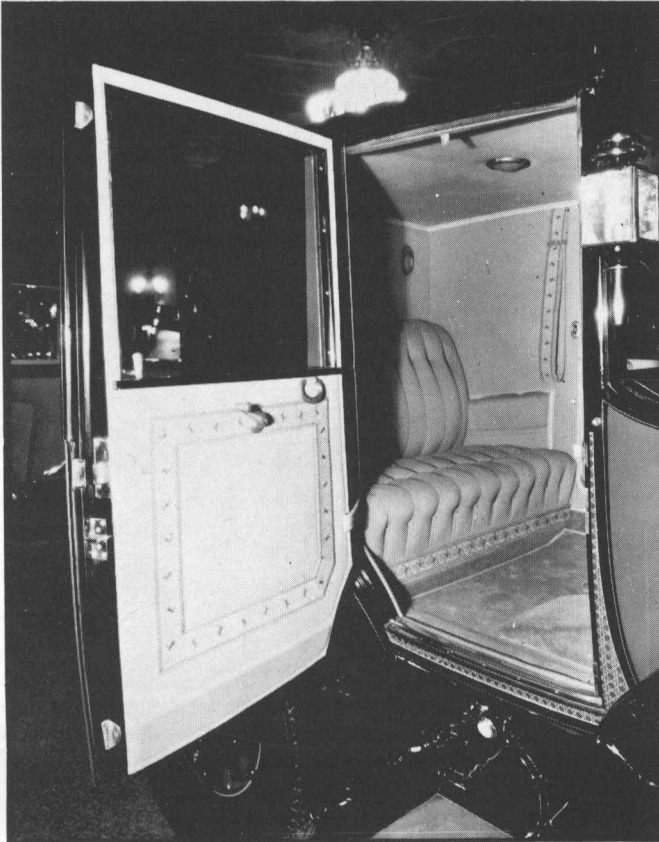
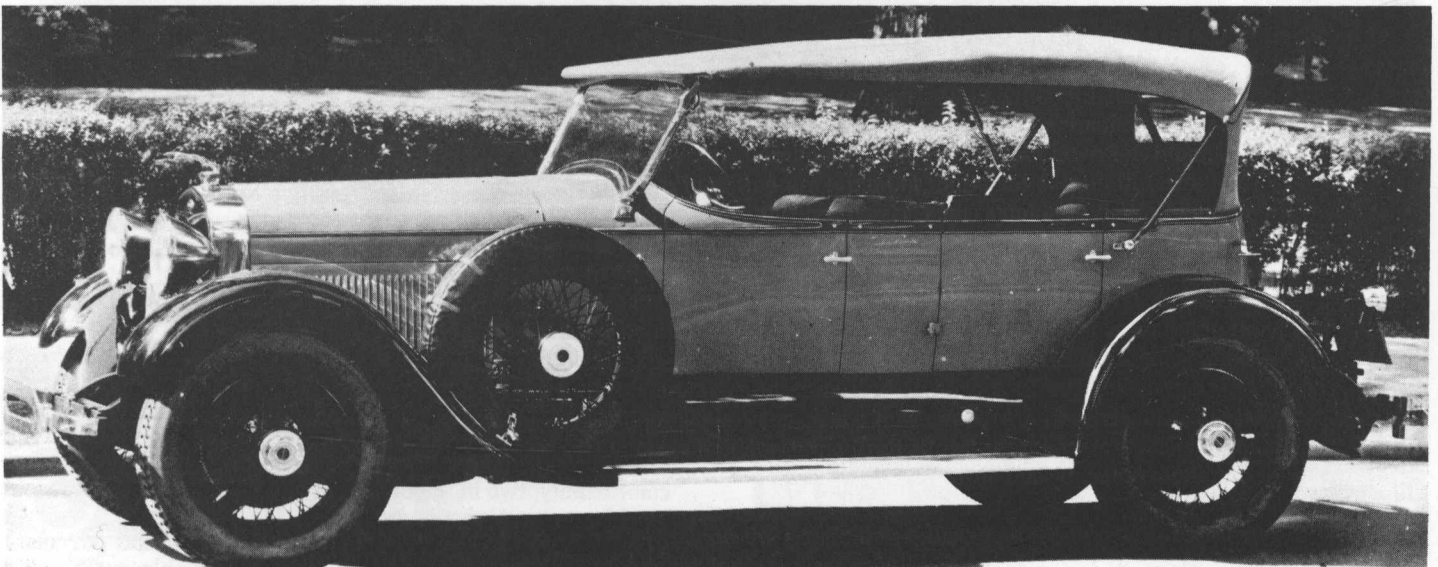


Illustration Li-22



sions: with or without the Dual Cowl, *Illustration No. Li-22* is a factory photo (courtesy of Ford Archives at Henry Ford Museum, Dearborn, Michigan) No. 49576 of the 1927 version without the Dual Cowl and windshield; and *Illustration No. Li-23* is an auto show photo of the front windshield and characteristic Locke lines of the cowl, used in the roadsters, phaetons and 7-passenger sport touring cars.

Readers of "Old Cars" and participants in Glidden Tours are familiar with the car shown in *Illustration No. Li-24*, the 1929 version of the 5-passenger Dual Cowl phaeton owned by Henry Austin Clark, Jr., of New York.

Probably the handsomest of the Locke open Lincolns of this period was the seven-passenger Sport Touring introduced in 1927. But then perhaps I am a bit prejudiced. *Illustration No. Li-25* shows the writer's 1929 version of this model being Type 164, Locke number 13 573, engine and chassis number 57074.

This car started its active career in Syracuse, N.Y. from which it moved to Bala Cynwyd, Pennsylvania, until 1964 when I acquired it still in its original condition and painted a Brewster green, medium, with Parisian-Morocco Dualtone (brown) leather upholstery. The car was completely restored by Walter Heater in 1966-67 in black with light cream wheels and striping, and upholstered in black leather. I have driven it over 40,000 miles on tours, in meets and parades. *Illustration No. Li-26* shows the interior; and *Illustration No. Li-27* is a photo taken on June 16, 1978, on the Village Green, Greenfield Village, Dearborn, Michigan, on the occasion of the 75th Birthday Jubilee of Ford Motor Company. The car represented the year 1929 in the 75 cars, each representing one year of Ford Motor Company's history.

These three open cars—the roadster, phaeton and sport touring—were widely featured in the Lincoln Motor Company advertising campaigns starting in 1928, particularly in the beautiful and colorful "bird" series (see *Illustrations No. Li-28, 29 and 30*).

In 1927 Locke submitted to Lincoln design No. 114 D of what was then called a Victoria Coupe *Illustrations No. Li-31 and 32*. In the 1928 line and continuing until the middle of 1930, this design was produced as the Club Roadster, a convertible coupe with rumble seat and a variety of configurations: wire, artillery spoke and disc wheels, rear mount, or side mounts with trunk. *Illustration No. Li-33*, courtesy of Ford Archives/Henry Ford Museum, is a factory photo of one of the first in this design.

It was also a subject of full-page, colorful "bird" ads in leading publications during this period *Illustrations No. Li-34*.

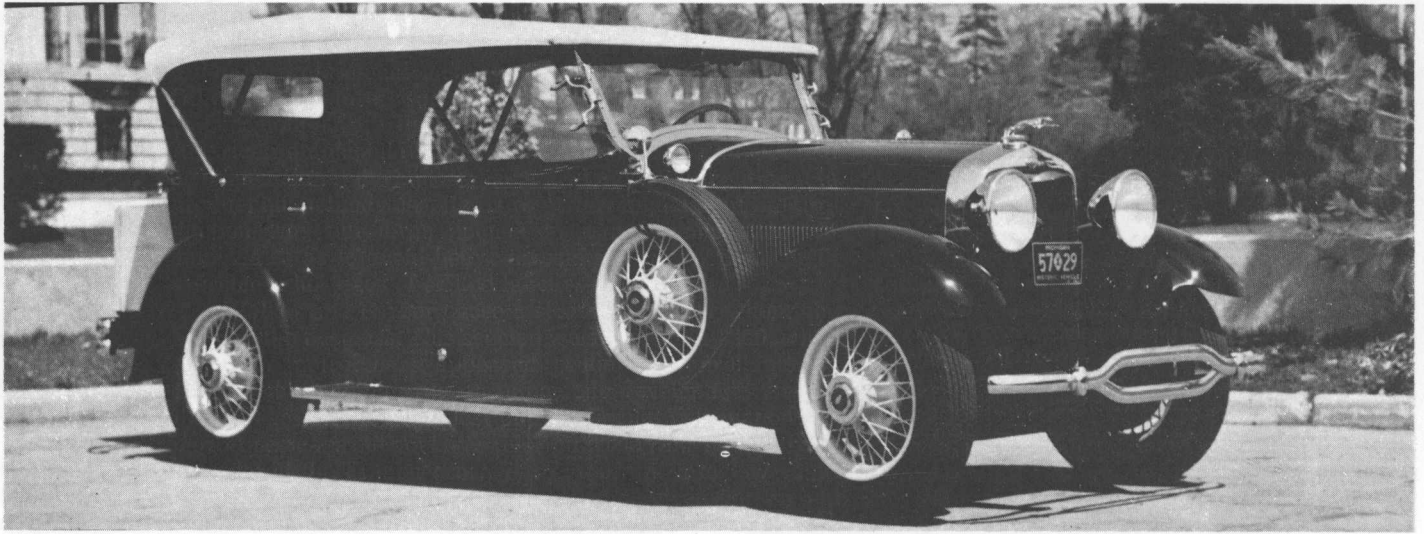


Illustration Li-25

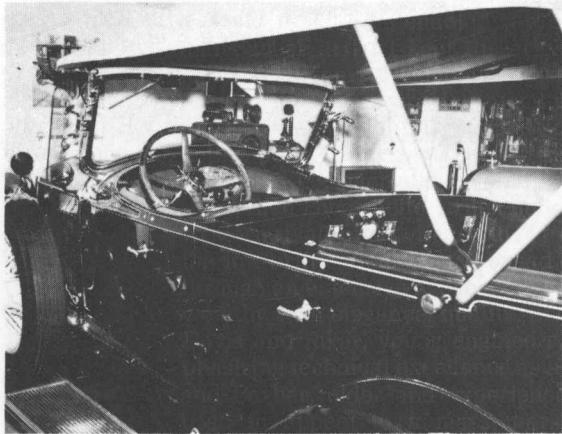


Illustration Li-26

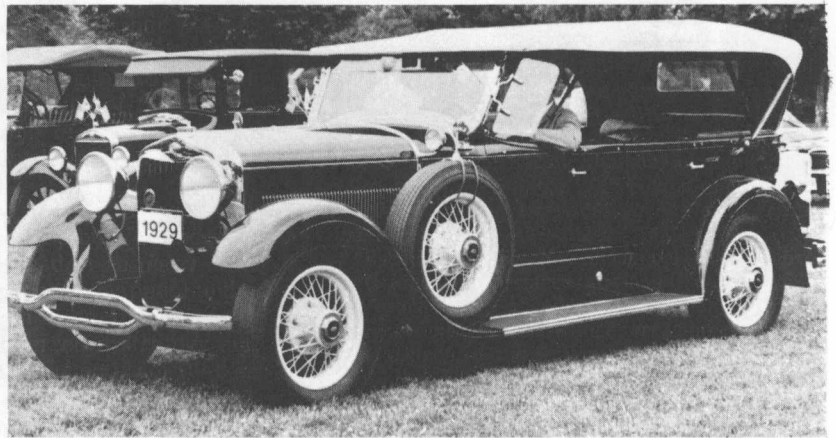


Illustration Li-27

Illustration Li-23

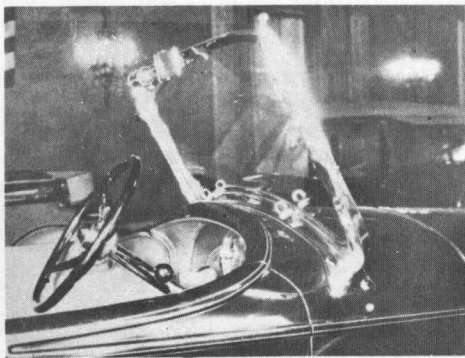
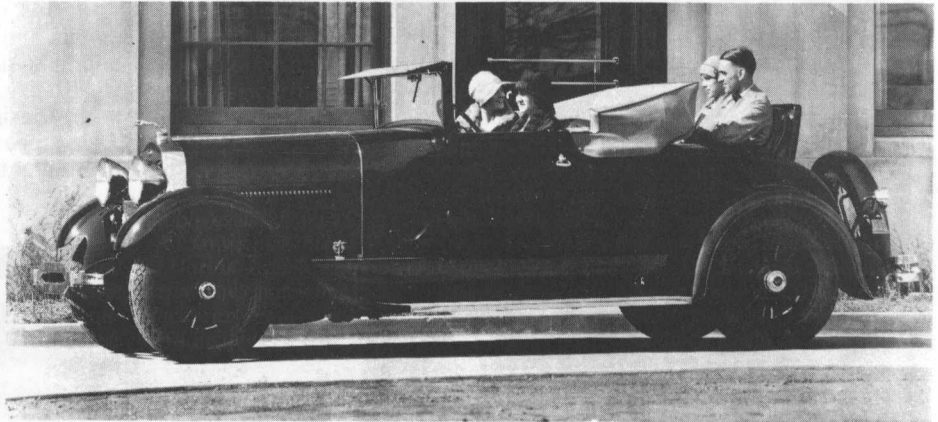


Illustration Li-28



Despite its relatively high cost of about \$7,000 fully equipped, the Club Roadster appealed to around 600 discriminating purchasers during the two and a half years it was available. T.L. Osborne of Oklahoma, owner of one of several existing Club roadsters, says of his 1928 model, "The aluminum coachwork of this alluring roadster is sculptured with most unusual side-mouldings that recapture the elegance of stagecoach design, with dashing upsweep scrolls at the front, then sweeping back and up around the razor-edged rear deck to accent the swanky, plush rumble seat compartment." *Illustrations No. Li-35 and 36.*

A 1929 model is owned by Stan Tarnopol of Pennsylvania and has become his favorite tour car. This car is painted in Brewster green, dark, with buff-brown striping and brown

leather upholstery inside. *Illustrations No. Li-37 and Li-38.*

When the Club Roadster was first introduced at the Custom Body Builders' Salons in New York, Chicago, Los Angeles and San Francisco between November, 1927 and March, 1928, the salon catalogue described it as follows:

"Long, low, powerful, this lithely handsome Locke design is perfectly symbolized by the leaping greyhound on its bow. Its windshield is smartly accoutered; and the top, when folded back, is compactly housed in a cover that blends attractively into the scheme of the body. It is a sporting car that seats four comfortably: two in the driver's seat and two in the capacious rumble seat, which fits neatly into the rear deck.

"There are compartments for golf clubs and parcels at the back of the front seat. An easily removable curtain with



Illustration Li-29

zipper arrangement is provided between the front compartment and rumble seat. It folds into the ceiling of the top, facilitating easy conversation between driver and rear seat passengers."

Here, perhaps, would be a good place to interject a little information as to how to identify a Locke body. Of course, the town cars and limousines built for individual clients carried the badge bar shown at the beginning of this article. The same applied to show and salon cars. These likely were all built at Locke's New York City facility.

Meanwhile at the Lincoln Motor Company plant Mr. Edsel Ford had established a highly respected body fabrication shop where Lincoln produced the "factory" bodies. However, anticipating the demand for Locke designs, Mr. Ford made an unusual arrangement with Locke: if he particularly liked a special model, he bought the rights to use the plans and specifications at the Lincoln shop to supplement Locke's production at Rochester. He also arranged to have Locke build 50 or 100 of a given design "in the white" so as to facilitate prompt supply. Lincoln assigned a particular code number to each custom body shop making bodies for it, number "13" being the one assigned to Locke. So, under the right front seat you will find a metal plate carrying the body

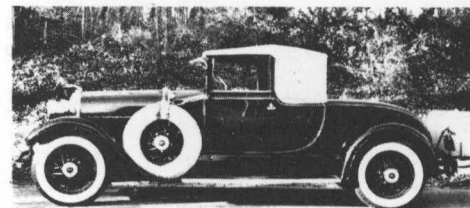


Illustration Li-38



Illustration Li-34

type number, and below it another number reading (as in the writer's Lincoln Sport Touring) "Number 13 572." The last three numbers meant that this was the 572nd body of this style built by Locke for Lincoln. These code numbers are readily available at Ford Archives, Henry Ford Museum, Dearborn, Michigan, for all of the custom body firms supplying Lincoln as well as for its own body shop.

The sport roadster was subtly redesigned by Locke for introduction in November, 1930 as shown in the excerpt from *Autobody* magazine Illustration No. Li-39.

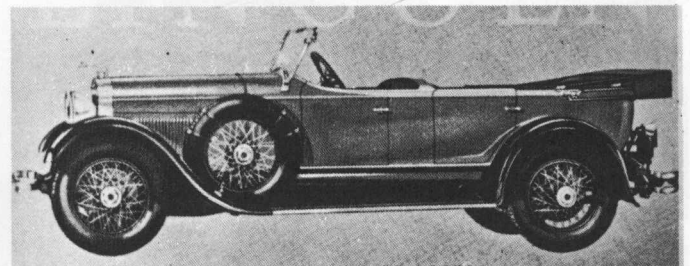
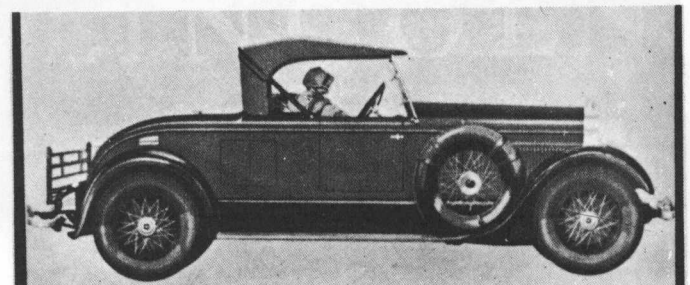


Illustration Li-30

Illustration Li-33



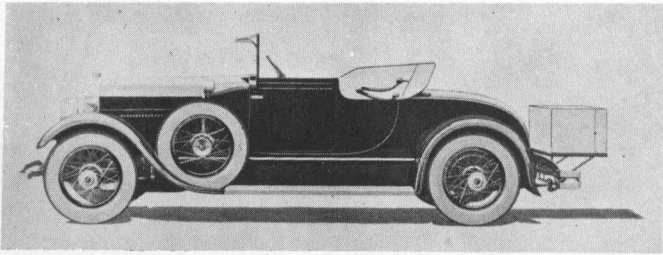


Illustration Li-32

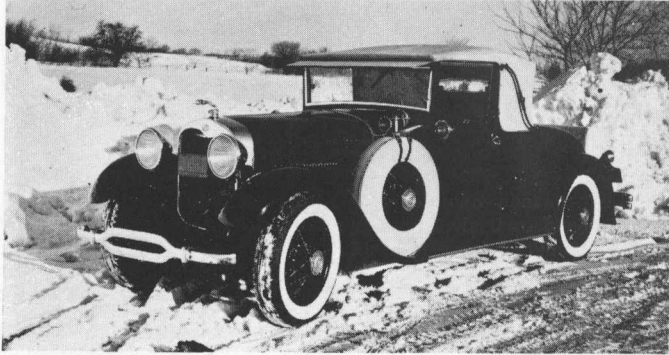


Illustration Li-35

Note that the belt line moulding starts at the back of the door rather than previously at the front of the hood. A handsome example of this model is the one owned for several years by Mr. Anthony Heinsbergen of California and shown in *Illustration No. Li-40*.

This basic design (with a return to the long belt line moulding the entire length of the body) continued into 1932, Locke's final year *Illustration No. Li-41*, from the photo collection of David R. Hollis).

The Lincoln Dual Cowl Phaeton for 1930—1931 is well represented by the one owned by Eugene C. Eldredge of Michigan shown in *Illustrations No. Li-42 and 43*.

This car appears to have been built during the last half of October, 1930, and shipped on or about November 1. All trim and accessories are 1931 style, and the plate under the right front seat bears Type No. 163 B. The body number is "13 275" indicating Locke. The original top has a radio antenna built into the top straps and pads. Exterior color scheme is light blue above the belt line, silver below, and black on fenders and aprons. The car is all original. Reportedly it was owned by the

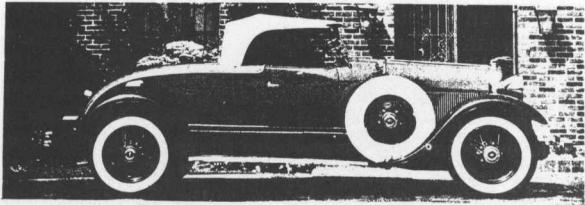


Illustration Li-40

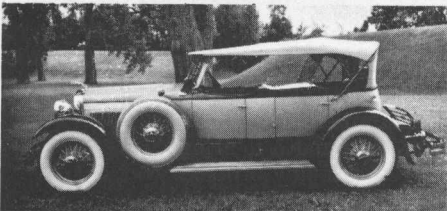


Illustration Li-42

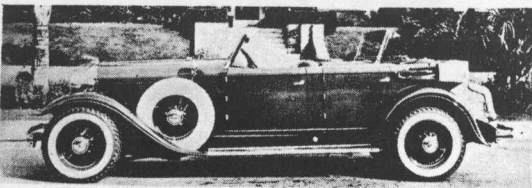


Illustration Li-44

family of the late former Governor of Michigan, Frank Fitzgerald.

Little is known concerning the rakish 1932 Lincoln Dual Cowl Phaeton with fender-wells, sidemounts and sculptured trunk shown in *Illustration No. Li-44* (from the photo collection of David R. Hollis), but it may be surmised that it was built in the Lincoln Motor Company shops following Locke designs.

DUESENBERG

In October, 1926, Errett Lobban Cord purchased the Duesenberg Automobile and Motors, Inc., during its transition period from the Model A to the Model X. The Model A's production had started in late 1920 (with the 1921 model featuring four-wheel hydraulic brakes, a 260 cubic inch straight 8 engine of 88 hp with gear-driven overhead camshaft (refined from the famous racing engine which won the 1921 French Grand Prix), all on the 134" wheelbase. The engine, with all valves on one side, was finished "like a jewel."

Performance, quickness, control and high speed were closest to Fred and Augie Duesenberg's hearts. Nevertheless the company offered a complete line of body styles. By 1925 the Duesenbergs had decided to increase the power of the engine to 100 hp and the wheelbase to 136" and to encourage custom coachwork, the better to satisfy discriminating customers who wanted more style with their performance. The new Model X with bodies by Locke and other leading firms, as well as a top speed of 100 mph was expected to do just this.

It has been said that upon his arrival, E.L. Cord preferred to have nothing to do with the Model X for his sights were set on the future magnificent Model J. However, because there were many parts already on hand or in process, he permitted Fred Duesenberg to continue the Model X project to use these up. So a total of twelve were built in late 1926 and 1927, after which Fred Duesenberg was promoted to Vice-President to Engineering and the experimental laboratories of the company, now named Duesenberg, Inc., and the company went all out on the Model J development.

Two existing examples of the Locke-bodied Model X are known, at least to the writer. The Dual Cowl Sport Touring, 1927, in Harrah's Automobile Collection, is shown in *Illustrations No. D-1*.

It attracted wide attention since it was the lowest car shown in the New York, Chicago and Los Angeles salons and, of course, it was a Duesenberg. Ryan lights had replaced the Model A's drum lights (which Fred Duesenberg had pioneered in the U.S.) and Buffalo wire wheels had replaced the Rudge type. The body is painted Old Ivory with Painter's Green on mouldings, wire wheels and the entire chassis. Striping detail is also Painter's Green. All exterior brightwork is chrome plated. The top is made of smooth light tan grain leather with a light tan cloth lining. Top bows are chrome plated with light ash accents. Rear trunk is upholstered to match the top.

The steering wheel is dark mahogany with dark brown plastic control center *Illustration No. D-2*.

The dash is painted black with black leather trim and carries complete instrumentation one would expect in a Duesenberg. Floor coverings are aluminum and black rubber mat in front *Illustration No. D-3* and black short pile carpeting in the rear.

Upholstery is Wolfe grain, spruce green leather, and all interior brightwork is either polished aluminum or chrome plated *Illustration No. D-4*.

In *Illustration No. D-5*, more of the cockpit and the low, sporty angle of the steering column are shown.

Harrah's purchased this car from the estate of Wendell Chapelle, New York, in June, 1964, and restoration was completed in December of 1966. The other Model X is owned by B.C. Hartline of Ohio and is a sedan limousine.

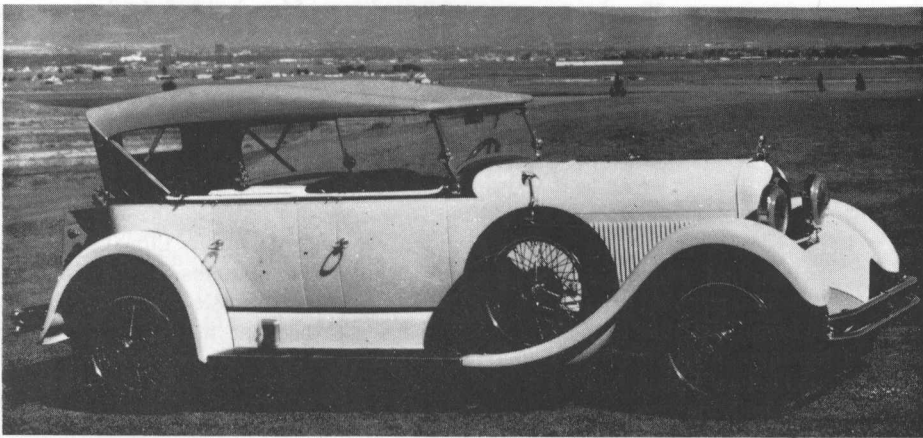


Illustration D-1

"America's Mightiest Motorcar" it was called—the legendary Model J Duesenberg, capable of 116 mph and seeming to be doing at least 60 even when parked in the driveway. It made its maiden appearance at the 1928 Salons and Shows following each other into the early months of 1929. Since it was available in chassis form only, the J-Duesy carried custom bodies by many of the leading firms; but Locke's Town Car Landaulet on chassis J-400 has been described as "one of the most elaborate bodies built." *Illustration No. D-6* shows the car as it appeared at the 1930 Chicago Auto Salon in the Hotel Drake, and *Illustrations No. D-7 and D-8* are views of the interior.

The November, 1930 issue of *Autobody* magazine described this magnificent car as follows:

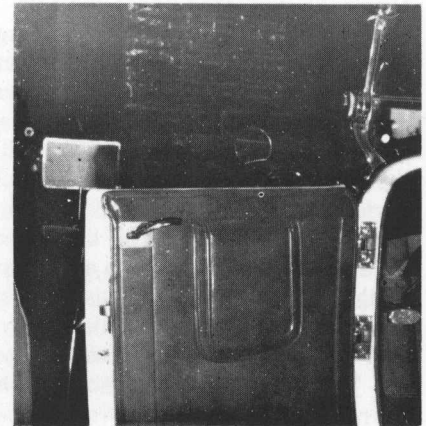
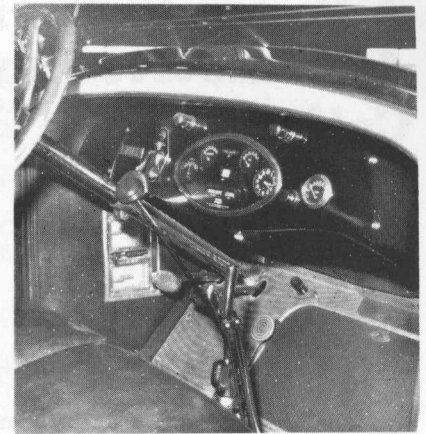
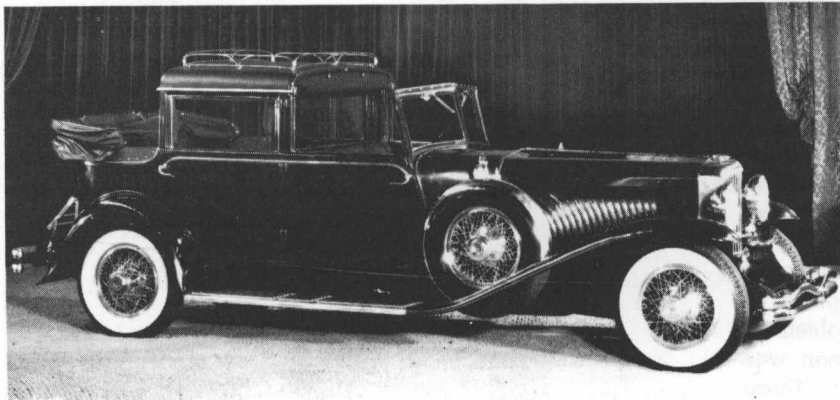
"One of these (Locke-bodied exhibits) will be a Landaulet on Duesenberg chassis with an unusual moulding treatment introducing a chrome plated moulding on formal cars, in accordance with the European vogue. This is not a through moulding but is used only on the doors and is so placed that it appears to join the curved door handles and create an unusual design.

"On the stationary part of the roof there is a removable chrome plated baggage rack. Other chromium plated items include the window channels, the cowl band, wire wheels, head lamps, etc.

"The body is finished in Valentine's Brewster Green, dark, a lighter shade being used for the upper works and for the other body mouldings. The front door line follows the inclination of the sloping V-type windshield but is swept backward as it approaches the base moulding.

"In addition to the customary canopy over the driving compartment, there is provided a solid detachable roof section permitting the body to be dissembled as an enclosed limousine. The head fittings in the landaulet section are not exposed.

Illustration D-6

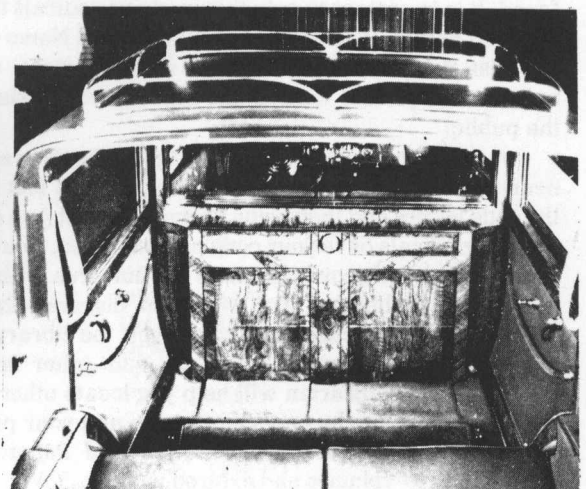


"The door friezes and division cabinet of natural Circassian walnut are by the Hayden Company, a new entrant into this field although well known for its fine furniture and other cabinet work."

This appears to be the only body Locke designed and fabricated for the J-Duesy, and unfortunately only the chassis survives today.

To Be Continued

Illustration D-7



A Guide to Early Automotive Periodical Collections

Through the kind permission of William E. Bomgardner, editor of the *Antique Automobile*, we are able to reprint the following material from the May 1958 issue of that magazine. Originally published under the title "How to find out about your Antique," these lists were compiled by R.S. Reed from the *Union List of Serials*, which is of course itself accessible in many libraries. Although this information was assembled more than twenty years ago, it can still serve as a valuable guide to the location of this research material and will save the investigator the trouble of combing the *Union List of Serials* himself. Obviously after such a length of time there may have been changes in the collections of some of these libraries, so there can be no assurance of complete accuracy or that all of the material listed is still there. On the other hand, in some cases collections may have been augmented over the years so that even more is available than is listed.

The ubiquitous copying machine has made its appearance since Mr. Reed wrote his set of instructions for requesting copies, and we have not reprinted this part of his introduction to the lists.

Throughout America and Canada there are libraries that contain partial or complete volumes of early automotive publications. Many of these collections are incomplete, but missing volumes and issues often can be found in another collection. This article attempts to list almost all known indexed collections of automotive literature that are available for researching information on your automobile.

How to Use the Followings Lists on Researching Through the Libraries

There are two lists. List A is the compilation of automobile periodicals and in what libraries they can be found. It is important to note that many periodicals frequently changed names. (See Evolution of Periodical Name Changes.)

List B is the list of libraries of local, state, museums, universities, private collections, and other libraries open to the public.

A quick way to determine what periodicals are available nearest you, look up your nearby libraries on List B. Taking the code letters and then going through the List A to determine what periodicals have your code number listed. You will often be surprised to discover libraries in your area with a wealth of automotive history. You will also discover that where automotive periodicals have been kept, the library often as not has a collection of catalogs and other automotive literature. Your librarian will help you locate other pieces of literature that may be important to you and your problem.

For example: *Automobile Dealer and Repairman* was published in 37 volumes and expired with No. 5, Vol. 37. These

37 volumes were published from March, 1906, to September, 1924. You must then interpolate what volume was published in 1909, 1910, and 1911. Unfortunately, there is no record of how many volumes to a given year in almost all publications. Assuming that these years would be in Volumes 6 to 12, determine what libraries indicated by their code would have Volumes 6 to 12.

NN 1-(29-31)-37

NN is the code for the New York Public Library (List B). Volumes 1 to 37 are available, but Volumes 29 to 31 are incomplete. Volumes listed in parenthesis are always incomplete. Unlisted numbers are either missing or in some cases never published.

How to Make an Inquiry

In corresponding with a library, supply as much information as possible; explain in detail what information you are seeking. Give complete information that you presently have on your car. Photographs are a great assistance to libraries. Pertinent facts on the type, model, engine number, wheel base, bore and stroke of engine and distinguishing features are a must for a thorough job by the library researcher. The more help you give the librarian, the quicker your response and the less correspondence will be involved.

Corresponding with libraries is second best. When possible, your personal visit is the most successful. Libraries are usually understaffed and swamped with many requests. A personal visit enables the librarian to personally assist you with your problem enabling you to obtain your answers far quicker than through correspondence and at the same time opens up broad avenues of other information.

The following information is compiled from the *Union List of Serials* published by the H.W. Wilson Company, New York.

Industrial Arts Index

For additional information, check your library's *Industrial Arts Index*. It started in 1913. In 1958, it became two publications: *Applied Science and Technical Index* and the *Business Index*.

Key to Symbols

+	currently received
()	incomplete
*	closed entry
no	number
ns	new series
v	volume

List A

AUTOMOBILE DEALER AND REPAIRER, a practical journal exclusively for these interests.

N.Y. Vol. 1-37 no 5, Mr 1906-S 1924

CoU	28-30
DLC	1-(32-36)
ICJ	23-24
IU	(22)-(27, 29)-(35)-37
IdU-S	28-37
KAS	(15, 19)-(21)
MB	30-37
MiD	(6-18)-37
MiU	29-36
MoU	16-31, 33-34
NN	1-(29-31)-37
OC	34-35
OCI	17-37
OO	(26-27, 29)
PP	19-(26-28)-37

AUTOMOBILE DIGEST. Cincinnati. 1, 1913+ 1913-My 1918 as *American Chauffeur*; Je 1918-Je 1925 *American Automobile Digest*

CL	24+
DLC	(7)-(17)
DP	(12) - 18
KAS	(6-10, 13-14)
MH	(7-8)
MiD	(2-12) - 25, 27
MiDU	(24-26)+
MiMiD	(24-26)+
MoS	(17) - (20)-(26)+
NN	1(2-5, 7)-(15)+
OC	21+
OCI	21+
OCI	(19-20) 23+
OT	19+
PP	(4-5, 7-17)
ULA	27+
VBP	(25)+

AUTOMOBILE MAGAZINE, New York

1-10, O 1899-Je 1907*

Merged into *Automobile*, later *Automotive Industries*

C	7-10
DLC	
IC	4-10
ICJ	1-6 (8-9)
IaAS	3-10
LNHT	(2-5)
MB	
MiD	1(2)-(5-6)-(9)
MoK	10
MoS	1, 4-10
MoU	5-10
N	1, 3
NB	6-7
NIC	9-10
NN	1(2-10)
NNE	1-3, 8
OC	3-9
OCI	6-10

OCIW	9
OO	(4-5)
OU	(2)-10
PPi	
TNV	8-10

AUTOMOBILE TOPICS, New York.
1, 0 20 1900+

CSt	(93-97)
CoD	73-115, 28+
CtY	(1-2, 68) - (70-78, 90-91, 112)
DA	(136)+
DLC	1-(108, 13, 16)+
DP	(15-96)
ICHi	(4, 15)
ICJ	(10-11, 20, 70-124) 26+
ICU	(124-33)
IEN-C	(92)+
IU	(36-43)+
InLP	24-43, 101+
MH-BA	(1-59) 67-94
MdBE	89-122
MiD	1(2-9)-(13-19)+
MiDbF	103+
MiU	(16-18, 22, 112)
N	22-(47)-(51)
NBU	24-51, 93+
NBUg	8-15
NIC	(3)-19
NN	(1-3)-(8)+
NNE	1-(33, 36)-(51-52)-(56, 108-34)+
NR	48-91
NjHoS	(1914)-(16)
OCI	10, 36-51(65)-(72-87)+
OO	(6-19, 61)
OT	(28-133)
PP	(21-23, 36-41) 86-98
PPi	1-11

AUTOMOBILE TRADE JOURNAL, Philadelphia.

VI-45 no 8, 1896-Ag 1940*

1903 - Ja 1912 as *Cycle & Automobile Trade Journal*; F 1912 - N 1928 *Automobile Trade Journal*; D 1928-N 1935 *Automobile Trade Journal and Motor Age*. Merged into *Motor Age* (1902+)

ATT	
CL	(29, 41)-45
CSt	(29, 34-35) - (41)
Ct	29-43
DA	(31)-(33)-(41)-45
DP	(10)-(23-26)-(29-30)-(36-37)-45
DeWI	(11, 29)
ICA	34-41
ICJ	8-45
ICU	29, 34-45
IEN-C	(20)-45
IU	33-45
IaDm	29-45
IaU	(21)-45
InLP	(13-40)
MB	(22, 29)
MCM	(8-12)-(14)-(16-20, 45)
MH-BA	(33)-45
MdBE	28-31, 34-40
Mi	34-(38)
MiD	(5-6)-(9)-(17-18)-45
MiGr	(35-45)
MiU	(6, 9-10)-(13-14) 34-40
MnM	28-30, 32
MnS	34-45
MnSj	(21)-(27)34-(36) 39-45

MnU	23-45
MoS	22(23-24)-(27-31)-45
MoU	(35)-(38-39)-(44)-45
N	(20)22-(24)-45
NBU	36+
NN	(4-7)-(9)-(12)-45
NNC	1833
NNE	(9)-(11)-(18)-(20-22)-(37-40, 43-44)
NR	(29-30)-(33)-45
NjT	34-45
OC	43-45
OCU	(23-24)-(26)-(32-33)-(38)39
OCI	(10-11, 16, 18)-45
OCIW	29
ODa	34-45
OO	(9-10) 11 (18-19, 29)
OT	34-35
OU	(15)-(20)-(24)-(29-31)-(38-39)-41
OkS	(15-19)
OrCA	(25)-(30-31, 38)
PP	(11-15) 19-45
PPi	5(11-13)-45
RP	11-(23)-(26)-45
ScCc	32-40
TxDaM	34-40
TxH	(28)-45
WaU	(10-13)

AUTOMOTIVE INDUSTRIES

New York. v 1-4 no 5; v 6 no 14, S 1899+ v 1-4 no 5, S 1899 - My 1902 as *Automobile*. Absorbed *Motor Review* Je 1902 and continued its volume numbering. v 6 no 14 - v 7 as *Automobile and Motor Review*; v 8 - 37 no 1 *Automobile*; v 37 no 2 - 17 *Automobile and Automotive Industries*.

ArU	52-70, 73+
AzU	65+
C	17(18)29+
CCC	54-59
CL	(68)+
CPT	80+
CSd	50+
CSf	34+
CSfA	(56-58)
CSt	(59-60)-(63, 67)-69
CU	30-34 (36-39)41(42-48)-(51-52, 54)+
CU-A	(47-55)+
CaH	49+
CaON	64+
CaTU	44+
CaU	52+
CoD	30+
CoFcS	32+
CoU	45+
Ct	(40-51)-81
CtU	(79)+
CtY	(6, 45, 50-58, 62)-(67-68)-70
DA	(38-40)-(43)+
DBS	38+
DES	39-49, 64-66, 68-69
DLC	1+
DP	1-(39)+
DPR	38+
DeU	(73-75)
DeWI	48-61, 70+
FJ	28+
FU	64+
GA	36+
GAT	48+
H	(56+)
I	47+

IC (17)+
 ICA 8+
 ICJ 8+
 ICU 47+
 ICW 37, 44+
 IEN 54+
 IEN-C 42-48, 50
 IU 23-24(32)-(36-37)+
 IaAS 26
 IaDm 33+
 IaDmD (60-64)65
 IaU 35+
 IdU 34-(41)-(45)+
 IdU-S 38+
 InFw 33+
 InLP 12+
 InU 38+
 KMK 42-45, 50+
 KPT 38-40
 KU 37+
 KWl 38+
 KyL (31-32)-(44)+
 KyU 1-2, 78+
 LNHT (20, 71-73)+
 MB 17+
 MCM 16-24, 26-30, 32-49, 51+
 MH-BA 16-17(29)+
 MMeT (38)57+
 MWelC (72-76)-(79)+
 MdBE 42+
 MdBJ 51-55, 57-76, 78+
 MeBa 16-26, 28-31, 34+
 MeU 43+
 Mi (57)-73, 76+
 MiD (3)6-(8-9)-(12-13)-(15-16)+
 MiDbF 3-4, 6, 38+
 MiDU (61-72)+
 MiEM 40-(45)+
 MiGr (36-58)-(60-83)+
 MiHM 72+
 MiMiD (43-45)+
 MiMu 33+
 MiU 23+
 MnM 30, 32+
 MnS (36)+
 MnSj 69+
 MnU 6+
 MoK 17+
 MoRM 16+
 MoS 17-(40)+
 MoSW 18-35, 37-76
 MoU 17, 27-67, 70+
 MsSM 60-65, 80+
 MtBC 34+
 N 25 (28)+
 NB 20, 22-75, 77+
 NBP 38+
 NBu (28)-(41)-53, 60+
 NBuG 10-17, 31+
 NIC (2-4) 6-9, 12-(24, 37)+
 NN 1-2(8, 10-11)+
 NNC 38-76, 78+
 NNCoc 78+
 NNCoo 24+
 NNE 8-13, 15+
 NNQ 1-2(14-17)19-(21-23)-(26)-
 (28-29)+
 (35-38, 42)-(44-45)+
 NR 48-60, 62+
 NSU (48)+
 NSchU 59-71, 77+
 NTR (30-31)-(33)+
 NbO 36-38(48)+
 NbU 38+
 NcD 74+

NcRS 51-60, 62+
 NcU 51+
 NhM 34
 NjHoS 34+
 NjP 36+
 NjT 38+
 NjT 38+
 Nu 36-(41)
 OC 10+
 OCU 1-4, 6+
 OCl 1-4, 6+
 OCiW 38-42, 44-60, 62-63
 ODa 21+
 OO (11-14)-(17)-(24-25, 28, 30, 32-35,
 37, 39-43, 48, 50)
 OOxM 65+
 OT 34(35)-(39-40)+
 OU (7-13)-(27)-(33)-(66)-(70-72)+
 OY 51+
 OkS 38+
 OkT 39+
 OkU (45-49)52-(54-65, 78)
 OrCA (38-39)+
 OrP 20+
 PBL 58+
 PLeB 77(78-79)
 PP 1+
 PPD 24-28, 48+
 PPF 75+
 PPI 1-6, 8+
 PPIc 42-(79)
 PPIM 55+
 PPIU 78+
 PR 61+
 PSC (70)+
 PSt 27-(42)-(53-57)+
 PU 36+
 PWb 64+
 RP 32+
 RPB 19-22
 ScCc 89+
 SdB (65)+
 SdU 54+
 TC (76)+
 TMC (52-57, 75)+
 TMG 18+
 TN 62+
 TNV 1-(4) 18, 60+
 TU (35-59)-(68-78)
 TxCM (38-40)-(54)+
 TxDaM 53+
 TxH (36)-(38-46)+
 TxHR (37)+
 TxLT 64+
 TxU 76+
 ULA 62+
 UU 36+
 VBP (28-32)-(35-37)-(42-44)46+
 VR (51)+
 VU (47-72)-(78-79)
 VtU 3, 27+
 WM 33+
 WU (4-6)+
 WaS 16-17, 20+
 WaU 60+
 WaWW 76-77
 WvU 76-79, 81

CYCLE AGE AND TRADE REVIEW. Chi-
 cago 1-28, 1888 - D 26 1901*
 1 - 19 as *Referee and Cycle Trade Review*.
 v 20 no 1 - also as v 1 no 1 - 3 Merged into
Motor Age

DLC 13, 20-28

DP 9-18, 20-25
 IC 20-26
 ICJ (20)-28
 PleB (9-13, 15)

HORSELESS AGE, New York. v 1-44 no 4,
 N 1895-My 15 1918*
 Merged with *Motor Age*. v 44 no 1 omitted
 in numbering.

CL 25-43
 CSf 31-44
 CSfM 17, 19-38, 40-43
 CSt (4-9)-(12-13)-(17-18)-(23)24
 CU 1-10, 24, 28-44
 CaViP 31-(33)-(41)
 CoD 23-44
 CoFcS 10, 12-44
 CoG 21-36
 Ct (35-37)
 CtY 1-3
 DLC 10-(44)
 DP
 DSI-M 1-(12-19)-24(28, 32)
 IC 39-44
 ICA 8-44
 ICJ
 IU 1(2-7)-44
 IaAS 19, 22-44
 IdU (38)-44
 InFw 37-44
 InLP (18-44)
 KyL (24)-(37, 39, 41)
 LNHT (1, 7)
 MB
 MCM 4-44
 MH-BA 1(2-3)17-(37)
 MMeT (33-44)
 MeU 20-42
 MiD 1(2-4)-(10-13)-44
 MiU 1, 4-44
 MnM 1-43
 MnS 19-22, 33-34, 36-37
 MnU 8-44
 MoS 37-44
 MoSw 29-44
 MoU 33-44
 N
 NBP 15-42
 NBu 1-2, 27-38
 NBuG 9-37, 39-44
 NIC (24)-44
 NN 1(2-3)-44
 NNC 6-8, 10-20, 25-(31)-44
 NNE 1(2)-44
 NR 5-36
 NhD 5-44
 NjHoS
 NjP 35-36, 39-44
 NvP 35-36, 39-44
 NvU (33-34)
 OC 9-44
 OCU 31-(34-35)-44
 OCl
 OCiW 6-7, 9-44
 ODa 31-44
 OO (7-13)-(25-42)
 OT 13-42
 OU 1-(21-22)-44
 OrP 19-43
 PP 4-44
 PPD 23-31, 33-34
 PPF
 PPL 1-42
 PPI

PR (5-28)
 RP 29-44
 TNV
 TxH (35-44)
 UU 40-44
 VR 2-4
 WHi 1-10, 12-13
 WM 17-44
 WU 1-24, 26-(35)-44
 WaS 20-44

MOTOR, The Automobile Business Magazine
 New York. 1, 0 1903+
 Subtitle varies. 42 no 1 omitted in numbering.
 Contains 3 preliminary nos called v 1 no 1-3
 JI - S 1903. Numbering confused.

AAP 69+
 AzU 69+
 C 13+
 CL 55+
 CSfM 8+
 CaT 22-24, 27-30, 32-34, 36-41
 CoD 41-58
 CoDB H
 CoG 53+
 DLC 1-29, 31+
 DP 12(13-15)-(22)-(26)-(28)+
 GS 53
 I (38)-(44)
 ICU (29-30)-38
 IU (12)-(17, 20-21)-(23, 47-49)
 IaDm (15-21, 27)-(32-33)
 InFw (10-64)+
 InI 13-28, 33+
 InLP 55, 63+
 LNHT (63-64)
 MB (9)-14, 19-20, 23, 25-(36-58)-(65-69)+
 MCM (1907-15)35+
 MdBE 15-17, 26-36, 39+
 MiD (1-2)-21(23)+
 MiDbF 52+
 MiEM 43+
 MiU (1-22)49+
 MoK 20+
 MoS 44+
 NBuG (1-2)-(9)38(39)
 NN (1-2)+
 NNC 51-67, 69+
 NNE (4-19)+
 NR (17, 25-26)+
 OCI 6+
 OO (3, 26)27, 29(30-31)
 OT (55)-(57)-(59-70)
 OrCA (23, 32-33)-(35-36)57+
 OrU 16-(24)28-29
 PP 1-14, 17+
 PSt 44(45-50)-(58-59)-(67)+
 TNG 51+
 V (37)+
 WaS 10+

MOTOR AGE, Chicago. v 1 - 5 no 3, S 12
 1899 - S 26 1901*
 Superseded by *Motor Age* (Chicago, Philadelphia)

ICJ
 MiD
 MnSJ 3
 NN (2)
 OU 2-5
 PPI

MOTOR AGE, Chicago, Philadelphia
 1, Ja 1902+ v 1 no 1-19 as ns in continuation of *Motor Age* (Chicago 1899-1901).
 D 1928 - N 1935 united with *Automobile Trade Journal* to form *Automobile Trade Journal and Motor Age*. Resumed separate publication D 1935 as v 55 no 1 (incorrectly numbered v 46 no 1 in continuation of the numbering of *Automobile Trade Journal*)

ATT 1+
 CL 39-40, 55+
 CSf 34-40
 CU 34-37
 CaB 34-40
 CoD 31-41
 CoU 37-38, 40-42
 CtU 35-53
 CtY 35(41)
 DA (30-33)35)36-39)-(42)+
 DES 34-40
 DLC 1+
 DP (32)-(43)-53
 FU 27-(41)
 I 23-40
 IC 33-54
 ICA 25+
 ICJ 1+
 IU 31+
 IaDm (20, 24-25)-28
 IaU 30-(41)55-56
 IdU (33)-(40)-(43-50)
 IdU-S (37)-(41-42)
 InFw 29-41
 InI 23-54
 InLP (25-28)
 KMK 34-37
 KPT (33-35)
 KyL (18)-(20)-(42)
 KyU (34-43)
 MB (33)-41
 MCM 11-20, 34-(54, 59)+
 MH-BA 14-(40)
 MdBE 39-41, 46+
 MeU 34-44
 Mi 21-(42-44)-54
 MiD (3-17)+
 MiGr (9-40)-(43-54)
 MiU 25-(27)-42, 55+
 MnM 25-41
 MnS 28-(31)33-40(44)47, 49-54
 MnSJ 1-27-41, 45-(51)-54(59)+
 MnU (11-52)55+
 MoK 35-42
 MoS 8-(43)-(54)+
 MoSW 34-48, 40
 MoU 23-42
 MsSM 26-31, 33-34, 37-39
 MtBC 31-34
 N (30-31)-54, 59)+
 NBP (33)-(49-50)+
 NBu 36-40
 NBuG 34-40
 NIC (1)-(25-27)-29, 31-(42)
 NN (3-4)-(33)+
 NNC (33)-(33-37)-(41)
 NNE (8-15)-(18-19)-(29, 33)-41, 58)
 NR (29, 31, 33, 49-48)55+
 NTR 24, 35-(39)-(41)
 NjP 31-41
 NjT 34-41, 44-54
 NmU (32-42)
 OC 32-41, 48-54
 OCI 22-(31)-(33)+

OCIW 34-(41)
 ODA 34-54
 OO (4-40)
 OT (55-56)+
 OU (18)-(27-28)-(35)-(40)-44, 55-(57)
 OY 37-38
 OrCA (33-34, 41)45-52, 55-57
 OrP (22-23)-(26)-40(41)
 OrU (23-27)-(29-32)-36
 PP (5-11)-44, 46-(55-56)
 PPD 15-20
 PPF 11-12, 14-17, 19-20, 25-30, 34-42
 PPL 34-41
 PPI 1-9, 32-54
 ScCu (19-28)-(35-42)55-56(58)
 TMG 55+
 TNV (34-38)
 TxDaM 53+
 TxH (17-54)
 UU 34(35-39)-(42)-(48, 50)-52 (54)56+
 WM (22-23)29-41
 WU 1-6, 15-19
 WaS 4-13, 15-(27)-(39)-41, 45-54
 WaU 25-40
 Wy (27-37)

MOTOR REVIEW. Cleveland, N. Y. nsv 1-6
 no 13, S 1899 - My 1902*
 1899 - JI 1901 as *Motor Vehicle Review*.
 United with *Automobile* to form *Automobile and Motor Review*, later *Automotive Industries*.

DLC
 LNHT (5)
 MWA (1)
 MiD 1-(4-5)
 NIC (5-6)
 OU (1)-(3)-(5-6)
 PP (2-4)
 PPI (1)-6
 WU (4-5)6

List B

ALABAMA

AAP Alabama Polytechnic Inst., Auburn
 ATT Tuskegee Normal & Industrial Inst., Tuskegee, Alabama

ARKANSAS

ArU Arkansas Univ., Fayetteville, Arkansas

ARIZONA

AzU Univ. of Arizona, Tucson, Arizona

CALIFORNIA

C California State Library, Sacramento, California
 CCC Claremont Colleges at Pomona & Scripps, California
 CL Los Angeles Public Library, Los Angeles, California
 CPT Calif. Institute of Technology, Pasadena, California
 CSd San Diego Public Library, San Diego, California
 CSf San Francisco Public Library, San Francisco, California
 CSfA California Academy of Sciences, San Francisco, California
 CSfM Mechanics Institute, San Francisco, California

OHIO
 OC Cincinnati Public Library
 OCL Lloyd Library & Museum, Cincinnati
 OCU University of Cincinnati
 OCI Public Library, Cleveland
 OCIW Western Reserve Univ., Cleveland
 ODa Dayton Public Library
 OO Oberlin College, Oberlin
 OOxM Miami Univ., Oxford
 OT Toledo Public Library
 OU Ohio State University, Columbus
 OY Youngstown Public Library

OKLAHOMA
 OkS Oklahoma Agricultural and Mechanical College, Stillwater
 OkT Tulsa Public Library
 OkU Univ. of Oklahoma, Norman

OREGON
 OrCA Oregon State College, Corvallis
 OrP Library Association of Portland
 OrU Univ. of Oregon, Eugene

PENNSYLVANIA
 PBL Lehigh Univ., Bethlehem
 PLeB Bucknell University, Lewisburg
 PP Free Library of Philadelphia
 PPD Drexel Institute of Technology, Philadelphia
 PPF Franklin Institute, Philadelphia
 PPL Library Company of Philadelphia
 PPI Carnegie Library of Pittsburgh
 PPIc Carnegie Institute of Technology, Pittsburgh
 PPIM Mellon Institute, Pittsburgh
 PPIU Univ. of Pittsburgh
 PR Reading Public Library
 PSC Swarthmore College, Swarthmore
 PSt Penna. State College, State College
 PU Univ. of Penna., Philadelphia
 PWb Osterhout Free Library, Wilkes-Barre

RHODE ISLAND
 RP Public Library, Providence
 RPB Brown Univ., Providence

SOUTH CAROLINA
 ScCc Clemson College, Clemson College

SOUTH DAKOTA
 SdB South Dakota State College, Brookings
 SdU Univ. of South Dakota, Vermillion

TENNESSEE
 TC Chattanooga Public Library
 TMC Cossitt Library, Memphis
 TMG Goodwyn Institute, Memphis
 TN Nashville Public Library
 TNV Vanderbilt Univ., Nashville
 TU Univ. of Tennessee, Knoxville

TEXAS
 TxCM Agricultural and Mechanical College of Texas, College Station
 TxDaM Southern Methodist Univ., Dallas
 TxH Public Library, Houston
 TxHR Rice Institute Library, Houston
 TxLT Texas Technology College, Lubbock
 TxU Univ. of Texas, Austin

UTAH
 ULA Utah State Agricultural College, Logan
 UU Univ. of Utah, Salt Lake City

VIRGINIA
 V Virginia State Library, Richmond
 VBP Virginia Polytechnic Institute, Blacksburg
 VR Richmond Public Library
 VU Univ. of Virginia, Charlottesville

VERMONT
 VtU Univ. of Vermont, Burlington

WISCONSIN
 WHi State Historical Society, Madison
 WM Public Library of Milwaukee
 WU Univ. of Wisconsin, Madison

WASHINGTON
 WaS Public Library, Seattle
 WaU Univ. of Washington, Seattle
 WaWW Whitman College, Walla Walla

WEST VIRGINIA
 WvU West Virginia Univ., Morgantown

WYOMING
 Wy Wyoming State Library, Cheyenne

Automotive publications of yesterday suffered the same financial problems of those published today. Name changes, mergers, were as common as they are today. This list was assembled by Miss Maude Payne, Head of the Automotive History Collection, Detroit Public Library, Detroit, Mich.

- (1)
 a American Chauffeur. 1913 - April, 1918. Became
 b American Chauffeur and Automobile Digest. May, 1918. Became,
 c American Automobile Digest. June 1918 - July 1925. Continued as,
 d Automobile Digest. August 1925 - July 1942. Continued as,
 e Automotive Digest. August 1942 - August 1952. Became,
 f Automotive Service Digest. September 1952 - date.

(2)
 Automobile Magazine. October 1899 - June 1907. Merged into Automobile, July 1907.

- (3)
 a Cycle and Automobile Trade Journal. 1896 - December 1911. Became,
 b Automobile Trade Journal. January 1912 - November 1928. Combined with Motor Age and became,
 c Automobile Trade Journal and Motor Age. December 1920 - November 1930. Resumed title,
 d Automobile Trade Journal. December 1930 - July 1940. In August 1940 merged with Motor Age.

(4)
 Horseless Age. November 1895 - May 15, 1918. Merged with Motor World, Automotive Industries and Motor Age in 1918.

(4a)
 Motor Age. September 12, 1899 - November 15, 1928. (There was no interruption in publication in this period, merely a renumbering of the volume numbers. v.1-5 covered 1899-1901; in January 1902 the volume numbering started from 1 again.) Information on merger with Automobile Trade Journal is correct.

- (5)
 a Motor Vehicle Review. September 1899 - June 27, 1901. Continued as,
 b Motor Review. July 4, 1901 - May 29, 1902. Absorbed by Automobile June 1902.

- (6)
 a Automobile. September 1899 - May 1902. Absorbed Motor Review and continued as,
 b Automobile and Motor Review. June - December 1902. Resumed title,
 c Automobile. January 1903 - July 5, 1917. Continued as,
 d Automobile and Automotive Industries. July 12, 1917 - October 25, 1917. Changed to,
 e Automotive Industries. November 1917 - 1941. Became,
 f Automotive and Aviation Industries. February 1942 - June 1947. Resumed title,
 g Automotive Industries. July 1947 - date.

(7)
 Cycle Age & Trade Review. v.1-28 1888 - December 26, 1901. Ceased publication.
 1-19 as Referee & Cycle Trade Review.
 v.20 nos.1-3 also as v.1 no.1-3. Merged into Motor Age. Motor. New York. October 1903 to present.

- a Automobile Topics. October 20, 1900 - July 1948. Continued as,
 b Wards Automobile Topics. November 1948 - March 1951. Resumed title,
 c Automobile Topics. April 1951 - date.

(8)
 Autocar. London. November 1895 to present.

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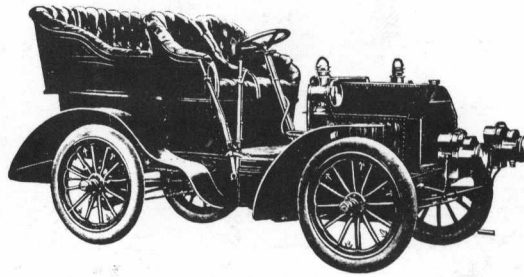
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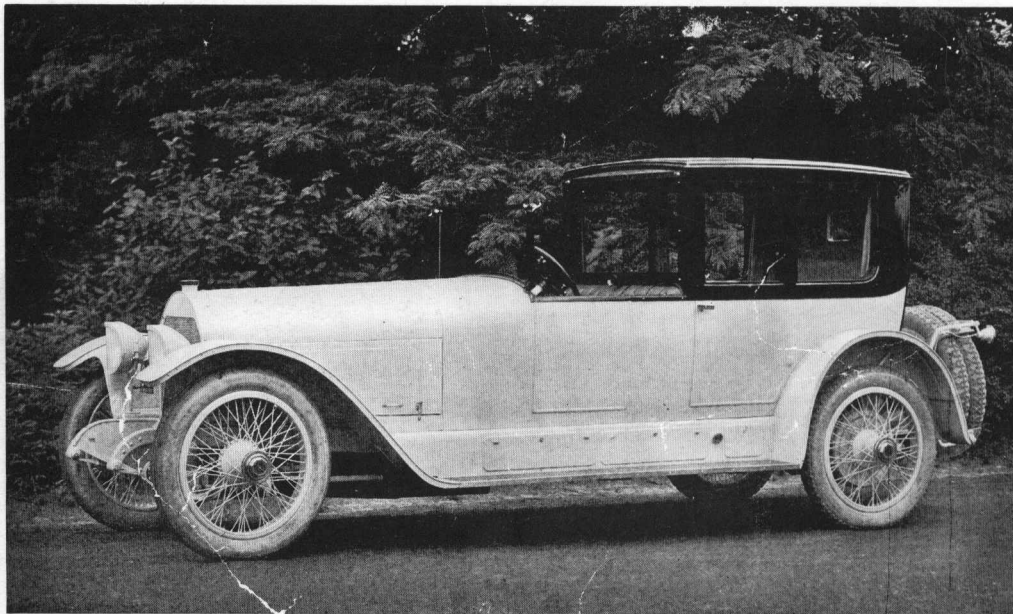
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