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## Billboard

**SAH Award Nominations** and **Board Nominations**: details of all the SAH awards and nomination contact info should be viewed on the website at: autohistory.org/index.php/awards

Here is a summary of all eight awards with their nomination deadlines:

Richard Scharchburg Student Paper Award (June 15th)

Carl Benz Award (April 15th)

E.P. Ingersoll Award (June 15th)

Friend of Automotive History (April 15th)

James J. Bradley Distinguished Service Award (August 1st)

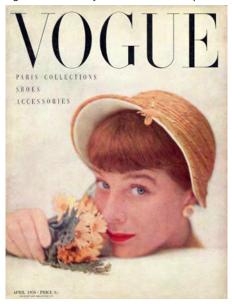
Nicolas-Joseph Cugnot Award, English (April 15th)

Nicolas-Joseph Cugnot Award, Non-English (June 15th)

Richard and Grace Brigham Award (April 15th)

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Front cover: The scope of SAH members' interests in automotive history subjects is wide, and it includes art, advertising, and popular culture. Our cover picture has a little of all those—it appeared in the April 1950 issue of British *Vogue* (cover below). The car is arguably the most significant Rolls-Royce: the 1907 40/50 hp Silver



Ghost, i.e., the Silver Ghost, chassis 60551, registered AX201. All the other 40/50 hp cars were later called "Silver Ghost"—the success of this original in various trials essentially established the reputation of Rolls-Royce. The model was Wenda Parkinson (née Rogerson, 1923-1987). The photographer was Norman Parkinson, CBE (1913-1990). Wenda became his muse and they married in 1947. A further thought on "interests"—while car clubs members' profiles include a list of their cars, the SAH members' profiles list their interests. Have you updated your profile's interests? See page 15 for details.

Back cover: Inspired by the Reid Railton: Man of Speed review on page 12, here we see the "Campbell-Railton Bluebird" land speed record car in Daytona, along with another car whose "sister car" raced in nearby Ormond Beach ("the birthplace of speed") in January, 1907. The car shown is a 1905 four-cylinder Rolls-Royce 20 hp (chassis 26350). The Bluebird, designed by Reid Railton, has a 2,300 hp 36.7 liter supercharged Rolls-Royce V12. (The actual 20 hp that raced at Ormond in January, 1907, was chassis 40523; and though lost, the details of its demise remain unknown. 26350 was restored by Stanley Sears in the 1950s and resembles 40523.) The picture was taken on January 19, 2007—nearly 100 years after 40523 raced at Ormond. The event was an RROC event over four days to commemorate the centennial. Photo by the editor.

Submission Deadlines:

Deadline: 12/1 2/1 4/1 6/1 8/1 10/1 Issue: Jan/Feb Mar/Apr May/Jun Jul/Aug Sep/Oct Nov/Dec Mailed: 1/31 3/31 5/31 7/31 9/30 11/30

<u>Note</u>: the SAH Journal is a bimonthly publication (printed 6 times a year) and there is a two-month horizon for submitted material before it is mailed (e.g., material submitted by February 1st appears in the Mar/Apr issue and is mailed on or before 3/31.) All letters, manuscripts, and advertisement submissions and inquiries go to the editor.



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An Affiliate of the American Historical Association



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## President's Perspective

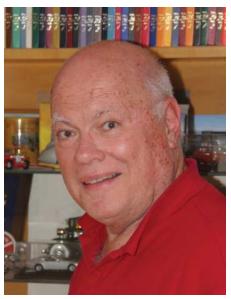
To provoke some "Letters to the Editor," maybe these President's Messages need to be more controversial, so here goes. Remember one of the mandates of SAH is to correct auto history facts, with one of the best examples being the legendary race between the Bentley and the Blue Train written by *Rubén Verdés* in the *SAH Journal*, issue # 260 of March 2013. It was not the sleek, stylish Gurney Nutting Coupe (which at the time of the run had not yet been built) but rather a 4-door H.J. Mulliner Weymann bodied sedan or saloon. Our role is to deliver the facts even if they are less flamboyant than some of the legends.

A while back we added a heading "Emission, Fuel Economy and Safety Regulations" to the SAH LINKS page on the website. Judging from the comments I have received, this category heading has received a healthy number of hits, many from younger people likely completing a college assignment. Here is where it will get controversial because one of the recently added links is "Climate Change Myths."

Let me stress that I do not fit under either extreme of the global warming debate. I am not an eco-warrior or a global warming denier; I am simply a curious observer who has not received many comprehensive answers to fairly simple questions. An example is the frequently quoted value that 37% of emissions are from transportation. What is not disclosed is how much of this value relates to planes, ships and trains, none of which have been subject to the likes of catalytic converters. The next category includes 18-wheelers, buses and other large commercial values, most of which until recent diesel sulphur changes were left alone by

A Call For Papers: The Michael R. Argetsinger Symposium on International Motor Racing History will take place on November 8th and 9th, at the Racing Research Center in Watkins Glen, New York. This is a joint endeavor with the SAH Motor Sports section. Please submit a 250-300 word abstract of the presentation/paper not later than Friday, August 9, 2019, to either *Dr. Patricia L. Yongue* (plyongue@uh.edu) or *H. Donald Capps* (cappshd@gmail.com). Questions?, con-

Billboard continued from page 3



the regulators. The silence on what portion of the 37% relates to cars could be because regulations have cleaned them up to the point where their contribution to climate change is very small; but we do not know because we are kept in the dark. Because I have placed a high priority on the agility of an automobile, most of my cars have been smallish with no trucks or SUVs in my wish list. Yet those of us who love cars, even small cars, have become a target of the ecowarriors.

Seeing great shards of the northern ice-fields collapsing into the water followed by a bear on a small iceberg sends a compelling message. Yes, satellite images have recorded over time that the Arctic ice pack is shrinking, but why are we not told that the vastly bigger Antarctic ice sheet is expanding at a far greater rate than any contraction in the North. In addition the global warming since the mini

ice age prior to the industrial revolution is not new. Using the same isotope evaluation of ice cores and other analysis has revealed that there have been several periods during which it has been equally as hot as today as we have moved through various cycles over time. This does not mean that we can abuse our atmosphere. We need to embrace conservation practices especially considering the ever increasing world population.

In the same manner that SAH strives to ensure accuracy in automotive history, we also need to ensure that attacks on the polluting habits of automobiles are evaluated in the proper context. Let's not forget that the move to electric propulsion is not consumer driven but rather the result of increasing legislation around the globe, which begs the question, how accurate are all these global warning forecasts that are prompting legislators to restrict or ban fossil fueled automobiles? It takes a brave politician (if such an animal exists) to ask politically incorrect questions. What about cradle-to-grave emission questions? The manufacture and ultimate disposal of batteries is seldom factored into some of these evaluations.

Whatever side of the fence you might sit on, or even if you straddle the fence, let us at least evaluate all components in this delicate subject in a respectful and calm fashion.

We have added a new award aimed to gain exposure for SAH at various concours d'élégance events. This idea was first floated by Rubén Verdés who will chair the committee, even though he wears plenty of hats already. Steve Purdy has been another promoter of the idea. We plan to name the award after Beverly Rae Kimes but have not finalized the criteria yet. It will likely be the oldest car on the field or the "Least Known Marque" to recognize the car that is most in need of our research and reporting.

—Louis F. Fourie

### **SAH Board Nominations:**

The SAH Nominating Committee is seeking nominations for positions on the board through 2022. Please address all nominations to the chair, *Andrew Beckman*, at abeckman@studebakermuseum.org.

**Free Digitizing Service:** The editor is seeking documents and photos related to Rolls-Royce of America, Inc. This includes promotional images of Rolls-Royce automobiles photographed by John Adams Davis. Other automotive history subjects

are sought too. Only digital images are needed. Accordingly, if you would like your antique automotive documents and photos digitized for free, just contact the editor at **sahjournal@live.com** to confirm the assignment. Then mail your material, and it will be mailed back to you with the digital media.

**Wanted:** Contributors! The *SAH Journal* invites contributors for articles and book reviews. (A book reviewer that can read Japanese is currently needed.) Please contact the editor directly. *Thank you!* 

tact Don Capps, at the email address above.



Although the majority of American soldiers were drafted into the Army, many volunteers were also employed in industrial occupations.

## GM AND THE GREAT WAR PART 2

The GMC Model 23 used a 27.20 hp engine. Only 339 were built. The 3½-ton Model 70 and five-ton Model 100 still had chain drive, but the Model 71 and Model 101, of the same capacity respectively, were shaft drive with bevel gear drive. A 6-ton truck was also listed. The chain drive was offered to those who were still not sold on the efficiency and durability of more modern design.



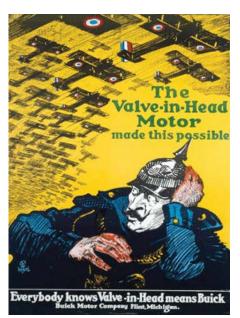
The 314.5 cid 70 hp side-valve (L-head) Cadillac V8 was introduced in 1915 and was used in all Cadillac staff cars. The horsepower was raised to 77 hp in 1916.

In 1918 the Model 30 was discontinued, and all GM trucks were shaft drive from then on. Once metallurgy had been improved, bevel and worm gears using shaft drive were found to be far superior to chain drive-which was noisy-demanded frequent adjustment and repair, and required oil which dripped on all surfaces.

In 1917 GM bought the Samson Sieve-Grip tractor company of Stockton, California. The tractors were intended to compete with Ford but were unprofitable and the division was closed in 1923. Durant's impetuous purchase of some other companies turned out to be dead ends.

By the time America had entered the war in Europe in 1917 (with the Middle East already in turmoil) General Motors was the largest manufacturer of its kind in the world. Buick and GMC trucks continued to be used primarily as ambulances and for transport of troops and weaponry, while Cadillac specialized in producing staff cars for officers as well as Liberty engines, searchlight trucks and munitions. Cadillac chassis were used in some instances to build armored cars which were considered experimental. A few photographs of Cadillac armored cars show that they were constructed at Lake Geneva, Wisconsin, at the Western Military and Naval Academy.

As a very large enterprise, GM had the wherewithal to spend resources on the development of prototypes and special use vehicles. GM had built an experimental front-wheel-drive car in 1915, which did not go into production. Buick experimented with at least one tracked vehicle. A photograph shows the test drive of this tractor. Having been a pioneer in this type of design,



Propaganda posters were used in large numbers including this one extolling Buick's patented technology.

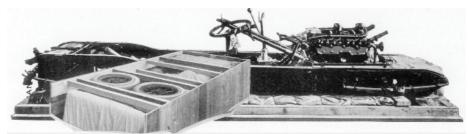


Shown here is a 1918 Cadillac Model 57 touring military staff car, which is still extant.

Holt Manufacturing and nearby C.L. Best obtained patents and built prototypes. Holt obtained a trademark on the name "Caterpillar" in 1910. GM did not go into building tracked vehicles.

However, General Motors was also instrumental in the development of a small tractor which was powered by a Cadillac V8 engine, displacing 314.5 cubic inches and producing 31.25 hp. This was the same V8 which powered the Model 57 Cadillac, powering its staff cars used by Allied officers, including General Pershing. Cadillac had first introduced its V8 in 1915. This was not the first V8 gasoline engine in the world, but it was the first to be mass produced in such numbers.

Despite various opinions of Billy Durant, most historians would admit that if it were not for his enthusiasm, General Motors would not have come into existence. The list of Durant's buy-outs of component and vehicle manufacturers at the very beginning of the last century is too long to include here. Nevertheless, what is relevant is Durant's



Among other makes, Cadillac sent CKD kits (Completely Knocked Down) in order to minimize the size of shipping crates and containers.

noted penchant for continuous acquisition and business dominance, which led to his ouster by the GM Board of Directors in 1910.

In the meantime, Durant had created a new auto company using an impressive level of secrecy, in cooperation with Louis Chevrolet and his brother, Arthur Chevrolet. As historians have noted, Arthur was Durant's chauffeur briefly and he and his brothers Louis and Gaston were all race car drivers. Upon rejecting Louis's six-cylinder design of his prototype car (complaining it was too large, bulky and expensive) Durant ditched Louis Chevrolet, who was forced to sell the shares of the company with his name on it in

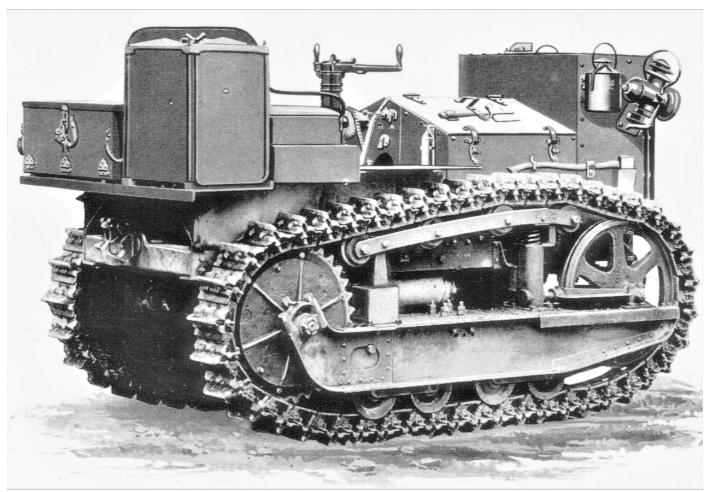
1914. Durant continued building "Chevys" on his own.

It may be humorous these days that Durant made a point of complaining about Louis Chevrolet's cigarette habit, but Durant had resorted to manipulating Chevrolet as an enterprise in a stealthy maneuver to buy controlling interest of GM through stock acquisition. In this manner the Chevrolet enterprise took over GM with Durant at the helm again, using a clever though underhanded tactic of business strategy. The press called it "Jonah swallowing the whale." Others called it "the tail wagging the dog," and some used even stronger language to describe the reverse merger.

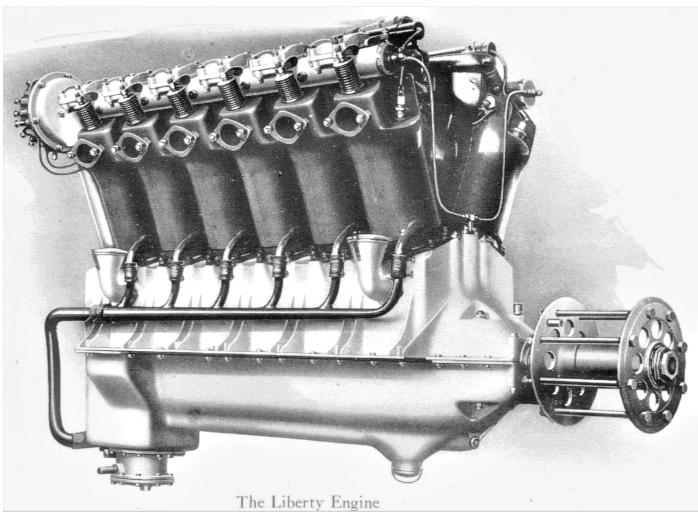
It should be noted that having started the Frontenac Motor Corporation with brothers Arthur and Louis, Gaston Chevrolet died in a crash in 1920 in Los Angeles. Then Louis and Arthur founded the Chevrolet Brothers Aircraft Company in 1929, which soon went "in the red" and was bought out. Louis Chevrolet died on June 6, 1941, and Arthur Chevrolet committed suicide on April 16, 1946.

Durant's wild management and financial shenanigans led GM's banking and business interests to oust him once more in 1920. Again, his gregarious business manner and methods slid from "outgoing" to "out going." Durant shrugged it off, and in January of 1921 organized Durant Motors, Inc. as a \$5 million company with over 140,000 stock holders. It went well for a decade, building cars and light trucks under the Star and Durant names, and exporting vehicles overseas.

However, what has been described as Durant's frivolity and cavalier approach, including long absences to Europe with his young second wife, resulted in Durant Motors going bankrupt by 1932 as the Great Depression took hold of many economies.



A 2 1/2-ton tractor was built for the U.S. military using a standard Cadillac V8 motor with minor modifications.



The V-12 Liberty aviation engine was a standardized power plant assembled by several companies in the U.S. including General Motors.

Billy Durant finally had to sell off his wife's jewelry trying to make ends meet. Even though Durant was eventually honored by GM with a major ceremony as its founder, Billy Durant famously ended up flipping hamburgers at a bowling alley prior to his passing on March 18, 1947, at age 85.

As noted, Cadillac was another big player in the GM stable which contributed vehicles to the war effort. The first Cadillac to see action in combat was a passenger car converted into an armored car in India after the outbreak of war in 1914. The car was customized with Maxim machine guns by local constabulary in Calcutta in order to quell civil unrest.

The company's own literature stated "...2,095 cars were shipped overseas and 199 to various military posts in the U.S. Two hundred twenty-one were delivered to the Canadian Government... War conditions gave rise to many requirements for motor equipment of a nature hitherto unheard of. Although Cadillac seven-passenger cars met the major needs of the Army for rapid, dependable pas-

senger car service, a demand was created also for a special type of enclosed car for the use of the officers. The Cadillac Company met this requirement with a limousine body of standard Cadillac construction and equipped to army specifications, mounted on a standard 125-inch wheelbase Cadillac chassis.

"In exterior appearance this limousine, except for its olive-drab finish, resembled the standard car, but the interior was especially adapted to the rough and ready uses of war. It was upholstered in leather instead of mohair velvet, the curtains were canvas instead of taffeta silk, the floor was covered with cocoa mat and the passenger compartment was provided with a desk intended for the use of officers in referring to their maps and charts while traveling from one part of the war zone to another. More than 300 of these special types of enclosed cars were furnished the Government for overseas service," as stated in Cadillac literature published by the company in 1919.

It was during WWI that Henry Leland and his son left the company. They were in-

strumental motor vehicle designers for Olds, Cadillac (and later Lincoln). According to William C. Durant, they were fired due to their differences of personality and overlaps in ambitions. According to the Lelands, they resigned because Durant refused to build the Liberty Engine, but Cadillac proceeded into Liberty motor assembly anyway, one of several to produce the aircraft engine. According to company literature of the time: "The Liberty Engine was a standardized engine. The complete interchangeability of its parts not only facilitated quantity production, but quick repair and overhauling. It was known among the craft as an 'apple tree repair job.' Old 'file to fit' methods of construction gave way to the greater ease and accuracy of the gauge system." The Liberty Engine was built in both V-8 and V-12 iterations—mostly the latter which was also adapted to the Mark VIII tank prototype by war's end.

Next issue: The story picks up with the 2½-Ton Artillery Tractor.

—Albert Mroz



## W.O.—IN HIS WORDS

This year is the 100<sup>th</sup> anniversary of Bentley Motors, which was first incorporated on January 18, 1919. That first incorporation was, long story short, a necessary step to form another Bentley Motors on July 10, 1919—the date that has been generally adopted as the firm's birthday. The first 3-Litre (EXP1) was registered BM8287 on December 11, 1919, and the first cars were delivered in September 1921.

There is no shortage of books on the Bentley marque and its founder, Walter Owen Bentley; and that catalog also includes a few autobiographical works by W.O. himself. Those titles include W.O.: The Autobiography of W.O. Bentley (1958), An Illustrated History of The Bentley Car (1964), and My Life and My Cars (1967). All of these books by W.O. are out of print, but could be found at any number of secondhand book sellers; and while one understands that an autobiography tends to hold its own points of view, they are all very interesting and engaging. This article will collect a few excerpts to inspire you to put these on your upcoming reading schedule (note: quotes are kept in their original British English spelling).

W.O. Bentley was born on September 16, 1888, the youngest of ten children. The custom to use his initials ("W.O.") was shared with his brothers (William Waterhouse [W.W.], Alfred Hardy [A.H.], Leonard Holt [L.H.], Arthur Waterhouse [A.W.], and Horace Milner [H.M.]). His childhood fascination was with trains. This fascination

led to a premium apprenticeship at the Great Northern Railway, before he got into motorcycle racing, then automobiles. That final step towards automobiles would have been a surprise to his earlier self, as he reflected back to his early days in My Life and My Cars: "The motor car seemed to me a disagreeable vehicle. Perhaps I should have realised the vast potentialities of internal combustion and recognised from my nursery days that it was to be the impelling force in my life. But the fact must be recorded that the motor car struck my young, literal mind as a slow, inefficient, draughty and anti-social means of transport. Motor cars splashed people with mud, frightened horses, irritated dogs and were a frightful nuisance to everybody."

Before WWI, brothers W.O. and H.M. were in business selling French DFP (Doriot, Flandrin et Parant) automobiles. While visiting the DFP factory, W.O. was inspired by an aluminum paperweight on Doriot's desk to experiment with aluminum pistons and settled on an alloy of 88% aluminum and 12% copper. He modified DFPs with these and used them in his BR aero engines. In My Life and My Cars W.O. tells this story of introducing them at Rolls-Royce as part of the war effort: "E.W. (later Lord) Hives was in charge of the experimental department, and, with a piston in my case, I called on him in his new office built on a sort of island surrounded by the factory's test track. I hadn't met him before and liked him at once. In later years, and under sometimes trying circumstances, we were to see a lot of one another, but we always got on well. He examined my piston, listened to my story, and then called in his foundry specialist, Buchanan, to whom I gave the formula. Very sensibly, he made an analysis to check my figures, and then had some experimental castings made. Production went ahead with crisis urgency, and the result was that Rolls-Royce's first aero engine, the excellent water-cooled 200-h.p. Eagle, had aluminum instead of cast-iron or steel pistons."

With the formation of Bentley Motors after the war, here are some of W.O.'s recollections of the first 3-Litre in *My Life and My Cars*: "I have an all too clear memory of my first run in the prototype 3-litre in 1919. I was quite appalled by the noise; that was my first and most lasting impression . . . The oil pump was the chief culprit, but, while I expected trouble here, I never thought it would make the din that half deafened me on that first trip. We had a form of dry sump

lubrication in which the oil was pumped under pressure to the bearings by one pump and a second scavenge pump emptied the oil out of the sump and up into the tank on the dashboard. The gears of those pumps made a quite incredible noise. Of course, everything made more noise in those days, a fact which is so easy to forget . . . Believe it or not, I think that noise is one of the biggest enemies a designer has to fight; and I have spent a good many years in the field of battle, so I should know! . . . I was pleased with the steering on the whole, and I think the 3-litre always had pleasantly light and precise steering considering the weight of the car and the year of its birth. The suspension, on the other hand, seemed far less satisfactory, and I knew we were going to have to work a lot on that. I was also pleased with the gearbox which never in fact gave serious trouble, and I found the car pleasant to handle through the corners and good on the road. Rather surprisingly, I also found that it was quite tractable in traffic. The brakes, on the other hand, were very noisy, chiefly because we used cast-iron shoes at first, but because of the unusually large drums, they were very effective."

As with most premium automobiles of the prewar era (i.e., pre-WWII), Bentley automobiles received bodies from thirdparty coachbuilders. After those bodies were mounted on the chassis by the coachbuilders, they would return to the firm's Cricklewood factory. Here, W.O. recounts the process at the "Finished cars test shop" in An Illustrated History of The Bentley Car: "Our life was made very difficult because all the bodies were different and had profoundly different effects on the chassis. Tappets that would remain unheard with some bodies would suddenly become very evident with others. Squeaks and leaks of all kinds might occur. Some coachbuilders we found very bad, one or two were very good. Mulliners were possibly the most satisfactory, especially for saloons, while Vanden Plas were far and away the best for open coachwork. The only model we at first sold complete with coachwork was the long-chassis Blue Label 3-litre."

The legend of Bentley Motors during the W.O. years was set in stone with the epic first place wins at Le Mans in 1924, 1927, 1928, 1929, and 1939. Here's a compelling perspective from W.O. after the 1927 race from An Illustrated History of The Bentley Car:

"To this day, the popular press take little notice of motor racing unless (a) there is a good crash, preferably with blood; or (b) a dramatic British triumph occurs. The 1927 Le Mans race gave everyone everything that they could possibly need: it contained the very stuff of popular journalism. There was the great crash, the extrication of a sorely damaged car in the dark, the struggle with a damaged machine against hopeless odds, the lone triumph.

"For the price of three damaged cars, we scooped the headlines of the world's press and put the marque Bentley firmly on the map. From this time we had no need to worry about publicity. Here, for example, is the winning car going to a party at the Savoy! All we had to fear was the adverse publicity that would follow failure—'. . . The harder the fall'!

"But from 1927 onwards fortune favoured us. Not only did we build some good cars, especially the 6-cylinder 6½ litre and 8-litre, but we had learnt-expensively-how to race them. We were never again to fail at Le Mans, and our record elsewhere was quite a creditable one. In addition (and as a major reason for this satisfactory state of affairs) the Company's finances were on a more stable basis. Captain Woolf 'Babe' Barnato was the man most responsible. He won Le Mans three times running, an achievement no one else has equalled. He was a formidable man, behind a glass of whiskey, behind a driving wheel, and behind a boardroom table. He enjoyed himself with Bentley Motors, enjoyed the racing, the status it brought him in the public eye. In spite of 1931, and the bankruptcy, 'Babe' and I never quarrelled, and this all happened too long ago for there to be any lingering bitterness."

The "bankruptcy" and "1931" refer to the events that led to the acquisition by Rolls-Royce. At the time, W.O. was confident that the company could continue with the help of Napier (an old rival of Rolls-Royce)—W.O. recalls in *My Life and My Cars*:

"I was feeling reasonably happy about our future plans—which also included a possible new aero engine—when the time came in November for the receiver to apply to the court for approval of the Napier contract. Terms had been agreed, everything seemed to be tied up, and this was to be nothing more than a formality."

"The court was in session, everything was running according to schedule, Napiers' representative had made known to the judge their price, when a figure rose and said, 'I am empowered by the British Central Equitable Trust to offer so much for the assets and goodwill of this Company'; a figure that was, by an extra-ordinary coincidence, a fraction more than that offered by Napiers. There was a brief and horrible pause, and then Napiers' representative got up and asked for a brief adjournment to allow him time to consult his principals. This the judge granted, and shortly after the court heard Napiers' new and higher bid. The other barrister was about to raise his price too when the judge informed the court that he was not an auctioneer and that there would be another adjournment until 4.30 in the afternoon when sealed final bids were to be handed in by the two opposing barristers. I don't know by how much precisely Napier were out-bidded, but the margin was very small, a matter of a few hundred pounds. All I knew that evening was that the deal would not be going through after all."

W.O.'s services were tied to Bentley Motors, so after the acquisition by Rolls-Royce, W.O. was called to meet with Henry Royce—from *My Life and My Cars*: "It seemed inconceivable that Rolls-Royce should want to employ me. What could they do with me? They had their own design staff, and it seemed to me that I would be as embarrassing as a prisoner of war after the armistice signing. I simply couldn't imagine what they might have in mind when I was asked to call at their London head office for an interview with Sir Henry Royce.

"It might be called an exploratory interview, I suppose, and I have often wondered what was its purpose. The opening was not propitious.

[Royce]: I believe you're a commercial man, Mr. Bentley?

[W.O.]: Well, not really, I said. Primarily, I suppose I'm more a technical specialist. [Royce]: You're not an engineer, then, are you?' Royce asked in some surprise.

"I didn't know quite how to answer this without appearing vain. And then I remembered from thirty years back.

[W.O.]: Yes, I suppose you could call me that. I think you were a boy in the G.N. running-sheds at Peterborough a bit before I was a premium apprentice at Doncaster.

"This was accepted with a nod, and I heard no more on the subject. Instead I was offered a job, on not ungenerous terms, a rather nebulous sort of job in their London showrooms as an understudy to Percy Northey who had, like nearly everyone at Rolls-Royce, been there since the company began. Northey, who had years ago brought a Rolls-Royce into second place in the first Tourist Trophy race, looked after the technical liaison with the works, and was due for retirement soon. I was to help him, to attend the morning sales conferences at ten o'clock when any technical points and criticisms were discussed, and ensure that the demonstration cars were in good order.

"Whether or not I could have refused is a nice point, and one that didn't arise."

W.O. spent some time testing the new cars which he called "Rolls-Bentley" and he recalled his battles with the engineering needed to get the noise out of components and achieve the desired results, and the time needed to do so; and the difference time would have made for Bentley Motors—from My Life and My Cars: "My period at Rolls-Royce had driven home once again to me the value of time for development: time, that luxury that only the most solidly founded firms can afford." On further reflection on Bentley Motors, he was concise: "When people ask me (and they are too tactful to do so often) why Bentleys went bust, I usually give three reasons: the slump, the 4-litre car, and the 'blower' 41/2s; in proportions of about 70, 20 and 10% respectively."

At first W.O. struggled a bit to comprehend the interest the old cars garnered, but he did eventually participate in BDC events-from My Life and My Cars: "Unfortunately my own position with the club was rather difficult at first when I was with Lagondas, but for the past twenty years or more I have kept in close touch, always attended the annual dinner and a number of the events, and have been honoured with the position of Patron. It is always a great satisfaction to see how beautifully the cars are kept and in what excellent hands they are spending their old age." For the 50th anniversary of Bentley Motors, W.O. attended an event where he visited Cricklewood and his old office on June 12, 1969.

W.O. passed on August 13, 1971. There was a memorial service in September at Guildford Cathedral with over 75 vintage Bentleys on site to join in on the tribute. We could call this a kind-of long review of W.O. books, and perhaps it's enough of a spark to inspire your further inquiry.

—R. Verdés



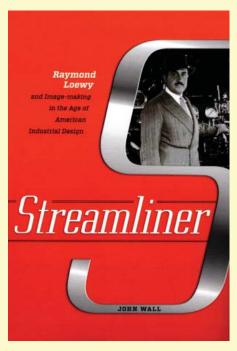
Streamliner: Raymond Loewy and Image making in the Age of American Industrial Design by John Wall

Johns Hopkins University Press (2018) press.jhu.edu

342 pages, 6 ¼" x 9 ¼" hardcover 49 b/w images, notes, index

Price: \$39.95

ISBN-10: 1421425742 ISBN-13: 978-1421425740



As I write this review, I'm watching on television the body of former President George H. W. Bush being loaded onto the Boeing 747 Special Mission 41 (AKA Air Force One) with the iconic blue and white paint job and with "United States of America" elegantly lettered on the sides. Likely it's the rare person who knows that this was one of industrial designer Raymond Loewy's design works. Previous to John F. Kennedy's presidency, planes used by the chief executive were designated on the fuselage as either "United States Air Force" or "Military Air Transport Service." The redesign of Air Force One was just one among many of Loewy's governmental commissions, but a design

that continues to live on whenever America's presidential plane touches down anywhere in the world. The story goes that the typeface for the fuselage lettering was inspired by the type font used in the heading to the Declaration of Independence, set in widely spaced Caslon typeface.

Loewy's Air Force One commission and other aircraft-related commissions (TWA, Air France, among others) might be considered his least celebrated works but they were visual shorthand for dozens of global businesses he and his firm dealt with, businesses that continue to be recognized by millions of people today.

Whenever I review a book whose focus is a larger-than-life personality like Raymond Loewy, I've typically first gone to *The New York Times* archives to see what *The Times* wrote about this or that person in its obituaries section. Indeed Loewy's obit was found on that newspaper's front page and it's useful to quote the first few paragraphs here because they essentially and succinctly capture Loewy's contributions to industrial design that, of course, include his styling and design work for the automotive industry.

Raymond Loewy, the "father of streamlining" who more than half a century ago founded the industrial design movement that radically changed the look of American life, died yesterday at his home in Monte Carlo. He was 92 years old and had been in failing health for several months.

By the 1950's he and his associates had drastically altered the appearance of thousands of everyday items, from toothbrushes to automobiles to airplanes. As head of Raymond Loewy Associates, the French-born Mr. Loewy was recognized as the most influential industrial designer in the United States. His company, formed in the early 30's, became the largest industrial design firm in the world. It ceased operation in New York in the late 70's and the Paris office was closed in 1984.

Mr. Loewy's artistic creed was: "Good design keeps the user happy, the manufacturer in the black and the aesthete unoffended." From dowdy to sleek his impact on industrial design was first felt in the 1920's, when everyday objects tended to be dowdy in color, ungainly in shape and bulky in form. Mr. Loewy's goal was to make such objects sleek and unencumbered.

While author John Wall does a splendid job in this book discussing the broad range of corporate accounts that Loewy's firm held over the years, where the book truly shines is in two areas: (1) It offers a solid perspective on the early influences, both from childhood and young adulthood, that made the later man; and of course, (2) for the reader of automotive history, a compelling summation (with a few glaring errors noted later in this review) of Loewy's involvements with, in the beginning, the Hupp Motor Company, and then later with Studebaker. Wall brings us new insights into how Loewy worked with both companies—including his on-again, off-again (and sometimes contentious) interactions with both management and engineering-all gleaned from a dive into the extensive Raymond Loewy Archives held by the Hagley Museum and Library. Alas, if only he'd spent more time in the Studebaker National Archives the overall integrity of his work might have been improved.

Few accounts of Loewy provide much insight into his early years in France, but we quickly learn that his family held high expectations for his education. While not a prodigy, he certainly came close. One fact most often overlooked is that young Raymond survived the First World War despite having to serve all through the conflict on the Western front. And he survived the Spanish flu pandemic that nearly wiped out a generation of young men. That survival—along with others of his generation—created the opportunity for many to create a life different from previous generations.

Wall often cites Loewy's autobiography Never Leave Well Enough Alone (1951) to lend a bit of Loewy's often tongue-in-cheek humor to this new story. Of particular note, one learns of the times over the years when Loewy held considerable resentment toward various corporate figures, especially as he engaged with production engineers. At his first meeting with Hupp Corporation engineers he later recounted: Full of enthusiasm I met the Chief Engineer in his office and he started telling me all the things I couldn't do. When it was over, about an hour later, it became apparent that the only things I was allowed to do were to jump out the window, swallow a gallon of enamel, or sit under a ten-ton punch press. At various points we get a sense of the give-and-take between what designers want and what production engineers are willing to provide. That said, we are offered little insight into whether Loewy really understood

the fine details of cost analyses in bringing a product to market, given that he was often, with many of his clients, physically removed from the day-to-day operational implementation of his design products.

For an interesting take on how Loewy thought of himself (grandiose and selfassured, among other words that could be used!), I'd certainly urge readers of this book to, at the same time, read Loewy's engaging and entertaining autobiography. When I read it a few years back I was expecting it to be more focused on the profession of industrial design—which it was not—but rather it's filled with stories and anecdotes which reveal much about the perceived America of the late 1940s. Today, when many of his contemporaries have faded into memory, his reputation has steadily regained its resonance as many earlier critics have applauded Loewy's mission to forgo theoretical design ideology in favor of the rising sales curve.

As trends and tastes changed over time and after his passing, the bold self-marketing that earned Loewy somewhat of a reputation as a publicity hound was no longer scorned. Today what Loewy achieved is simply called branding. Importantly, what is reinforced over and over in this book is that Loewy never produced junky products, even as his career wound down. And he never diluted his image—which he easily could have—by merchandising his name like many later "name designers" like Calvin Klein, Donna Karan, and Martha Stewart and others did.

For the automotive historian there is some new material here on Loewy's work with Studebaker including a range of photos obtained from the Studebaker National Archives. That said, as regular contributor to this journal *Helen Hutchings* said in her review of the book and found in a recent issue of the *Avanti Magazine* and online in SpeedReaders.info (speedreaders. info/20027-streamliner), there are some factual errors that a more disciplined researcher could have avoided. This is especially true in the chapter on the Studebaker Avanti. I quote Hutchings' review here to substantiate that concern:

Notably, and sadly, in the tenth chapter which focuses on and is titled "Avanti" there are at least half-a-dozen statements that made Lew Schucart, the editor of the Avanti Owners Association International's *Avanti* magazine, take exception. The most egregious and puzzling is where

Wall wrote, "Shortly after the debut of the Avanti, on November 25, 1963, the production plant in South Bend closed its doors, laying off 6,000 workers."

As there is no accompanying chapter note upon which Wall based these words, he is solely and totally responsible for this fantasy. Had Wall researched in the Studebaker National Museum's holdings or read SNM Archivist Andrew Beckman's Studebaker's Last Dance: The Avanti he might have been saved from making some of these grievous errors. History—and a multitude of books and published road test articles from every enthusiast magazine of the time—support that Studebaker debuted the Avanti in April 1962. While Studebaker did ultimately move all production to its Canadian plant, that didn't happen until after January 1, 1964 and as Beckman recorded, "Regular production in South Bend ceased on December 20, and Studebaker built its last Avanti on New Year's Eve 1963... Studebaker built 4,643 Avantis over its 18-month production run."

These and other oversights aside, Loewy's relationship with the Studebaker Corporation clearly ended more with a whimper than with a bang. After Studebaker finally let Loewy go, faced with declining interest in its entire product line, Loewy never got over the break. As he wrote in *Industrial Design* (1979), his often mercurial temperament and resentment were on display:

My decades with the company were exhilarating and unforgettable, and my respect for its engineering department immense. I leave it to others to uncover the reasons why such a great, prestigious firm, having at last found its market, finally disappeared at a time when it was admired throughout the world and when the Avanti had just come out with a backlog of orders. It was an industrial tragedy.

Ultimately this book adds another important chapter to the legendary work of the man who essentially created the field of industrial design, thus making the corpus of his career's work available to a new generation of readers.

Note: A range of digitized papers and photographs may be found on Hagley's website at: digital.hagley.org/islandora/object/islandora:2166399

—Ed Garten

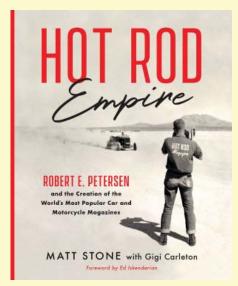
Hot Rod Empire: Robert E. Petersen and the Creation of the World's Most Popular Car and Motorcycle Magazines

by Matt Stone with Gigi Carleton Motorbooks (2018)

QuartoKnows.com/ +44 (0) 20 7700 6700 208 pages, 73/4" x 91/2" hardcover, dust jacket 115 b/w and 112 color images, index

Price: \$35

ISBN-10: 9780760360699 ISBN-13: 978-0760360699



Hot Rod Empire: Robert E. Petersen and the Creation of the World's Most Popular Car and Motorcycle Magazines by Matt Stone deserves mention on these pages. It is very much a contemporary story as has been celebrated in anniversary issues of several of its magazines, in company-issued press releases, and the hard-cover book Fifty Years of Motor Trend published in 1999 by MBI (Motorbooks International), now a sub-group of this current book's publisher Quarto.

The pages of this book are a generously-illustrated celebration of the lives of Robert E. Petersen and his wife, Margie, which is all the more understandable when the reader is aware of author Matt Stone being a one-time employee/editor on the staff of several of the Petersen publications. And then there is his collaborator, Gigi Carleton.

Ms. Carleton was Robert E.'s personal assistant/manager and executive secretary for 40 years. Early on she also formed a fast-friendship with Margie as well. Since the passing of Robert in 2007 and Margie in 2011, Carleton has been and still is the "keeper of the flame." Her official title and responsibilities are as president of the Margie and Robert E. Petersen Foundation, which philanthropically benefits many charities.

From the historian's perspective, what enthusiast-turned enthusiast-magazine publisher "Pete" Petersen accomplished and built will likely never be repeated if for no other reason than the decline of the printed periodical. And it wasn't just one enthusiasm or one magazine, for Petersen was a man of eclectic interests and enthusiasms including (but not limited to) hot rods or, more accurately, cars of all sorts and types, also fishing, using (hunting and trap alike) and collecting guns, boats, aircraft, motorcycles and more. For every interest he soon developed and published at least one magazine, sometimes multiple titles reflecting various facets.

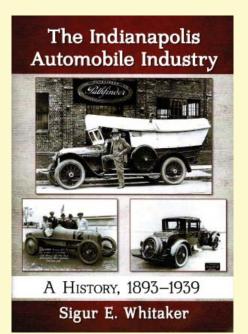
By the mid-1990s, the astute-businessman aspect of Petersen foresaw the publishing world was heading for changes. Ultimately he sold the entire Petersen Publishing Company. Subsequent owners chopped and channeled it, thankfully renaming it with each change. Thus the Petersen Publishing Company's reputation, legends and accomplishments are untarnished as this book shares, remembers, and celebrates.

—Helen V Hutchings

## The Indianapolis Automobile Industry: A History, 1893–1939

by Sigur E. Whitaker
McFarland & Company (2018)
McFarlandpub.com/ 800-253-2187
313 pages, 7" x 10" softcover
45 b/w images; chapter notes, bibliography
Price: \$39.95

ISBN-10: 1476666911 ISBN-13: 978-1476666914



This book traces the history of the In-■ dianapolis automobile industry from 1893, when carriage maker Charles Black created a rudimentary car, up to 1939, when the industry in that city essentially came to an end due to the financial problems of various manufacturers. It details the significant contributions of the industry to the innovation of the automobile and the relationship between the industry and the Indianapolis Motor Speedway, as carmakers used the Speedway for testing and improvements. Importantly, it describes in considerable detail manufacturers like Stutz and Duesenberg, as well as Marmon, Premier, Marion, Frontenac, Monroe, Empire, National, Parry, Pathfinder, American, Hassler, Lyons-Atlas, Lafayette, Henderson, and Overland.

Without question, this is a dense read given the scrupulous attention to detail as evidenced by the book's extensive notes and references, but it stands alone in gifting the automotive historian with a compelling and comprehensive picture of the early years and up until the end days of Indianapolis as a powerhouse of the early industry.

The author, a delightful and engaging person with whom this reviewer spoke at the Society's 2018 Banquet in Hershey, tells, in this latest of her books, of a trip to her hometown of Indianapolis where she discovered a photograph album of the historic home—Riverdale—which had belonged to her great-great uncle, James Allison. Allison of course was one of the key pioneer figures in the early and quickly thriving automobile industry of the early 1900s. Whitaker's desire to learn more about Allison led to her first book, James Allison: A Biography of the Engine Manufacturer and Indianapolis 500 Cofounder. With that accomplishment behind her she then went on to write an extraordinary book about successful Indiana businessman Tony Hulman, whom readers here will recognize as the man who purchased the Indianapolis Motor Speedway when it was on the verge of being demolished in 1945. That book was titled appropriately, Tony Hulman: The Man Who Saved the Indianapolis Motor Speedway.

In addition to writing biographies of individuals who have been involved in auto racing, Whitaker has worked as a copywriter specializing in the financial and auto racing industries and writes an occasional blog that may be found at her website at:

sigurwhitakerbooks.com/?page\_id=119

For those less familiar with the early Indianapolis automobile industry, it's important to note that the industry began in 1893 when Charles Black, a local carriage maker, produced a rudimentary motorcar. Within fifteen years, Indianapolis became a major automobile manufacturing center rivaling, for a few years, Detroit as well as Cleveland. Although never producing a large number of automobiles, the marques that were manufactured in Indianapolis were widely known for their innovation and high quality. Early automobiles were unreliable and manufacturers from the early days turned to various contests and challenges including endurance runs, hill climbs, and track racing in order to demonstrate the quality of their product. When the Indianapolis Motor Speedway opened in 1909, Ms. Whitaker impressively offers the reasons why Indianapolis and Indiana engineered vehicles dominated the track. With its brick surface, running on the Speedway quickly uncovered any automobile weaknesses and flaws far better than running on city streets or other forms of racing.

If nothing else, this book adds additional perspective to the already strong historical context of the famed Indianapolis Motor Speedway. With its range of excellent photographs as well as the earlier noted extensive references, this book belongs on the shelf of anyone who has a passion for the founders and innovators in the industry as well as those who covet books related to motor racing.

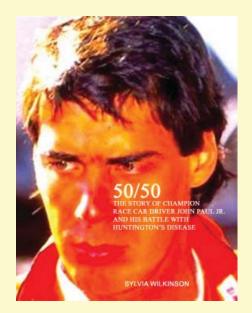
—Ed Garten

### 50/50: The Story of Champion Race Car Driver John Paul Jr. and His Battle with Huntington's Disease

by Sylvia Wilkinson
High Desert Press (2018)
johnmortonracing.net/5050-john-paul-jr
148 pages, 7½" x 9½" hardcover, dust jacket
30 b/w and 88 images, chapter footnotes.

Price: \$50 ISBN-10: 1732723907 ISBN-13: 978-1732723900

It's an unconventional book in many ways—including its story. Visually, page layouts have a variety of type styles and sizes with the text interrupted by "interjections" from others and "call-outs" too, each of which are sometimes in boxes with some background color but no border rule lines while others are just there on the page. It feels rather as though you are looking at a



scrapbook that's in the process of being assembled. Then there's the reality of no table of contents to give an idea of what will be unfolding on its pages so, as the book begins, the reader may feel a bit disoriented.

Then, the words of veteran writer and author Sylvia Wilkinson capture and captivate, drawing the reader into the story she's telling in 50/50. Her skillfully chosen words tell of the naturally brilliant race car driver John Paul Jr. But as his life and story unfold it becomes decidedly unconventional in just about every aspect.

The book's 50/50 title comes from a sad reality of John Paul Jr.'s life: an inherited degenerative disease of the central nervous system that affects only about half of those who inherit the gene. And if inheriting something like this isn't bad enough, those whom it "might" affect don't know for sure until attaining the age 40 to 50.

So having perhaps nothing yet everything to do with John Paul Jr., what exactly is this insidious disease called Huntington's? Earliest symptoms are subtle. One begins "acting kinda funny," maybe moody but just not "right." Ultimately Huntington's causes a loss of mental and physical control that eventually develops into complete helplessness.

John Paul Jr. has developed the disease, but there's real hope now too, for UCLA is leading the charge with advanced studies in which he willingly participates as they seem to be on the cusp of offering that longed for real help. The gene that causes Huntington's has been isolated and work is underway with some 21 clinical trials of existing neuroprotective drugs. And that's what this one-time race driver has devoted himself to and what

motivated Syliva Wilkinson to write this book with its title 50/50 reflecting that possibility an inheritor "lives with" of whether (or not) they will develop the disease.

That said, Wilkinson didn't merely write 50/50. Along with John Morton, a notable race driver himself (think of Peter Brock's BRE Datsun-running efforts among others) and a one-time teammate of John Paul Jr., she underwrote the book's printing and distribution. And they've designated the proceeds from its sales be directed and devoted to that UCLA treatment/cure research program which, as it turns out, may also have implications for helping with research/treatment for Alzheimer's (stay tuned!).

As a very new race car driver John Paul Jr. was reckoned to be on his way to being among the top tier of drivers once he had honed his natural talents with experience. He had the advantage of a wealthy father as team owner and sometimes teammate driver. Together they compiled a winning record in IMSA. But that same dad, who had initially made his money as a stock investor, then decided to augment income with his proceeds from bringing in illegal drugs (read marijuana). When arrested as complicit in his dad's activities, John Jr. refused to testify against his father so spent time behind bars. That's not a good career interruption even for one who had won his fourth ever Indy Car drive.

Jr.'s first child was 18 months old when he entered the minimum security prison and was just turning four when her dad was released. Defying common perceptions, John Paul Jr. was able to resurrect his driving career although he wasn't necessarily the first choice for top drives with top teams. Sometimes what he achieved was all the more remarkable just because he had been driving less than stellar equipment. And he did compile another fine record including qualifying seven times for the Indianapolis 500, wins in IRL and more in the World Sports Car, the series that had replaced IMSA.

His demeanor coupled with his racing abilities earned John Paul Jr. not only respect and admiration but solid, lasting friendships such as that of fellow driver Tommy Kendall. Both John and Tommy stand several inches over six feet. Here's Kendall: "Most drivers, including a younger me, could learn a thing or two from John on taking responsibility and how to carry themselves with humility and a certain dignity when things don't go

their way. And, for what it's worth, he carried himself in exactly the same way when things did go his way." And no one, ever, heard him utter a word of complaint. There was no passing the blame to team or car or mechanics or his medical condition as it made itself known.

Now John Paul Jr.'s goal is focused on doing all in his power to help the medical community in its effort to find treatments, even a cure, for Huntington's. SAH members can help. Add a copy of this book to your library and learn of the man who inspired it. And, you can help even more at: giving. UCLA.edu/JohnPaulJrHD. No index, no table of contents but chapter footnotes citing media references and photo credits as well as acknowledgments of sources.

—Helen V Hutchings

### Reid Railton: Man of Speed

by Karl Ludvigsen

(Preface by Sally Railton Joslin, Foreword by Ronald Ayers MBE)

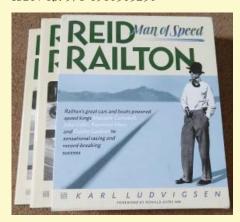
Evro Publishing, UK (2018)

evropublishing.com/ 612-344-8100

Two volumes, each: 424 pages, 9½" x 11½" splipcased. Approximately 750 b/w and color photographs and diagrams.

Price: £150

ISBN-10: 1910505250 ISBN-13: 978-1910505250



With four Cugnot Awards to his credit, *Karl Ludvigsen* brings great expectations to his latest work, published in the spring of 2018. In contrast to his previous books on Mercedes, Porsche and Volkswagen, *Reid Railton: Man of Speed* covers topics that are more varied, yet less well known. At ten pounds and measuring 9½ by 11½ inches it can also be described as "mammoth"; thankfully it comes in two lap-sized volumes, nicely presented in a slipcase.

Reid Antony Railton was born in Cheshire, England, on June 24, 1895. After attending Rugby School, he took a science degree at Victoria University of Manchester. In 1915 he joined Leyland Motors and worked under J.G. Parry Thomas, designing military vehicles during World War I. Later, he became an assistant to Parry Thomas on the Leyland Eight, a short-lived luxury car. In 1923, he followed his boss to Brooklands, where they set up a racing operation. One product of this was the Arab sports car, another the Brooklands Riley Nine for racing car engineers and constructors Thompson & Taylor. Parry Thomas's piece de resistance was "Babs," a 27-liter Liberty aircraft-engined speed record car in which he eventually met his end, in 1927 on the Pendine Sands in Wales.

In 1931, after Parry Thomas's death, Railton designed a Blue Bird speed record car for Malcolm Campbell. Two years later he worked on chassis design for the ERA racing car, and licensed his name for Noel Macklin's Hudson-based prestige car. He did a speed record car for MG in 1938, followed the next year by the Napier-Railton, a four-wheel drive, twin-engine record contestant for John Cobb. His speed record quests extended to boats, beginning with water-borne Blue Birds for Campbell, for which he was responsible for the power source, not the naval architecture. Later he worked on the jet-powered Crusader for John Cobb.

In 1939, Railton moved his family to the United States, as he began work at Hall-Scott Motor Company engineering speedboat engines, which would find new uses in the war to come. In 1945, he started his own business and remained in the U.S., consulting for the Hudson Motor Car Company from 1948 to 1954. He died at his home in Berkeley, California, in August 1977.

Author Ludvigsen covers all these topics in 26 chapters and six appendices, totaling 848 pages in all. He begins the tale in 1933, in many ways the high point of Railton's career, before rewinding to 1890 to sketch the family history and Reid's own upbringing and education. As a staffer at Thompson & Taylor as well as an independent consultant, Railton's work was varied, with projects often overlapping one another. Thus the author has employed "topical gulps," which require the reader to reposition at the beginning of most chapters to set the stage for a new subject. The Man of Speed was ahead of his

time as a master of multitasking. It takes a long mental perspective to keep it all in focus. Ludvigsen's engineering background enabled clear explanation and analysis of the technical aspects, although he could not resist occasional judgments, some of which are arguable.

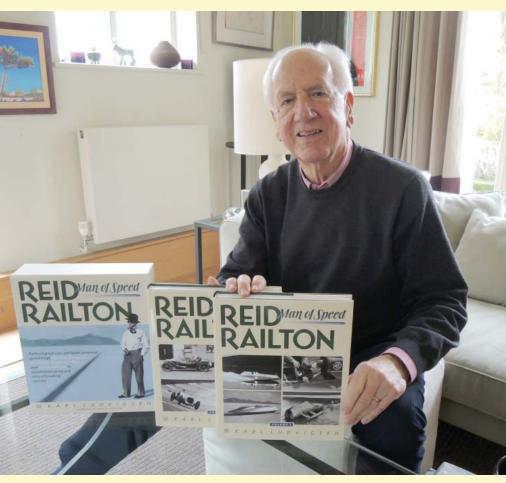
A full two chapters are devoted to Reid's namesake Railton automobile, most familiar to this reviewer (who, full disclosure, is quoted therein). The account gives an interesting and different view from that seen in most enthusiast journals. New, to the reviewer at least, is a later chapter on Railton's postwar work with Hudson in the USA, in particular patents on an automatic transmission and a mechanical concept for variable ratio steering. Hudson's poor financial health derailed both of these efforts, resulting in the purchase of Hydra-Matics from GM and the adoption of Chrysler-style power steering. Also welcome is an appendix devoted to A.C. "Sammy" Sampietro, an Italian-born engineer hired by Railton at Thompson & Taylor and who remained his good friend for life. Sampietro, well remembered in the UK, is virtually unknown in the USA, where he worked for Willys-Overland and Ford. He was primarily responsible for the Tornado

overhead-cam version of the Willys six, which employed a single-lobe-per-cylinder camshaft of the type used on the Leyland Eight.

The two-volume packaging, while great for reader ergonomics, has resulted in compromises for the scholar. There is one fairly concise bibliography (books only, no articles), at the end of Volume 2, but, oddly, separate indices for each volume, even though the pages are numbered sequentially. While the bibliography is welcome, it is not linked to the text by direct citations, so chasing the source of a quote or the basis of a fact is difficult. Superscripted footnotes are employed to expand on some minor points raised in the text; the author is to be commended for avoiding cumbersome endnotes.

Those quibbles aside, this is an important work about a man whose name is well known but whose career and accomplishments are rarely appreciated in their totality. It's not an easy read, in large measure because of its technical nature and the many parallel projects, but the effort is worth it. The historic photographs themselves justify the purchase price. The press run was modest, but as of this writing copies are readily available on both sides of the Atlantic.

—Kit Foster



## Damsels in Design: Women Pioneers in the Automotive Industry, 1939–1959

by Constance A. Smith
Schiffer Publishing, Ltd (2018)
schifferbooks.com/ 610-593-177
192 pages, 8½" x 11" hardcover
425 b/w and color images
Price \$34.99

ISBN-10: 0764354353 ISBN-13: 978-0764354359



Damsels in Design

OMEN PIONEERS IN THE AUTOMOTIVE INDUSTRI 1939-1959



Ponstance Smith is a graduate of Pratt Insti-✓ tute, where she earned a Master's Degree in Industrial Design (MID). She was recruited into General Motors Design by Charles Jordan using a portfolio of safety models and the first idea of a heated/cooled storage or glove compartment. In GM's Advanced Studios she was involved in state-of-the-art electronics and airbags after studying electronics at GM's Management Training Program. Ms. Smith has also studied engine mechanics at Chrysler's Motech and worked for automobile franchises, schools, Charles Pollock and Cox Automotive. There is little doubt that this book gives us a detailed insight to the design of automobiles from an insider.

Forewords are provided by both Mary Beth Vander Schaaf, Managing Editor of *Automotive News*, and Elizabeth Wetzel, Director of Design, User Experience Studio, General Motors Global Design, who has been inducted into the Automotive and Michigan Women's Hall of Fame. This is a clear indication that within the industry this book has attracted significant attention.

Ms. Smith was a key participant in the Eyes on Design Lecture Series co-sponsored by the Leland Chapter of SAH in June 2018, at the Fisher Building. This highly acclaimed event was profiled by Bob Barr in the *SAH Journal* No. 293.

The reader is treated to the careers of twenty women who succeeded in a nearly male dominated industry where competition was fierce for everyone. You learn not only what institutions they attended but also the profiles of some of their lecturers and mentors. The Pratt Institute appears to have been the primary source of these lady designers.

Harley Earl soon realized that women had the ideal appreciation for interior upholstery materials and designs. This respect began in 1942 with the hiring of a single mother, Helene Rother, who hailed from Europe. Contrary to what the cover may indicate Earl was not the only person hiring women; they were also found at Ford, Lincoln, Packard and Hudson. Independent industrial designers were keen to apply women in their projects that included the automotive industry as well as other forms of designing. Studebaker's innovative designs are an example of female input via independent industrial design houses.

Styling practices and terms are used that may not be fully understood by all readers, but their use does give the inquiring reader insight into styling and modelling practices. Many of these women became lecturers following their automotive careers while others formed their own industrial design companies. The book

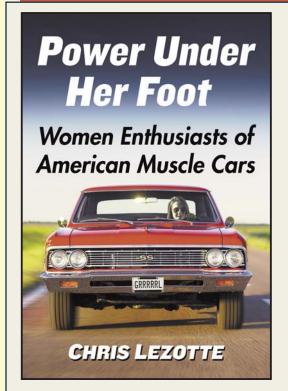
includes photography of all forms of creative design—furniture, pottery, architecture—all to illustrate the varied skills.

The nurturing natures of women made them ideal designers of safety applications from infant seats to air bags and dash designs with safety controls. Ruth Glennie pioneered Heads Up Display, seat belt retractors, and door lamps. Patents were secured for helmet designs and lumbar adjustment.

With GM's involvement with Frigidaire, women played a major role in appliance designs. Many of the flamboyant Motorama display stands were the work of these women, as part of GM's Product and Exhibit Design department. Their creative nature found them in many artistic endeavors, with many images recorded in this book. Most of these women participated in concept designs of one source or another.

There are many books on automotive styling but none that this reviewer knows reflecting the unique roles played by women. This book also has many photographs of automotive interiors, a subject not common in the automotive literature. There are a few dating errors but in every other respect this book is unique, refreshing and most informative. It is highly recommended.

—Louis F. Fourie





Since their introduction in 1964, American muscle cars have been closely associated with masculinity. In the 21st century, women have been a growing presence in the muscle car world, exhibiting classic cars at automotive events and rumbling to work in modern Mustangs, Camaros and Challengers.

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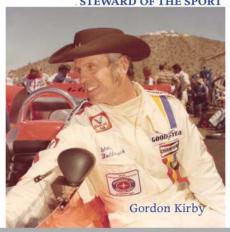
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