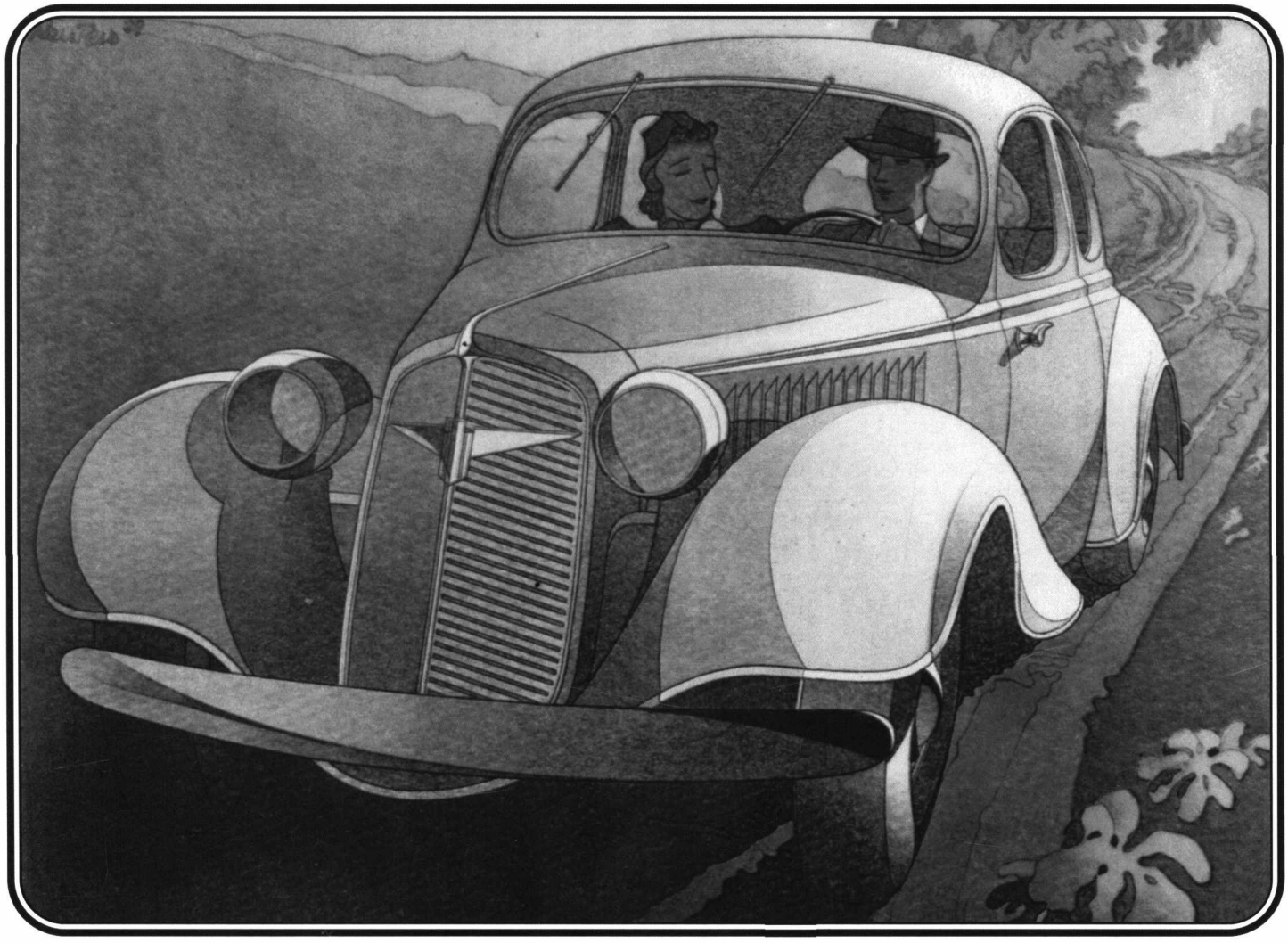
AUTOMOTIVE HISTORY REVIEW

Spring 2009 Issue Number 51



A PUBLICATION OF THE SOCIETY OF AUTOMOTIVE HISTORIANS, INC.
An Affiliate of the American Historical Association

Editor's Notes, Corrections, and Letters to the Editor

As Adam remarked to Eve upon leaving the Garden, "We are certainly living in a world of change." The events in the American automobile industry since the Fall 2008 issue of the Review are history unforetold. Fresh from its 100th anniversary observance, General Motors faces bankruptcy with the intervention of the U.S. government; as of this writing, it has already killed Pontiac. Chrysler has entered Chapter 11 and may emerge to marry Fiat, who, rumor has it, is also courting GM Europe. As I am fond of remarking, "the good thing about automotive history is that there is more of it every day."

* * *

A couple of readers have written that they would prefer less emphasis on European automotive history in the *Review*. As a general rule, the editor chooses articles for each issue from the stockpile on hand, most of which comes unbidden and "over the transom," as they say. A large number of these unsought but welcome articles come from non-US members. So if there's a perception of an imbalance, it's because comparatively few of our U.S. members appear interested in writing for our publication. I can't believe that the 45 years or so of *Automobile Quarterly* or marque publications have exhausted all exciting aspects of U.S. automotive history.

With respect to Issue No. 51, I have arranged the contents more or less in chronological order. *Charles K. Hyde* of Royal Oak, Michigan, sent us "Gearing up to Produce the First Dodge Brothers Automobile: A View From the Inside." Charlie's article is based upon corporate materials he researched in the National Automotive History Collection (NAHC) in Detroit. He received his Ph.D. in history at the University of Wisconsin-Madison in 1971, and has taught history at Wayne State University since 1974. His fields of specialization are the history of technology, industrial archeology, and automotive history. He is the author of *Riding the Roller Coaster: A History of the Chrysler Corporation* (2003), and *The Dodge Brothers: The Men, the Motorcars, and the Legacy* (2005). His next book, to be published in the fall of 2009 will be *Storied Independent Automakers: Nash, Hudson, and American Motors*. Presently a trustee of the NAHC, he is in line to be the next president of the NAHC Trustees. The article was peer reviewed by *Tom Labadie*. Tom has served on the Historical Research Committee of the Dodge Brothers Club since 1995, and became a charter member of the Chrysler Customer Advisory Board last year. He has owned Dodge cars and trucks for the past 35 years, a true enthusiast I'd say.

Ten years ago, or more, I asked *William J. Greer* if he would do an article for the *Review* on proprietary engines. Patience had its reward in "George A. Weidely and his Engines" which you'll find in this issue, relating Weidely's career as co-founder of Premier and as an engine manufacturer. Bill relates that he is presently (2/09) editing his 87th consecutive issue of *Stutz News*. He was a contributor to *The Splendid Stutz* (1996), edited by the late *Ray Katzell*. The peer reviewer of this article asked not to be identified but I can assure you that he is well grounded in a knowledge of engine makers and midwestern manufacturers.

Peter Engelhard of Essen, Germany, sent us "Why Adler Left the Auto Industry After World War II: From the Perspective of Subjective Economics." Economics, as I recall, was my worst subject in college, and I generally run from any mention of the word, but I found Peter's explanation very clear, and I hope you will too. Adler was the fourth largest producer of automobiles in Germany before World War II, and might have been expected to resume afterwards. Peter examines the reasoning behind manager Ernst Hagemeier's decision not to resume vehicle production. Peter previously contributed "Fiat as a German Manufacturer," No. 40 (Summer 2003), and "A Summary of the Yugoslav Auto Industry's Historic Evolution and its Economic Drivers Until the Crisis of the 1990s," No. 48 (Fall 2007). After a stint as Senior Manager Economic and Energy Market Research at Robert Bosch he is now a Senior Economist at RWE, a leading German utility. He received his Ph.D. in Economics from Philipps University in Marburg. This article represents personal views and research results. The article was peer reviewed by *Robert Ebert*, Buckhorn Professor of Economics at Baldwin-Wallace College, Berea, Ohio. Bob is no stranger to these pages, generally appearing in issues devoted to the automotive history conferences. He is also a member of the Board of SAH.

This year's winner of the Richard P. Scharchburg Student Paper Award was *Peter Cajka*, whose prize-winning topic was "Consumers, Cadillacs and Civil Rights: The Social and Cultural Impact of the Automobile in *Ebony* 1945-1965." Peter's paper traces the role of the automobile in black mobility as shown in the pages of the premier black-oriented periodical in the first 20 years after World War II. A revised version of this article will appear in *The Historian*, probably in the autumn of this year. Born in Akron, Ohio, Peter graduated from the University of Dayton in 2008 where he studied automotive history under *Dr. John Heitmann*. He is now a graduate student at Marquette University in Milwaukee, Wisconsin, and intends to pursue a Ph.D. in American social history. Religion is one of his interests and he is currently working on a seminar paper about car culture in the lives of the Catholic clergy of Milwaukee and the effects of automobility on urban parishes.

From "Down Under" comes *Paul Murrell*'s contribution, "Australia's Own Car Comes of Age: The 1968 Holden Monaro." Until the introduction of the Monaro, Holden's vehicles lacked a certain excitement. I'm not sure that the Monaro provided it, but at least Holden tried, and Paul does a good job of putting the car in the company context. Paul is a professional motoring and feature writer for such publications as *Wheel Spin*, *Australian Classic Car*, *SA Life* and *Highlife*. Paul's article was peer reviewed by *Louis Fourie*, a Canadian member. During the late '60s and early '70s, Louis was part of General Motors Overseas Operations, posted in the Republic of South Africa. He comments that "In the early '60s, GMSA assembled what I believe was the widest range of GM vehicles, imported from all their major

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Taylor Vinson, Editor

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Rear Cover: 1907 Mitchell (from the brochure collection of Steve Hayes)
Acknowledgments: Except as otherwise noted, each author provided the illustrations for his article.

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Gearing Up to Produce the First Dodge Brothers Automobile: A View From the Inside

by Charles K. Hyde

Introduction

In July 1913, John and Horace Dodge (Fig. 1) gave the Ford Motor Company a required one-year notice that they would stop making parts and components for Ford, setting in motion their plans to make their own automobile. The first Dodge Brothers car went into production in mid-November 1914, a mere 16 months later; this was a 4-cylinder automobile weighing 2,200 lbs. and selling for $785 (Fig. 2). In the interim, the Dodges designed the car, substantially enlarged their factory in Hamtramck, Michigan, to produce it, and installed the necessary machinery and equipment to make most of the car's components in-house.[1]

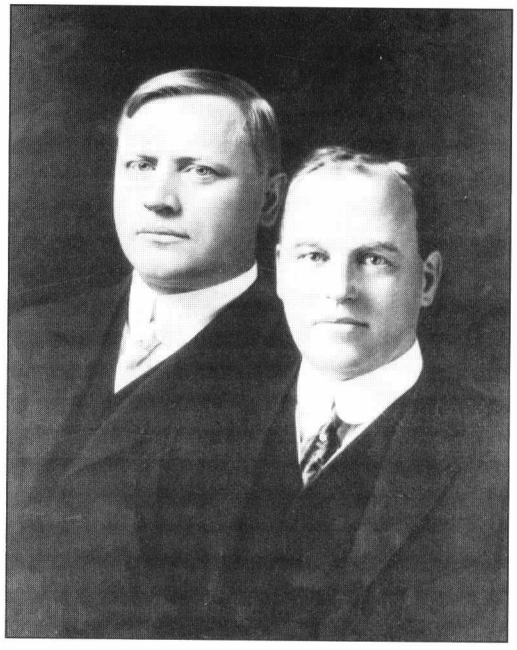

Fig. 1 – John (left) and Horace (right) Dodge.

The National Automotive History Collection (N.A.H.C.) of the Detroit Public Library has an invaluable set of documents which provide a unique insight into the process and methods used by the Dodge Brothers company to plan the manufacture of a brand-new automobile. In June 1912, the Dodge brothers hired Frederick J. Haynes (Fig. 3) to manage their factory, but he was quickly put in charge of planning the manufacturing of their new automobile. A set of three notebooks which document the creation of the Dodge Brothers automobile over the period from March 1914 through June 1916 have survived and provide a detailed inside view of the decision-making processes. Frederick J. Haynes was almost certainly the compiler of the notebooks. They contain dozens of calling cards for suppliers who came to the factory to see Haynes. The notebooks also include detailed employment histories and references for a score of candidates who had applied for mid-level management positions at Dodge Brothers, including chief engineer, machine shop superintendent, and stamping plant superintendent. Haynes would have had the responsibility of filling these positions. The author of the volumes also refers at several points to meetings and discussions he had with John and Horace Dodge, strongly suggesting that he was Frederick J. Haynes, the factory manager.[2]

The notebooks document scores of significant decisions Dodge Brothers made over a period of 27 months, including the choice of manufacturers to supply the company with raw materials and supplies, machinery and tools to use in production, and components and accessories the automaker would not produce in-house. Detailed coverage of Dodge Brothers' interesting and sometimes stormy relationship with the Edward G. Budd Manufacturing Company, its body supplier, offers insight into automaker-supplier relations in the early days of the industry. Finally, the notebooks contain Dodge's detailed analysis of the machinery requirements and costs of starting the production of stampings for its bodies.

The Purchase of Raw Materials From Outside Suppliers

Most of the entries relating to raw materials consisted of lists of suppliers who could provide particular items, such as steel for rear axle housings, axle tubing, seamless tubing, brazed tubing, steel sheet plate, and industrial diamonds. The most elaborate evaluation of outside suppliers involved the production of sheet steel that Dodge Brothers would use for the fabrication of body panels. Dodge representatives visited seven steel manufacturers and a total of ten steel mills in Indiana, Ohio, and Pennsylvania between April 30 and May 8, 1915. These included plants of Inland Steel (Indiana Harbor, Ind.), the American Rolling Mills (Middleton, Ohio), American Steel & Tin Plate (McKeesport, Pa.), among others. The volumes include a ten-page detailed report on the processes and machinery in use at the American Rolling Mills and a detailed summary and comparison of all ten mills. The report spelled out the machinery and the processes used in making and rolling steel, but also ranked the plants by size, age, cleanliness, and the consistency of the sheet steel they produced.[3]

Machinery and Other Equipment

The Dodge brothers invested approximately $500,000 to retool their factory to manufacture their new car because they needed new machinery of all descriptions to make parts and components in-house. Haynes developed detailed comparisons of machinery under consideration, spelling out the dimensions, production capabilities, and purchase price of each model produced by various machinery manufacturers. In March 1914, he considered presses that would be required to make rear axle housings, comparing presses sold by the Toledo Machine & Tool Company, the E. W. Bliss Company, and the Farracute Machinery Company. Haynes expanded that comparison to include presses needed to make rear hubs and rear brake drums.

Dodge Brothers decided that Farracute could not supply the required presses and chose Bliss over Toledo Machine and Tool based on cost ($9,160, as compared with $19,067). A month later, Haynes produced a detailed analysis of the daily production capability of six different Bliss presses that Dodge intended to purchase.[4]

Machinery was expensive and Dodge Brothers was not bashful about negotiating for more favorable prices. In buying a machine for milling engine cylinders from the Ingersoll Milling Machine Company, Dodge learned how Ingersoll calculated its prices and coaxed a ten percent reduction in price from the company (from $10,920 to $9,820). Forming a part as simple as a front hub cap required four operations and four sets of dies for the presses. At the end of March 1914, Horace Dodge received a detailed quotation from the Toledo Machine & Tool Company for dies needed to make hexagonal hubcaps with an embossed letter "D" ($825). At about the same time, John Dodge suggested modifications to the production sequence proposed by the Foote-Burt Company for drilling cylinder blocks and changes to the machinery Foote-Burt would provide to perform the work. In mid-April, Foote-Burt revised its proposals, presumably in reaction to John Dodge's suggestions. The modified drilling machine would cost Dodge Brothers more ($45,194 compared with $41,519) than the original proposal. By May 1, 1914, Dodge Brothers placed orders for ten pieces of machinery from Foote-Burt.[5]

Fig. 2 – John (left) and Horace (right) Dodge in their first automobile, November 1914, in front of John's mansion.

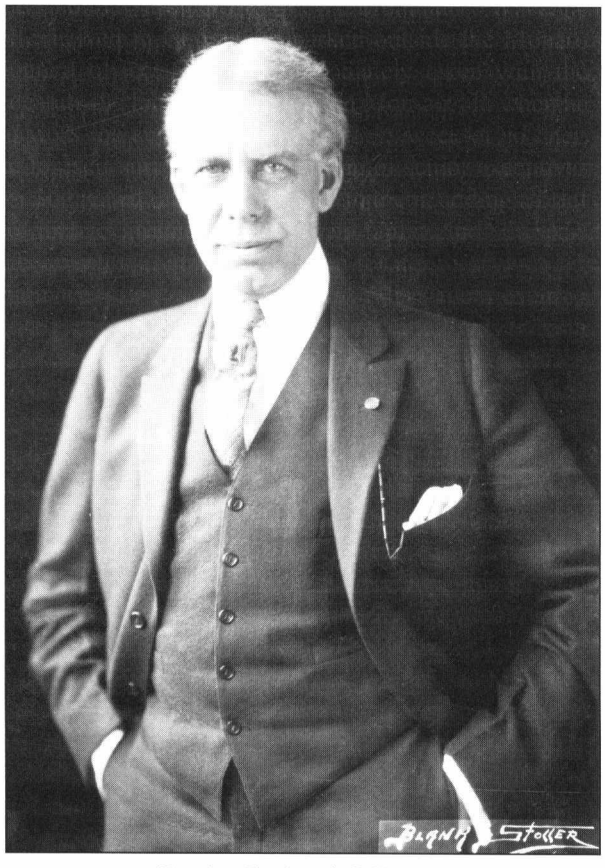

Fig. 3 – Frederick J. Haynes.

The machinery mentioned above is only part of the variety of machines and equipment Dodge Brothers needed to start automobile production. In early April 1914, the company received a proposal from Beaman & Smith of Providence, Rhode Island for an 8-spindle boring machine equipped with three motors, for $8,375. Later in 1914, Dodge received proposals for Tabor molding machines for aluminum and for a welding machine from the Toledo Electric Welding Machine Company. In June and July 1914, it was shopping for ovens used to bake foundry cores. Dodge Brothers received two bids to erect six ovens with cars used to transfer the cores in and out of the ovens, one for Coleman ovens ($5,700) and one for Whiting ovens ($4,482).[6]

Parts and Accessories

Despite Dodge Brothers' efforts to fabricate most of its own parts and components, the automaker nevertheless bought many parts and accessories from outside vendors. The notebooks include at least one proposal from an outside supplier to provide Dodge Brothers with axles, ball bearings, batteries, carburetors, frames, gaskets, ignition components, lamps, magnetos, paint, piston rings, rims, springs, starters, wheels, and "winter tops." I will not attempt to summarize the proposals for all of these parts and accessories, but will discuss the decisions regarding a few key parts, including wheels and rims, carburetors, electric lights, radiators, and batteries. Dodge Brothers typically sought and received multiple proposals before deciding on a supplier. In a few cases such as the Rex Buggy Company, which supplied "winter tops," there was a single bidder.

Dodge Brothers entertained proposals from one group of suppliers for wheels and from a slightly different set of suppliers for rims. From April

through June 1914, the Auto Wheel Company (Lansing, Mich.), Hayes Wheel Company (Jackson, Mich.), Imperial Wheel (Flint, Mich.), the Kelsey Wheel Company (Detroit), and the W. K. Prudden & Company (Lansing, Mich.) submitted proposals to supply Dodge with wheels. Dodge subjected these wheels to breaking tests, with the Prudden wheels the weakest, breaking at 3,100 pounds of force, while the Auto Wheel Company's wheels were the strongest, withstanding 6,485 pounds. There are detailed cost figures only for Hayes and Prudden and these show miniscule differences. Dodge chose Hayes. Among the five companies submitting wheel proposals, only Prudden and Kelsey Wheel did the same for rims. In addition, there are proposals from the Detroit Demountable Rim Company, the Mott Wheel Works (Utica, N.Y.), Standard Welding Company (Cleveland, Ohio), supplier of Stanweld rims, and the Weston-Mott Company (Flint, Mich.). The prices quoted for a set of rims ranged between $5.00 and $6.45. The first Dodge Brothers cars came with Stanweld rims, with a quoted price of $5.46 per set.[7]

In mid-August 1914 Dodge Brothers received proposals for carburetors from the Marvel Carburetor Company, Johnson Carburetor (Detroit), and the Detroit Lubricator Company, which made the Stewart carburetor under license. Detroit Lubricator supplied a blueprint for the Stewart carburetor and a set of instructions for Regal Motor car owners for operating it. Noting that Detroit Lubricator had already supplied 12,400 Stewart carburetors for Lozier, Regal, and Paige automobiles, Dodge decided to use Stewart carburetors in its first cars (Fig. 4). The automaker also received proposals to supply electric headlamps from five suppliers: the Corcoran Lamps Company (Cincinnati, Ohio); the Gray and Davis Lamp Company (Amesbury, Mass.); the C. M. Hall Lamp Company; the Indiana Lamp Company; and Edmund & Jones Lamps (Detroit), with prices ranging from $3.70 to $4.68 per pair. Edmund & Jones had the lowest price and won the contract.[8]

Dodge Brothers considered a source for radiators starting in May 1914 and was in contact with the McCord Manufacturing Company in Detroit, but the notebooks offer no evidence of Dodge's final choice for a radiator for its first cars. However, the Dodge Brothers Master Parts Price List (9th edition) shows the use of McCord radiators (Fig. 5). Dodge opened negotiations in early January 1915 with K. M. Boblett of Toledo, Ohio, who held radiator patents that Dodge apparently wanted. Studebaker and Overland were already making his radiator under license and Boblett proposed a similar arrangement for Dodge. At the end of January, Boblett agreed to issue Dodge a license, under which Dodge would pay $500 per month and 20 cents per radiator that it built. He would supervise the design of the radiator itself and the building of the required machinery, and manage production at the Dodge factory until "a regular and satisfactory routine is established." Boblett would also serve as a consultant regarding future improvements in radiator design or production methods. The National Can Company of Detroit also quoted a price of $12.85 per radiator in mid-June 1914. In early August 1915, Dodge Brothers had not committed to Boblett and was considering a detailed proposal from McCord to supply radiators. The costs appeared to be very similar $8.72 per radiator from Boblett and $8.93 from McCord. Dodge stayed with McCord.[9]

Dodge Brothers also had a wide choice of potential suppliers of storage batteries. In early July 1914, Haynes listed six manufacturers of batteries the Edison Storage Battery Company (Orange, N.J.); the Electric Storage Battery Company (Philadelphia, Pa.), which made the Exide battery; the Philadelphia Storage Battery Company; the Willard Storage Battery Company (Cleveland, Ohio); and the Gould Storage Battery Company (no location indicated). Haynes considered proposals from only four potential suppliers in July and August 1914, including the makers of the Willard and Exide batteries, along with two additional manufacturers the Detroit Battery Company and the Titan Storage Battery Company (Newark, N.J.). Dodge narrowed its choice to Exide and Willard, but chose Willard based on quality differences between the two. A list of "Objections to Exide Batteries" produced by three Dodge officials (Welshier, Lay, and Haynes) and dated September 23, 1914, claimed that Exide batteries were inferior to Willard in terms of quality and their ability to hold a charge (Fig. 6). They cited Exide's lack of any Detroit-area service facility as another disadvantage. A few days later, as part of an analysis of the Willard battery's discharge rate, Haynes made the observation, "absolutely first class." Dodge chose Willard batteries for its first car.[10]

Dodge Brothers revisited the issue of battery source in October 1915 with the intent of signing a long-term contract. Willard and Exide were the only batteries considered. Dodge proposed a contract by which Willard would supply batteries for $9.18 each, but would agree to reduce that price if the costs of raw materials or manufacturing went down in future years. Willard agreed to earn a maximum ten percent profit on sales the first year of the contract and no more than eight percent in the second year. A direct cost comparison a week later showed Willard supplying batteries "ready to install on car" for $10.03, while Exide would cost $9.73. A year after Dodge had complained about the poor quality of Exide batteries, a direct comparison with Willard dated October 17, 1915 showed roughly equal quality. Willard had extensive service facilities around the United States, reflecting the fact that its batteries were used on roughly two-thirds of all American cars. Dodge was extremely happy with Willard's quality the company received complaints from only 42 customers out of 35,000 who bought Dodge Brothers cars equipped with Willard batteries. At the conclusion of a comparison of the two batteries, Dodge pondered whether saving 30 cents a car was worth the risk of dropping Willard, "which has given us complete satisfaction for one year." The decision was made to keep Willard as its supplier.[11]

Dodge Brothers first offered a "winter car" version of its touring car and roadster models in September 1915. For an additional $165, the buyer would get a detachable solid "winter top," with removable glass windows. The Rex Buggy Company (later Rex Manufacturing Company) of Connersville, Indiana, was the exclusive provider of winter tops to Dodge Brothers. In April 1916, Rex Buggy proposed a new contract with Dodge based on the winter top design already in production, for a cost of $112.06 per top. Dodge's engineering department suggested design modifications which would reduce the price to $103.89. At the end of May 1915, Rex quoted a price of $76.66 for roadster winter tops, reflecting the smaller top needed for a

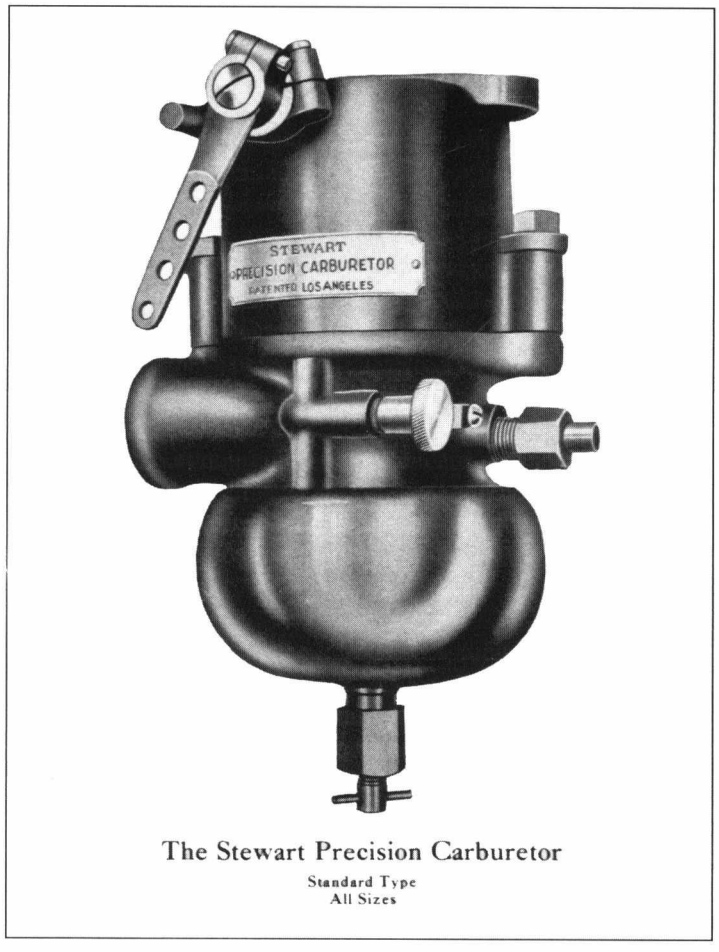

Fig. 4 – The Stewart carburetor, used on the first Dodge Brothers car.

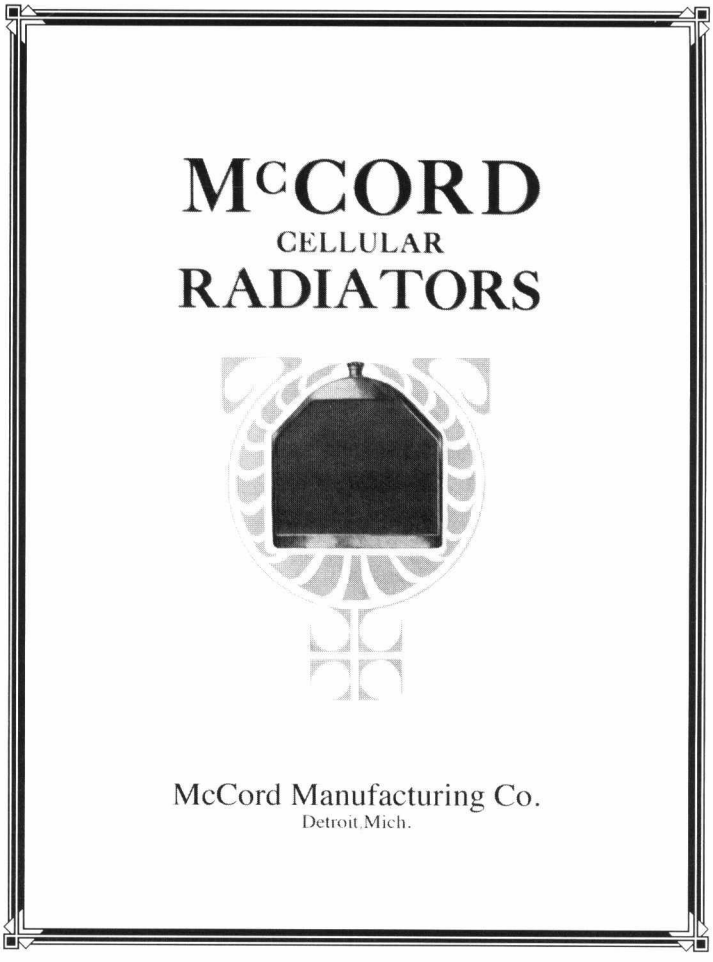

Fig. 5 – The McCord radiator

roadster as compared with a touring car. Through the mid-1920s, Rex remained the exclusive supplier of winter tops to Dodge.[12]

Dodge Brothers and the Budd Manufacturing Company

The notebooks also provide interesting details about the evolving relationship between Dodge Brothers and the Edward G. Budd Manufacturing Company of Philadelphia, which made all-steel bodies for the automaker from the outset of Dodge production. Dodge ordered 5,000 steel bodies from Budd in 1914 and another 50,000 for delivery in 1915. A statement of the source of bodies and other stampings for the first 40,000 Dodge Brothers cars, dated June 2, 1915, shows the heavy dependence on Budd. Of the first 35,000 touring car bodies, Budd delivered 33,500 and the Wilson Carriage Company of Detroit the remaining 1,500. Budd also made all but 50 of the first 5,000 roadster bodies. Budd supplied 35,000 sets of fenders and the Hayes Manufacturing Company of Detroit the remaining 5,000. The production of front fender "splash aprons" was more evenly divided, with Budd making 22,000, Dodge another 10,000, and Hayes the remaining 8,000. Still, Dodge's heavy reliance on Budd inevitably brought a close and normally cooperative relationship. The automaker apparently assigned a full-time inspector to monitor the quality of Budd's work at the Philadelphia plant. In April 1915, Budd agreed to pay the salary and the expenses of the Dodge inspector.[13]

The notebooks provide insight into the heavy investments Budd needed to make to fulfill the Dodge Brothers orders. By May 1915, Budd had placed orders for dies costing $71,884 and had received invoices for deliveries for January-August 1915 totaling $54,913. Dodge closely monitored Budd production to assure its own uninterrupted operation. Haynes visited the Budd plant in Philadelphia on May 21 and 22, 1915 and again on June 21. The notebook includes detailed statements about Budd's (promised) production schedules and prices for fenders, splash aprons, and roadster (runabout) bodies. Haynes reported on June 21 that over the previous six weeks Budd had failed to deliver 1,856 of the promised 5,799 touring car bodies, nearly one-third of the total, and 154 of the 325 roadster (runabout) bodies scheduled for delivery, close to half. Budd fell behind the production schedules in large part because it was slow to add the needed machinery and tooling. A note dated June 3, 1915 explained: "Runabout production is now limited by welding jig. Budd will try to get another jig done next week." Haynes complained on June 21 that Budd still did not have the additional welding jig in place, nearly a month behind its promised installation date of May 29. The relationship was sometimes strained because of poor production planning by Budd. Haynes reported on June 21 that the Budd plant had run out of left-hand roadster doors because the foreman in charge of pressing door panels did not resume production until the plant was out of them.

The first batch struck on the presses was defective and was rejected. While buying bodies from Budd, Dodge began planning to produce a substantial part of its body requirements in-house. By March 1915 the Dodge Brothers factory complex already included a "pressed steel shop" and the company was planning a major expansion in its body production capability.[14]

Planning for Steel Body Production

In February 1915 Haynes penned "Notes on Press Shop," a four-page list of things to do in preparation for launching an expanded stamping operation to make various small body parts. Haynes was going to take away rear axle stampings from the Press Shop and investigate the purchase of several types of presses and dies to greatly expand the production of body parts. There is also a list of 14 presses of different types and size, along with the body parts and other stampings each press would make. These small parts included splash guards, fender skirts, inside door panels, step brackets, radiator shells, front seat backs, front and rear fender crowns, seat panels, instrument boards, door sill covers, and a dozen additional pieces. Budd's costs of producing many of these parts and the equipment Budd was using is included in most of the calculations. It seems likely that Dodge planned to have Budd concentrate on producing the core body for the touring car and roadster and Dodge would make the ancillary parts and complete body assembly in its own plant.[15]

In addition to buying new presses Haynes switched ten presses "from Klinter's Dept." to the Body Shop and give Klinter more up-to-date replacements. On March 17, 1915, Haynes compiled a "Total Summary Presses" in which he showed Dodge Brothers buying a total of 39 presses of 17 different types and sizes, all from the E. W. Bliss Company. A four-page document dated two days later did an explicit comparison of 19 types and sizes of presses sold by Bliss and the Toledo Machine & Tool Company, which included the weight, cost, and promised delivery date for each type of press. Weights of individual presses ranged from 3,200 pounds to 190,000 pounds, and prices for individual presses, reflecting their weights, ranged from $315 to $13,500. For most of the presses under consideration, Toledo Machine & Tool was less expensive and could deliver two or three weeks quicker than Bliss. Delivery time varied from four to twelve weeks, but both companies needed eight weeks or longer to deliver most of their presses. The presses Dodge Brothers bought are given in a list dating from the end of March 1915. It shows orders placed between March 30 and April 23 for 45 presses of 23 different types, with Toledo Machine & Tool Company receiving virtually all of the orders. Deliveries were promised from May 24 through July 1, 1915. There is no mention of the manufacturer missing the delivery dates.[16]

Conclusion

The Haynes notebooks reveal a good deal about the complex decisions that faced a "startup" automobile manufacturer, even Dodge Brothers, with more than a decade of experience making components on a large scale for the Ford Motor Company. With automobile production booming in the 1910s, automobile suppliers were numerous as well. Whether Dodge Brothers was in the market for sheet steel, presses, or storage batteries, the company had a lot of potential suppliers to choose from. Most of these were conveniently located in Michigan, Ohio, Pennsylvania, or Indiana. In choosing suppliers, Dodge considered quality and cost, not always picking the cheapest component or machine. Because Dodge was the first automaker to use all-steel bodies and the overall market for automotive sheet steel was modest, its potential suppliers were smaller, specialized steelmakers. Haynes had no problem getting access to their plants. Giant steelmakers such as United States Steel or Bethlehem Steel were not potential suppliers.

Similarly, Dodge bought machinery from specialized manufacturers located close by. Perhaps the largest and most successful machine tool maker in the United States, the Brown & Sharpe Manufacturing Company of Providence, Rhode Island, is notably absent from its deliberations. The notebooks also provide a rare glimpse into the Budd Company's struggles to "tool up" and to "move up the learning curve" fast enough to satisfy Dodge Brothers rapidly-growing demand for bodies.

All photographs were provided courtesy of the National Automotive History Collection, Detroit Public Library.

Footnotes

[1]Charles K. Hyde, *The Dodge Brothers: The Men, the Motor Cars, and the Legacy* (Detroit: Wayne State University Press, 2005), pp. 61-78.

[2]Each volume has an identical hand-printed note (in red ink) taped to the front: "To Whom It May Concern Property of Theodore T. Heidloff, Registered." They are found in the Dodge Brothers corporate files in the N.A.H.C. and are identified as "Dodge Office Books."

[3]Book II, pp. 140, 150, 151 and Book III, pp. 19-38.

[4]Book II, pp. 21-28, 52-55.

[5]Hyde, op. cit., p. 69, and Book I, pp. 31-32, 42-51, 63, 82.

[6]Book I, pp. 40-41, 125-127, 137, 139.

[7]Book I, pp. 56-57, 64-65, 68-69, 71, 73, 75, 81, 86, 88, 108, 111, 143, 145, 152, 165 and "Dodge Brothers Reveal the Car They Will Make," *Automobile Topics*, November 7, 1914, p. 907.

[8]Book II, pp. 21-23, 25 and "Dodge Brothers Reveal the Car They Will Make," p. 907 (carburetors); Book I, pp. 136, 156, 177, 180-181, 189-191 (electric headlamps).

[9]Book I, pp. 78-80, 135; Book II, pp. 78, 81, 83, 88-89; and Book III, pp. 76-81, 92-95, and 102-103. Reference to the Master Parts list from John Parsons.

[10]Book I, pp. 161, 162 and Book II, pp. 15, 27, 34, 37, 47, 49, 51.

[11]Book III, pp. 122-123, 132-141.

[12]Hyde, op. cit., pp. 88, 222, note 10 and Book III, pp. 158-160, 172-173.

[13]Ibid., pp. 80-82; Book II, "Body Schedule – First 40,000 Cars – Issued June 2nd, 1915;" and Book III, p. 16.

[14]Book II, pp. 154-155, 160-164, 176-181; Hyde, op. cit. p. 68.

[15]Book II, pp. 107-114.

[16]Book II, pp. 115-119, 128-131, 133.

THE ELECTRIC STORAGE BATTERY CO.

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Type 3-X-15. Assembly 1

"Exide" Type X is a new battery especially designed to meet the exacting requirements of automobile electric self-starting and lighting service.

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The nature of the service is such that an ordinary ignition battery cannot give first class results.

The "Exide" Type X Battery offers the uniformity, reliability and durability of the famous "Exide" line in a form excelling in the electrical characteristics required for engine cranking service and of superior mechanical construction.

"Exide" Type X Batteries are built to give satisfaction to the ultimate user, the individual car owner, and in the belief, based on experience, that in this service only the best is good enough.

Preceding types of "Exide" Starting Batteries have had an important part in the development of the modern automobile electric self-starting and lighting systems and have made an enviable record on tens of thousands of cars. The basic principles of design proved and established as correct in the past are retained in the "Exide" Type X and combined with the refinements suggested by that experience.

GENERAL DESCRIPTION

"Exide" Type X Batteries are distinguished by great starting ability per unit of weight and volume, this characteristic having been developed to the maximum consistent with reliability and durability. They permit the use of a lighter and smaller battery for equal starting ability or offer

The "Exide" Type X Battery

Fig. 6 – The "inferior" Exide battery, not chosen.

George Weidely and his Engines

by Bill Greer

Introduction

This article pays tribute to an extraordinary pioneer automotive engineer, George A. Weidely (1870-1948), by sharing all known available information regarding his life and accomplishments (Fig. 1). Weidely's automotive career comprises two distinct chapters: first, as the manufacturer of the Premier motor car (1902-14), and then, as the manufacturer of proprietary engines (1915-23).

My quest for information about George Weidely began in 1986 when I bought a 1922 H.C.S. Series III, 4-cylinder car, primarily to learn about the final automotive product of Harry C. Stutz. The engine design and overall layout of the motor accessories in the H.C.S. intrigued me as everything was so neatly arranged and of high quality. It was my first direct encounter with an engine built by the Weidely Motor Company of Indianapolis. The search for more information on George A. Weidely had begun, and my admiration for him grew as each bit of new finding unfolded. All references uncovered in this endeavor have been listed for your information.

Weidely's Early Years

Weidely was born December 19, 1870, in Zurich, Switzerland, the son of Rudolph and Rose (Meyer) Weidely. His good performance in school won him a scholarship in one of the national technical schools of Switzerland, where he spent two years. At the age of 16, he came to the United States, and upon his arrival in 1887, he soon found employment as a machinist in Akron, Ohio. Later he became associated with the B. F. Goodrich Company of Akron where he obtained a practical knowledge of the rubber industry. At the age of 21, he married Jennie Long of Kent, Ohio, on February 4, 1892, and they had one son, Walter. The Weidely family came to Indianapolis in October 1897 where George was employed as a master mechanic for the Gormully & Jeffery Tire Co.; he later became superintendent.[1]

Fig. 1 – George A. Weidely (photograph by Dexheimer, Indianapolis Men of Affairs, *ed. by Paul Donald Brown, American Biographical Society of Indianapolis, 1923) p. 644.*

You may recall that in 1897 Harry C. Stutz was mounting a single-cylinder stationary gas engine he developed on a chassis of his own making which he called "Old Hickory." Stutz sold his Stutz Manufacturing Company of Dayton, Ohio, to the Lindsay Automobile Parts Co. in 1902 and became Lindsay's factory superintendent upon his arrival in Indianapolis at the age of 26. Harry also spent some time in the experimental department of the Gormully & Jeffery Tire Co. (the basis of Uniroyal, Inc.) where he may have met Weidely.[2]

The Founding of the Premier Motor Manufacturing Company

It was at G & J Tire Co. that George Weidely met Harold O. Smith with whom he organized the Premier Motor Manufacturing Company on the day before Christmas, 1902.[3] By this time, Weidely had built and sold a water-cooled motor buggy. Premier began operations in 1903 with a capital of $50,000 with George in charge of engineering.[4]

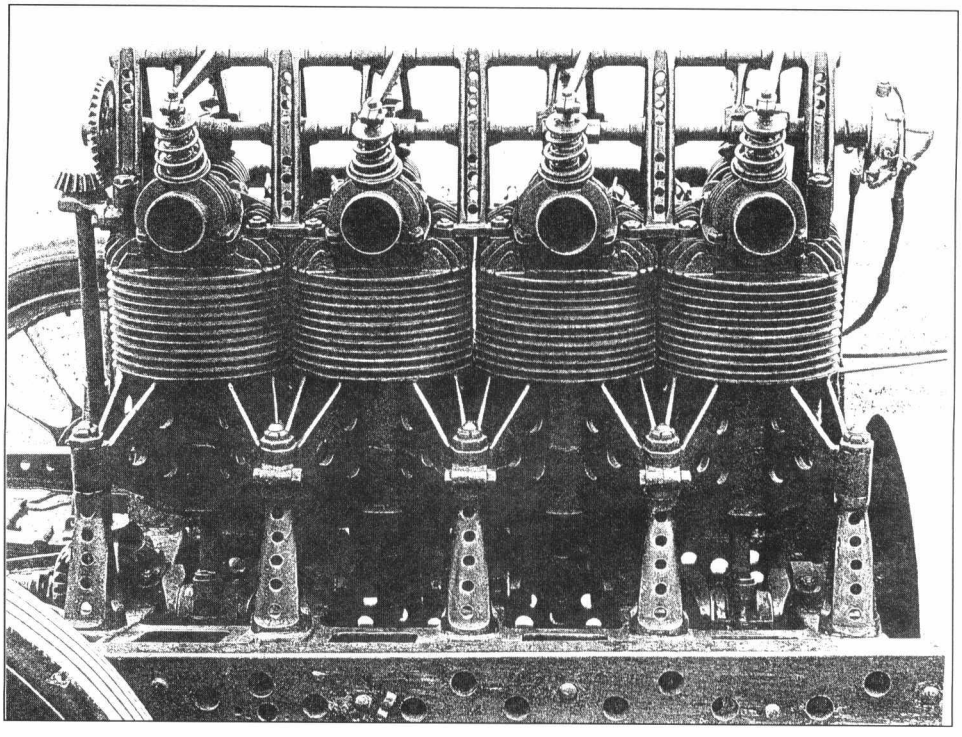


Fig. 2 – 1903 Premier Special race car engine.

Premier's first offering in 1903 was a handsome car on the lines of the French Panhard, with a 2-cylinder engine mounted vertically in front, cooled by water circulating through a vertical coil of tubing. The progressive Panhard-type transmission led into a shaft drive, and the car frame was a very early design of channel section, pressed steel, with semi-elliptic spring suspension all around. This model with rear entrance tonneau was priced at $2,500. Along with Louis P. Mooers' vertical twin for the 1902 Peerless, these early efforts led the way to multi-cylinder engines. Built in "considerable numbers [they] proved to be both powerful and reliable."[5]

The Premier Special

It appears that Weidely had already made quite a name for himself around Indianapolis by this time because in 1903 Carl G. Fisher, one of the founders of both the Indianapolis Motor Speedway and the Prest-O-Lite Company, commissioned Premier to build him a special race car for the 1904 Vanderbilt Cup Race.

What a beast Weidely engineered! Imagine if you can, a mammoth 4-cylinder air-cooled engine displacing 923.43 cubic inches or over 15 liters. Its 7-inch diameter pistons thundered up and down with a stroke of 6 inches (that's one gallon CID per cylinder) and the massive valves were nicely operated by a single overhead camshaft (Fig. 2). The Premier Special sported a wheelbase of 112 inches and a track of 56.6 inches, and originally weighed over 2,500 pounds. With almost 100 H.P., this racecar was bare bones, without enclosures for crankcase, camshaft or valves (similar to early steam engines, the first crankcases were open), and the chassis bereft of body work, fenders or windscreen—just two bucket seats.[6] One can only imagine Fisher's dismay when he learned that the Vanderbilt Cup regulations limited the weight of entries to 1,000 kg. or 2,204 pounds. The Premier factory was challenged to reduce all weight

TABLE 1 – PREMIER MODELS AND ENGINES DURING THE WEIDELY ERA

YEAR	CYL	MODEL	H.P.
1903	2	A (Water Cooled)	20
1904	2	A (Water Cooled)	20[9]
	4	F (Air Cooled)	16
1905	4	F (Air Cooled)	16
1906	2	H (Water Cooled)	10
	4	F (Air Cooled)	16
	4	L (Water Cooled)	20/24
1907	4	24 (Water Cooled)	24
After 1907, all engines were water cooled.			
1908	4	24	24/28
	4	30	30/35
	6	45	45/5
1909	4	30	30/35
	6	45	45/55
1910	4	4-40	40
	6	6-60	60
1911	4	4-40	40
	6	6-60	60
1912	4	4-40	40
	6	6-60	60
1913	6	6-40	38.4
	6	6-60	48.6
1914	6	Weidely SOHC	38.4
	6	6-48 T Head	38.4
1915	6	6-49	31.6
	6	6-50	38.4

Fig. 3 – Premiere's oak leaf radiator badge, from Motor Field, *May 1913, p. 52.*

possible. The original heavy bevel gear differential was replaced with side chain drive to each of the rear wheels. A total of 256 holes were drilled in the channel iron frame while the aluminum bronze motor base castings were bored with 190 holes and the rear axle with 28 holes.[7] But, all this machine work was in vain as the race car was still a hefty 120 pounds overweight and never made the race. Carl Fisher did give it a run in 1905 at the Indiana State Fairgrounds, circling the dirt track at 59.21 miles per hour and barely tapping the potential available in winning a five-mile handicap. No doubt the spectators were awed by this incredible and ominous car and thrilled right down to the bone with the thunderous roar of four gallons exploding and an unmuffled exhaust. The Premier Special now resides at the Indianapolis Motor Speedway and is usually on display at the Hall of Fame Museum to capture your attention and appreciation.

Premier 1903-1914

Weidely had just turned 32 when he and Smith founded Premier at the end of 1902. The name "Premier" had been suggested by Sam Miles, publisher of *The Motor Age*. The company would claim that its radiator badge featuring on oak leaf represented the first use of an emblem as an automotive trademark (Fig. 3).[8]

A decision was made in mid-1904 to tap a lower-price market, and an entirely new design of car was introduced utilizing air cooling, a wood frame armored with angle irons at points requiring strength, a planetary gear set, and single chain drive. Four small cylinders were considered more efficient for air cooling than two large ones (as exemplified by John Wilkinson's early Franklin) and these were mounted crosswise in front for the best exposure to the air. The 16 H.P. Model F was continued into the 1905 season, selling at $1,250 for the runabout, $1,200 in rear-entrance tonneau form, and $1,500 for a side-entrance model.

During the years with Premier, Weidely developed a number of engines which the company used in its various models (Table 1).

Premier's 1911 sales catalogue stated that:

> It is a tribute to Premier designing that as early as 1902 with no precedent to guide, the Premier Motors and stroke (5-¼ inches). Though more costly to construct there is a marked advantage in having the intake and exhaust valves located on opposite sides ('T-head design') permitting larger valves and the consequent quick handling of the gases.

The 1912 two-volume book *Gasoline Motors* by P. M. Heldt, editor of *The Horseless Age*, discusses various valve arrangements and gives statistics on the cars displayed at the auto show of 1911 held at Madison Square Garden. Of these, 40 percent had engines of "T-Head design," that is, intake and exhaust valves on opposite sides; the engines of 38 percent were of "L-Head design," with intake and exhaust valves on the same side; and 12.5 percent were equipped with engines of overhead valve design ("O.H.V." or "valve-in-head"). Designers of early engines tended to prefer the T-head design for engines of larger volume but one disadvantage was lower compression ratios.

By 1910, Premier had completed three Glidden Tours with a perfect score, a marvelous record of achievement. These tours were named after Charles Glidden (d. 1927), who made a fortune in the early days of the telephone business. The initial Glidden Tours were run from 1905 through 1913, and ranged from 7 days (870 miles) up to 16 days (2,851 miles) fully testing the mettle of the automobiles entered. In 1911, 12 Premier automobiles engaged in a transcontinental run, starting from Atlantic City on June 26 and finishing five weeks later on schedule, at Los Angeles on August 10. This feat was widely advertised.

6-Cylinder Valve-in-Head Engine

On December 18, 1913, Premier announced a new Weidely Model car with a 6-cylinder valve-in-head engine with centerline overhead camshaft driven by a vertical shaft through worm gears from the crankshaft. Other advanced features included a single block casting containing the 6 cylinders, entire crankcase and intake header. The detachable cylinder head was covered with an oil-tight valve cover secured by four small hand wheels for easy valve adjustment. No rocker arms were used, the camshaft being right above the ends of the valve stem, but the ends of very light steel fingers were set between cams and stem ends and pivoted at the other end carrying the adjustment for wear. The shorter valves and light fingers permitted valve springs 20 pounds weaker than usual, giving less wear and noise, and side thrust on the valve stems was eliminated. *The Automobile* termed this engine "advanced."[10] Remember, this is 1913. This design reminds the writer of a similar finger-cam follower layout used by C. H. Wills in his famous Wills Sainte Claire OHC engines of the early 1920s. The combination of all the features designed into this engine for production cars (as opposed to race cars) is truly remarkable and advanced for its day (Fig. 4).

Other interesting features on the Premier of 1913 were the gear drive for the Remy generator, Eisenmann low tension magneto, water pump and shaft for belt pulley. The design eliminated water pipes and hose connections as the radiator was supported only by the top and bottom water connections. The water pump casting, if you can fathom it, served also for the water connection from radiator to pump, the pump connection to motor, the starting crank bearing, the radiator support front motor support, and held the adjustable thrust bearing at the front end of the crankshaft.

Other advanced features were to be found in the forced feed and splash oiling system, in the piston design and overall unification of the power plant. The cylinders were 3-5/8" in diameter and the stroke was 5-1/2" giving the engine a displacement of 371.5 cubic inches with 38.4 rated H.P. A test at the Indianapolis Motor Speedway showed the new Premier that Weidely designed was capable of 70 miles per hour. Road tests on city streets with a touring car of 132-inch wheelbase

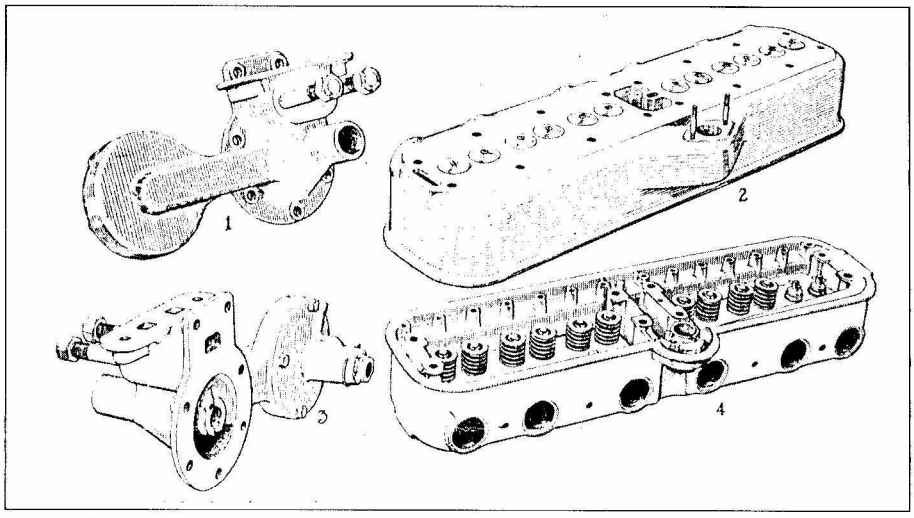


Fig. 4 Views 1 and 3 showing water pump, which also forms base support for radiator; views 2 and 4 show bottom and top view head of motor. (The Automobile, December 18, 1913, p. 1166).

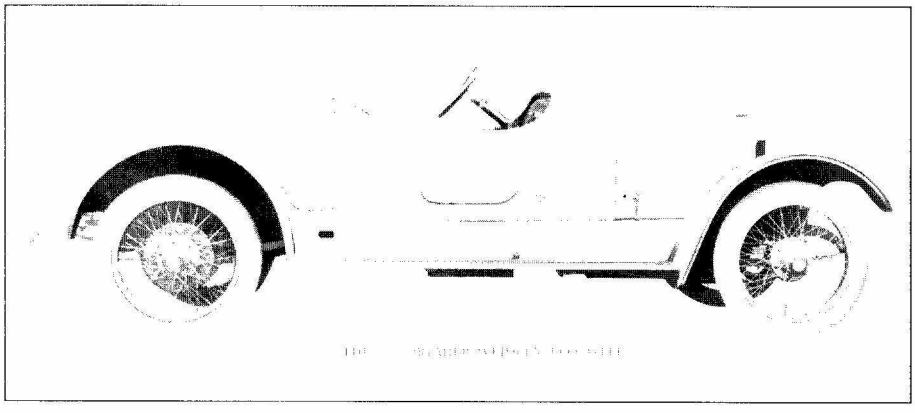


Fig. 5 The 1915 Premier-Weidely motor car as presented in the company's sales catalogue, Premier the Quality Car (from the editor's collection).

carrying four people gave gasoline mileage of 22 miles per gallon.[11] However, there is no evidence that a vehicle with this engine actually entered the market.

By early 1914, the man and the company were practically indistinguishable. Premier issued a sales catalogue, "Premier The Quality Car" for the 1915 model year, identifying the car throughout as the "Premier-Weidely" (Fig. 5). The company boasted that its new design had eliminated "40 percent of needless moving parts with a great saving of weight and consequent wear on tires." According to it, "The day of the Economist-Engineer has arrived George Weidley is the master Economist-Engineer."

But pride goeth before a fall. On October 15, 1914, the Premier Motor Mfg. Co. went into receivership and was reorganized as the Premier Motor Car Co. Then, around 1919, it was known as Premier Motor Corp. and was again reorganized as Premier Motors, Inc. in 1923. It was sold to National Cab & Truck Co. of Indianapolis in October 1926.[12] George Weidely's final contribution to Premier was the series 6-49, announced in Motor Field in June 1914 (Fig. 6).

It is difficult to discern at this point where the company's financial troubles lay. Sales for 1914 seem to have been at an all-time high for the company, 1,300 units.[13] My feeling is that Premier ran into a cash flow problem due to the investment required to develop and test the new engine and the failure to market it.

We believe Premier continued to use Weidely-designed engines after 1915 but this is difficult to prove as the reorganized company ceased mentioning Weidely and did not identify its power plants. For example, the Auburn-Cord-Duesenberg Museum has a 1916 Premier Model 6-56 touring car but the Museum was unable to confirm to me that it has a Weidely engine. Sales literature of the post-Weidely period describe engines that appear to be adaptations of the 1913 engine that never entered production.

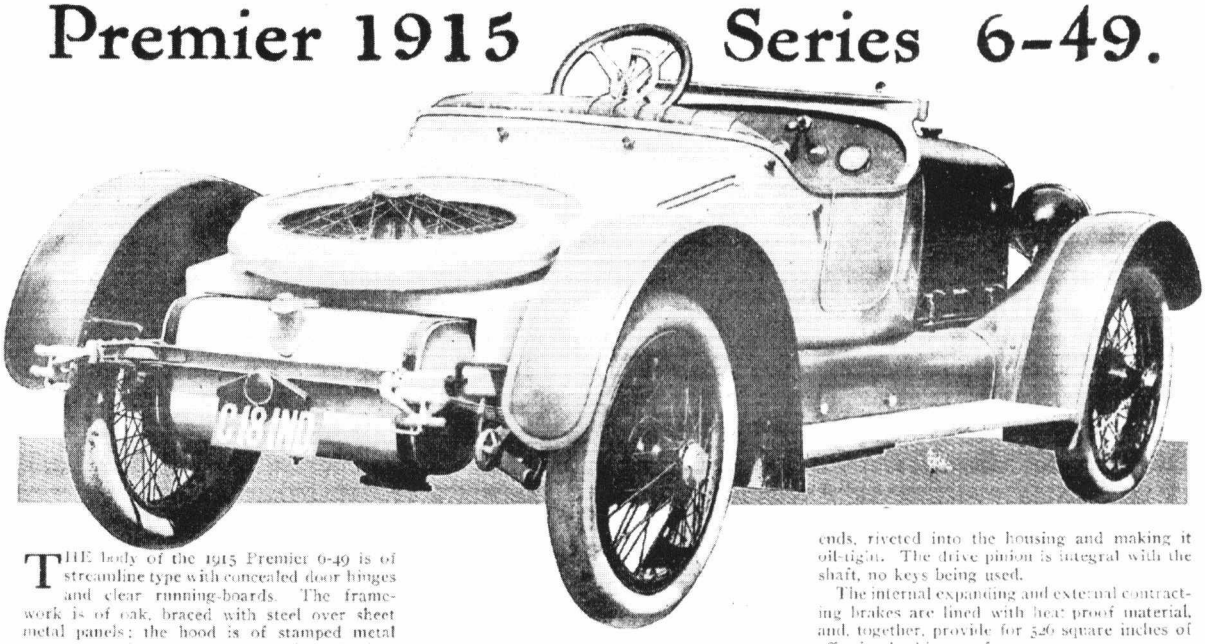
Weidely Motor Company Manufactures Proprietary Engines (1914-1924)

On October 27, 1914, Judge Albert B. Anderson authorized Frank E. Smith to borrow $10,000 for 60 days to carry on business and as receiver of Premier to enter into agreement with R. M. Owen, George A. Weidely and Harold O. Smith under which those three men obtained rights to manufacture Weidely engines, in return for which the receiver and his successors had the right to use them.[14] R. M. Owen, president of R. M. Owen Co, New York City, and stockholder of the Entz Motor Corp. of New York, had been developing the Entz electric transmission and chassis fitted with a Weidely engine. In early November 1914 the Weidely Motor Co. of New York City was being incorporated to build engines to be sold to the trade and also to be used in conjunction with the Entz transmission.[15]

The Weidely Motor Co. was organized with W. E. Showers, of Bloomington, Ind., as president, George A. Weidely as vice president, W. A. Umphrey as treasurer and L. A. Poundstone as secretary. These officers and Edmund Rosenberg of Indianapolis, and George Hughes, president of the Pikes Peak Ocean to Ocean Highway Association, constituted the directorate. The company leased a large factory space at the Mais Motor Truck Co., 133-143 South West Street, Indianapolis. In February 1915 Weidely Motors announced that the plant was working at full speed on large contracts which included a new 6-cylinder engine for the Chalmers "Light Six." In addition, prototype fours and sixes were being produced for several other car companies with a view of obtaining their contracts. A larger Weidely 6-cylinder engine, later reported to be 415 CID, was being developed for the Owen Magnetic car.[16]

Details pertaining to Weidely's new 4-cylinder engine with overhead camshaft and detachable head were provided in *The Horseless Age* which commented that "The design as a whole is quite similar to that of the 1913 overhead camshaft, valve-in-head 6-cylinder engine shown previously." The following were

Premier 1915 Series 6-49.

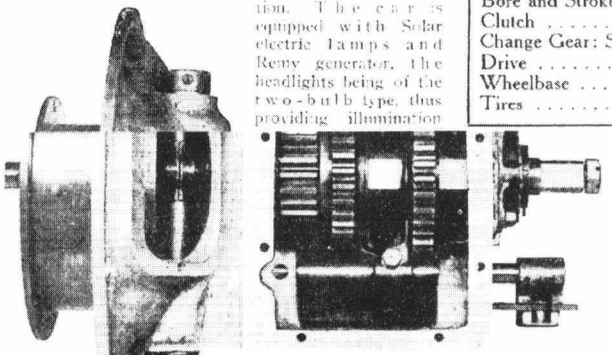


THE body of the 1915 Premier 6-49 is of streamline type with concealed door hinges and clear running-boards. The framework is of oak, braced with steel over sheet metal panels; the hood is of stamped metal protected against rattling and the front fenders are flanged for rigidity with splash guard between them and the car. Both front and rear fenders are crowned to add to both appearance and strength.

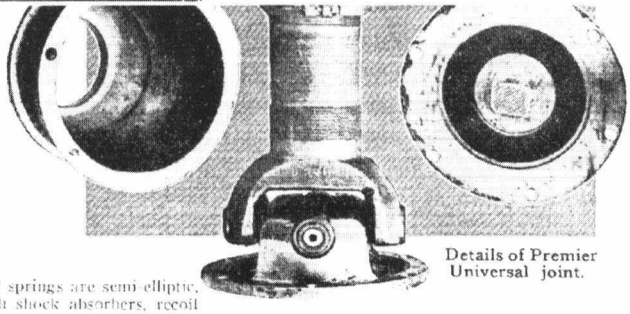
Remy, six-volt, starting system is installed, and an Eisemann magneto supplies the ignition. The car is equipped with Solar electric lamps and Remy generator, the headlights being of the two-bulb type, thus providing illumination for both town and country and doing away with side lamps. There is a combination tail and license lamp, an instrument light and inspection lamp, all lights being independently operated.

An efficient gear-driven tire pump is provided and the tires are fitted on Q. D. demountable rims with one extra rim.

Manufactured by the Premier Motor Mfg. Co., Indianapolis, Ind.	
Price: Five-Passenger Touring Car and Roadster	$2,385
Cylinders	Six, unit power plant
Bore and Stroke	4 x 5½ inches
Clutch	Multiple disk
Change Gear: Selective type, three speeds	
Drive	Shaft and bevel gear
Wheelbase	132 inches
Tires	36 x 4½ inches



Top of Premier gearset, showing gears.



Details of Premier Universal joint.

Both front and rear springs are semi-elliptic, and are equipped with shock absorbers, recoil straps and rubber bumpers. The front axle is a single piece I beam, weldless drop forging, and the special Premier rear axle is made up of a crucible steel internally ribbed housing and drawn steel tubes flanged at both ends, riveted into the housing and making it oil-tight. The drive pinion is integral with the shaft, no keys being used.

The internal expanding and external contracting brakes are lined with heat proof material, and, together, provide for 526 square inches of effective braking surface.

The special carbureter has a hot water-jacketed priming device connected direct to the intake manifold and the steering column is provided with an air adjustment.

The fuel tank has a capacity of twenty-one gallons, and is fitted with a gasoline gauge. Lubrication is taken care of by a constant level circulating system and a gear-driven centrifugal pump, together with a five-bladed belt-driven fan provide efficient water circulation.

An electric horn is located under the hood and is operated by a press button in the steering wheel center.

Equipment includes a Golde one-man top, a ventilating windshield, a Warner speedometer, foot and robe rails, jack and complete tool kit.

A glance at the picture at the top of this page shows that the spare tire problem has been effectively dealt with. Top and windshield are furnished without extra charge, although not shown in the illustration. Either wire or wood wheels are furnished on this roadster model and a choice of 34 or 36 inches is given.

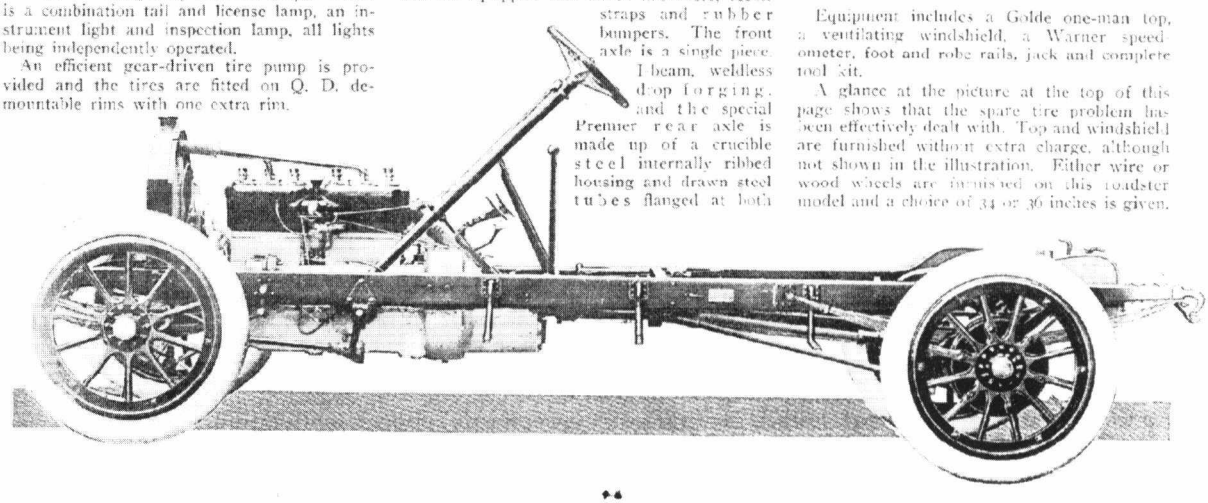


Fig. 6 – Weidely's last car for Premier, the Series 6-49 (probably Motor Field, *June 1914).*

New Weidely Overhead-Valve Four

3½ by 5½-in. Design Develops 50 Hp. at 2400 R.P M.—Valve Action Carried in Detachable Cylinder Head—Oiling Is By Pressure

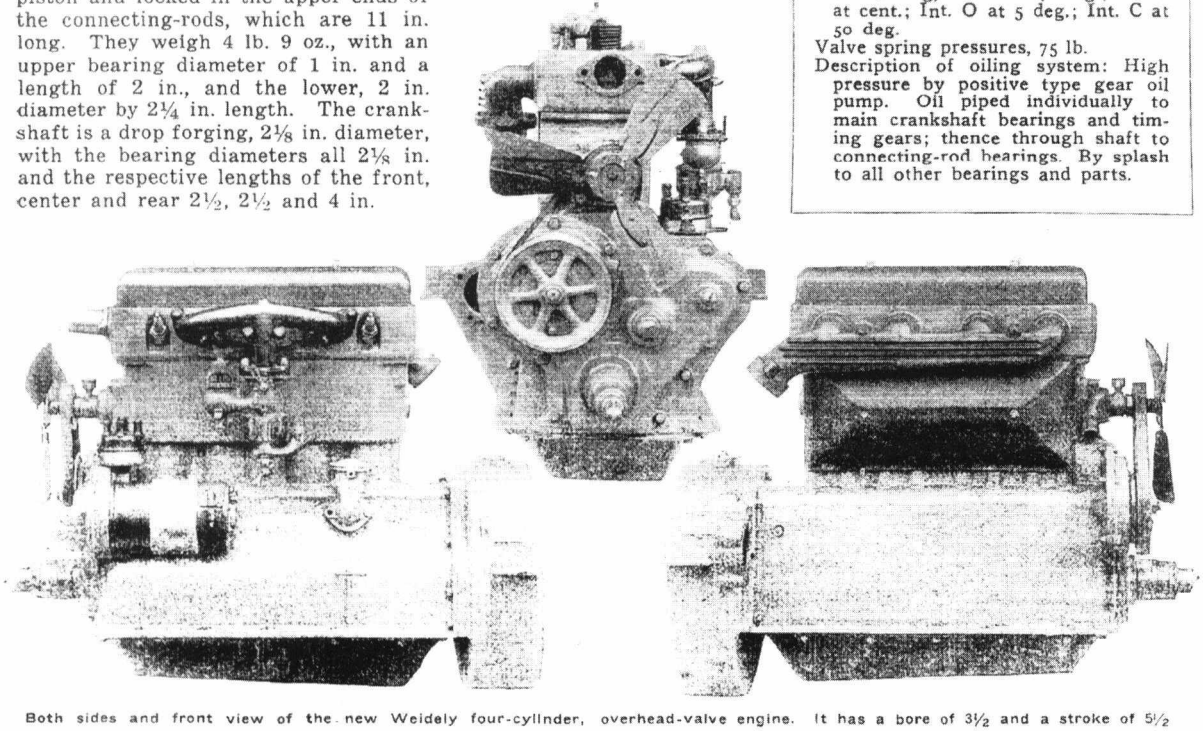
A NEW Weidely engine is just ready to be put through as regular production by the Weidely Motors Co., Indianapolis. This is a block, 3½ by 5½-in. overhead-valve four, developing 50 hp. at 2400 r.p.m., as indicated by the horsepower and torque curves shown herewith.

This engine has the entire overhead valve action carried in a detachable head. The valves are mounted directly over the combustion chamber and are actuated by push rods from the camshaft housed within the crankcase. The valve push rods, although necessarily long in order to carry the motion of the cam from the crankcase to the overhead valves, are guided throughout a large percentage of their length, as will be noted from the accompanying sectional drawings. Over the valve action there is a cover plate which, in combination with the inclosed valve rods, gives a very compact appearing design with a smooth exterior. The combustion chamber is centered over the piston head and is carried entirely in the detachable cylinder head. The piston rises to the top of the main cylinder casting.

The cylinder block is cast integrally with the upper half of the crankcase. The oil pan is pressed steel and carries the oil reservoir and the splash troughs, into which dip scoops on the bottom of the connecting rods. The pistons are iron, 4¾ in. long, and fitted with three rings, all above the wristpin. The weight of the piston with the piston rings and the wristpin is 2 lb., 6 oz. The piston pins are placed slightly below the center of the piston and locked in the upper ends of the connecting-rods, which are 11 in. long. They weigh 4 lb. 9 oz., with an upper bearing diameter of 1 in. and a length of 2 in., and the lower, 2 in. diameter by 2¼ in. length. The crankshaft is a drop forging, 2⅛ in. diameter, with the bearing diameters all 2⅛ in. and the respective lengths of the front, center and rear 2½, 2½ and 4 in.

Specifications of Weidely Engine

Number of cylinders, four.
Bore, 3½ in.
Stroke, 5½ in.
Displacement, 213 cu. in.
Length of piston, 4¾ in.
Number of rings, three.
Length of connecting-rod, 11 in.
Connecting-rod, drop forging.
Connecting-rod bearing dimensions, Upper, 1-in. diameter x 2-in. Lower, 2-in. diameter x 2¼-in.
Crankshaft diameter, 2⅛ in.
Material of crankshaft, drop forging.
Crankshaft bearing dimensions, 2⅛-in. diameter x 2½-in. front, 2½-in. center, 4-in. rear.
Number of crankshaft bearings, three.
Method of valve drive, helical gears, 1¼-in. face, very wide angle.
Number of camshaft bearings, three—1 7/16-in. diameter x 2¾-in. front, 2⅛-in. center, 1½-in rear.
Dimensions of camshaft, 1⅛ in. between bearings.
Valve timing, Ex. O at 40 deg.; Ex. C at cent.; Int. O at 5 deg.; Int. C at 50 deg.
Valve spring pressures, 75 lb.
Description of oiling system: High pressure by positive type gear oil pump. Oil piped individually to main crankshaft bearings and timing gears; thence through shaft to connecting-rod bearings. By splash to all other bearings and parts.



Both sides and front view of the new Weidely four-cylinder, overhead-valve engine. It has a bore of 3½ and a stroke of 5½ in. Valves are mounted directly over the combustion chamber and the push rods are guided throughout a large portion of their length

Fig. 7 – Weidely 4-cylinder overhead camshaft engine (The Automobile, *March 8, 1917, p. 516).*

features of the engine: bore and stroke: 3-3/8" x 5-1/2" 196.81 CID, counterbalanced crankshaft and banjo rings, aluminum pistons and tubular connecting rods of nickel steel of 4-bolt design, aluminum crank case, and pressure oil feed to all bearings and camshaft" (Fig. 7).[17]

At the end of the year, *Motor World* reported that "George Weidely, VP and General Manager was delighted at the stockholders December 1915 meeting when an increase in capital from $100,000 to $350,000 was approved permitting enlargement of the plant and more production equipment to pursue the introduction of the new Weidely Twelve-Cylinder motor."[18] This great valve-in-head engine was announced in the January 20, 1916 issue of *Motor Age*. The Weidely 12 Model C had a bore of 2-7/8" a 5" stroke giving a displacement of 389 CID. It was rated at 39.6 H.P., SAE, 70 B.H.P. at 2,000 RPM (Fig. 8).

This overhead valve 12-cylinder engine was attractive to a number of car companies, including Pathfinder. David Parry had established the Parry Automobile Co. in 1909 (its name was changed to Pathfinder in 1912). During 1916 Walter Weidely (George's son) drove a Pathfinder seven-passenger touring car weighing 5,150 lbs. with passengers and equipment cross-country from San Diego to New York City. The trip covered 4,889 miles and the Pathfinder 12 averaged 10.2 miles per gallon.[19]

A fine example of this rare Pathfinder King of Twelves is on display at the Hall of Fame Museum, Indianapolis Motor Speedway. The Hall of Fame's roadster was built in 1917 at the plant located at 1100 Division Street, Indianapolis. The Pathfinder company failed in 1917 and the factory, sold for $59,000, was converted to turn out shoe polish.[20]

Listed below are car companies other than Pathfinder known to have used the Weidely 12-cylinder engine.[21] (Table 2)

World War I impacted the adoption of the Weidely 12 and the first automotive industry depression of 1921-22 dealt the more expensive 12-cylinder cars of all makes a death blow. Even Packard dropped its noted "Twin Six" after 1923. Twelve-cylinder engines appeared again a decade later during the Depression.

Weidely Motors introduced a new, more conventional 213 CID OHV 4-cylinder engine in early 1917.[23] Later in 1917 Weidely announced that it had entered into a contract with Cleveland Tractor Co, Cleveland Ohio to supply $3,000,000 worth of tractor engines over a period of three years. The first year called for 5,000 engines with an increasing number the remaining two years.[24] The new engine was eventually upgraded from a bore of 3-1/2" to 3-3/4" with a 5-1/2" stroke for 243 CID to deliver 22.5 H.P., SAE, 55 B.H.P. and marketed as the Type MAT "Bulldog." These dependable "Bulldog" OHV 4-cylinder engines were used in the 1918 Mercury car, the Ajax ½ ton truck, Cletrac (Rating 10/20 and 12/20), Douglas 1-1/2 ton truck, Graham Brothers trucks and buses circa 1920, Pacific Power Rating 12/25, Uncle Sam rating 12/20 and Wilson Rating 12 20.

Weidely and Stutz

The first direct reference to a Weidely-Stutz connection came in 1920 when the H.C.S. Motor Car Co. of Indianapolis introduced the H.C.S. car bearing the initials of Harry Clayton Stutz. Its power plant was a nicely dressed-up version of the Weidely 227 CID "Bulldog" OHV 4-cylinder engine with a bore of 3-5/8" and 5-1/2" stroke rated at 50 B.H.P. The H.C.S. cars of 1920 were designated Series II in deference to the Stutz Model H.C.S. of 1914/15. The price of $2,975 for roadsters and touring cars restricted sales, forcing a $500 price drop for the Series III cars of 1921-22. The Series IV Model 4 H.C.S. cars of 1923 used the Weidely 4-cylinder OHV engine with a bore of 3-3/4," stroke 5-1/2" giving 243 CID and 55 B.H.P.[25] The roadster and touring were offered at $2,250, still considered expensive in the depressed market.[26]

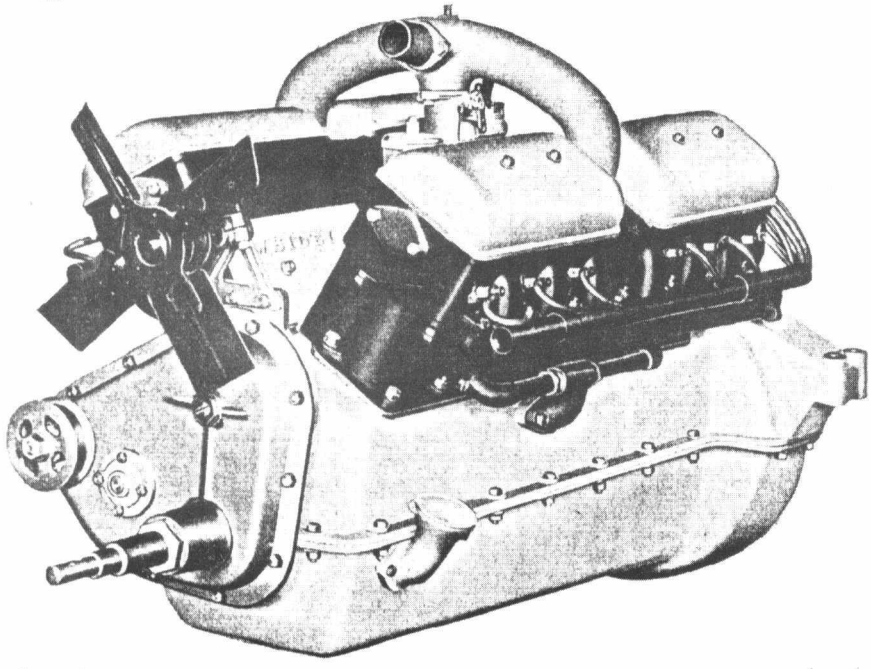
TABLE 2 – 12-CYLINDER ENGINES PRODUCED BY WEIDLEY MOTOR COMPANY AND OTHERS, 1916-23

YEAR	COMPANY	MODELS
1916	Meteor	(only a few built)
1916-18	Lozier	HAL 12 21-A Model 25 in 1918
1917-18	Kissel	"Double Six"
1917-18	Austin	"Highway King"
1920	Singer	"20-12"
1920-21	Shaw/Colonial	"Ambassador"
1921-23	Heine-Velox	12
1921	Vaughn	12-90 Prototype
Other companies who made their own 12-cylinder engines in 1915-1923 were [22]		
1916-22	Haynes	40/41 60 hp 365.3 CID and "Light 12" 70 H.P.
1915-16	National	"Highway 12" 70 B.H.P., 60 degree V, 2 3/4" x 4 3/4", 338 CID
1916-23	Packard	"Twin Six" 60 degree L-head, 88 B.H.P. , 3" x 5", 424.1 CID
1916-	Brush-Ferro	OHV V-12 2.875" x 4.5", 350.5 CID
1916-17	Enger	"Twin Six" and "Twin Unit 12," 186 CID, 55 B.H.P.

WEIDELY

Overhead-Valve Motors

Make it a point to see the exceptionally high quality cars equipped with the Weidely Twelve-Cylinder motor at the Chicago Show.



Bore 2 7/8"; Stroke 5"; Cylinders cast in triplets; Light reciprocating parts.

Single Crankshaft; all moving parts enclosed; positive oiling system.

Manufactured by Pioneers in High Grade Power-Plant Designing and Manufacturing

Detailed information supplied on request

WEIDELY MOTORS COMPANY

INDIANAPOLIS, U. S. A.

When Writing to Advertisers, Please Mention Motor Age

Fig. 8 – Weidely advertises its 12-cylinder engine (Motor Age, *January 20, 1916, p. 209).*

To be competitive in the market Weidely Motors developed a new overhead valve 6-cylinder engine of 248.9 cu in (3-1/4" x 5") rated 63 B.H.P. at 3,000 rpm.[27] This new 6-cylinder engine was marketed successfully to the trade under the name "Forty Point Bulldog" (Fig. 9). The new engine was purchased by Stutz for its Stutz Six line, by Auburn for its Model 6-63, called "Six Supreme," and by H.C.S. for its Model 6.[28]

The orders by Stutz and Auburn for their new 1923 6-cylinder models led to the rather sudden demise of Weidely Motors in July 1923.

Death of Weidely Motors

By the end of July 1923, William H. Fletcher, former secretary of Weidely Motors, had been appointed receiver of the Weidely Motors Co. by Judge Harry O. Chamberlin of the U.S. District Court in Indianapolis in response to a friendly receivership suit brought by William A. Umphrey, treasurer and general manager, to temporarily protect the company's business. Umphrey declared that Weidely Motors was solvent with assets of $1,270,940 with liabilities of $851,924. Merchandise creditors were owed about $238,000. However, there was insufficient cash flow to meet obligations due to recent instructions from customers, primarily Auburn and Stutz, to hold up shipments of some 3,000 engines. This situation left the company with 100 completed engines and inventory stock for another 1,000. Since January 1923 Wiedely had built more than one million dollars worth of engines.[29] Judge Chamberlin directed Weidely's creditors to file their claims before December 3, 1923.[30]

In late January 1924 the judge approved the receiver's sale of Weidely Motors Co. assets to Edward W. Showers and Umphrey, and the majority bondholders for $300,000. Umphrey announced that the reorganized company would include George A. Weidely and that operations would ensue "in a couple of weeks."[31] No evidence has been uncovered that Weidely Motors resumed operations. According to the October 30, 1924 issue of *Automotive Industries*, Frank Daly and 75 other preferred stockholders of Weidely Motor Co. had filed suit asking damages of $150,000 from Showers, Umphrey, and William H. Fletcher, all former officers of the company.

Stutz Plays a Role

Let's explore how the Stutz Motor Car Co. inadvertently contributed to the failure of Weidely Motors Co. George A. Weidely and Harry C. Stutz were contemporaries and known to be good friends. Harry most likely considered George, who was six years older, his peer. There is evidence that Weidely Motors helped train some of the Stutz craftsmen who were employed to build Harry's noted 16-valve 4-cylinder T-head engine in 1917, and perhaps even built the first engines. Harry left the Stutz Company on July 1, 1919 to oversee his newly-organized Stutz Fire Engine Co. and H.C.S. Motor Car Co. located at 1400 N. Capitol Ave., Indianapolis. His respect for Weidely's expertise was confirmed when he chose Weidely's new "Bulldog" 4-cylinder OHV engine for his H.C.S. Series H cars of 1920 as previously mentioned. They were both members of the Indianapolis Athletic Club and enthusiasts as to the technical aspects of racing. Weidely having been selected by the American Automobile Association (AAA) to serve on its stock car racing standards committee along with Edgar and Elmer Apperson and Harold O. Smith, as far back as April 1907.

The Stutz Company was severely affected by the post World War I depression and was sold at auction on August 2, 1922 for $2,500,000 to Charles M. Schwab and some associates.

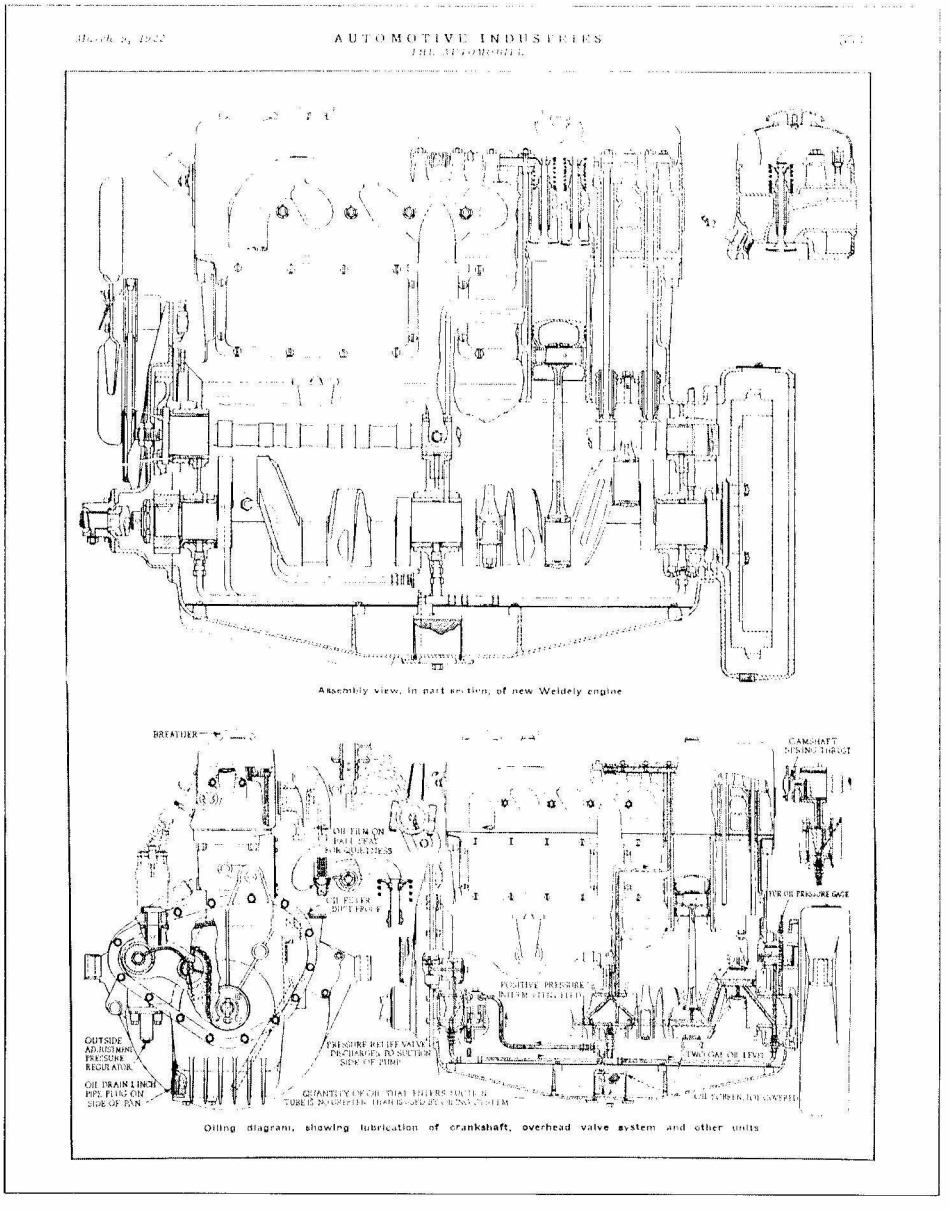


Fig. 9 Weidely's last engine, the "Forty Point Bulldog."

Schwab was 35 years old in 1897 when Andrew Carnegie selected him to be president of Carnegie Steel at an annual salary of one million dollars. Then, in 1902 he pocketed two million dollars his first year a president of U.S. Steel Corp. In 1903 he became the "czar" of Bethlehem Steel.[33]

Schwab immediately brought experienced people to Stutz including Charles S. Crawford, a graduate engineer with over 20 years experience in engineering and management which included the years 1915-21 with Premier from which he resigned in 1921 as vice president of engineering. After exploring various alternatives, Crawford found Weidely's new OHV 6-cyinder engine to be the right fit for the new Stutz Series 690 of 1923 and the Special Six Series 692 of 1924. Enthusiasm ran high for the new 6-cylinder Series with expectations of up to 10,000 cars being produced. Weidely was expecting Stutz to take delivery of 5,000 engines by July 1923 but only 2,191 engines were ordered to be delivered by that time. A total of 2,348 engine numbers were assigned to Series 690-692 cars indicating that at least 157 Weidely engines were acquired after July 1923.[34]

With the demise of Weidely, Crawford proceeded to develop an "in house" Stutz Six Model 691 engine, an enlarged and refined version of the Weidely "Forty Point Bulldog." This Stutz Six, 3-1/2" x 5", 288.6 CID rated 80 B.H.P. powered the "Speedway Six" Stutz Models of 1924-25.

Meanwhile, due to the failure of Weidely, Harry Stutz was forced to find another company to build the 6-cylinder engine for his 1923 H.C.S. Series IV, Model 6, 80 H.P. car. He engaged the Midwest Engine Company, successor to Lyons-Atlas whose engine building experience dated back to the early 1900s. The writer, an owner of an H.C.S. Model 6 touring car, believes that Midwest acquired available engines from Weidely and dressed them to Harry Stutz's specifications which included a unique Brush-designed head. A maximum of 400 Series IV H.C.S. Model 6 cars were produced and only a handful survive.[35]

On January 28, 1925 William H. Fletcher, receiver for Weidely Motors, sued Stutz for $750,000 alleging breach of contracts in which 5,000 engines were ordered but Stutz had taken delivery of only 2,191 as of July 1923.[36] This suit was dismissed in April 1927. Weidely Motors also lost its $425,000 suit against Auburn which was filed on March 21, 1925.[37] With these court decisions the saga of Weidely Motors sadly ended.

George Weidely had an illustrious and productive career. He held patents on various mechanical devices including the first QD rim (quick-detachable) which was universally used. He was also a social person. He was a member of Mystic Tie Lodge No. 398 of Indianapolis from December 7, 1914 until his death in 1948. Weidely held memberships in the Columbia and Athletic Clubs, other social and benevolent organizations and was affiliated with many automotive societies.

The author is still seeking information as to what George Weidely did during the years following the demise of Weidely Motors.

Footnotes

[1]Obituary, *Indianapolis News*, August 31, 1948, p. 5.

[2]*Horseless Carriage Gazette*, July-August, 1970, p. 30.

[3]"Indiana and Indianans," American Historical Society, Chicago (1919), vol. 4, p. 16959.

[4]Beverly Rae Kimes and Henry Austin Clark, Jr.; "Standard Catalog of American Cars, 1805-1942" First Edition, p. 1161.

[5]Norbye, Jan; "Survey of the Gasoline Engine," *Automobile Quarterly*, Vol. 5 No. 1 (1966), p. 88.

[6]Cole, Nick; "The Incredible Bulk," *Automobile Quarterly*, Vol. 21, No. 2 (1983), p. 148.

[7]Ibid., p. 153.

[8]Kimes and Clark; op. cit., p. 1161.

[9]MacElwain, Walter O.; "The Premier," VMCCA, *The Bulb Horn*, July-August, 1976, p. 14. Although Kimes and Clark, op. cit., list the Model A with an air-cooled engine, this seems contradicted by the statement in the text that air-cooled engines did not make their appearance until mid-1904.

[10]*The Automobile*, December 18, 1913, pp. 1165-68.

[11]Ibid.

[12]Kimes and Clark; op. cit., p. 1161.

[13]Kimes and Clark; op. cit. (Third Edition), p. 1242. Through 1914, the company is estimated to have produced 7,125 passenger cars.

[14]*Motor Age*, October 29, 1914, p. 13.

[15]*The Automobile*, November 5, 1911, p. 866.

[16]*The Horseless Age*, November 18, 1914, p. 1; March 3, 1915, p. 286.

[17]*The Horseless Age*, July 28, 1915, p.1085.

[18]*Motor World*, December 29, 1915, p. 39.

[19]*The Bulb Horn*, October-December 1994, p. 22.

[20]Kimes and Clark; op. cit. (Third Edition), p. 1157.

[21]Ibid., various pages.

[22]Ibid.; *The Automobile*, September 7, 1916, p. 93.

[23]*The Automobile*, March 8, 1917, p. 516.

[24]*The Horseless Age*, October 1, 1917, p. 48.

[25]A sales brochure, "Harry C. Stutz and H.C.S. Motor Cars" is one of the rare instances in which a manufacturer credited Weidely Motors with the engine: "Special H.C.S. motor built by Weidely Motors Company; used exclusively in H.C.S. motor cars."

[26]Katzell, Raymond A.; (ed), *The Splendid Stutz*, The Stutz Club, Indianapolis (1996), p. 108.

[27]*Automotive Industries*, March 9, 1922, pp. 551-553.

[28]Auburn: bore 3-¼" to give 63 H.P. Stutz: bore 3-3/8" to give 75 H.P., H.C.S.: bore 3-½" to give 80 H.P.

[29]*Automotive Industries*, August 2, 1923, p. 250.

[30]*Automotive Industries*, November 8, 1923, p. 975.

[31]*Automotive Industries*, January 24, 1924, p. 204.

[32]Perschbacher; "Before the War," *Old Cars*, June 5, 1997, p. 19.

[33]Katzell; op. cit., p. 97.

[34]Ibid., p. 108.

[35]"*The Splendid Stutz*," op. cit., Chapter 12, p. 332.

[36]*Automotive Industries*, January 29, 1925, p. 210.

[37]*Motor Age*, March 26, 1925, p. 32.

Understanding Why Adler Left the Automotive Industry After World War II—an Approach from the Perspective of Subjective Economics

by Peter Engelhard

Fig. 1 – Ernst Hagemeier

Introduction

Adler was among the leading German manufacturers of passenger cars for most of its history. Its departure from the motor industry in 1948 was abrupt and unexpected for some contemporary observers and until today remains a puzzle for many automotive historians. In World War II the company's facilities were converted to producing goods deemed more essential for the country's belligerent efforts—as it was the case for most other automotive companies in Germany.[1] Nevertheless, soon after the end of the war Adler was prepared to resume passenger car production—by 1948, everything had been arranged for this purpose. But in that year Adler's former Director General Ernst Hagemeier (Fig. 1) was released from Allied custody and reinstated in his duties. Being back in charge, one of Hagemeier's first decisions was to stop the Adler postwar passenger car project. The company now turned towards manufacturing typewriters, machinery and, since 1949, motorcycles—a business line that had been abandoned in favor of passenger car production as early as 1907.[2]

Ernst Hagemeier has frequently been accused of killing one of the most traditional and reputable automotive brands in Germany for no apparent reason. Automotive historian Werner Oswald boldly states that Hagemeier ruined the entire company by a series of blatant errors and lack of business acumen.[3] As a matter of fact, commercial fate soon turned against Adler in the post-war era. The machinery business generated nothing but losses. Adler's motorcycles were generally well received by the public but they were not really competitive compared with other major and long established suppliers like NSU or Zündapp. As a consequence, Hagemeier had to leave the company's management board in 1955. Finally, Adler was taken over by the Grundig Corporation in 1957.

This article examines whether Hagemeier's decision to withdraw from the automotive business was an erroneous one under the conditions which prevailed in 1948.

Methodology

Often the historic assessment of a business decision is based on the evaluation of its objective results. In this light, Hagemeier's decision to focus Adler's business on typewriters and motorcycles apparently was an erroneous one since the ventures failed. In an analytical perspective, objective historic outcomes have no meaning for the underlying decision and actions; at the point of time of deciding and acting one cannot have knowledge about the objective outcomes because they will materialize only in the future. What really counts are the expectations about the future outcomes of any action taken in the present. With hindsight, expectations may turn out to be right or wrong. Nevertheless they are the driving moment of any economic action. This is one of the core insights of the so called Austrian or Subjective School of Economics.[4] Ludwig von Mises, one of the founding fathers of this school, made the point that all human action is purposeful.[5] Any economic actor will try to achieve his aims and purposes by making the best use of means available to him. "Best use" essentially depends on his knowledge and abilities. This is the Austrian School economist's understanding of economic rationality or economic reasoning.

The Austrian School economist assumes that any historic business action or decision is rational but that rationality is conditioned by the actor's subjective purposes, by his subjective expectations about outcomes, by his subjective knowledge about available means to achieve them, and by his subjective abilities to use these available means. It is never possible to fully and objectively fathom all the subjective details of historic economic decisions and actions. Nevertheless in order to make them intelligible it is useful to consider the historic facts which most likely shaped the decision maker's intellectual background, i.e., his perception of business opportunities.

Ernst Hagemeier was the key decision maker at Adler during the 1930s and 1940s. In order to understand the reasons behind the company's exit from the automotive industry the remainder of this article will elaborate on the general business experiences made before the time of decision. Furthermore, we must think about the historic circumstances that prevailed when Hagemeier made up his mind in 1948 about the future prospects and opportunities for his company in the automotive business.

Hagemeier's managerial performance in the 1930s and 1940s

The history of Adler began in 1880 when Heinrich Kleyer founded the Heinrich Kleyer Werke in Frankfurt/Main which quickly became a major German producer of bicycles. In 1886 the company was re-named Adler Fahrrad-Werke and in 1896 it became a joint-stock company, Adlerwerke vorm. Heinrich Kleyer, AG. In 1900, the company launched its first passenger car, in 1901 its first motor cycle. Both ventures turned out to be

successful. Adler was among the leading players in the German automotive industry before Word War I.[6]

The hour of Hagemeier

As for many other German passenger car manufacturers, Adler's economic fate turned during the 1920s. In 1925, the German government began to gradually lift protectionist import barriers for passenger cars in order to increase the industry's efficiency. As a consequence, technically rather simple (though affordable and comfortable) 6-cylinder sedans manufactured at that time by General Motors and other American manufacturers gained popularity among German business people during the "Roaring Twenties." The most popular American brands were Chevrolet and Buick. Sales volumes and profitability of local German brands came under pressure since business people and self employed professionals constituted their most important customer segment.[7] Adler's product portfolio did not contain anything that could effectively meet the American challenge. The company's attempt to counter-strike entailed the development of a new 6-cylinder sedan—which, however, was not much more than copying American blueprints. Though many of Adler's peers embarked on this or a similar strategy (e.g., NAG, Presto, Protos, Brennabor) it was a blatant economic failure. The new Adler Standard 6 was launched in 1926 (Fig. 2). It cloned contemporary Chryslers but nevertheless the car turned out to be technically immature. Later, the company introduced the Standard 8. In the end Adler managed to overcome technical problems involving steering (the engines were also considered to be insufficiently reliable and durable) but many customers were annoyed and re-engineering was costly.[8] By 1929, the 6-cylinder experiment and deteriorating market conditions had brought Adler in serious need of commercial rehabilitation.

This was the hour of Ernst Hagemeier. Hagemeier was installed by Danat-Bank, Adler's largest shareholder at that time, as the new Director General—a decision which deprived the Kleyer family almost completely of its influence in the company's fate.[9] Hagemeier is described as an energetic and hard-nosed self-made business man.[10] Despite rapidly worsening economic conditions for the motor industry during the early 1930s, he brought the company on track again, among others by downsizing the company's workforce from approximately 6,000 in 1926 to 3,000 in 1930 (Adler's headcount was soon to recover to 7,000 towards the end of the decade)[11] and up-to-date process innovations like a thorough standardized parts strategy. But Hagemeier also turned out to be far-sighted on the product side of the business. By hiring brilliant engineers like Hans Gustav Röhr (1931-1935) or Karl Janschke (1936-1945) he paved the way for advanced drive-train and bodywork technology which resulted in Adler's gaining the reputation of being among the innovation leaders in German passenger car manufacturing.

Moving away from large cars

Perhaps Hagemeier's most intriguing business decision at that time was to drastically scale back Adler's output of large 6- and 8-cylinder sedans. Instead, he brought a new series of conventionally designed mid-size cars (Adler Trumpf/Primus) and technically advanced front-wheel driven compact cars (Adler Trumpf Junior) to the market in 1932 (Fig. 3). Hagemeier correctly anticipated that the 6-cylinder fashion of the mid-1920s was not a sustainable one and that it would not survive the Great Depression for long. Table 1 depicts the evolution of German passenger car sales by engine size—larger than three litres and smaller than three litres—during the Great Depression. Both categories developed more or less in line until spring 1931.

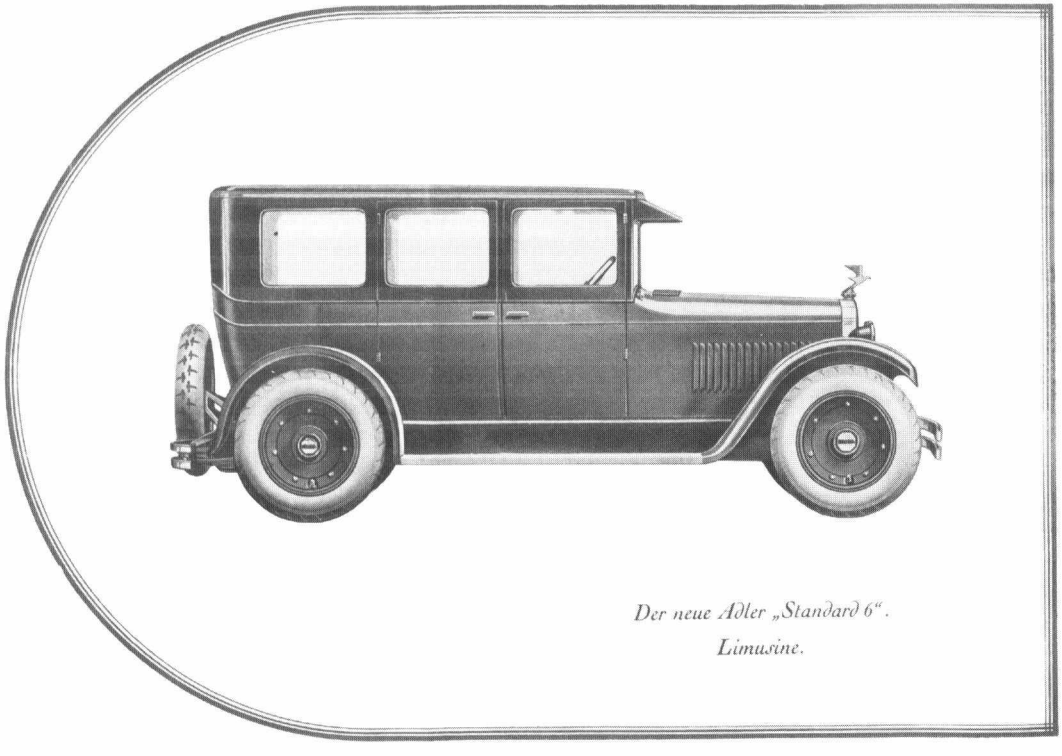


Fig. 2 – The First Adler 6 (1926).

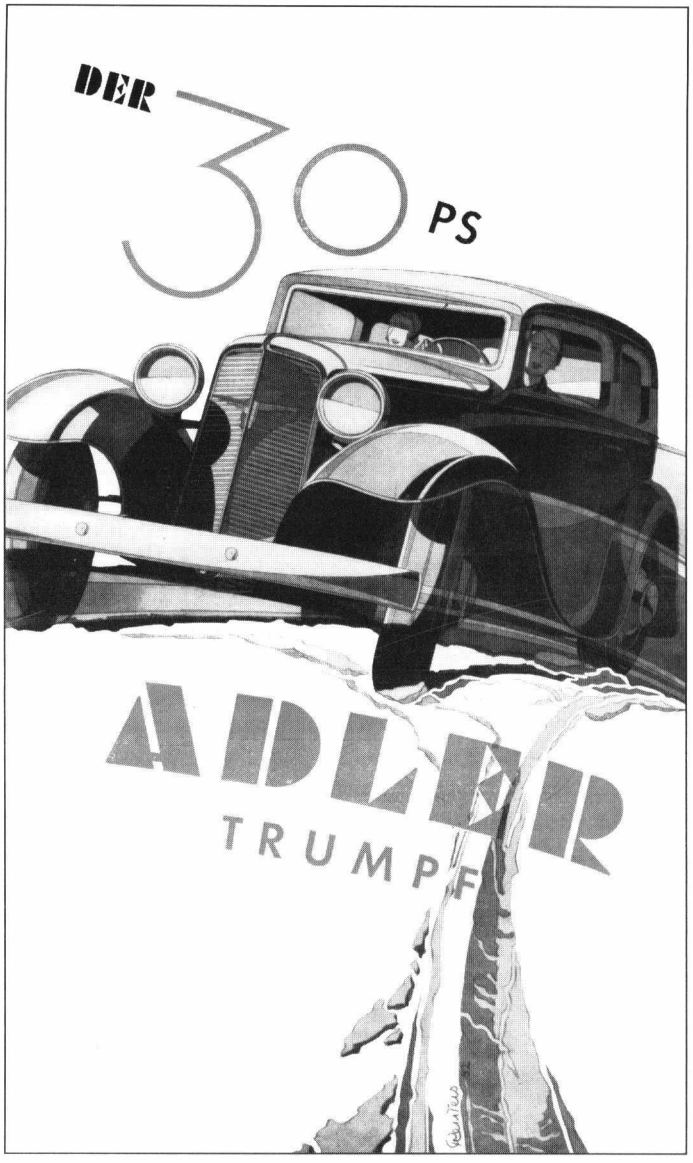
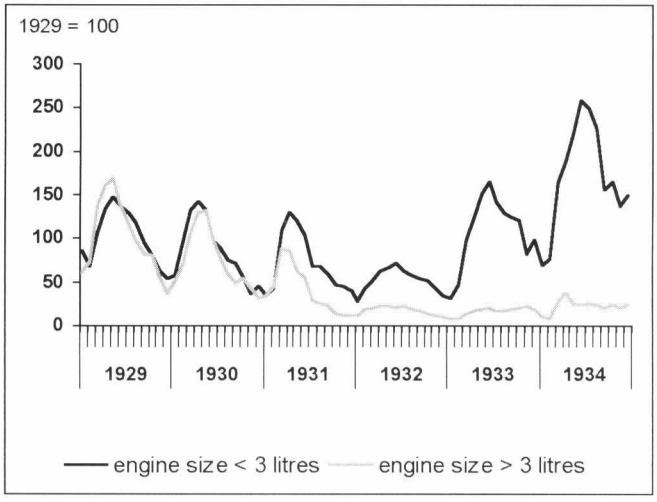


Fig. 3 – Adler's 1932 Trumpf with a 1.5 litre 4-cylinder engine.

Table 1 – Monthly German Passenger Car Sales by Engine Size, 1929-1934



(Source: Author's database, Reichsverband der Automobilindustrie)

Then large car sales began to plunge. Smaller cars swiftly followed. But while sales of smaller cars soon recovered when the crisis abated in 1933-34, sales of passenger cars with large displacement engines never again recovered to their former scale. This development also pushed most of the American import cars out of the market.

Hagemeier, unlike many of his contemporary peers in the German automotive industry, was able to make a clear intellectual distinction between market fundamentals and ephemeral phenomena like fashions or speculative bubbles. This ability is one of the core elements of successful entrepreneurship.[12] Today it is very well known that the relative prosperity German business life experienced during the second half of the 1920s was not sustained by the underlying fundamentals of the German economy. Rather, unsustainable short-term credit financing inflated short-term business activities. Hardach talks of the "pinchback gold of the golden years."[13] Any alert entrepreneur in the German motor industry may have noticed that the popularity of large American 6-cylinder sedans was not much more than a fashion which

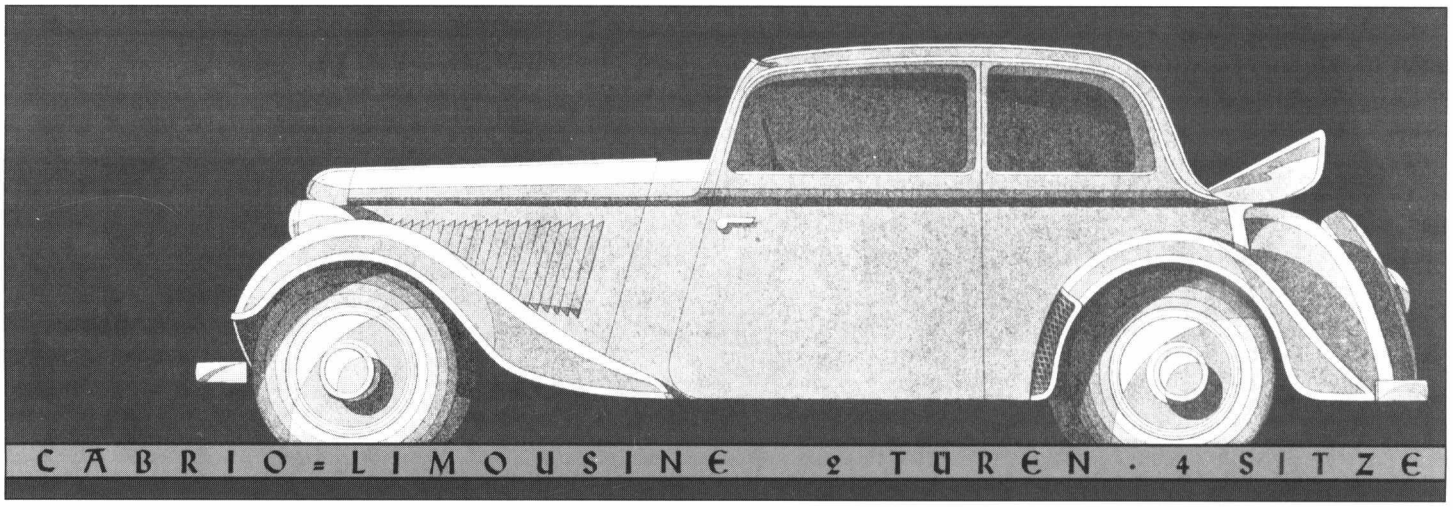


Fig 4 – The 1936 Adler Trumpf Junior.

emerged in this artificially upbeat economic climate. American manufacturers were able to exploit this constellation by "hit and run" actions using off-the-shelf products. For incumbent manufacturers, in contrast, it should have been essential to recognize that many underlying fundamentals of the market had not really changed at all, e.g., the German tax regime, regulations and running costs, still implied a relative competitive advantage for small and mid-sized cars which became manifest in the course of the Great Depression with particular rigor. Especially after the full consequences of the German banking crisis had emerged in spring 1931[14] corporate buyers began to avoid buying expensive vehicles – if they bought any new cars at all. Many owners traded-in their large cars for smaller ones in order to economize on running costs.[15] Consequently, passenger car demand quickly shifted away from larger and more luxurious vehicles.

Undisputed chief executive

By the end of the 1930, Ernst Hagemeier was the undisputed chief executive at Adler – a position he had achieved not only because of his personal performance and business acumen. As of 1943 he also owned 30 percent of the company's stock. An additional 47 percent was under the control of Dresdner Bank. This further increased Hagemeier's personal influence since he was chairman of Dresdner Bank's regional advisory committee for Frankfurt and Hesse.[16] Thus, Adler was a company more or less solely driven by the entrepreneurial spirit of its Director General.

World War II

Ernst Hagemeier's work during the years of World War II is not easy to assess. The last Adler passenger cars were assembled in 1941. Then the Frankfurt plant was entirely converted to produce war goods. Like many other German industrial companies, Adler at that time relied heavily on the forced labor of concentration camp inmates. The premises were severely damaged on March 22, 1944, by an Allied air raid. After the occupation of Frankfurt by American troops in the spring of 1945, Hagemeier was detained. Inquiries into his role during the war years brought numerous reports of severe maltreatment to light. Mortality rates among forced laborers at the Adler plant are reported to have been high. Nevertheless, the proceedings at the Frankfurt de-nazification court and investigations by the German public prosecutor did not adduce evidence sufficient to indicate that Hagemeier was personally responsible.[17] He resumed his duties at Adler in July 1948. Since 1946, the company had manufactured typewriters. Soon after his return Hagemeier made the decision to entirely abandon the passenger car business although everything had been prepared to roll out a redesigned version of the Trumpf Junior compact car.[18] Instead, in 1949, Adler became a manufacturer of motorcycles.

Market experiences made during the 1930s

Hagemeier's career up until then demonstrates that he was a proactive man with high entrepreneurial abilities and good foresight about market developments. One may also assume that his decision not to resume passenger car production at the Adler factory was based on careful and rational reasoning (which, of course, does not mean that such reasoning cannot be subject to economic error).[1]

The entrepreneur's decision to stay in a certain business or to leave it contains several elements which can be identified by referring to the economic theory of productive assets developed by Ludwig Lachmann.[20] From Lachmann we learn that the decision to stay or leave depends on the company's current market position and the entrepreneur's expectations about its future market position: does the business yield returns which he or his investors consider appropriate and will it continue to do so? If not, the question arises whether to close down, to sell off, or to convert to another business. The first option will be chosen only if a sell-off or conversion is commercially not viable. The entrepreneur will consider the sell-off option when there is a buyer for his assets and when he may recover the initial costs that once were necessary to set up his business (including interest) or when eventual write-offs are lower than those associated with closing down. The conversion option becomes viable when there are alternative business opportunities and conversion is not too costly – hence if write-offs associated with conversion are lower than those associated with closing down or selling off. The costs of conversion depend on the flexibility of the asset base. It is more expensive to convert capital-intensive and highly specific installations than less specific, general purpose assets.

Lachmann's theory sets the agenda for the further analysis of the Adler/Hagemeier case. First we develop a general view on Adler's market position in the 1930s. Market experience during the 1930s is supposed to be a major component of the general mindset for any business decision made after World War II. Then we ask what at that time could have been reasonably expected for the further development of Adler's market position.

Adler's market position in terms of production volumes

Table 2 displays an estimation of total production volumes in Germany by manufacturer. It covers the time span from the end of the Great Depression around 1933 and the outbreak of World War II in 1939/40. During this period Adler ranked fourth among German manufacturers with Mercedes-Benz as its closest peer in terms of overall output. Nevertheless, there was a clear preponderance of the heavyweight mass producers Opel (General Motors) and Auto Union (Ford was more or less still in the ramp-up stage for much of the decade) over the mid-sized players Mercedes-Benz and Adler. Further down the ranking there were only two other significant players, BMW and Hanomag, while all other manufacturers were more or less insignificant.

The simple quantitative output ranking gives a first impression of the relative weights of players in the market place. However, in order to attain a more elaborate picture of Adler's true market position it is necessary to identify the company's closest competitors. The market for passenger cars is a highly differentiated one: There is a broad range of different model-types of different size and appearance which serve different purposes, suit different tastes and convene with different abilities to pay. This phenomenon of product differentiation causes the entire market for passenger cars to break down into "elementary markets"[21] or market segments. Any market player will consider the incumbents of its relevant market segment to be its closest peer group. Against their actual or anticipated

Table 2 – Ranking of German Passenger Car Manufacturers by Production Volume

Rank	Manufacturer 1933-39 [k units]	Total Production 1933-39 [%]	Share in Total Production
1	Opel	599	41.7
2	Auto Union	272	18.9
3	Mercedes-Benz	138	9.6
4	Adler	118	8.2
5	Ford	94	6.5
6	BMW	78	5.4
7	Hanomag	65	4.5
8	Borgward	27	1.9
9	Stoewer	12	0.8
10	Brennabor*	6	0.4
11	Röhr**	3	0.2
12	NAG***	1	0.1
13	Maybach	1	0.1
14	Others	23	1.6

*out of business since1933
** out of business since 1935
*** out of business since 1934

Source: Oswald 1982, author's calculations

reaction it will try to measure which effect its own competitive actions (e.g., price variations, introduction of a new model, technical innovation etc.) will have.[22] Furthermore, against their commercial performance it will measure whether its own performance is satisfactory or not. Therefore intra-segment competition is more intense than cross-segment competition.

The German passenger car market may be broken down into five elementary markets or market segments:[23]

1) Small cars
2) Compact cars
3) Mid-size cars
4) Upscale cars (such as BMW 335, Mercedes-Benz 200, 290)
5) Luxury cars

Table 3 disaggregates total German passenger car production by manufacturer and segment, by shares of manufacturers in specific segments and by the share of specific segments in manufacturers' specific product line-ups. In terms of total output volume, the most important segment comprised compact cars which accounted for nearly 67 percent of the industry's output between 1933 and 1939.

In the 1930s, Adler's product line up included the compact car Trumpf Junior, the mid-size cars Trumpf, Primus and 2.5 Litres series as well as the luxury class Standard and Favorit series. The compact Trumpf Junior was the company's focus product since it accounted for nearly 70 percent of its output (Fig. 4).

Within the compact car segment Adler ranked third after Opel and Auto Union. In terms of compact car market share, however, the gap between Adler and these two mass producers was significant: Adler accounted for merely 8.5 percent of total German compact car production (Opel: 58.1 percent; Auto Union: 19.2 percent). Thus, Adler was strongly focused on the compact car segment but its position within this segment was overshadowed by two much larger incumbent mass producers.

There were other reputable smaller players in the German passenger car industry like Mercedes-Benz, BMW, and Hanomag and even very small players like Stoewer and Maybach. Also Ford's Cologne plant had an output capacity which was also quite comparable to Adler. It is important to note that apart from BMW and Ford (which is a different story) all the smaller-sized German passenger car manufacturers followed a different segment strategy than Adler did. Instead of focusing on the compact car segment where they faced direct competition of the much larger mass producers they rather made the mid-size, upscale and luxury segments their home turf.

However, a company's sheer size does not say too much about its commercial performance. For the entrepreneur's decision to stay in a certain business or to leave it, commercial performance relative to peers is a much more relevant criterion than size—as long as one assumes that profit is the entrepreneur's primary motivation.

Adler's commercial position—a calculation on the back of an envelope

We assess Adler's relative commercial position by a simple though instructive calculation on the back of an envelope. The results are summarized in Table 4.

The calculation shows that labor productivity at the Adler plant was only slightly lower than at GM's Opel plants and Auto Union (5.2 cars/man-year compared with 5.5 cars/man-year) despite the company's smaller size. However, under normal output conditions Adler's operations appear to have been more profitable, yielding an estimated EBDIT-margin on returns of 21 percent (compared with the 15 percent attained by Opel and Auto Union).

The primary source of Adler's superior relative profitability was a higher sales price which could be attained in the market place compared with the products of its principal competitors. One reason for the higher achievable prices might have been the product's good reputation for quality and advanced technology (although in the late 1930s Opel's new Kadett and Olympia compact cars were technologically at least equally innovative). Another and probably more important reason was market tightness: Demand for compact cars resumed expansion after the Great Depression had abated and it was further fuelled by specific fiscal measures (i.e., suspension of the car tax) taken by the Nazi regime after it came to power in 1933.[25] Nevertheless, as car demand rose during the 1930s the government increasingly curtailed the automotive industry's procurement of supplies for production in order to stabilize Germany's current account balance.[26] Furthermore it effectively tried to re-direct new car sales to foreign markets and to withhold supplies from the domestic market.[27] The consequence of these market interventions was a growing excess supply in the domestic car market. This could not simply be reduced by letting prices generally increase (as any free market logic would imply) since price controls had been effective since 1936. It rather appears that excess demand was to be skimmed by selling more high-end fractions of the German compact car portfolio at higher prices while rationing the supply of cheaper cars. This

Table 3 – Production Volumes by Manufacturer and Market Segment 1933-1939

	Small	Compact	Mid-size	Upscale	Luxury	Others/ Unspecified	Total
Total production volumes [k units, est.]							
Opel		558600	9400	24400		6400	598800
Auto Union		184500	66800	5300	10300	4900	271800
Mercedes-Benz		4300	117800	14300	2000		138400
Adler		81900	32000		4000		117900
Ford		76400	17300				93700
BMW	7200	45800	22400	300		2200	77900
Hanomag		7800	22100			34900	64800
Borgward	700		26100	200			27000
Stoewer			5300			7200	12500
Brennabor		1500	4000			300	580
Röhr			2100		100	300	2500
NAG				500		700	1200
Maybach					800	100	900
Others						23000	23000
Total	7900	960800	325300	45000	17200	80000	1436
Share [%]	0.5	66.9	22.6	3.1	1.2	5.6	100
Share of manufacturer in segment [%]							
Opel		58.1	2.9	54.2	0.0	8.0	41.7
Auto Union		19.2	20.5	11.8	59.9	6.1	18.9
Mercedes-Benz		0.4	36.2	31.8	11.6		9.6
Adler		8.5	9.8	23.3			8.2
Ford		8.0	5.3				6.5
BMW	91.1	4.8	6.9	0.7		2.8	5.4
Hanomag		0.8	6.8			43.6	4.5
Borgward	8.9		8.0	0.4			1.9
Stoewer			1.6			9.0	0.9
Brennabor		0.2	1.2			0.4	0.4
Röhr			0.6		0.6	0.4	0.2
NAG				1.1	0.0	0.9	0.1
Maybach					4.7	0.1	0.1
Others					0.0	28.8	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Share of segment in manufacturer's product line-up [%]							
Opel		93.3	1.6	4.1	0.0	1.1	100.0
Auto Union		67.9	24.6	1.9	3.8	1.8	100.0
Mercedes-Benz		3.1	85.1	10.3	1.4		100.0
Adler		69.5	27.1		3.4		100.0
Ford		81.5	18.5				100.0
BMW	9.2	58.8	28.8	0.4		2.8	100.0
Hanomag		12.0	34.1			53.9	100.0
Borgward	2.6		96.7	0.7			100.0
Stoewer			42.4			57.6	100.0
Brennabor		25.9	69.0			5.2	100.0
Röhr			84.0		4.0	12.0	100.0
NAG				41.7		58.3	100.0
Maybach					88.9	11.1	100.0
Others						100.0	100.0
Total	0.6	66.9	22.7	3.1	1.2	5.6	100.0

Source: Oswald 1982, author's calculations

Table 4 – Estimated Commercial Parameters for Compact Car Production at Adler, Auto Union and Opel in the Late 1930s

	Opel	Auto Union	Adler
Maximum capacity—k units / year	125	54	30
Assumed capacity usage—%	85%	85%	85%
Normal annual output—k units / year	106	46	26
Labor force—men / year	19250	8400	4900
Average wage rate—RM / man / year	2300	2300	2300
Labor productivity—cars / man / year	5.5	5.5	5.2
Labour costs—RM / car	418	420	433
Other variable input costs—RM / car	1700	1200	1700
Total variable production costs—RM / car	2118	1620	2133
Average sales price—RM / car	2500	1800	2700
EBDIT—mn RM / year	405	129	147
EBDIT / returns—%	15%	15%	21%

All data for compact car production only: Opel Kadett / Olympia / Super 6, Auto Union DKW Reichsklasse / Sonderklasse, Adler Trumpf Junior. RM = Reichsmark; EBDIT = Earnings before Depreciation, Interest and Tax.

Source: Author's estimation based on data given by Oswald,[24] Rauch and Reichsverband der Automobilindustrie

also explains the significant uptick of the compact car price curve at its right hand end (Fig. 5).

Sustainability of Adler's market position towards the end of the 1930s

One may conclude that towards the end of the 1930s Adler's market position was, under the prevailing conditions of that time, not bad in terms of profitability. Nevertheless, Figure 5 also demonstrates that the company's role in the compact car market had become marginal in terms of output volumes. Furthermore, it was in a "sandwich position" between Ford and Opel. Consequently, Adler's position within the compact car segment was more or less sustainable as long as the highly regulated and not really competitive market conditions of the late 1930s did not change. However, if the market climate were to become more competitive for whatever reason, there was a high probability of Adler falling further behind the larger producers.

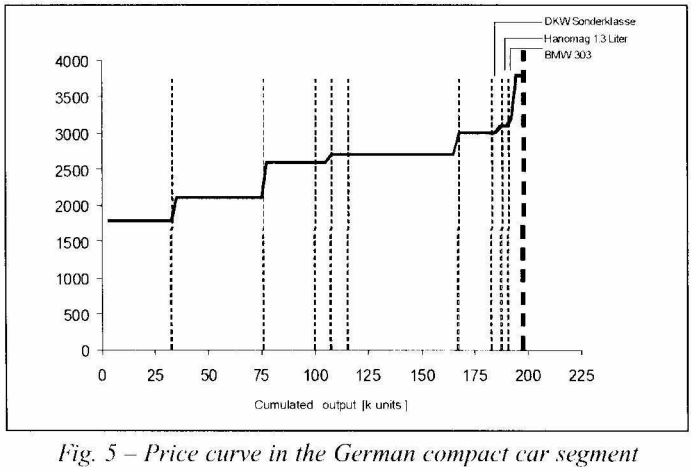


Fig. 5 – Price curve in the German compact car segment as of 1938.

Source: Author

Together with other indigenous car producers Adler had effectively mitigated the most severe threat for compact car market incumbents that had been imminent since 1934: The creation of the Volkswagen. The Volkswagen's technical "spiritus rector" was Ferdinand Porsche but in the early phase of the project its implementation lay within the German industry association's ("Reichsverband der Automobilindustrie") responsibility. A respective project team had been staffed with experts from Daimler-Benz AG, Auto Union AG, BMW, MAN and, finally, the Adler Werke.[28] None of these incumbents had any true interest in seeing the Volkswagen enter production—with a projected production volume of 175,000 units per year and a (subsidized) sales price of merely 1,000 Reichsmark they would have created a credible new competitor. Nevertheless, there was a political imperative to realize the project. The smart solution of this problem was market splitting: The whole issue of producing and marketing the Volkswagen was handed over to the wealthy Nazi labor union "Deutsche Arbeitsfront (DAF)." Furthermore, the right to buy a Volkswagen would have been exclusively reserved to the members of DAF, i.e., mainly blue and small white collar workers. Traditional passenger car buyers—i.e., upper middle class and commercial customers—would almost entirely remain with the traditional manufacturers.[29]

Adler's business prospects after World War II

We now return to the task of evaluating how the future prospects of the German passenger car market looked like after World War II for a smaller German passenger manufacturer like Adler when Hagemeier had to decide whether to stay in this kind of business or to leave it. Passenger car production at Adler's plant had finally ceased in 1941 due to war time circumstances. Experience made in the market place until the late 1930s constituted the mental background on which decision-maker Hagemeier would make up his mind. The preceding paragraphs showed that Adler's market position had been profitable but increasingly marginal. It could have even turned precarious if competition were to become more intense. Thus, in the late 1940s the decision-maker's key question to answer was whether the coming years would bring more competition or not.

Positive prospects: postwar recovery of the German passenger car industry

Despite the manifold difficulties the German economy faced after World War II (destruction of its asset base, the advent of the "Iron Curtain" which more and more divided the country, and cumbersome regulation of almost any economic activity), prospects for the German automotive industry in general began to improve around 1948. Most plants which had survived the war were more or less operational again at that time.[30] In fact the

economy was recovering since 1947 and even accelerated in the course of 1948, heading for a reconstruction boom which other European countries had already experienced during the preceding two years.[31] Finally, private customers again began to play a role for new passenger car demand after the West German currency reform and the far reaching deregulation of markets had been implemented in the summer of 1948.[32] For the time being, sales were driven by pent-up demand which could be expected to play a vital role for the domestic car industry for some years to come: As of 1946, the number of registered and operated passenger cars was 76 percent below the respective number for 1939 (Western Germany) and the remaining passenger car fleet was heavily aging. There was a substantial motorization gap.[33] As a consequence, passenger car output in the British and American occupation zones recovered to almost 30,000 units in 1948 a threshold beyond which contemporary experts saw sustainable future prospects for the industry.[34]

Seen from the perspective of 1948 there were some good reasons to believe in a growing German passenger car market. There was also good reason to believe that compact cars like the Adler Trumpf Junior would be particularly sought-after under prewar conditions. Compact cars were most popular among self-employed professionals and craftsmen who had constituted the most important prewar customer group. After the war they again turned out to be the most likely new car buyers.[35]

Negative prospects: potential over-supply

As acceptable as the prospects for a general resumption of passenger car production might have been, it needs to be kept in mind that the motorization boom which Western Germany experienced in the late 1950s and 1960s was not foreseeable at all in 1948. Rather, it was realistic to assume that sooner or later the number of sales and production would return to their prewar levels but most likely not grow too much beyond it. Contemporary analyses foresaw an upper ceiling for domestic new passenger car demand at only 270,000 units annually.[36] If one allowed for an export quota of 25 percent and assumed that imports were not to play an important role, this translated into a realistic potential production volume of approximately 360,000 units per year.

Anyone who in the late 1940s tried to assess the likely evolution of competition for the years to come would have compared this number with the domestic plant capacities which were or were likely to become operative. For this exercise, several facts were to be taken into account:

a) The projected maximum production volume for Western Germany matched the total German plant capacity of 1938 with remarkable precision. However, seen from the Western perspective a substantial fraction of prewar capacity was effectively lost due to the dismantling of industrial installations by Allied authorities (e.g., the entire assembly line for the Kadett compact car at Opel's Rüsselsheim plant). BMW's and Auto Union's passenger car plants were situated in Eastern Germany and in 1948 both brands played no substantial role for the Western German new car market. The Stoewer plant was now under Polish administration. These losses decreased available postwar production capacity

b) Resumption of passenger car production at Adler and Hanomag was not confirmed in 1948 though certain preparations were under way

c) Mercedes-Benz had made substantial investments in production capacity during the early 1940s.[37] The Volkswagen plant had no opportunity to play a visible role in the prewar passenger car market but after 1948 its initial capacity of 175,000 units per year became operative. It was by far the largest and technically most advanced plant in contemporary Germany.[38] Volkswagen's domestic sales potential was not restricted to particular customer groups anymore. These circumstances substantially increased Western German postwar production capacity.

The summary of production capacities given by Table 5 demonstrates that the advent of the Volkswagen plant in the "free" passenger car market potentially changed the industry's competitive landscape. Without Adler and Hanomag, total available capacity remained just below the aforementioned maximum output volume which according to contemporary estimates the market was able to absorb. Re-entry of these two players would have caused available capacity to exceed the expected output ceiling. Anyway, in 1948 it was reasonable to expect that it would take some years for sales to match the anticipated maximum level. Consequently, for contemporary actors the emergence of over-capacities and increasing competitive pressure was a very likely scenario. It would have particularly affected the compact car market where the Volkswagen was targeted. A very much smaller compact car manufacturer like Adler was likely to be among the players who were to bear the full brunt of intensifying competition.

A hypothetical picture of a postwar compact car market and how it might have been reasonably anticipated in 1948 under such circumstance is represented by Figure 6. If the compact car segment was to have more or less the same size as in the last

Table 5 – Estimated Capacities of German Passenger Car Manufacturers [k units]

Manufacturer	1936	1938	1948*	1948**
Maybach	0.24	0.24	-	-
Stoewer	2	3	-	-
Borgward	7	7	10	10
BMW	16	20	-	-
Hanomag	17	17	-	17
Adler	30	30	-	30
Ford	30	30	30	30
Mercedes-Benz	34	34	43	43
Auto Union	54	54	-	-
Opel	124	140	78	78
Volkswagen	-	-	175	175
Others	8	-	-	-
Total	332	359	336	383

** Without Adler and Hanomag*
*** Including Adler and Hanomag*

Source: Author's calculations

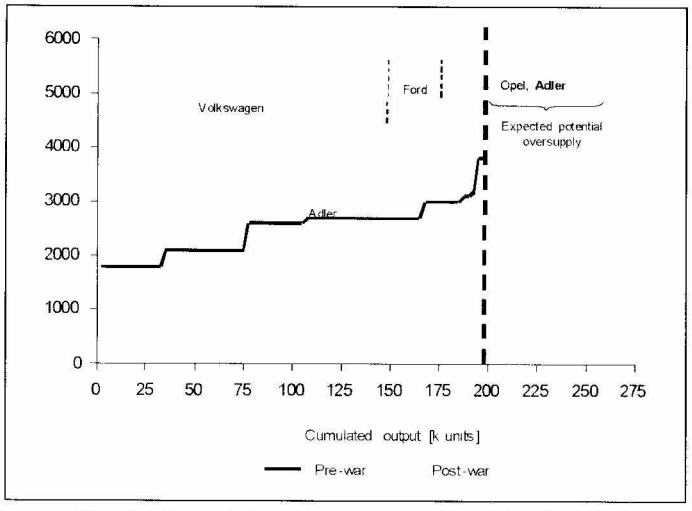


Fig. 6 - Potential postwar price curve in the German compact car segment anticipated in 1948.

prewar years (a realistic anticipation under the 360,000-unit total market scenario) the Volkswagen plant would have covered almost 75 percent of it (including export sales). One might have expected some room to remain for the higher priced Ford Taunus but Opel and Adler would have competed at the position of the marginal supplier with only very limited sales volume left. If Opel and Adler were to produce at their normal output levels, the emergence of oversupplies must have been very likely for the prudent compact car manufacturer in 1948.

Conclusions and epilogue

Given the likely market development that may have been anticipated in 1948, Volkswagen's advent in the "free" market for compact cars left only very limited room for other suppliers in the segment on which Adler had traditionally focused. That the decision to abandon the automotive business was an erroneous one taken by Ernst Hagemeier is therefore not really well-founded. Rather, to give up passenger car production was a comprehensible decision given the market information that was available at that time and the market development that could reasonably have been anticipated.[39] This conclusion may be derived and made intelligible by employing the method of Austrian Economics to a specific historic problem, i.e., by asking for the subjective rationality behind decisions taken by economic actors at a certain point of time and under certain circumstances.

Finally, one needs to keep in mind that Adler had the opportunity to convert to other fields of business at comparatively low cost. Though passenger car production had accounted for 90 percent of the company's turnover during the 1930s[40] it never had been entirely focused on it. Rather there was substantial experience with other products available in-house. Furthermore, Adler's asset base was probably less capital intensive and more multipurpose than it had been the case with larger automotive-only players. From a market perspective, especially the motorcycle business might have appeared attractive in 1948. The data shown in Table 6 indicate that in 1948 the number of registered motorcycles grew perceivably faster than the passenger car fleet. Production remained sluggish for the time being since demand obviously was met through re-registration of motorcycles mothballed in wartime. Nevertheless, this development might well have been interpreted as a harbinger for increasing demand for brand new motorcycles which in fact materialized one year later.

How well or how bad Hagemeier managed Adler's new fields of activity after 1948 is quite a different story, though.

The image of Ernst Hagemeier was supplied by the author. The illustrations of Adler passenger cars are from the editor's collection.

Footnotes

[1]Blaich, Fritz; *Wirtschaft und Rüstung im "Dritten Reich"* (Schwann-Bagel, Düsseldorf 1987), p. 16.

[2]Tragatsch, Erwin; Adler Motorräderschnelle Delikatessen aus Frankfurt, in: *Markt für klassische Automobile und Motorräder* (fasc. 11, 1985), p. 22-25.

[3]Oswald, Werner; *Deutsche Autos 1920-1945* (5th edition, Motorbuch Verlag, Stuttgart 1982) p. 9.

[4]Kirzner, Israel M.; *The Economic Point of View* (Sheep and Ward, Kansas City 1975), p. 146 ff. Kirzner, Israel M.; *Perception, Opportunity and Profit* (The University of Chicago Press, Chicago and London, 1979).

Table 6 – Comparison Between Registered Number and Production Volumes of Passenger Cars and Motorcycles

	Registered Passenger Cars [k units]	[1938 = 100]	Registered Motor Cycles [k units]	[1938 = 100]	New Passenger Car Production [k units]	[1938 = 100]	New Motorcycle Production [k units]	[1938 = 100]
1936*	945	74	1184	78	245	88	146	77
1938*	1272	100	1513	100	277	100	190	100
1945**	-	-	-	-	1	0	-	-
1946**	172	14	233	15	10	4	-	-
1947**	174	14	243	16	10	3	-	-
1948**	253	20	412	27	29	11	14	8
1949	383	30	634	42	104	38	146	77

** Deutsches Reich*
*** United Economic Zone*
Source: Verband der Automobilindustrie.

[5]Von Mises, Ludwig; *Epistemological Problems of Economics* (Princeton, New Jersey et al. 1960), p. 23 ff.

[6]von Fersen, Hans Heinrich; *Autos in Deutschland 1885-1920 - Eine Typengeschichte* (Motorbuch Verlag, Stuttgart, 4th edition, 1982), p. 11f.

[7]Edelmann, Heidrun; *Vom Luxusgegenstand zum Gebrauchsgut Die Geschichte der Verbreitung von Personenkraftwagen in Deutschland* (VDA, Frankfurt/Main 1989), p. 61 ff.

[8]Oswald op. cit., p. 14 f; Simsa, Paul; "Dauerläufer—Adler Trumpf Junior Sport, der Sportwagen des jungen Deutschland," in: *Motor Klassik*, February 1985, pp. 18-24. For many of Adler's peers the 6-cylinder-experiment was lethal. At the beginning of the Great Depression, in 1928, 29 once reputable German passenger car manufacturers had left the market.

[9]Danat-Bank itself was absorbed into Commerzbank after going bankrupt in the banking crisis of 1931, cf. Kindlerberger, Charles P.; *Die Weltwirtschaftskrise* (Deutscher Taschenbuch Verlag, München, 1973), p. 111 ff.).

[10]Simsa; op. cit., p. 24.

[11]Oswald; op. cit., p. 9.

[12]Kirzner, Israel M.; *The Meaning of the Market Process—Essays in the development of modern Austrian Economics* (Routledge, London and New York, 1992) p. 42.

[13]Hardach, Karl; *Wirtschaftsgeschichte Deutschlands im 20. Jahrhundert* (1914-1970) (Vandenhoek & Ruprecht, Göttingen, 1993), p. 39 ff.

[14]Borchardt, Knut; *Grundriß der deutschen Wirtschaftsgeschichte* (Vandenhoek & Ruprecht, Göttingen, 1985), p. 65.

[15]Edelmann, op. cit., p. 131.

[16]http://kz-adlerwerke.de.

[17]http://kz-adlerwerke.de.

[18]Simsa, op. cit., p. 23.

[19]Kirzner, Israel M.; *Perception...*, p. 120 ff.

[20]Lachmann, Ludwig; *Capital and its Structure* (G. Bell and Sons, London, 1956).

[21]von Stackelberg, Heinrich; *Grundlagen der theoretischen Volkswirtschaftslehre* (J. C. B. Mohr—Paul Siebeck, Tübingen and Polygraphischer Verlag, Zürich, 1951), p. 240 ff.

[22]Rothbard, Murray M.; Man, *Economy and State—A Treatise on Economic Principles* (Ludwig von Mises Institute, Auburn University, Auburn, 1993), p. 636 f.

[23]From a data set containing price and technical specs for 110 passenger car types which were produced in Germany in the 1930s we extracted close peers to any specific company by sorting out those who offer the most similar products. This can be performed by creating a market segmentation based on the dissimilarity of specific passenger car types according to their price and wheelbase specs. We used the Euclidic Distance (L2 norm) or Minkowski metric. This method aggregates least dissimilar single passenger car types by a stepwise process into five clusters.

[24]Oswald, op cit. passim; Rauch, Siegfried; *DKW—Geschichte einer Weltmarke* (Motorbuch Verlag, Stuttgart 2007); Reichsverband der Automobilindustrie; *Tatsachen und Zahlen aus der Kraftverkehrswirtschaft 1937* (Reichsverband der Automobilindustrie, Berlin, 1938).

[25]Edelmann, op. cit., p. 160. The availability of domestic motor production facilities of substantial size was a priority set by German military planners. Furthermore, mass-motorisation had been among the icons of fascist ideology since the 1920s: Payne, Stanley; *Geschichte des Faschismus* (Propyläen Verlag, Berlin, 2001), p. 573 ff; Möser, Kurt; *Geschichte des Automobils* (Campus Verlag, Frankfurt and New York, 2002), p. 174 ff.

[26]Tooze, Adam; *Ökonomie der Zerstörung—Die Geschichte der Wirtschaft im Nationalsozialismus* (Siedler Verlag, München, 2007), p. 93 ff.

[27]Busch, Klaus W.; *Strukturwandlungen der deutschen Automobilindustrie* (Duncker & Humblot, Berlin, 1966), p. 30.

[28]Since Opel and Ford were foreign-owned enterprises they had been excluded from the project. Lewandowski, Jürgen; *VW-Typen und Geschichte* (Steiger Verlag, Augsburg, 1998), p. 12.

[29]Volkswagen AG; *Eine Idee macht Geschichte* (Wolfsburg, Volkswagen AG without year), p. 4; Etzold, Hans Rüdiger; *Der Käfer II* (Motorbuch Verlag, Stuttgart, 1984), p. 12; Barkai, Avraham; *Das Wirtschaftssystem des Nationalsozialismus* (Fischer Taschenbuch Verlag, Frankfurt/Main, 1988), p. 217 f.; Mommsen, Hans & Manfred Grieger; *Das Volkswagenwerk und seine Arbeiter im Dritten Reich* (Econ Verlag, Düsseldorf, 1996), p. 64.

[30]Diekmann, Achim; *Die Automobilnachfrage als Konjunktur- und Wachstumsmotor* (J. C. B. Mohr—Paul Siebeck, Tübingen, 1975), p. 27.

[31]Abelshauser, Werner; *Wirtschaft in Deutschland 1945-1948* (Deutsche Verlags-Anstalt, Stuttgart, 1975), p. 21.

[32]Diekmann, op. cit., p. 25.

[33]Diekmann, Achim; *Die Automobindustrie in Deutschland* (Deutscher Institutsverlag, Köln, 1985), p. 25, p. 14. Carlin, Wendy; "West German Growth and Institutions, 1945-90," in: Crafts, Nicholas & Gianni Toniolo, eds.; *Economic Growth in Europe since 1945* (Cambridge University Press, Cambridge, 1996), pp. 455-497.

[34]Busch, Klaus W.; op. cit., p. 37.

[35]Compact cars offered a high degree of versatility, comparatively low operating costs while purchase prices were generally perceived as being the most reasonable. While these specifications traditionally appealed to the aforementioned customer groups, they gained particular importance under the still frugal conditions of the post-war economy.

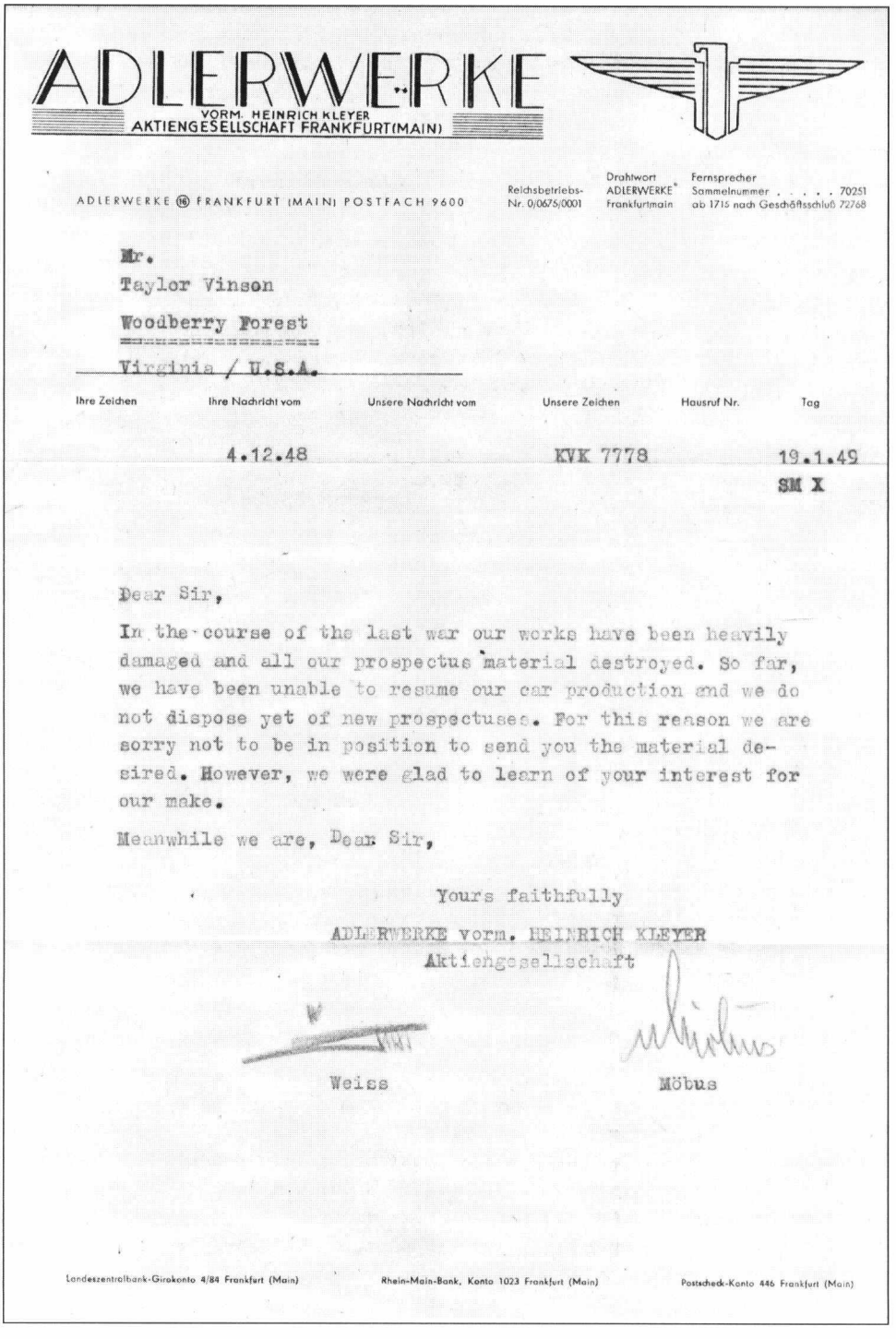
[36]Becker, Wolf-Dieter; *Das Ordnungsproblem der unvollständigen Konkurrenz in der deutschen Kraftwagenindustrie* (typoscript, Berlin, 1952).

[37]Daimler-Benz AG; *Das Werk Untertürkheim* (Daimler-Benz Aktiengesellschaft, Stuttgart, 1983), p. 115.

[38]Graef, Bernd; Grieger, Manfred; Gutzmann, Ulrike; Schlinkert, Dirk; *Volkswagenchronik* (Schriftenreihe des Unternehmensarchivs der Volkswagen AG, Wolfsburg, 2002), p. 11.

[39]Other manufacturers drew their consequences from this market situation, too. Ford and Opel had the funds to develop new cars (Opel Rekord, Ford 12M) and moved up-market towards the mid-size segment in 1953. Hanomag decided not to produce the newly-developed 1951 compact car Hanomag Partner and to concentrate on commercial trucks instead (Oswald, op. cit. p. 140).

[40]Oswald, op. cit. p. 9.



ADLERWERKE
VORM. HEINRICH KLEYER
AKTIENGESELLSCHAFT FRANKFURT(MAIN)

ADLERWERKE ⑯ FRANKFURT (MAIN) POSTFACH 9600 — Reichsbetriebs-Nr. 0/0675/0001 — Drahtwort ADLERWERKE Frankfurtmain — Fernsprecher Sammelnummer . . . . . 70251 ab 1715 nach Geschäftsschluß 72768

Mr.
Taylor Vinson
Woodberry Forest
Virginia / U.S.A.

Ihre Zeichen	Ihre Nachricht vom	Unsere Nachricht vom	Unsere Zeichen	Hausruf Nr.	Tag
	4.12.48		KVK 7778		19.1.49 SM X

Dear Sir,

In the course of the last war our works have been heavily damaged and all our prospectus material destroyed. So far, we have been unable to resume our car production and we do not dispose yet of new prospectuses. For this reason we are sorry not to be in position to send you the material desired. However, we were glad to learn of your interest for our make.

Meanwhile we are, Dear Sir,

Yours faithfully
ADLERWERKE vorm. HEINRICH KLEYER
Aktiengesellschaft

Weiss Möbus

Landeszentralbank-Girokonto 4/84 Frankfurt (Main) — Rhein-Main-Bank, Konto 1023 Frankfurt (Main) — Postscheck-Konto 446 Frankfurt (Main)

A letter from Adler to the editor dated December 12, 1948, and signed by two officials named Weiss and Möbius, stated that "so far, we have been unable to resume our car production. . . ." The "so far" can be interpreted as meaning that the question was not yet resolved. Dr. Engelhard says that "more research needs to be done on the exact timing and exact circumstances of Adler's market exit, in particular, it needs to be clarified which role Allied authorities played for it. There is some indication that the Adler factory was subject to the dismantlement of a significant portion of its equipment in late 1949—which is astonishing since dismantling of industrial facilities had become very unusual in the American occupation zone at this time."

Consumers, Cadillac, and Civil Rights: The Social and Cultural Impact of the Automobile in *Ebony*, 1945-1965

By Peter Cajka

Introduction

In his 1957 novel *On The Road*, Jack Kerouac exclaimed, "At lilac evening I walked with every muscle aching among the lights of 27th and Welton in the Denver colored section, wishing I were a Negro, feeling that the best the white world had offered was not enough ecstasy for me, joy, kicks, darkness, music, not enough night."[1] Kerouac's desire was radical: In American mid-century memory, the kicks, ecstasy, and joys of the road were reserved for whites only. Kerouac fancied himself as a "white negro," but as he traveled from New York to San Francisco, he noted that many blacks were stuck in factories or shanties. Like Kerouac, scholars portray mobility as a white experience. In survey histories of the automobile's impact on American life, African-Americans often appear as workers in Ford plants, being pulled over by white police, and segregated in urban environments.

The automobile functioned as a machine in the fight for equality, a statement of success and an indicator of "auto-citizenship." The automobile created new possibilities that allowed African-Americans to break racial barriers, demonstrate a newly achieved status, make mechanical advancements, and organize communities. Three overall conclusions emerge about African-American mobility. First, in the 20th century, the Western United States could be considered a new frontier for race relations. While escape was temporary in the South and the North, the West had an aura of freedom for blacks in the latter half of the 20th century. Second, the segregation system known as Jim Crow could not persist in the presence of the private, individualized freedom created by automobile ownership. Third, the postwar mobility of African-Americans enabled by the automobile expedited a structural change in everyday life which hastened the advent and growth of the civil rights movement. The vexing problem of the original Reconstruction after the Civil War was the inability of the freedmen to obtain land, and thus achieve economic independence from the planter regime and the federal government. For a century after the Civil War, geographic constraints hampered black freedom. In what we may call the second Reconstruction, African-Americans conquered geography with the automobile. A review of *Ebony* (1945-65) demonstrates that historical scholarship on African-Americans and their relationship to the road has neglected the broader social transformation engendered by a minority with automobility.[2]

The Historiography of African-Americans and the Automobile

In the *Automobile in American Life and Society*, Thomas J. Sugrue acknowledged in 2004 that, "the history of race and the automobile has yet to be written."[3] No other technology has had such a dramatic effect on the everyday American in the 20th century. The rise of the automobile industry and the impact of the road and car explain a large part of the history of the American people in the 20th century, no matter what their race.[4] The automobile provided Americans the means to level time and space, thus altering interactions and institutions. Invariably, the automobile has permeated the lives of African-Americans. Sugrue noted the positive effects of the automobile, but focused on the frustrating racism of American society. In his 2001 article "Driving While Black," international scholar Paul Gilroy emphasized similar outcomes about the automobile's effects on African-American daily life.[5] Contemporary sociologists such as Melvin P. Sikes and Joe Feagin have noted the negative effects of using the automobile to travel in public.[6] Historians James J. Flink and John B. Rae condense African-American mobility into a few paragraphs in larger narratives. In *The American Automobile* and *The Road and the Car in American Life* Rae classified all car culture participants as Americans, avoiding distinctions of race.[7] Flink noted the presence of African-Americans as workers in Ford plants and the phenomenon of "white flight," but still relegated African-Americans to only a few paragraphs in his book, *The American Automobile*. In her 2004 essay, "The Open Road: Automobility and Racial Uplift in the Interwar Years," historian Kathleen Franz provided a valuable study of the relationship of freedom and machine leading up to World War II.[8] But it was postwar America that witnessed the apex of car culture. Given Franz's important assertions that a focus on material culture can help broaden the study of the black middle class, and that technological artifacts can highlight the importance of technological skill and knowledge in large arguments about racial progress, the period of 1945-1965, which witnessed a spread of automobility to the racially diverse American working class, is essential for understanding race and the automobile.[9] Ultimately, articles and observations about African-Americans and the automobile compose a mosaic: Sugrue correctly asserts that a comprehensive history of blacks and the automobile has yet to be written. To write a comprehensive history, the actions of the black middle-class and their consequences have to be acknowledged and considered.

Ebony *and the Automobile*

The 20th century witnessed America's entrance into the modern age and the creation of mass society. Carolyn Kitch, in *Pages from the Past: History and Memory in American Magazines*, argues that journalists played a special role in a society of mass communication, and, "increasingly [took] on the role of public historians, supplementing the communicative and educational role in American society of institutions such as

museums, archives, historical tourism sites, and war memorials."[10] As a result, social historians have a cache of sources. "People profiles," group accomplishments, and photographs provide a wealth of sources that provide a "counter memory." Counter memory documents the past, challenges public memory, and allows historians to weave a set of seemingly isolated events into a comprehensive narrative. George Lipsitz in *Time Passages: Collective Memory and American Pop Culture* explains, "it starts with the particular and the specific and then builds outward towards a total story."[11] A broad set of local experiences builds a total, universal experience. Photographs branded images into the American consciousness, provided famous images and depictions of a social history, and called for more historical inquiry. "Pictures constitute political statements simply because their very ordinariness contradicts stereotypes."[12] Photojournalism historian Maren Stange observed of the photos in *Ebony*, "The pictures . . . reproduce iconic blackness articulated to equally naturalized and sanctioned symbols of class respectability, achievements, and American national identity."[13] Successful people are often pictured next to their cars. Photographs also transport blacks into ordinarily white settings. The vacation, often remembered as an activity of white families, is a ubiquitous ritual in *Ebony*, and the automobile is the most recommended method of transportation.[14] The emphasis in profiles and photographs on ordinary people, form a vital depository of material for the social historian. "Ordinary people testify to the presence of African-Americans in the country's social life – its national identity—as well as political life."[15]

In 1945, John H. Johnson pawned his mother's furniture for $500 and created *Ebony* to capture the positive aspects of African-American middle class life, a world of joys, kicks, and darkness. *Ebony* documents the automobility of the black middle class as a positive experience and that automobility has a profound and complex impact on social and cultural history. It depicts business owners and entrepreneurs using automobiles in their daily operations, celebrities "rolling up" at night clubs in Harlem, students driving to college, farmers increasing productivity, competitors racing to victories, inventors making technological contributions to the automobile, families taking vacations to California, and civil rights activists galvanizing communities. These images invoke the aspirations of the American experience—freedom, speed, individualism, restlessness, and progress. African-Americans indulged in postwar consumerism and in the process achieved automobility. The automobility of a minority frustrated and antagonized Jim Crow. Black consumerism and mobility, as documented by the writers and photographers of *Ebony*, constituted a threat to white hegemony. The social and cultural documentation has the potential to provide new historical insights on the causes of desegregation, the ideas of integration and segregation, and the impetus behind the civil rights movement.

As the movement transformed American politics, it also transformed *Ebony*. By 1964 the magazine became politicized as an advocate for African-American gains. Kitch noted that "Gloria Myers and A.V. Margavio found that during the 1950s the magazine displayed minimal interest in black history, and that it was during the 1960s and 1970s that racial group identification shifted from individualism and toward commonality."[16] Into the 1950s and early 1960s *Ebony* did not focus on the civil rights movement. Historian Roland E. Wolseley observed in 1971, "With the rise of black militancy . . . *Ebony* has become more outspoken on behalf of quicker improvements in the living conditions, educational opportunities, and vocational acceptance of blacks."[17] The automobile moved from a vehicle of utility to a vehicle for the civil rights movement. *Ebony* began capturing the drama of the movement at the end of 1964. *Ebony* tells a different story of automobility than academics who have concentrated on the negative effects of automobility on race.

Race and the Automobile in the Jazz Age

In "Driving While Black," Paul Gilroy observed, "African-Americans were in on the automobile revolution from its inception."[18] Considering the magnitude and depth of social change brought by automobility, Gilroy's observation is obvious. As early as 1910, the famous boxer Jack Johnson challenged the top white racer Barney Oldfield to a public contest. Johnson lost dramatically, but the statement was poignant; blacks would use automobiles to challenge white hegemony. Challenges were not just acts of sport; mobility also provided impetus for litigation to desegregate hotels. "As the car became part of everyday life, the black elite launched a series of legal challenges to discrimination on the road."[19] An article entitled, "High-Powered Cars a Tradition in Negro Community," harkened back to African-Americans and the cars they drove during America's thrust into modernity: "high-powered automobiles have been mainly owned by members of the sports, night life, and theatrical world, who have put big showy cars of domestic and foreign make on the avenues of Harlem, Chicago, and Los Angeles."[20] The upper class was composed of entertainers, athletes, and other celebrities. The article featured black celebrities such as Jack Johnson, Sugar Ray Robinson, and actress Vandalia Snow. With his wealth Jack Johnson not only raced cars, but cruised downtown Chicago in an "immense [Apperson] Jack Rabbit, painted a brilliant Rooster Red."[21] The article also claimed that among African-Americans, "Rolls-Royce owners were not uncommon during the 1920s."[22] The automobile was a showpiece for upper-class African-Americans, an object to worship and lavish money upon. The automobile also created poetic motion. "Motor vehicles were public ciphers of celebrity and black musicians and entertainers in particular appreciated the poetic possibilities that cars created."[23] During the period dubbed the "Jazz Age" and heralded as the "Harlem Renaissance," upper-class African-Americans demonstrated success with automobiles. This trend would continue into the rock-and-roll, rap and hip-hop cultures later in the 20th century.

The 1920s marked both the Harlem Renaissance and the genesis of an African-American middle class, but it also marked the rise of the Ku Klux Klan. While the automobile offered individualized transportation away from Jim Crow, the specter of racism lingered. Whites created an ideology that blacks were technologically incompetent, and in need of white supervision. "Tourist narratives, popular fiction, post cards, and automobile advertising all perpetuated minstrel images of blacks as lazy, boastful, and technologically backward."[24] African-Americans

traveled, but the automobile had to become a moving house. Geographer Karl Raitz argues:

> Black people knew that in traveling long distances they would not be served at many roadside establishments, so they prepared accordingly. Certainly the personal freedom to engage the roadside via automobile did not apply to African Americans, and perhaps other minorities, in parts of the nation whether north or south.[25]

Sugrue observes, "African-American travelers regularly carried buckets or portable toilets in their car trunks because service station bathrooms and roadside rest areas were usually closed to them."[26] They "worried incessantly about breakdowns and flat tires that could leave them stranded at the mercy of bigots," wrote Brent Staples of his discussion with historian Dr. John Hope Franklin, who said "Your took your life into your hands every time you went out on the road."[27] Even the roadside automobile camps were racially exclusive, but "the car still provided southern blacks a way to subvert Jim Crow."[28] Beginning in the 1930s travelers began to publish pamphlets and guides for non-discriminatory travel. The demand for vacationing produced a supply of experiences provided by African-American entrepreneurs. By the 1940s and into the 1950s, *Ebony* published vacation guides that developed an "overground" railroad: a network of information that strategically advertised locations of non-discrimination to aid African-American travelers. "The automobile offered blacks an escape from the Jim Crow segregation they encountered in trains and street cars."[29] An increased mobility enabled by the automobile allowed escape from the local pressures of racism and segregation. The automobile transported youths away from parents, sinners away from saints, rich away from poor, and importantly, blacks away from whites.

Class and the Automobile

In his 1936 *A Preface for Peasantry: a Tale of Two Black Belt Counties*, sociologist Arthur Raper suggested that the automobile enabled tenant farmers in Georgia to attain an unprecedented level of racial equality and socio-economic status.[30] He claimed the automobile provided "the mechanical means for greater degree of self-direction and self-expression."[31] It "could transport rural blacks many miles away from the restrictions and white scrutiny of their local communities, and on the way they were usually subject only to the same regulations that applied to whites."[32] The automobile enabled an escape for both middle-class urban and rural blacks. A business class also began to offer chauffeuring and jitney services. The automobile denoted middle class status, a utility for economic uplift, and a machine for flight from racism.

For lower-class African-Americans automobility and the construction of roads provided an ambivalent experience of segregation, labor on the assembly line, and institutional racism. The spatial effects made the automobile a necessity for economic life and created new layers of segregation.[33] Flink observed "In the black ghetto of Inkster, Michigan, adjacent to lily-white Dearborn, a bastion of the Ku Klux Klan, [Henry] Ford set up a gigantic plantation for his black workers. . . . He paid them only $1 a day in cash of the $4 wages, the remaining $3 in food and clothing from a public commissary."[34] Flink also noted that Ford was a hero to black workers.[35] Sugrue argues: "Because blacks were more likely to be poor than whites . . . they were less likely to be able to afford new cars and for the most part of the twentieth century they had difficulties getting car loans and paid more for insurance because of discriminatory attitudes of bankers and actuaries."[36] The lower class lived in inner cities segregated by highways and congested by automobiles.

To middle-class blacks, the upper class' infatuation with the motor car took shallow precedence over more substantial possessions like homes.[37] Desiring to demonstrate to whites their responsible ownership of technology, blacks during the interwar period established an auto-citizenship. Franz observes "Automobile ownership provided material evidences that one segment of the black community had achieved a middle-class lifestyle."[38] This professional middle class of doctors, teachers, ministers, and editors filled the pages of *Ebony*. These blacks advocated responsible use of technology to demonstrate a Protestant ethic of frugality, hard work, and commitment to education. Often this commitment engendered accusations of acting "white." Franz argued that in the 1920s middle class blacks mounted a three-pronged campaign for 'auto-citizenship' to be acknowledged as responsible and progressive. "They produced counter images of black drivers as inventive and respectable; they legally challenged discrimination by auto insurance companies and hotels; and they created separate systems of travel that protected the comfort and safety of motorists."[39] *Ebony* produced counter images, reported on litigation, and published copious travel guides. When America entered the age of Ford, the automobile was considered a "white" machine. But through education, bourgeois morality, wealth, and technology African-Americans demonstrated responsible and progressive lives. Automobility played an important role for racial uplift; it also created color and class conflicts.

The Automobile in "Catch Up" America

John H. Johnson founded his magazine in the context of "catch up" America. For white Americans it was a chance to "catch up" after depression and war, but for African-Americans it was time for "catch up" after slavery and segregation. Home-ownership and the ubiquity of new technology revealed an emerging racial minority of consumers. In 1945 the home stood as the first symbol of the new middle class status.[40] While the home and the car were intricately linked, photographs and articles focused on the home. Among this, the automobile made a subtle entrance into *Ebony*. In the late 1940s the automobile only appeared in advertisements for other products.[41] The automobile was first featured centrally in a cartoon with the caption, "always bragging about the big car the boss would let you use some night."[42] It depicted an excited African-American ready to borrow his white boss's car.

Even if it was the white boss's car, postwar America had become a different country for African-Americans. The mobility and consumerism of African-Americans demonstrated change and so did the actions of the government. Historian Fath David Ruffin notes, "World War II was the first time that an African-

American was portrayed as a hero by the United States Government."[43] In *Ebony* the automobile's depiction played a key role in demonstrating African-American heroism and challenging segregation. The magazine portrayed athletes, entertainers, and veterans as heroes, with cars as a pivotal accoutrement. The April 1948 edition featured famous track athlete Jesse Owens riding in a convertible after winning at Hitler's 1936 Olympics.[44] In a 1947 article entitled "Amputee Auto," a paralyzed African-American veteran, Willis Douglas, received a "customized 1946 Ford equipped with hand-operated brakes, clutch and accelerator" from the state government of New York.[45] The auto was central to his postwar recovery: "His auto, for which he applied a year ago, is one of the final steps in his rehabilitation as an ordinary citizen."[46] An African-American veteran received a car from the government, and with its therapy became a "regular citizen." The automobile was linked directly with citizenship. It enhanced status and was an appendage to heroism.

Articles in immediate postwar *Ebony* magazines featured celebrities such as Joe Louis who drove his 1949 Cadillac to escape the daily grind: "Night driving at high speeds is Joe's weakness. . . . He gets into his car and races along the highways for hours."[47] Articles emphasized the mobility of celebrities. Lionel Hampton traversed America with an "entourage of 1949 Cadillacs, along with buses and trucks to carry instruments around the nation."[48] Singer Hazel Scott and her husband traveled to performances in a 1949 Chrysler Town and Country convertible in defiance of Jim Crow.[49] The automobile became a showpiece of American success. At the same time the African-American middle class used the automobile to access education, raise families, and provide services. It became economically essential to the budding middle class. A July 1947 article featured a cartoonist whose "station wagon and coupe are both Buicks."[50] The pages are filled with mobile college students, a traveling doctor, and a chicken farmer with a truck. An article on a modern cowboy notes, "the Packard Clipper is depended upon by Silas to cover large distances on the ranch, although he uses his horse for local work, he doesn't coddle the car, but drives right out to wildest corners of his holdings."[51] The automobile was a manifestation of economic success, and evidence of African-Americans now living the "American" life.

The Automobile: Consumerism and Freedom

After World War II, African-Americans had become highly mobile, using planes, trains, buses, cars, and even motorcycles to traverse the United States and abroad. Domestically, black vacationers traveled to California. The West had an enticing aura of racial equality and contrasted with the racism of the rural South and urban North. As an article in May 1948 stated, "to greet Negro visitors the sunshine state will offer a host of new facilities and resorts, many open to colored vacationists [sic] for the first time because of wartime exigencies."[52] The war-time boom wages along with opportunities to travel via rail, air, or car made the late 1940s an ideal time to vacation. The May 1948 edition of *Ebony* advised that the "auto is the best way to travel in the west."[53] It offers the traveler autonomous control in locating non-discriminatory businesses. The article advises, "For negroes anxious to avoid Jim Crow, an auto is ideal – especially now that Los Angeles has its first big negro-owned motor court."[54]

Vacationing required a public network and also fostered a market response for black travelers. In the late 1940s the majority of black consumers had their needs met by black businesses. One way to challenge segregation was a nascent African-American free market. The domestic market even exerted its strength abroad as African-Americans traveled outside the United States to Jamaica, Haiti, and the Dominican Republic.[55] In the summer of 1948 Haiti was featured because of "its cool mountain air, its rich racial traditions, its gaiety as a playground, its free and equal treatment of all and the amazingly low vacation rates."[56] African-Americans were traveling domestically and abroad, demonstrating the potency of newly attained disposable income. A 1955 article observed, "Until the end of World War II, few white motel operators were willing to accept Negro Patronage. In recent years, however, discrimination against the naturally colored traveler has declined noticeably along the highways."[57] However, the racial ambiguity of the road experience continued: "Encouraging though the motel picture is, travel accommodations for colored people are still too few and too scattered. In 1955 . . . 3,500 white motels would put up dogs, but less [sic] than 50 unhesitatingly said they would house Negroes."[58] *Ebony* still sent the mass-marketed "overground" railroad biannually to its consumers across the United States.

The automobile also formed an integral part of 1950s minority youth cultures. A December 1950 article entitled "Sex in High School" blamed the automobile for a change in morality among black teens. Allegedly, the automobile shifted courting rituals from the parlor to the backseat, breaking down morals: "since the coming of the automobile youths of high school have had more and more freedom to be alone, completely off to themselves on 'car dates,' usually arranged in some half-hidden spot on the edge of town – and it is simply taken for granted that 'necking' or 'petting' will automatically be part of the evenings activities."[59] This spawned a later article that asked, "How moral are our COEDS?," and *Ebony* provided the statistic that 31 percent of girls have their first sexual experience in autos.[60] African-Americans felt the pangs of the American youth culture: lover's lane was a non-discriminatory location. The angst of the 1950s youth culture was not just for white families, but the article claimed that, "white schools have even more trouble."[61]

The first car on the cover of *Ebony* appeared in March of 1950. It featured Herb Jeffries in a convertible, beckoning readers to ride with him.[62] In the 1950s the magazine would become a major medium of advertisement to the burgeoning African-American middle class. It exploited a growing number of African-Americans as consumers and producers involved in a mobile economy. White-managed corporations realized the reality of an economically powerful class of African-Americans, and began to fill the pages with advertisements. Even in the face of criticism, John H. Johnson used major white-managed corporations to generate revenue for the magazine. Ruffins notes:

> Johnson was brilliant to point to a major market advertisers had not yet seen: the black middle class. By identifying Afro-Americans with disposable incomes, nationwide,

> Johnson shrewdly perceived that he could fund his publication by going to major advertisers such as Pepsi-Cola, Xerox, General Motors, and American Telephone and Telegraph to suggest that they spend millions of dollars in advertising.[63]

Johnson even created two promotional movies to market the black middle class to white corporations entitled *There's Gold in Your Backyard and the Secret of Selling the Negro*.[64] In 1955 on its tenth anniversary, *Ebony* claimed that "the income of the negro consumer leaped skyward 192 percent with a third of the negro population earning between $2,000 and $3,000 a year."[65] The numbers and their interpretations can be debated, but *Ebony* viewed consumerism as freedom. Full page advertisements began appearing for Motorola televisions, Quaker oatmeal, Budweiser beer and Hunter whiskey. The automobile made subtle appearances in advertisements as an appendage to other products, notably Budweiser. African-Americans continued to take vacations to resorts, consume, and enjoy pleasure driving, responding to the call of Herb Jefferies.

The Automobile Economy

African-Americans did not benefit from the automobile simply as consumers or vacationers, but also as business owners. The automobile expanded African-American businesses beyond the mortician and rare resort owner. An article of July 1950, proclaimed a "Revolution in Mississippi." After the revolution: "Negroes are now operating banks, service stations, grocery stores, restaurants, taxicab companies, laundries, and dry-cleaning establishments."[66] The cause of this "revolution" remains unclear, but in its aftermath, blacks owned transportation industries such as taxicab companies, serviced cars and gas stations that provided gas.[67] This "revolution" did not take place merely in the rural South. In California, two ex-GIs working their way through college owned and operated a five-pump gas station near the University of Southern California, ideally placed next to a school with "20,000 students owning 9,000 cars." (Fig. 1)[68] "The partners operate a 75-car parking lot behind the station which is crammed when the Coliseum is in use."[69] African-American business owners provided services to both whites and blacks. The free market and mobility transpiring in postwar America defied Jim Crow and enriched a growing black middle class.

African-Americans worked in automobile plants as laborers on the assembly line, but direct economic gains from the production and consumption of the automobile did not stop at the assembly line. In Detroit, Edward Davis founded a car franchise that, "accounts for 500 auto sales in Detroit annually . . . and is valued at more than $200,000."[70] The article noted he has 60 percent white clients. A 1958 article featured Eddie Mason, allegedly the "nations [sic] top Negro car dealer."[71] Mason employed an all-black staff and owned a gas station and a parking lot large enough to fit 100 cars. "In 1957 he sold over 1,800 new and used cars, principally Oldsmobiles and Cadillacs."[72] Black dealerships sold at least partially to a black clientele. A November 1950 article featured an owner of a cab company with 13 cars and 35 drivers.[73] Historically, blacks worked as chauffeurs and owned jitney services, but by the

Fig. 1 – 1954: Rolland "Speedy" Curtis and Sterling Wallace, owners of a gas station just off University of Southern California's campus. "Students Run California Gas Station," Ebony, *March 1952, p. 85.*

1950s they were actively involved in retailing. The dealership business remained the most lucrative and successful for African-Americans. Sugrue observed, "In the post-1960s years, car dealerships became an important vehicle for black upward mobility: by 1987, 53 of the top 100 black-owned companies in the United States were also dealerships."[74]

Beginning in the mid-1950s the first five pages of *Ebony* contained a section entitled "Speaking of People," which noted successful African-Americans in businesses. African-Americans were involved in every stage of the retail of new automobiles. Thelma Greene became a car saleswoman at a Cadillac dealership in Birmingham, Alabama.[75] James L. Greene became the top salesman at Drexel Chevrolet in Chicago, selling an average of 200 cars annually.[76] Blacks were also employed by burgeoning governments at every level to deal with the regulation of automobiles. The Los Angeles police department hired African-Americans as photographers of violent car crashes.[77] Kansas City hired a black city license inspector,[78] and an African-American was hired as a highway postal foreman.[79]

Technology and the Automobile

African-Americans also contributed to improvements in automotive technology. An engineer at U.S. Thermo-Control, Frederick Jones, invented the first unit to refrigerate big trucks, and a self-starting gasoline motor.[80] Los Angeles Mechanic Frank Mann, "fashions flashy, chrome-lined luxury cars with hopped up motors which sell to Hollywood movie personalities and Beverly Hills businessmen from $3,500 to $7,500."[81] The article also noted, "Other Mann creations are regularly featured in major auto shows across the nation."[82] Stock car racer Wilbur Gaines invented the roll bar.[83] He was inspired by the following

injuries: "collar bone broken twice, severe burns on hands and chest . . . right leg fractured, left arm broken, and numerous other bruises and lacerations."[84] A machinist at the Philadelphia Navy Yard designed and patented an automobile seat-bed.[85] A paralyzed man in Memphis created a "jerry-built, muscle mobile" composed of, "cast-off plumbing pipes and salvaged auto parts."[86] A midget businessman even manipulated his vehicle to adjust the height difference. African-Americans tinkered with, and improved, the quintessential American invention.

Fig. 2 – Marty Payne inspects the winning car of the 1940 Mobil Economy Run. "Teen Age Racer Sets precedent," Ebony, *May 1965.*

Fig. 3 – Marty Payne as he nears the finish line, in the 1965 Mobil Economy Run. "Teen Age Racer Sets precedent," Ebony, *May 1965.*

Racing to Victory

Into the 1950s and through the 1960s African-Americans not only handled automobiles responsibly and provided technological advancement, but also raced them to victories. Racing and winning accomplished four things. First, a racing victory represented a racial victory. Second, it challenged the racially-exclusive policies of various automobile associations. Third, it proved blacks were willing to compete in dangerous sports, an American pastime. Fourth, it demonstrated use of technology under pressure. In a 1948 article, a midget named Mel Leighton was a top money winner on a track in Los Angeles. He became "a familiar figure to the average 10,000 race crowd that followed, the year-round Western circuit. Leighton relies on mechanical skill and, 'engine secrets,' to get as much as 134 mph out of his Riley motor mounted on a Model Ford B. Block [sic]."[87] The only thing that stopped Mel Leighton from competing professionally was the American Automobile Association's (AAA) ban on non-Caucasian participants. Significantly, the article featured a statement by the commissioner of the AAA who said, "To date the position of the AAA has been, 'New drivers must pass a driver's test before a license will be issued to them. If and when Mr. Leighton files an application, he will receive the same consideration as any other application'."[88] Leighton goes on to brag that, "When I pull into small towns . . . and the local Georgia Crackers ask me who the racer belongs to. . . . I watch their mouths drop when I tell them the racer's mine."[89]

In 1949 a group of African-Americans formed a motorcyclist club called the "Flying Falcons" to circumvent the American Motorcycle Association and to experience a certain freedom not offered by cars. The group was composed of "two housewives, . . . post-office workers, cab drivers, mechanics, deliverymen, and at least five deputy sheriffs."[90] One member articulated the freedom offered by the motorcycle:

> People think we're crazy, that we're daredevils that motorcycling is dangerous . . . motorcycles give a feeling that's different. You cover a lot of territory, enjoy the scenery more, smell the air and feel the breeze. You will never go back to a car.[91]

In 1955, Stock Car Racer Wilbur Gaines, age 63, was the, "only colored driver in the sport of stock racing."[92] A 1957 article

featured a Los Angeles housewife, Laruth Bostic, who raced an Austin-Healey 100-6 in various Sports Car competitions in California. "Laruth got into sports car racing through the Women's Sports Car Club of Los Angeles after she becomes the group's first Negro member in 1956."[93] By 1955 the bans on African-Americans to race automobiles had been lifted. In 1965, 17-year-old Marty Payne placed third in the Mobil Economy Run, a transcontinental contest of fuel economy (Fig. 2). Upon finishing Marty said, "I knew I had to be among the leaders at the finish, so much depended on it. By being the first Negro ever to be selected to drive in the run, I realized my showing would have some bearing on future Negroes being chosen to drive." (Fig. 3)[94] In 1966, Wendell Scott became the first African-American in NASCAR. He acknowledged racing as a difficult technical and mental endeavor: "It takes a great deal to succeed. A stock car racer has to have skill, common sense, a knowledge of his car, and a whole lot of guts." (Fig. 4)[95] After a difficult career that included being deprived of a first place win because of his skin color and flipping his car over, he finished ninth in the "World 600" in Charlotte, N.C. "Afterwards he was mobbed by fans seeking his autograph. In the Deep South, it was one of the highest compliments that a Negro could receive."[96] Motorcycle racers Milton Hall and Emmett Mickle competed in nationally sanctioned events.[97] Mickle raced "drag meets," and is photographed with 45 trophies he had won from won 20 major events over half and quarter-mile courses in just two years of racing.[98] The article exclaimed, "Racial Barriers drop as new stars entered hazardous sport."[99] Racing involved technological knowledge and application—privileges that were not simply limited to whites. Racing is an American pastime and, as African-Americans participated and won, they proved their ability to handle, manipulate, and excel with technology.

The Automobile as White Machine: Advertisement and Reality

From 1953 to 1965 automobile advertisements in *Ebony* featured white models: men, women, and families. Readers saw this blatant juxtaposition. What message did these contradictions send readers? Analyst David Berkman, in a 1965 comparative study of *Ebony* and *Life*, observed:

> A commonly held belief about the Negro is that the one symbol of middle-class status to which he aspires above all else is the possession of an automobile. Apparently, however, Detroit does not seem to feel that to whatever degree these aspirations do exist, they translate themselves into sales—at least insofar as new cars are concerned.[100]

Berkman concluded that, "advertising in negro publications such as *Ebony* now, and for some time [in the future] will continue to reflect the socio-economic dichotomy which exists between the reality of the Negro's existence and the status to which he aspires."[101]

Substantial evidence showed that middle-class African-Americans purchased cars as frequently as whites and even purchased more expensive models. Fred C. Akers, in a 1968 market study *Negro and White Automobile-Buying Behavior: New Evidence*, analyzed 300 African-American car-owning families in the Chicago area. He concluded, "Negroes in this study tended to own higher priced models regardless of make and automobiles with more cylinders than comparable income white families."[102] Because African-Americans purchased more expensive models and makes, Akers argued automobiles were more important to blacks than whites.[103] Akers hypothesized:

Fig. 4 – The first African-American NASCAR racer, Wendell Scott. "Stock Car Racer reaches Big-time," Ebony, *May 1966, p 62.*

> A possible explanation for the Negroes [sic] greater personal involvement in automobile ownership is that a private car offers an escape from Jim Crowism. . . A negro among strangers in public transportation is immediately recognized and stereotyped. . . . However, in his community and work groups, the Negro is known and accepted as a

Fig. 5 – SNCC organizers, like the one above, used cars and radios to organize their movement. "Rebels with a Cause," Ebony, *July 1965.*

> person . . . the automobile bridges the gap between the two places and gives the Negro individual identity.[104]

Paul Gilroy observed, "African-Americans currently spend some 45 billion dollars on cars and related products and services and . . . they are 30% of the automotive public, although they are 12% of the population."[105]

Cadillacs: Style and Interpretation

A portion of African-Americans achieved automobility with style. In the 1950s the Cadillac assumed a mystical place in African-American car culture. It was linked with celebrities like Sugar Ray Robinson, who "excited the car-conscious world with a wild tutti-frutti-colored 'fish tail' Cadillac he took to Paris to run up and down the Champs-Elysées."[106] Articles and captions mentioned the Cadillac explicitly, highlighting the car as a profound statement. In September 1949 an editorial entitled, "Why Negroes buy Cadillacs," was published to address the Cadillac phenomenon. It was both a declaration of property ownership and an explanation of the "Cadillac Complex." *Ebony* declared the Cadillac, "a weapon in the war for racial equality . . . and a substantial symbol for many a Negro that he is as good as any white man."[107] The Cadillac was interpreted as a luxury item and as a machine that physically posed a challenge to white hegemony. The "Cadillac Complex" is explained as an effort to match whites in status at any cost: "Negroes will scrimp on many things to be able to buy the things in life which are most evident to their fellow man, the things [by] which people judge one's status in the world of today."[108] The "Cadillac Complex" defined equality in terms of automobile ownership. Whereas Jim Crow laws necessitated that the finest whiskey be drunk at home rather than at the club, the car as a personalized transportation device became an ostentatious display that could not oppressed in totality. Automobile ownership frustrated segregationists. As an open, public utility, roads could not be segregated. The article ended with the declaration that, "to deny the pleasure of driving a Cadillac to Negro well-to-do . . . is as ill-advised and illogical as demanding white millionaires," to surrender their estates to the unemployed.[109]

The mystique of the Cadillac developed further because of its role in funerals. When Texas financier William "Gooseneck Bill" McDonald, allegedly the world's richest Negro, died in 1950, "Cadillac followed Cadillac in his two and half mile long burial procession."[110] In 1953 *Ebony* claimed that "Negro undertakers spend more annually to provide plush cars for families to ride in to cemeteries than on caskets for the dead."[111] The article claimed that undertakers did a gross business of $120 million a year as the result of 150,000 Negro funerals.[112] Morticians often became the wealthiest individuals in African-American communities. Sociologist E. Franklin Frazier in his 1957 polemic, *Black Bourgeoisie*, linked, "Why Negroes Buy Cadillacs," with funerals:

> It appears . . . Negroes insist upon having Cadillacs for the funerals of their relatives. Their desire in regard to Cadillacs seems to be a reasonable demand in the light of the editorial which appeared in Ebony, September, 1949 entitled, "Why Negroes Buy Cadillacs," it was stated that wealthy negroes should not be criticized any more for buying Cadillacs while the masses of Negroes live in slums than well-to-do whites who buy Cadillacs when numerous whites are unemployed.[113]

Frazier argued that the Cadillac was the physical manifestation of the nascent black bourgeoisie that has, "accepted unconditionally the values of the white bourgeois world; its

morals and its cannons [sic] of respectability, its standards of beauty and consumption."[114] Even an African-American intellectual reinforces the ideology that the automobile is white property. To Frazier, the Cadillac was not a bold statement of equality and a weapon to change perceptions, it was a white machine. Yet, in the popular mind it remained a machine to be attained. Dizzy Gillespie, in a 1965 parody of "Swing Low, Sweet Chariot" wrote "Swing Low, Sweet Cadillac" about the Eldorado and its use in funerals:

Swing Low, Sweet Cadillac,
Comin' for to carry me home,
Swing Low, Sweet Cadillac,
Comin' for to carry me home.
I looked over Jordan, and what did I see?
Comin' for to carry me home.
Oh, an Eldorado, comin' after me
Comin' for to carry me home.[115]

In the 1950s African-Americans consumed to achieve equality.

Into the 1960s, the automobile made a more frequent appearance in picture and articles than advertisements.[116] There is a curious omission from the advertisements in *Ebony*: until 1965 General Motors never advertised the Cadillac. The Cadillac while ubiquitous in photos and articles of *Ebony* remained strangely absent in advertisements. The 1949 editorial suspected that, "Cadillacs are becoming so commonplace on Lennox Avenue, South Parkway and Central Avenue that rumors are floating around to the effect that General Motors is trying to curb sales to colored customers lest their prize of the automobile trade be labeled as 'a negro car'."[117] Clearly the Cadillac was a social symbol and ingrained as such in the popular consciousness. David Berkman explains, "Whatever the reason for the Cadillac's omission from *Ebony*, there are those who think that it reflects a belief that if Cadillac were to become identified in the public mind with any degree of Negro ownership, its prestige would fall."[118] In Akers' study, African-Americans bought more Cadillacs than whites, and bought them new, not used.[119] Robert Sheehan, in "A Cadillac is a Cadillac is a Cadillac," argued it is not the prestige alone that sells the car, but its quality as a machine. Cadillacs were built with industrial precision, and because the production of Cadillacs was done with immense care, the supply did not meet the demand. Sheehan argues, "Though GM denies there is anything more to it than that, it appears to many that Cadillac deliberately encourages the scarcity."[120] *Ebony* describes the machine as a status symbol in the war against racism and as a statement of consumer equality. Sheehan has a different interpretation of the "Cadillac Complex:"

> Cadillac learned a long time ago that the last thing a sophisticated status seeker wants to admit is that he chose his car purely for the prestige it represents. That would give the game away. He desires, above all, an economic rationale to be able to say sternly to his friends and associates that the purchase represents the best damn investment value in the market.[121]

The meaning of the Cadillac as a machine remains open to interpretation. African-American Cadillac ownership even entered the parlance of postwar conservative politics. Sugrue noted, "By the late 1960s, white, conservative critics of welfare created a powerful and enduring (even if completely fictional) image of "welfare queens" who drove Cadillacs – black single mothers who supposedly lived decadent lives off of their checks."[122] General Motors did not even advertise to African-Americans who were eager to own Cadillacs. Sheehan described the profile of the Cadillac customer of 1968 as "not significantly different from what it has been in the past. . . . His median age is fifty-three, his median annual income $25,000 plus . . . sixty percent of the purchasers hold administrative or professional positions."[123] Sheehan also could have described the customer as affluent and white. *Ebony* contained images that differed from the "public image." *Ebony* aimed to alter the public image.

The Automobile and Civil Rights

An editorial in September of 1964 captured an African-American being beaten with a night stick in front of a patrol car.[124] Local governments and private citizens who wished to prolong segregation used the automobile as a tool of oppression. The Watts riots in 1964 erupted because Marquette Frye was pulled over and beaten by highway patrolmen on an alleged drinking and driving charge. After being pulled over, Frye reportedly said, "I even offered to walk the rest of the way home because my father was coming home soon and he could come get the car."[125] The arrest and beating triggered a six-day riot in which inner city automobiles became part of the carnage. *Ebony* captured two flipped and charred cars in the south side district of Los Angeles.[126] Metal parts and glass were strewn across the street.

Major leaders of the civil rights movement were highly mobile, traversing America by car. Malcolm X was given a Chevrolet and bragged, "In five months, I put about 30,000 miles of 'fishing' on that car before I had an accident."[127] Malcolm then began driving an Oldsmobile. Vincent Harding, a historian who traveled with Martin Luther King, noted that he traveled by auto from Montgomery to Atlanta to Albany to Birmingham.[128] Major leaders were mobile and visible, and so were organizations like the Southern Christian Leadership Conference (SCLC), Student Non-Violent Coordinating Committee (SNCC), Congress of Racial Equality (CORE), and Deacons for Defense and Justice (DDJ). The SNCC was organizing communities in door-to-door campaigns (Fig. 5). SNCC began by "going from one filthy jail to another, from one shack to another—and as they moved, singing, their numbers grew."[129] The article noted that, "SNCC, has a fleet of radio cars. The organization has a continual education program for staff members who learn how to operate radios, business machines."[130] The car clearly functioned as a business machine, a machine that organized communities block-by-block and placed leadership in the spotlight. The DDJ, a state-chartered organization, possessed "walkie-talkies for instant com-munication, a fleet of ever-ready cars and a membership rumored to include a tenth of the Negro Adult Male population."[131] They used their cars to monitor racists: "When a carload of whites would come in . . . one of the cars would pick it up and follow it through the quarters. Usually when they knew they were under surveillance, they'd just go on through and not stop."[132] The car mobilized whites and blacks in

the fight for civil rights. Racists also used the automobile for surveillance and intimidation: "Two CORE Field workers, Bill Yates and Steve Miller, discovered themselves being followed by a car load of whites . . . a police car assigned to protect them suddenly disappeared . . . and the workers were chased at high speeds though the Negro area."[133] An article about the SCLC, "The Men Behind Martin Luther King," revealed a group of highly mobile civil rights managers. For example, Rev. Fred Shuttlesworth, the SCLC secretary, was forced to move his family to Cincinnati, but still "commuted almost weekly to Birmingham."[134] *Ebony* captured Hosea Williams, "The General," and SNCC worker Carl Cox conversing in front of a car with a mounted television camera during the march on Birmingham.[135] The automobile also brought the media into the civil rights movement.

Fig. 6 – The so-called 'Sani-Cruiser' was the leading vehicle in the march. Pictured above, it is stuck in the mud. "50,000 March on Montgomery," Ebony, *May 1965.*

The media captured pivotal events of the civil rights movement and the vehicles that empowered the activists. A "Civil Rights Maverick" named Julius W. Hobson, a former small plane pilot in World War II, "uses military tactics of deployment of demonstrators, surprise attacks, and careful planning."[136] Yale Law graduate Marian Wright began a highly mobile campaign for civil rights in Mississippi during the summer of 1966. Her daily routine included being "in the office, in court, out 'in the field' visiting plaintiffs, back in her office for appointments and then out again for a round of meetings."[137] Automobiles were also a vital tool for mass demonstrations. The automobile provided impetus for the march from Brown Chapel Church in Selma to the Montgomery Courthouse. Once the marchers began the 54-mile trek, they were followed and aided by trucks.[138] "During the march, large tents were put up by a crew that traveled ahead in trucks."[139] Drivers of the supply trucks included a Catholic priest who distributed orange juice and volunteers who handed marchers bagged lunches. The marchers used the highway, and caused massive traffic jams. "On narrow sections of highway, vehicles were sometimes backed up for miles . . . marchers always kept one lane open for traffic."[140] The National Guard brought in jeeps to help protect the marchers. A mobile medical unit provided aid to faltering marchers. The automobile and

Fig. 7 – On the march to Birmingham this Chevrolet received tacit approval from the state guard and drove past marchers for two days. "50,000 March on Montgomery," Ebony, *May 1965.*

trucks served as a utility tool for the entire march; bringing provisions and relief. However, automobiles also created logistical problems. The head-quarters vehicle, a large van nicknamed the "Sani-Cruiser" became stuck in the mud (Fig. 6). "Stuck vehicles comprised one of the demonstration's biggest headaches, consuming vital energy."[141] A car with "Dear Old South" and "Marching Martin Luther Coon Go Home," which followed the march for two days, received quiet approval from the State Guard (Fig. 7). A truck full of white men drove by with the Confederate flag draped from the side. Serious ideologies battled on the road from Selma to Montgomery, and the automobile was the tool used to propagate these messages. While few would complete the actual march, interracial protesters arrived at the rally, "pouring in by train, bus and plane."[142] The march from Selma to Birmingham was not simply a journey by foot, but rather a mobile citizenry holding a mass gathering to redress the government. The government could not control this mobile population.

Conclusion

By the end of the 1960s, a majority of African-American families owned an automobile. The *Ebony* Handbook estimated that, "In 1970, 57 percent of black families owned at least one car, and 13 percent owned two or more automobiles."[143] The automobility of African-Americans after World War II afforded escape from Jim Crow. Not only did the automobile convey uplift in a symbolic sense, as an individualized transportation device it provided freedom, individuality, mobility, and economic opportunity. *Ebony* has provided photographic, editorial, and documentary evidence of African-Americans having a positive experience with automobiles. African-Americans raced, developed, acquired, and sold the automobile. African-American families took vacations, received medical services, and drove to school in the automobile. The automobile empowered civil rights activists, creating a participatory democracy organizing community by community with automobility. The automobile transformed social interactions and created opportunities for African-Americans. Scholars such as Thomas J. Sugrue, Paul Gilroy, John B. Rae, and James J. Flink have highlighted "driving while black," working in Ford factories, new layers of spatial segregation, white and black flight, urban angst and ultimately marked the automobile as a tool of racism. .

The automobile was a special machine in the pursuit of freedom. Racist ideologies zealously guarded machines, but ultimately technology provided liberty and freedom beyond biological constraints. As working women proved in the factories during both the First and Second World Wars, machines offered an unmatched egalitarianism. African-American mobility challenged white legal and social hegemony. Segregation necessitated that African-Americans remain static, created a geographical structure that ensured impoverishment, and allowed racists easy surveillance of activities. The automobile transformed absolutely rural and urban landscapes as well as time and space. The social transformations were too rapid for politics, although the political decisions were important. The 1954 *Brown v. Board of Education* and the 1956 *Browder v. Gayle* decisions were used by African-Americans to litigate against segregation. Of course, these decisions were enforced with "all deliberate speed." With the automobile, African-Americans already had an acquired a form of "speed." The Civil Rights Act of 1964 and the Voting Rights Act of 1965 were pivotal pieces of legislation, but the political utility of the automobile enhanced participatory democracy. The politics of civil rights were catalyzed by mobility that inspired litigation, media coverage of violence, racial victories at the race track, consumerism, and economic gains. While the political decisions marked fundamental change, the social changes wrought by the consumer's economic mobility played revolutionary roles. Clearly civil rights activists believed in a political solution, and equal protection is paramount in a just society, but in the latter half of the 20th century, what constituted equality? In American consumer society of the time, it could be equality of ownership.

Footnotes

[1]Kerouac, Jack; *On the Road.* (Mattiluck New York, Ameron House, 1957), p. 148.

[2]Automobility is defined as the use of automobiles as the major means of transportation. In Merriam-Webster Online Dictionary. (2008) s.v. "automobility."

[3]Sugrue, Thomas J.; *Automobile in American Life and Society* [Database Online] (Dearborn, Michigan: University of Michigan c.a. 2004 -, accessed October 23, 2007) available from http://www.autolife.umd.umich.edu/Race/R_Casestudy/R_Casestudy1.htm

[4]Flink, James J., *The Automobile Age.* (Cambridge: MIT Press, 1988), iix.

[5]Gilroy, Paul; "Driving While Black," in *Car Cultures*, ed. Daniel Miller (Oxford: Berg, 2001), pp. 84-101.

[6]See Joe R. Feagin and Melvin P. Sikes; *Living with Racism.* (Boston: Beacon Press).

[7]Rae, John B., *The American Automobile*, (Chicago; University of Chicago Press, 1965). See also The Road and Car in America, (Cambridge, MA: MIT Press, 1971).

[8]Franz, Kathleen; "The Open Road," Automobility and Racial Uplift in the Interwar Years," in *Technology and the African-American Experience: Needs and Opportunities for Study*, ed. Bruce Sinclair (Cambridge, MA: MIT Press, 2004), pp. 132-133.

[9]Ibid.

[10]Kitch, Carolyn; *Pages From the American Past: History and Memory in American Magazines.* (Chapel Hill: University of North Carolina Press, 2005), p. 5.

[11]Lipsitz, George; Time Passages: Collective Memory and American Popular Culture, (Minneapolis: University of Minnesota Press, 1990), p. 231.

[12]Ibid, p.100. Maren Stange, *Photographs Taken In Everyday Life*, p. 208.

[13]Lipsitz, op. cit., p. 98.

[14]"Auto is the Best Way to Travel In West," *Ebony*, May 1948, pp. 24-26.

[15]Kitch, op. cit., p. 3.

[16]Kitch, op. cit., p. 89.

[17]Wolseley, Roland E.; *The Black Press U.S.A.* (Ames, Iowa: Iowa State University Press, 1971), p. 119.

[18]Ibid, p. 87.

[19]Ibid, p. 143.

[20]"High-Powered Cars a Tradition in Negro Community" *Ebony* (July 1951), p. 18.

[21]Ibid.

[22]Ibid.

[23]Gilroy, op. cit.

[24]Franz, op. cit., p. 137.

[25]Raitz, Karl; "American Roads, Roadside America," *The Geographical Review*, 88 (July 1998): p. 378.

[26]Sugrue, op. cit.

[27]Staples, Brent; "John Hope Franklin," *The New York Times*, March 27, 2009, p. A22.

[28]Ibid.

[29]Franz, op. cit., p. 140.

[30]Raper, Arthur; *Preface to Peasantry: A Tale of Two Black Belt Counties* (Chapel Hill: University of North Carolina Press, 1936), pp. 174-75. In Brownell, Blaine A.; "A Symbol of Modernity: Attitudes toward the Automobile in Southern Cities in the 1920's," *American Quarterly*, 24 (March 1972): p. 34.

[31]Ibid, p. 35

[32]Ibid, p. 36.

[33]Gilroy, op. cit. p. 90.

[34]Flink, op. cit., p. 221.

[35]Ibid, pp. 126-128. See also Meier, August, and Rudwick, Elliott: *Black Detroit*, (New York: Oxford University Press, 1979).

[36]Sugrue, op. cit., (database online).

[37]Ibid.

[38]Franz, op. cit., p. 133.

[39]Ibid., p. 139.

[40]See *Ebony*, November 1945, February 1946, April 1949, Also, March 1949 article "How to build a home for 5,000 Dollars" (45-48).

[41]For instance, see *Ebony*, November 1948, pp. 37, 47, August 1949, p. 39.

[42]*Ebony*, December 1945, p. 39. Another cartoon appears in April 1946, with the caption, "Won't you women ever learn how to drive?," p. 52.

[43]Ruffins, Fath David; "Reflecting on Imagery in the Landscape of Commerce," in *Getting and Spending*, ed. Jetlif Dunker. (Washington D.C.: Cambridge University Press, 1998) p. 393.

[44]"1948 Olympic Prospects" *Ebony*, April 1948, p. 13.

[45]"Amputee Auto," *Ebony*, April 1947, p. 19.

[46]Ibid, p. 21. The auto was paid for by the Veterans Administration and cost $1,340.

[47]"Can Joe make Good in Business" *Ebony*, May 1949, p. 23. See also, "Henry Willis: Famous Black Panther switches career from boxing to business" which notes, "owned by Willis is a Harlem Showpiece, he and his wife go on long trips often," p. 19.

[48]"Hampton's Million Dollar Band Business," *Ebony*, August 1949, p. 21.

[49]Powell, Adam Clayton, Jr., "My Life with Hazel Scott," *Ebony*, January 1949, p. 48.

[50]"Jolly Cartoonist Enjoys Rural Life," *Ebony*, July 1947, p. 10.

[51]"Silas started cow hunting in saddle while boy of 5," *Ebony*, July 1948, pp. 30-32.

[52]"California Vacation," *Ebony*, May 1948, p. 23

[53]"Auto is the Best Way to Travel In West," May, 1948, p. 24.

[54]Ibid.

[55]See *Ebony* the month of May 1948-1952.

[56]"Vacation in Haiti," *Ebony*, July 1948, p. 56.

[57]"Many Motels have Opened Doors to Negro Tourists" *Ebony*, June 1955, p. 97.

[58]"Hotels on the Highway" *Ebony*, June 1955, p. 93.

[59]"Sex in High School" *Ebony* December 1950, p. 26.

[60]"How Moral are Our Co-Eds?" *Ebony*, July 1952, pp. 101-103.

[61]"Sex in High School" *Ebony*, December 1950, p. 27.

[62]Cover, *Ebony*, March 1950. Later article mentions "two cars are in the Jeffries Entourage one a Cadillac,"p. 61.

[63]Ruffins, op. cit., p. 395.

[64]"*Ebony* Movie Illustrates Wealth of Negro Consumer," *Ebony*, November 1955, p. 132.

[65]Ibid.

[66]Ibid, p. 43.

[67]Ibid. The article includes a picture of van for the Sno-White Laundry and Cleaners Company to deliver goods.

[68]"Students Run California Gas Station," *Ebony*, March 1952, p. 85.

[69]Ibid.

[70]"Davis Motors," *Ebony*, December 1955, p. 74.

[71]"Nations top Negro Car Dealer" *Ebony*, April 1958, p. 85.

[72]Ibid.

[73]"Speaking of People," *Ebony*, November 1950, p 21.

[74]Sugrue, op. cit., (database online).

[75]"Speaking of People," *Ebony*, July 1954, p 5.

[76]"Speaking of People," *Ebony*, October, 1955, p. 4.

[77]"Cops With Cameras," *Ebony*, November 1950, p. 21.

[78]"Speaking of People," *Ebony*, September 1954, p. 4.

[79]"Speaking of People," *Ebony*, November 1955, p. 5.

[80]Jones Invented First Until to Refrigerate Big Trucks" *Ebony*, December 1953, pp. 42-43.

[81]Sports Car Builder," *Ebony*. March 1954, p. 29.

[82]Ibid.

[83]"Gaines invents special bar to prevent injuries in races," *Ebony*, June 1953, pp. 42-44.

[84]Ibid.

[85]"Speaking of People," *Ebony*.

[86]"The man who Can't Sit Down," *Ebony*, September 1952, p. 78.

[87]"Auto Racing," *Ebony*, August 1948, 36.

[88]Ibid.

[89]Ibid.

[90]"Motorcycle Club," *Ebony*, December 1949, 83.

[91]Ibid.

[92]"Stock Car Racer Reaches Big-time," *Ebony*, May 1966, p. 49.

[93]"Woman Sports Car Racer," *Ebony*, December 1957, p. 107.

[94]"Teen Age Racer Sets Precedent" *Ebony*, May 1965, p. 62.

[95]"Stock Car Racer Reaches Big-time," *Ebony*, May 1966, p. 49.

[96]Ibid.

[97]"Motorcycle Racers," *Ebony*, June 1955, p. 47.

[98]Ibid.

[99]Ibid.

[100]Berkman, David; "Advertising in *Ebony* and Life: Negro Aspirations vs. Reality," *Journalism Quarterly, 40* (Winter 1963): p. 55.

[101]Ibid, 64.

[102]Akers, Fred C.; "Negro and White Automobile-Buying Behavior: New Evidence," *Journal of Marketing Research*, Vol. V (August 1968), p. 288.

[103]Ibid, p. 287. For this Akers cited the amount of "Car Washes that African-Americans perform vs. White Americans".

[104]Ibid.

[105]Gilroy, op. cit., p. 3.

[106]"High-powered cars a tradition in Negro community," *Ebony*, July 1951, p. 18.

[107]"Why Negroes Buy Cadillacs" *Ebony*, September 1949, p. 34.

[108]Ibid.

[109]Ibid.

[110]"Death comes to the World's Richest Negro," *Ebony*, October 1950, pp. 66-67. See also, "Fabulous Funerals," *Ebony*, November 1951, p. 16. See also "Underworld Funerals Bring Gangsters Into His Church."

[111]"More Money Spent for Cars than Caskets," *Ebony*, May 1953, p. 118.

[112]Ibid.

[113]Frazier, E. Franklin; *Black Bourgeoisie*, (New York: The Free Press, 1957) p. 185.

[114]Ibid, p. 26.

[115]Gillespie, Dizzy,; *Swing Low, Sweet Cadillac*, 1965.

[116]See *Ebony* 1960-1962.

[117]"Why Negroes Buy Cadillacs," *Ebony*, September 1949, p. 34.

[118]Berkman, op. cit., p. 55.

[119]Akers, op. cit. p 288.

[120]Robert Sheehan, "A Cadillac is a Cadillac is a Cadillac," *Fortune*, April 1968, p. 117.

[121]Ibid, p. 119.

[122]Sugrue, op. cit., (database online).

[123]Sheehan, op. cit. p. 117.

[124]"Violence Sends A Message," *Ebony*, September 1964, p. 141.

[125]"If they Hadn't Kicked that Man. . . . ," *Ebony*, October 1965, p. 114.

[126]Ibid, p. 115.

[127]Haley, Alex; *The Autobiography of Malcolm X*, (New York: Ballatine Books, 1973) p. 259. The term "fishing" refers to traveling the streets of the city to find potential converts to the Nation of Islam.

[128]Harding, Vincent; *So Much History, So Much Future: Martin Luther King, Jr., and the Second Coming of America, in A History of Our Time*, ed. William H. Chafe, Harvard Sitkoff, and Beth Bailey (Oxford University Press: New York, 2003) pp. 130-146.

[129]"Rebels with a Cause," *Ebony*, July 1965, p. 150.

[130]Ibid, p.153.

[131]"Deacons for Defense," *Ebony*, September 1965, pp. 26-28.

[132]Ibid.

[133]Ibid.

[134]"The Men Behind Martin Luther King," *Ebony*, June 1965, p. 166.

[135]Ibid, p.172.

[136]"Civil Rights Maverick," *Ebony*, May 1965, p. 144.

[137]"The Mission of Marian Wright," *Ebony*, June 1966, p. 100.

[138]50,000 March on Montgomery," *Ebony*, May 1965, p. 60.

[139]Ibid, p. 82.

[140]Ibid. pp. 54, 62.

[141]Ibid, p. 80. Similar vehicular problems transpired at Woodstock.

[142]Ibid, p. 85.

[143]*The Ebony Handbook*, ed. By the editors of *Ebony*, (Chicago: Johnson Publishing Company, 1974), p. 7.

The illustrations are provided courtesy of Ebony *magazine.*

EDITOR'S NOTES *continued from p. 2*

manufacturing regions. This coverage provided a unique opportunity to experience nearly all the GM brands." Louis has prepared "a full history of all GM's foreign makes" and "is in search of a sympathetic publisher."

The sharp-eyed among you will note several changes on the Table of Contents page. *Tom Jakups*, former editor of the *SAH Journal*, has become chair of the Publications Committee. Former SAH president Leroy D. Cole is now the contact for back issues of the *Review*; we wish *Fred Roe* a full recovery from the stroke that necessitated this change. Leroy's address is P. O. Box 183, Goodrich, MI 48438. Finally, the official address for SAH has become 178 Crescent Road, Fairport, NY 14450, and correspondence should be directed there rather than the previous address at Gales Ferry, CT.

There'll be a further change with Issue No. 52. As has been noted elsewhere, I am stepping down as editor after this issue. My successor is my predecessor, *Kit Foster*, editor of Issues Nos. 24-29. There's a pleasing symmetry to that, and the *Review* will now be in the best of all possible hands.

The 13½ years that I have been in this post have been intellectually gratifying –and lots of fun. The most significant change in those years has been institution (more or less) of a peer review process, thanks to the urging of *David L. Lewis*. *Kit Foster* has been especially helpful in suggesting reviewers when my own imagination failed. I appreciate the patience and understanding that successive officers and board of directors have provided as support since I became editor in 1995. Our production team, usually Mountain Laurel Press, and printer, Arena Press, has been extremely cooperative in insuring a timely and quality product. *Pat Chappell* and Kit have viewed the proofs through different eyes and I've been ever amazed by how each finds something different that the other (and I) have not noticed. The production, proofing, and printing of the *Review* owes its generally typo-free content to the efforts of these folks.

continued on page 50

Australia's Own Car Comes of Age: The 1968 Holden Monaro

by Paul Murrell

Introduction

Until the late 1960s, Australians who bought locally-manufactured cars were happy to drive whatever they could get their hands on, and that usually meant homegrown and homely. After the great excitement in 1948 about "Australia's Own" car, the prosaic Holden 48-215 (retrospectively known by the internal designation FX), things settled down to ongoing mediocrity (Fig. 1). There were sedans, then utilities and station sedans in the Holden range but it was very much a case of practicality overriding almost any other consideration.

A primitive automatic transmission (the General Motors Hydramatic four-speed) became optional on Holdens in 1961, perhaps the first step towards indulgence. With the EJ model of 1963, General Motors—Holden's (GM-H) gave a passing nod to luxury when it announced the top-of-the-line Premier sedan and wagon (Fig. 2), but leather seats and a white steering wheel were only a light frosting on top of a very Plain Jane cake. And then, like something from another universe, the stunning new Monaro burst onto the scene in the summer of 1968.[1]

Finally, a stylish Holden

Australians were astonished. Not only was the Monaro[2] Australia's first purely indulgent Holden, its svelte lines had been designed right there, by Australians, although with considerable input from GM styling trends from other countries (notably the Oldsmobile Toronado and the Opel Rekord C

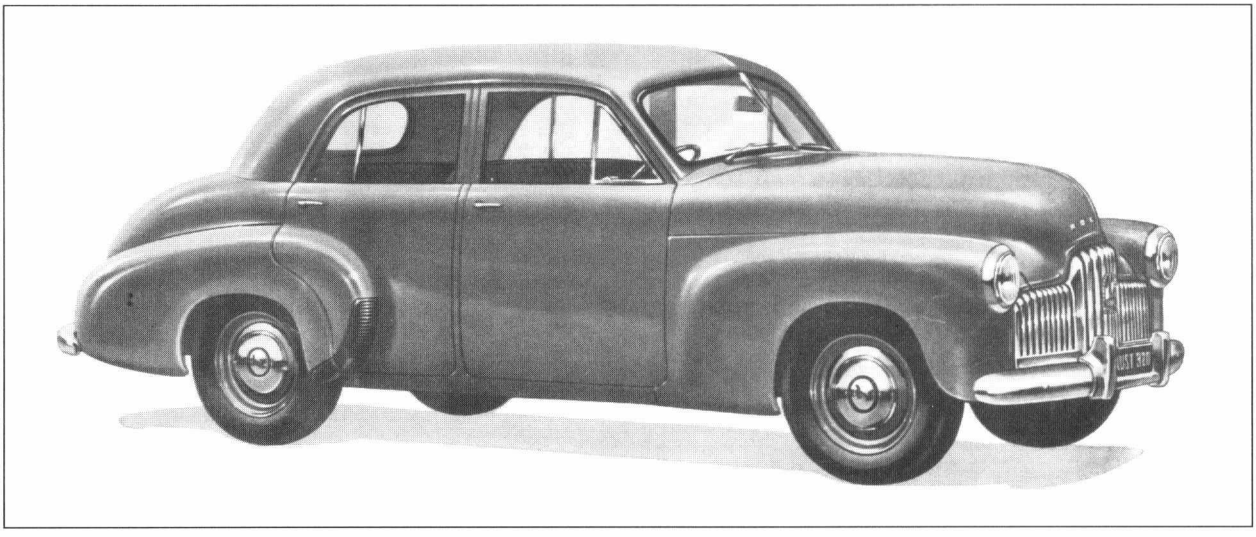


Fig. 1 – The first GM Holden automobile, 1948.

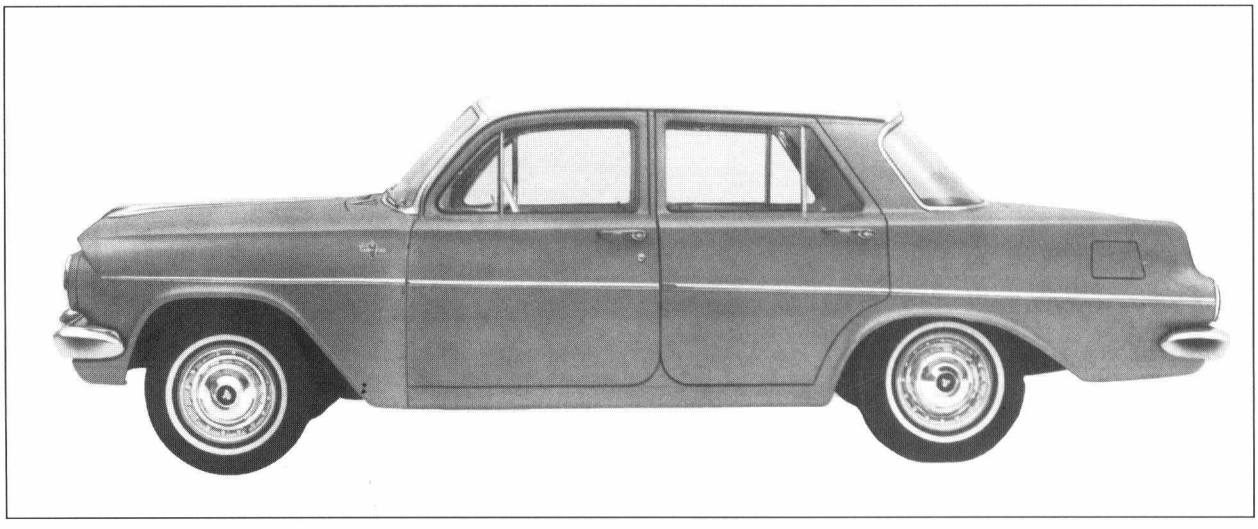


Fig. 2 – The 1963 Holden Premier, Series EJ.

Fig. 3 – The 1968-69 Monaro GTS.

coupe). It had more elegance and flair than any Australian-designed car before it, even if the coupe lines compromised head and legroom. As one awe-struck newspaper reporter put it, this was Holden's "biggest step since the first FX" a mere 20 years earlier. Despite an overall length of almost 185 inches (4.7 meters), interior space, especially in the rear seat, was hardly generous. But if a car looked this good, who cared about practicalities? Certainly not glamor-deprived Australian motorists. The car was offered in three series: Monaro, Monaro GTS, and Monaro 327 GTS.

The Monaro grabbed head-lines across the country and had people flocking into showrooms in numbers never before seen in Australia and created an excite-ment reminiscent of the furor a few years earlier in the U.S. with the release of Ford's Mustang.[3] Much of this excitement was whipped up by Melbourne, Victoria, advertising agency George Patterson using hyperbole and high fashion photography (some of it by now world-renowned Helmut Newton). "Monaro by Holden" announced the glossy brochure, "Australia's first sports machine. A new power is loose in the land. Man seeks excitement by instinct. Monaro GTS supplies it by design. Holden Monaro GTS. Out to drive you wild." (Fig. 3). Glamorous young models (a Helmut Newton trademark) put the finishing touches to the story, with one young model in a hooded white jumpsuit peering alluringly over her shoulder as she is about to jump into a Warwick Yellow GTS complete with delete-option go-fast stripes.[4]

First, win the media

In line with the huge excitement surrounding the new coupe, GM-H went all out with its launch to the media.[5] The launch was held at the upmarket Chevron Hotel in Surfers Paradise, Queensland. Journalists were flown in to Coolangatta on Sunday July 21, 1968 (the sedans and wagons of the HK range had been released to the press at the Palm Lake Motel, Melbourne, on January 27, with the coupe utilities appearing in March 1969). At 3:05 they were exposed to the Brougham, Holden's tepid extended-trunk response to Ford's highly successful extended wheelbase Falcon, the Fairlane. After a break for afternoon tea at 3:40, the Monaro was unveiled at 4:00. Next morning, they had the chance to drive the new car around the 2-mile (3.2 km) Surfers Paradise race circuit (the Brougham was test driven on a "special course" adjacent to the circuit).

All the cars at the launch were produced at the Elizabeth, South Australia, plant except for the Queensland press vehicles. To put some miles on them before the journalists put them through their paces, they were driven overnight from Elizabeth to Lang Lang, Victoria, a distance of 500 miles (800 km) where they then underwent a further journey of 1000-1500 miles (1600-2400 km) on the test track to highlight any potential problems. On Sunday July 21 they were transported after dark and in strictest secrecy to Surfers Paradise.

Writers for the main motor magazines had been given a sneak preview at Lang Lang on Monday July 15 to enable them to

meet deadlines for their September issues. There was a strict embargo on the press release of 9 a.m. Monday July 22 (the launch would have been conducted on Monday July 15, but the PR Director at GM-H, D. K. Hayward, noted on April 24, "... there is an important motor race meeting at Sydney on Sunday July 14 which most of the motoring journalists will probably want to attend, therefore this tends to indicate that Monday July 22 would be preferable to Monday July 15 for the press announcement"). Another reason for the choice of date was that the motoring press had broken the embargo on Ford's XT Falcon and GM-H. Holden, with little faith that the Monaro embargo would be honored, actively tried to find a press launch date that would be too late for the August issues of the motoring magazines.[6]

The press cars were well equipped with reclining bucket seats, 11-transistor push-button radios, and, standard on the V-8 327 GTS, power steering with the quicker rack, limited slip differential, 327 cu. in. engine, Dunlop D70 tires, rally wheels, 4-speed transmission and the 3.36 rear axle.

A simple formula

Holden's idea of turning a family sedan into a sporting coupe was fundamental in the extreme: stiffen up the suspension, drop in a big motor and light blue touch paper. On smooth bitumen, the Monaro rides flat and stable but if there's a bump mid-corner (and isn't there always?) the car hops and jiggles alarmingly, attributable to the primitive rear suspension and light rear end. Adding to the thrill seeking are the too-flat bucket seats that do little to hold you in place as the rear end flicks and fidgets its way around bumpy bends. Recline was an option and to operate it you needed to open the door because the seats are so close you couldn't get your hand down to the lever. Wind noise was extreme, even worse than four-door 1968-69 HK models.[7]

HK parentage

Despite having a close family relationship to the HK sedans, the Monaro shares very few panels: only the dashboard (some thought it unfortunate) and eight sedan pressings (the underbody, floorpan, plenum chamber, front end chassis Y-frame, radiator side supports, bonnet (hood), decklid assembly and lower back outer panel). Impressively, Holden's engineers managed to imbue the coupe with the same body strength and torsional rigidity as the sedan, a commendable achievement in a '60s coupe.

The GTS 327 came in for some serious attention to match its gutsy 327 cu. in. engine. To complement the American engine and transmission, the 327 gained a special Salisbury heavy-duty rear axle, thicker anti-roll bars, torque rods and other special equipment. Later, a 5.7-litre 350 cu. in. Chevrolet engine was available.

The 6-cylinder Monaro achieved an impressive 98 percent local content and even the 327 managed 80 percent. The quicker steering and Opel gearbox as fitted to the GTS 186S were also available as options on HK sedans; in fact, it was possible to order a Premier that was mechanically almost identical to a Monaro GTS.

Distinctive Monaro identification items included four totally unnecessary vents behind the front wheel arches, a rear trim strip painted red to simulate a full width taillamp, and fussy ornate wheel trims.

It was almost inevitable that the Monaro would win *Wheels* Car of the Year award for 1968; what other car in that year had created such an overwhelming response?

Announcing the award in January 1969, *Wheels* reported, "The Monaro fits the ideal behind the *Wheels* COTY award probably better than any of its predecessors in the six years we have been running it". They continued, "(The Monaro is) a calculated gamble that is succeeding probably beyond all but the wildest dreams of its originators. The Monaro was a positive jaw swinger."

Model changes

Somewhere around 1,190 HK GTS 327 Monaros were built and these have been retrospectively divided into Series 1 (the early cars) and Series 2. The original plan was to build 500 to homologate the car for Bathurst (as was not unusual at the time, these numbers may have been exaggerated). The Series 2 cars were built with an eye to road use rather than pure racing and produced slightly fewer brake horsepower.[8]

In 1969, the HT- series Monaro made its appearance. It was slightly fussier and had a more conventional rear design with real (but plain) taillamps and a black paint-out panel. It also saw the introduction of new colors Sebring Orange and Metallic Olive Green. The Monaro gained new V-8s including the 350 cu. in. with 50 more horsepower than the 327 and a lot more torque. The 307 5-litre was replaced by a local 308 cu. in. engine (confusingly also known as the 5-litre), a development of the Australian-developed 253 V-8. An automatic transmission option was also offered with the 350 V-8.

Just as the 327 GTS cleaned up Ford's XT GT, the 350 wiped the floor with Ford's XW GTHO Super Roos ("HO" standing for "Handling Option"), identified by decals on the front fender of a tire-burning wheeled kangaroo. In 1971, the Monaro was retired as a racing car to make way for the smaller, more agile and nimble Torana which, in turn, continued to humble the best Ford could throw at it.

The final Holden model based on the HK platform was the HG. The HG-series Monaro arrived in July 1970 with changes in line with the rest of the HG range, and the GTS suspension revised for greater comfort, a change made possible because the Monaro was no longer Holden's racing headliner.

With the advent of the HQ-series in 1972, the Monaro's sporting character was even further compromised; the car was softer, smoother, quieter and more refined but at the expense of character and fire. As is the way with these things, weight was up and performance down (the HQ 350 delivered only 275 hp (205 kW) compared with the HG 350GTS's 300 (224 kW) (We should note, however, that the HQ was revised more than any previous new model compared with its predecessor, changing from rear leaf springs to coils, and a novel front subframe, reaching back to the B pillar).

When Holden launched a four-door GTS, it was a sign that all wasn't well with the Monaro concept. Coupes have never been easy to sell in pragmatic Australia and after the HQ GTS, the model became a low-volume niche-market vehicle. The pedigree was further diluted by the release of the Monaro LS, a "Premierized" coupe fitted as standard with the rev-averse 202 cu. in. (3.3-litre) engine (although it could be optioned up) coupled to a Trimatic (often labeled "Traumatic"

by long-suffering owners) auto 'box and a pathetic 87 mph (140 km/h) top speed (Fig. 4). The base model HQ GTS was equipped with the adequate but hardly-thrilling 253 cu. in. (4.2-litre) V-8.

With the arrival of the HJ-series in October 1974, the Monaro underwent a heavy-handed restyle that gave it tougher looks, but the 350 cu. in. V-8 was gone, leaving the Aussie 308 cu. in. as the top-spec engine. The HJ sedans received a new nose and tail, but the Monaro got short shrift with the new nose but old tail, leaving it looking like two cars joined in the middle—an HJ at the front and an HQ behind (Fig. 5).

The end was nigh for the Monaro with the arrival of the HX range in July 1976. Holden made a cynical attempt to clear the last of the coupe bodies with the LE (for Limited Edition) by painting them metallic maroon with maroon velour interior and loading them up with all the hard-to-move options, including the already-obsolete 8-track cartridge player. Holden managed to clear 600 LEs at a hefty $A 11,000 each in late 1976. But the LE was to be the last Monaro and the last coupe until the revival of the Monaro name in 2001.

Not called a Monaro (but one in all but name) was the HZ GTS introduced in October 1977. With RTS (Radial Tuned Suspension) as fitted to all HZ Holdens, it handled better than any Monaro before it and stopped better too, with four-wheel disc brakes.

The Monaro was a true child of the '60s and '70s, big and bloated outside, cramped and impractical inside . . . but every time you looked at those sublime curves, you forgave it all its shortcomings. It might have survived if the do-gooders hadn't come down so hard on self-indulgent high performance cars. But it wasn't to be.[9]

Monaros used to be affordable. Now the top line models are reaching outrageous prices (recent auction results have exceeded $A 200,000 and cars currently on offer range as high as $A 350,000 for a matching numbers car down to a basket case restoration project without engine or transmission for just $A 15,000. There's probably some justification since these are and were groundbreaking cars, although there are lots of better driving experiences for a lot less money.

Specifications: 1968 Holden Monaro GTS 327

(taken from contemporary road tests and reports)

Production:	July 1968-May 1969
Engine:	327cu in (5360cc) V-8
Transmission:	high performance, close ratio four-speed manual
Bore and stroke:	101.6mm x 82.55mm (88.39mm for 350 cu. in.)
Compression ratio:	8.75:1
Power:	250bhp (186kW) @ 4800rpm
Torque:	325 lb/ft (440 Nm) @ 3200 rpm
Rear axle ratio:	3.08:1 or 3.36:1, 3.55:1; 3.73:1, 4.10:1, 4.55:1
Tires:	D70 x 14 (185 x 14 optional)[10]
Length:	4.69m 184.8"
Width:	1.81 m 71.4"
Weight:	1498kg (3295 lbs)
Wheelbase:	2.82m 111"
Track f/r:	1.476 (58.12") (equipped with 6" rims)
Top speed:	210km/h
0-60mph:	7.2 secs
Standing ¼ m:	15.8 secs
Fuel consumption:	12-20mpg
Fuel tank:	25 imperial gallons[11]

Acknowledgement: Thanks to Holden Australia for allowing access to its archive material in the preparation of this story. The illustrations are from the editor's collection.

Footnotes

[1]The first official acknowledgement of the new coupe in Holden's records appears in the Engineering Technical Specification Transmittal Letter H.60 of December 18, 1967, where it is identified as HK80737—GTS Coupe. It is then mentioned again in Letters H.61 (Jan. 9, 1968) and H.62 (Feb. 14, 1968). Letter H.63 identifies all the new models: HK81469 Brougham Sedan, HK80337 Monaro Coupe, HK80737 Monaro GTS Coupe and HK80380 Kingswood Coupe Utility. The first mention of the 327 GTS is in Letter H.64 (May 15, 1968) where it is identified as HK81837 Monaro G.T.S. '327' Coupe.

Fig. 4 – The 1973 Monaro LS.

Fig. 5 – The 1975 Monaro GTS.

The new coupe made do without an official name while discussion raged about what to call it, with about one hundred possibilities under consideration. With mere months to go before the new car was released to the public, a decision on a name was becoming pressing.

[2]Noel Bedford, a designer on loan to the Styling Department from Holden's "body drawing office" happened to take a two-week touring holiday around the Snowy Mountains. When he and his wife arrived in Cooma, he parked outside the Monaro County Council offices. He was immediately taken with the name and despite the locals pronouncing it Mon-air-oh, when he returned to work, he suggested Mo-nah-ro. A week or so later, Noel found himself surrounded by a group of senior executives and his boss suggested the Monaro name to them, adding a brief summary of its background. There was no fanfare, no "Eureka" moment. The executives simply said, "Go for it."

[3]Television was used to announce Australia's most exciting new car, and supported by an unprecedented advertising campaign. A spectacular 60-second commercial, entitled "Whisper on the Wind" was produced with the odd line "Life is suddenly very Monaro". It reached over 96 percent of Australians over a two-week intensive campaign. Full page press ads appeared on August 2, using the line "Holden lets loose a new power in the land" and full page, full color ads appeared in general interest, women's and motoring magazines. This was supported by a saturation five-day radio campaign and, an expensive innovation in Australia for the time, four color brochures in dealerships.

[4]The Monaro GTS also came standard with an alloy-spoked sports steering wheel, an indispensable accessory in any self-respecting sporting car of the time. However, as the brochure coyly explained, "Looks like wood. Feels like wood. Isn't. So it won't splinter like wood. Standard on GTS. As is full instrumentation."

According to all the internal GM-H memos and correspondence and the initial Monaro sales brochure, the GTS was available in only four colors on release: Bright Blue Metallic, Warwick Yellow, Silver Mink Metallic and Picardy Red. At some stage in the production run, Ermine White certainly and Inca Gold probably were added to the choice. The additional colors are partly confirmed by the car featured in *Wheels* magazine's report on its extended 6-month road test of a Monaro GTS 5-litre V8 in May 1969 (making the car a December 1968 delivery). This car was white with black rally stripes and, oddly, a standard HK steering wheel in place of the imitation wood-rimmed version usually fitted as standard to GTS models.

[5]GM-H was seriously concerned that news of the new Monaro would leak out before the official launch, diluting the impact they so desperately wanted to create.

On May 3 1968, the Pagewood Vehicle Assembly Plant (New South Wales) was closed to visitors, in line with a memo from Plant Manager D. M. Smith. "Further to my memo of April 22, VIP conducted tours will now be curtailed for the period Monday May 6 to Monday July 22 inclusive." PR Manager (SA) J. F. Bremner advised that Woodville (South Australia) plant tours would cease from June 11. Personnel Relations Manager F. N. Allaway announced plant tours of the Acacia Ridge (Queensland) plant would cease on May 31 and Pagewood (New South Wales) Manager W. V. Harcourt advised that all visits would cease from April 18 and resume July 1. If questioned, they were told to use the excuse that the tour ban was due to "plant alteration and rearrangement".

A memo dated April 29, 1968, from D. K. Hayward reinforced the need for confidentiality and security at all levels: "All documents and envelopes must carry a 'confidential' stamp and be kept out of sight when away from your desk or when visitors are expected. Documents are to be locked away overnight and shredded when discarding." Material provided to the advertising agency was delivered in locked metal cases by armed security guards.

[8]A Holden GTS driven by Bob Watson and Tony Roberts set 16 endurance records in a 24-hour record run at Sandown Park (Victoria) between 9 p.m. Saturday August 17, and 9 p.m. Sunday, August 18. The car covered 1,700 miles (2,700 km) at an average 8.6 mpg. The only reported problems encountered were with oil surge in the sump and brake pad wear. Being one of the first GTS 327s built, the car didn't have a baffled sump. Brake pads were replaced every 200-300 miles (320-480 km). Light showers and blustery winds contributed to a low average speed of "just 70 mph."

In May 1969, *Wheels* wrote of its extended test of a 5-litre Monaro GTS , calling it "still a crowd stopper" but complaining that it was the "heaviest handling, least parkable car we've ever experienced on test" (no doubt because it had the largest wheel/tire combination Dunlop Superwide D70 H14 Sovereigns and no power assistance). Fuel consumption was, even in those days of affordable fuel, an awe-inspiring 11mpg in town, rising to "almost" 18mpg on the highway.

Wheels summarized the car as "safe, solid, satisfactory transport than can cover 250 miles (400km) in four hours without strain." Quality control was an issue – the seat adjuster fell off, the air conditioner collapsed "if pressed in the wrong place," the cigarette lighter failed "after 12 cigarettes," the indicator failed at 200 miles and the rear ashtray was either "upside down or back to front."

[9]Monaro, according to the sales brochure, may have been "out to drive you wild", but most buyers opted for the "mild one" over the "wild one". By far the majority of Monaros were ordered with the old Holden "red" engine in 186S spec (in fact, half the production output was committed to the middle-of-the-road Monaro, the 186S GTS with 4-speed manual gearbox). This combination delivered the ideal balance of performance and economy for most buyers, with the standing quarter mile being covered in 19.1 seconds.

Australia hadn't gone fully metric in 1968, but despite this, the 307 cu in V-8 was known as the 5-litre. Holden didn't have faith that the Opel 4-speed manual transmission would handle the power, so the 5-litre was only available as an auto. The 2-speed Powerglide coupled with the 5-litre V-8 resulted in a quarter mile time only half a second faster than the 186S and a feeble 9 mph (15 km/h) advantage in top speed.

The image-leading 327 needed a Saginaw gearbox from the Corvette to handle the 326 lb ft (442Nm) generated at 3200rpm. It also featured a four-barrel Rochester carburetor, low restriction exhaust and 25 imperial gallon (113-litre) fuel tank. It was designed to win Bathurst and, on October 6 1968, it did just that.

As well as the GTS models, there were Monaros that were nothing more than two-door versions of the basic model HKs. Even people driving a 161 cu in, three-on-the-tree bench seat base model, complete with skinny tires, drum brakes and daggy Kingswood trim could imagine they were King of the Mountain, even if it did take them more than 20 seconds to cover a quarter mile!

[9]It was inevitable that a 120 mph supercar would bring out the howling doomsayers. Passions were inflamed by headlines such as "Too hot for the highway" (*Sydney Sun*, 2 August 1968), "Holden Coupe a family flyer" (*Adelaide Advertiser*, 30 July 1968), "The 120 mph Holden" (*Sydney Mirror*, 24 July 1968), "Will police be able to catch them?" (*Melbourne Herald*, 30 July 1968). "The hottest Holden yet—125 mph" (*Melbourne Herald*, 22 July 1968), "130 mph Holden" (*Sydney Mirror*, 22 July 1968), "A 124 mph eye-catcher" (*Melbourne Sun*, 22 July 1968), "It's a racer" (*Melbourne Age*, 30 July 1968).

Responsible citizen D. Cox of Novar Gardens (South Australia) was typical in his (her?) letter to the *Adelaide Advertiser*: "Australia's first mass produced coupe makes one wonder whether manufacturers are aware of their responsibilities as far as road safety is concerned or whether they are content that their contribution should be merely lip service. What possible justification is there for putting yet another car on the market which will exceed 120 mph and accelerate from 0-30 mph in 2.9 seconds? How many will possess the skill and the temperamental qualifications necessary to handle such a lethal weapon safely?"

[10]In the archives is a file of letters from similarly concerned citizens, usually in beautifully handwritten copperplate, sent to GM-H. One wonders about people such as Beverley Mountford of Mont Albert (Victoria) who took the time to berate the Managing Director of GM-H in a three page handwritten letter, dated 22 July 1968, that began "After dinner last night, my husband and I were discussing why there is a need for a 125 mph Holden."

[11]It was a sign of the times that the choice of tires for the new Monaro was truly huge: 6-inch wheels were standard with wide 600-14 rally wheels optional and a purchaser could choose from D70 red band 7.35 nylon tires, four-ply blackwall rayon 6.95 tires, or any of another ten different tires in four or six ply, radial or crossply.

[12]On May 9, 1968, Engine Engineer F. G. James sent a memo about the size of the fuel tank in the GTS 327. "A decision has just been taken to release a 25-gallon fuel tank for the G.T.S. (*sic*) 327 (GTS Coupe with the L34 engine option) effective start of production. As the fuel tank capacity may revert to the standard 16.5 gallons after say 500 vehicles, it is desirable that the tank capacity is not referred to in advertising and sales promotion. The 25-gallon capacity will appear in Engineering Technical Specifications related to this vehicle and should also appear in the Service Manual and Owner Manual."

The illustrations in this article are from the editor's collection.

EDITOR'S NOTES *continued from p. 43*

My own "signature" has been the appearance on the back cover of a view of the rear of an automobile, as a way of saying goodbye until next time. So I say farewell this time with three lovely ladies waving at you from the tonneau of a 1907 Mitchell.

CORRECTIONS

Review No. 50 (Fall 2008)

Front Cover

The cover photo depicted Charlie Easter and Frank Thompson in the 1908 Motor Parkway Sweepstakes with a Buick, and noted that it was furnished by *Terry Dunham*. In Terry's opinion,

> This photo represents the best action shot of a race car taken at speed before 1910. I think the photographer must have been positioned at exactly the right spot on the corner and took the photo at exactly the right moment in order to stop the action as he did. Buick used the photo many times in its contemporary advertising. The photo. . . actually belonged to Charlie Easter. I purchased his personal photograph album many years ago and included with his memorabilia was this photo.

The caption noted that the drivers were "in" a Buick. Racing publications of the day spoke of drivers being "on" a vehicle, and one can certainly understand why from photographs such as these, where men rode atop a bare chassis rather than being enclosed by bodywork.

From Aerodromes to Race Courses: The Evolution of Sports Car Racing in Southern Ontario, Canada After World War II

Page 8, Figure 4: The car is identified as a Devin SS. Devin body, yes, but the complete car was built by Devin and powered by a small block Chevy and used a larger size of the Devin shell. Only a handful were built. The car in the photo appears to be a Devin bodied special probably built on an MG TD [chassis] to judge by the two SUs jutting from the hood and the wheels.

Michael A. Jacobsen
California, USA

LETTERS TO THE EDITOR

Issue No. 50 (Fall 2008)—The Race That Was Not a Race: The Gilmore Economy Run

Fig. 3 This photo is from the 1956 Mobilgas Economy Run.

A three-part article titled "Mopar and the Mobil Economy Run" (*High Performance MoPar*, October and November 1995, January 1996) gives additional insight to efforts by Chrysler Corporation engineers to enhance their standings during the 1960s. Individual makes have also been the subject of a few articles including "Hudson and the Economy Runs" by *Perry Zavitz* (*The Plymouth Bulletin* [Plymouth Owners Club], January-February 2008, March-April 2008, May-June 2008). Floyd Clymer published Yearbooks for each Run from 1950 through 1959, with the exception of 1956. Various publications such as *Automobile Topics*, *Car Life*, *Motor Life*, *Motorsport*, *Motor Trend*, *Road & Track*, and *Speed Age* covered the Runs each year with those in the 1950s being the most detailed. Credit should also be given to both Mobil as well as the AAA Contest Board and the USAC for their efforts to keep everything on track.

A few further comments: Although discussed in the article, an explanation of Ton Miles Per Gallon would be appropriate. The formula is the Weight of Car and Passenger in Tons, Multiplied by Miles Traveled, Divided by the Gallons of Gasoline Consumed. A more detailed explanation was provided in a "Confidential for Lincoln Salesmen" Bulletin (dated 5-52) discussing the Lincoln Capri Class Win which showed: 2.635 Tons times 1415.4 Miles Traveled divided by 63.311 Gallons of Fuel Consumed = 58.9085 Ton Miles Per Gallon.

The family of Mel Alsbury continued to participate and win through the 1960s. After Mel Sr. sold his Chrysler-Plymouth dealership, his sons, Mel Jr. and George, drove Oldsmobiles and took a First Class trophy driving the new Toronado in 1966.

Dave Hermanson
Tennessee, USA

Al Ball of Santa Rosa, California, points out that "Mobil," not "Mobile" was the name of the subject economy run until 1962. He also calls attention to a relevant article in the March 1966 *Motor Trend*, "Behind the Bedlam of the Featherfoot Fleet." The article, by Wayne Thoms, will be found at p. 60.

GUIDELINES FOR ARTICLES FOR THE *AUTOMOTIVE HISTORY REVIEW*

Authors wishing to submit articles for publication in the Automotive History Review *are requested to follow these guidelines:*

1. When using MicrosoftWord, ***before starting to type***, please turn off **AUTO CORRECT OPTIONS** "before typing" by going to **TOOLS → AUTOCORRECT OPTIONS → AUTOFORMAT AS YOU TYPE**. Then uncheck or make sure that no boxes are checked when you begin your article. This is a very important procedure to ensure that your article imports correctly into our template.

2. Manuscripts should be in Microsoft Word format, double-spaced, 12-point Times Roman font, sent as attachments to email. Please add page numbers to the upper right corner, and leave 1-inch margins on each side. Right margin should be ragged right (not justified). Include footnotes and captions immediately following the end of article body. Do not separate with bland pages. ***Paragraphs should be indented with the tab key. Please DO NOT use the space bar to indent your paragraphs manually! Please type just one (1) space at the end of sentences, not two.***

   Remove any hidden commands (i.e., track changes) prior to submitting your electronic file. Provide tables separately, rather than embedding them in the text file.

2. Photographs that are not especially sharp, such as those taken in the early 20th century, should be submitted as glossies to ensure best-quality reproduction. More contemporary photographs may be submitted as e-mail attachments. TIFF format is preferable to JPEG. Resolution should be 300 dpi, but in any case, not be less than 150.

3. The article should begin with a paragraph headed in bold **Introduction**. As the theme of the article is developed, there should be additional breaks in the text identified by similar phrases in italics, e.g. *The early years*.

4. The spelling of words that prevails in the United States should be used, e.g, "tires" rather than "tyres;" "color" rather than "colour." Dates should be expressed in the style used in the United States: month, day, year. However, if a publication is cited in which the date of publication is expressed as day, month, year, that style should be used.

   Measurements should be in English; followed, if the author chooses, by the metric equivalent within a parenthesis.

5. Numbers over ten should be expressed in Arabic numbers (for example, "21st century." Numbers of ten or less should be spelled. The exception is units of quantity, such as a reference to a "4-door sedan" or a "6-cylinder" engine. If the engine is V-type, place a hyphen between the V and the number of cylinders, e.g. V-6.

6. Titles of articles referenced should be in quotation marks (British authors should follow the American style of double marks instead of single marks, which seems to be now common in the UK). Titles of books, journals, newspapers, and magazines should be in italics. Following American practice, the period in a sentence ending in a quote should appear following the word, not following the closing quotation mark. However, semi-colons and colons appear outside the closing quotation mark.

7. For ease of reference, footnotes are preferable to endnotes. When citing works, the following order, style, and punctuation should be used:

   Hoonsbeen, Gary; "Cadillac's First Year: Manufacturing and Sales," *Horseless Carriage Gazette*, Nov.-Dec. 1998, p. 18.

   Foster, Kit; *The Stanley Steamer: America's Legendary Steam Car* (Kingfield, ME. Stanley Museum, 2004), p. 53.

   Where there is no doubt as to the state where the publisher is located (e.g. Boston, New York City) the state is omitted. When a footnote refers to a work referenced in the immediately preceding footnote, the word "Ibid." is used. When a footnote refers to a work referenced earlier in the article, the following style is used: Foster, op. cit., p. 54. If the author has used works that are not referenced in a footnote, they should be added at the end of the article under the title "Additional References."

8. The manual adopts no form for internet citations; these are at the author's discretion.

   In cases of doubt, please contact the Editor at ztv@comcast.net or 703-751-7903, or at 1314 Trinity Drive, Alexandria, Va. 22314.

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