AUTOMOTIVE HISTORY REVIEW

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Editor's Notes and Corrections

Shortly before the yearly Paris dinner, "Aspects of Motoring History 3," produced by the Society of Automotive Historians in Britain, and edited by Malcolm Jeal, arrived in the mail. This annual publication was no less eclectic than its predecessors, covering a colorful one-time partner of William Morris named Launcelot Creyke (lovely photo of him in his steam-powered Serpollet "Easter Egg" racer), by *Robin Barraclough*. "The Small Car Trials of 1904" were covered by *Gordon Brooks*. "Citroën's Jewel - the Bijou Affair" is *Malcolm Bobbitt*'s history of this exclusively British variant of the 2CV. The issue ends with its by-now staple feature, "Looking Down the Decades" by *Anders Ditlev Clausager*, an account of notable events in years ending with the digit of the magazine's publication, in this instance, "7." The most notable event of 100 years ago, that is to say, 1907, was the opening of the Brooklands track. As a matter of interest, the opening was attended by the father of our French member *Claude Rouxel*, and Claude attended the centenary ceremonies last year. The distressing thing about "Aspects of Motoring History 4" is that its publication is so far away. Malcolm is the latest to be recognized by SAH as a "Friend of Automotive History," and accepted his award in Paris with humor and humility.

Previously, *Heon Stevenson* had sent me the program from the 2007 London-Brighton run for which Malcolm provided the marque notes. I congratulated Malcolm on this, and was impressed by his account of how many of these represented his "back-to-square one"approach when standard reference works proved inaccurate. Doggedness is the mark of a true historian. Malcolm's award was eminently well deserved.

Turning now to *Review* No. 49, I am always amazed at the diversity of our authors. The five articles in this issue were authored by an engineer who works for Buick, doctoral candidates in Alabama and Belgium, a retired Canadian businessman, and a Dutchman who was a vice-managing director for a GM dealership in his country. All are SAH members, none of them professional historians, but all amateurs in the best sense of the word: writing because of their love of the subject.

According to *Kevin M. Kirbitz*, his "Buick and the Wolverine" is based upon a recently discovered, century-old court transcript which answers old questions and sheds new light on the actions and thinking of David Dunbar Buick, creator and namesake of the Buick automobile. Kevin is a Buick historian by hobby and a General Motors engineer by profession. He began his GM career with Buick in 1979 and is still involved in the development of future Buick products. In addition to SAH, he is a member of the Buick Club of America, and serves on the Board of Governors of the Buick Historical Alliance. The article was reviewed by noted Buick historian, *Terry B. Dunham*, who termed it "one fine piece of automotive research and writing." Noting the lack of contemporary press and photographic materials on David Buick, Terry notes that Kevin's discovery of Buick's testimony in a court transcript means that "for the first time, automotive historians have a chance to observe Buick the man as he 'speaks.'" Terry also notes that Kevin examined old city maps of Detroit to determine the "geographical relationships between where David Buick lived, where his various enterprises were located, and where his suppliers could be found." We thank *Leroy D. Cole* for providing the *Review* with this significant article.

From *Harry Carpenter III* we have "Creating Order out of Chaos: Establishing Financial Security for NASCAR. This includes a discussion of the efforts by the Teamsters to unionize NASCAR, which was the subject of a paper that Harry gave at the first automotive history conference in 1996, and which was reprinted in full in *Review* No. 32 (Spring 1998), "Unionization Efforts at NASCAR." Harry is a Ph.D. candidate at Auburn University who is doing part time graduate work in Geography at Appalachian State University in Boone, N.C. Since January 2004, he has been a fulltime instructor of History at Western Piedmont Community College in Morganton, N.C. *Patricia L. Yongue*, associate professor at the University of Houston, Texas, and a former director of SAH, has had a lifelong interest both in racing and writing, and reviewed Harry's article for us. Her article "Elizabeth Junek: Racing the Bugatti" appeared in *Review* No. 39.

A couple of years ago, a man who many of us regard as Canada's premier automotive historian, *R. Perry Zavitz*, offered to write an article on trucks manufactured in his native country. The end product was a bit broader, covering buses, sedan deliveries, and the like, thus the title "Reviewing Canadian Commercial Vehicles." Perry, a member of SAH since 1970 and a resident of London, Ontario, has written two books, "Monarch/Meteor," and "Canadian Cars 1946-1984." For 24 years, he wrote the column "Postwar Scripts" for *Old Autos*, a Canadian bi-weekly publication, for which he has also written a variety of features. *Fred Crismon*, SAH's resident authority on military and commercial vehicles, served as peer reviewer.

Frans Vrijaldenhoven has sent us "Carrossier van Rijswijk & Zoon of Holland," and provided many photographs of the interesting coachwork of this little-known Dutch coachmaker. Frans has also appeared in these pages before with "Kaiser Assembly in Rotterdam," *Review* No. 44 (Summer 2005) and, another kind of Kaiser, "The Cars of Kaiser Bill," *Review* No. 31 (Summer 1997), which, I must confess, is one of the articles published during my tenure that I have enjoyed the most. Frans grew up in Holland, the son of one of the five official Dutch car brokers in the 1930s. After technical training at Saurer (Switzerland), Jaguar (England), and Daimler-Benz (Germany), he started his career as a service manager for Mercedes-Benz. Between 1973 and 1991, he was vice-managing director of a General Motors dealership. He has written a book on cars of the Dutch royal family and articles for a number of automotive publications at home and abroad.

It has been the Society's practice to publish each year's award-winning

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Taylor Vinson, Editor

 All correspondence in conjunction with *Automotive History Review* should be addressed to Editor, 1314 Trinity Drive, Alexandria, VA 22314 USA, or ztv@comcast.net.

Further information about the Society of Automotive Historians may be obtained by writing to the Society of Automotive Historians, Inc., 1102 Long Cove Road, Gales Ferry, CT 06335-1812 USA or online www.autohistory.org.

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Front Cover: 1937 Buick, courtesy of Gerald Vallee.

Rear Cover: 1938 Chevrolet with roof modifications by van Rijswijk, courtesy of Frans Vrijaldenhoven.

Acknowledgments: Except as otherwise noted, each author provided the illustrations for his or her article.

Back Issues of Automotive History Review

We can offer sets of the issues remaining in stock (numbers 4, 5, 6, 7, 11, 12, 14, 15, 16, 23, 29, 30, 31, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48 and the Index) for $135.00 postpaid in the USA. Single copies are $8.00 each plus $2.00 postage, $5.00 postage internationally. All payments in US funds, please. Mastercard, Visa and American Express accepted as well as checks. Orders and inquiries should be sent to Fred Roe, 837 Winter Street, Holliston, MA 01746-1159. Make check or money order payable to Society of Automotive Historians, Inc. Inquire for shipping costs outside the USA. This supersedes all previous lists and prices, which are no longer valid.

David D. Buick and the Wolverine

by Kevin M. Kirbitz

Introduction

At the beginning of the 20th century, while America was in the middle of its second industrial revolution, hundreds of men dreamed of affixing their names to the radiators of the growing number of automobiles being developed across the country. Few succeeded. Far fewer actually brought forth vehicles that survived for long. Of the four marques which survived to celebrate their centennials, much has been written about the early careers of Henry Ford (Ford), Ransom Olds (Oldsmobile), and Henry Leland (Cadillac).

The fourth to celebrate 100 years is Buick. Yet, as venerable an automotive marque as Buick may be, historians have until recently known relatively little about the earliest days of its founder, David Dunbar Buick (Fig. 1). Buick's history between 1903 and 1905, a time of great transition for both the man and his company, has long been the subject of mystery, speculation, and curiosity among Buick enthusiasts.

The situation has recently changed. Two years ago, the first biography of David Buick was published (Lawrence R. Gustin, *David Buick's Marvelous Motor Car: The men and the automobile that launched General Motors*, Buick Gallery and Research Center, Alfred P. Sloan Museum, Flint, MI 2006). Shortly thereafter, new information surfaced about Buick's career as a plumbing inventor and executive in the mid- to late-1890s. Now, a recently discovered transcript from a case heard before Michigan's Wayne County Circuit Court in April 1906 reveals still more details of Buick's obscure life as an auto pioneer.

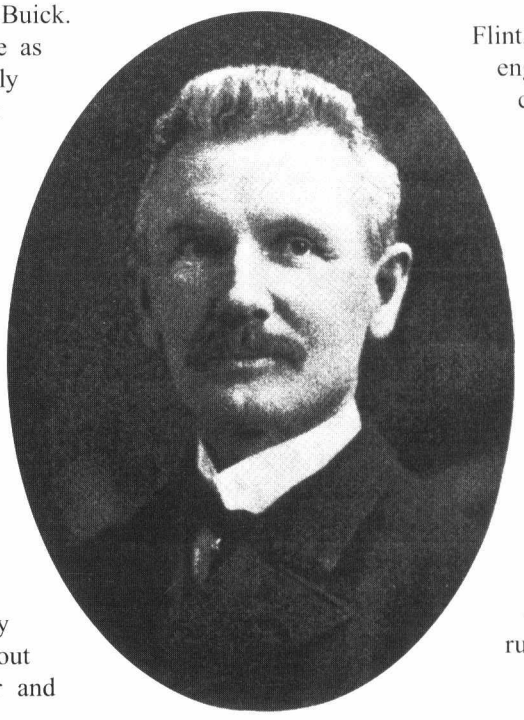

Fig. 1 – David Dunbar Buick, c. 1904.

A suit for non-payment of goods was filed August 26, 1904, by the fledgling Buick Motor Co. against the even more obscure Reid Manufacturing Co. of Detroit. It's more than the story of an engine built by Buick for Reid's Wolverine touring car. The transcript is particularly interesting to automotive historians because it provides clues about how David Buick's mind and his company operated. For the first time, Buick is revealed as a man who was actively involved in the design and manufacture of engines that bore his name.

Mysterious Engine Identified

For many years, there has been considerable debate surrounding two photographs from the Buick Motor Co.'s earliest history. Buick's golden anniversary booklet contains a photograph of a young Walter L. Marr, who became Buick's first chief engineer, standing next to an unfinished and unidentified automobile body. It carries the caption, "the early model probably was the first experimental Buick," with "rough wooden body, square radiator, [and] wagon wheels." There's also a photograph of an odd looking, 2-cylinder engine said to be the first produced by Buick for an automobile. (Though maybe not. A 1901 letter written by David Buick refers to a "double ended carriage engine" the company had produced, suggesting this earlier model to be Buick's first 2-cylinder engine.)

Early-Buick historian Charles Hulse of Flint, Mich., had learned that this photo was of an engine produced by Buick in 1904 under contract to the Reid Manufacturing Co. Some believed the engine was designed by Reid but merely manufactured by Buick. Another Buick historian, Terry Dunham, of Apopka, Fla., once interviewed Hulse and asked him specifically about the early engine photo. According to Dunham, Hulse told him that he knew what the engine was but didn't want to talk about it. "It was the only subject we touched on in a two-hour interview that he would not discuss," Dunham said. "Over the next several years I tried and tried and tried to find out what he knew. He never shared it, and now of course he is gone. As I said before, it is one of the strangest configurations I have ever run across." (Fig. 2)

Hulse also expressed doubt about the photograph of Walter Marr and the unfinished car, believing it not to be a Buick but rather a Wolverine, produced by Reid around 1904. (Fig. 3) Buick historian Lawrence R. Gustin of Lake Orion, Mich., who has extensively studied Hulse's notes, told the writer, "There has been debate about that picture over the years, with some saying it must be an early Buick and Hulse arguing Wolverine." A recently discovered advertisement for the Wolverine revealing a very similar—some would say identical—style as the car in the photo with Marr appears to confirm that identity. "It proves (to me)," said Gustin, "Charlie Hulse was right once again—in the picture of Walter Marr with the wooden body in the snow, the car is a Wolverine. You can tell by the front end design and center rear door." (Fig. 4)

Spurred by this series of discussions, the writer sought to learn more about the Buick-Reid relationship and to determine exactly what this strange engine might be and, quite by chance, discovered the previously mentioned court proceedings. With nearly 200 pages of testimony and more than 100 exhibits entered into evidence, not only does the transcript of the case

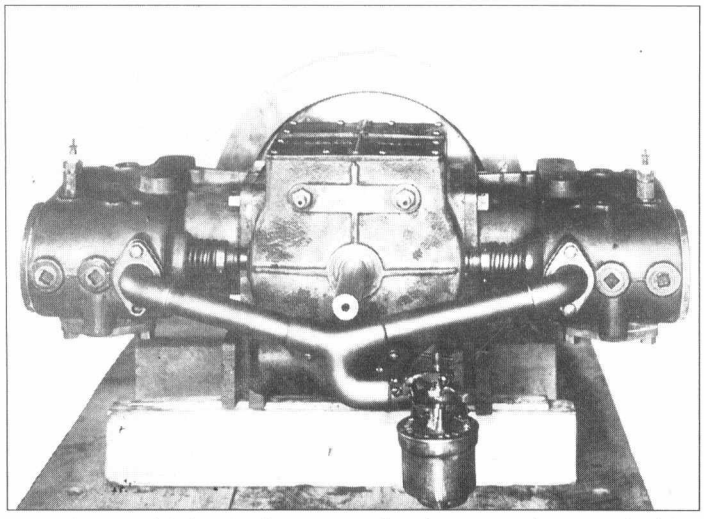

Fig. 2 – Buick's 2-cylinder, opposed end engine, photographed by Fred Tiedman in February 1904 (photo from the Kettering University Archives, Crooks Photo Collection)

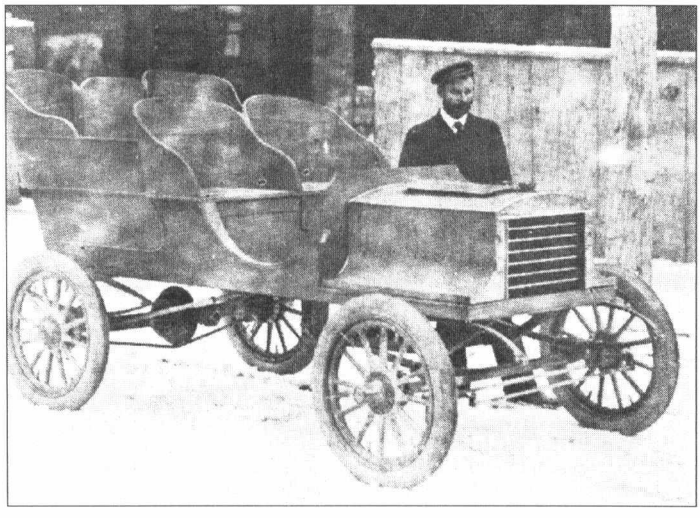

Fig. 3 – Walter L. Marr standing next to an unfinished automobile, recently identified as the Wolverine, produced by the Reid Mfg. Co. of Detroit, c. 1903.

offer a technical description of the "Reid" engine, it provides remarkable insight into this early, pivotal, transitional period in the automotive industry, with first-hand accounts from significant figures in Buick's rich history–George L. Walker, James H. Whiting, William Beacraft, and David D. Buick.

Background of David Buick

"My name is David Buick" the transcript reads. "I am a manufacturer of automobiles. The title of my concern is the Buick Motor Company, of which I am Secretary . . . I have been engaged in the manufacture of motors and gears for automobiles since 1895. I built one of the first cars that ever ran on the streets of Detroit." Some may dismiss such claims as hyperbole, but this was not a conversation with a reporter 20 or more years after the fact, as are many of the "eyewitness" recollections historians frequently cite. This was the opening testimony of a lawsuit filed as production of the Buick automobile had barely begun.

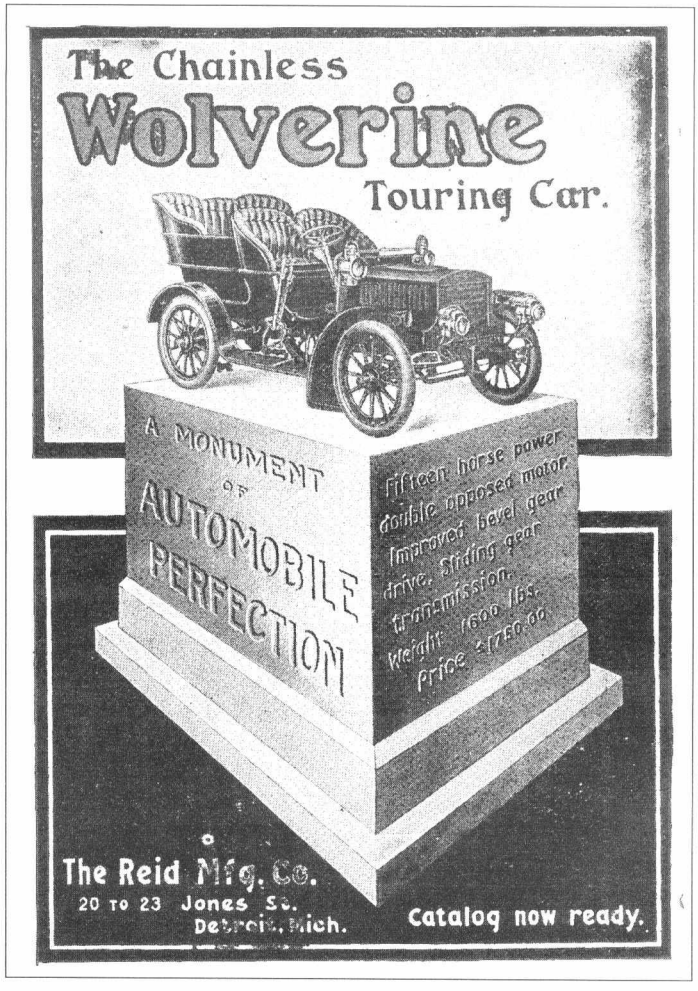

Fig. 4 – A rare advertisement for the Wolverine (Cycle and Automobile Trade Journal, October 1904).

Born in Scotland in 1854, David Dunbar Buick resided in Detroit for nearly his entire life. From 1880 to 1900, he was a successful businessman and co-owner of the Buick & Sherwood Manufacturing Co., a leading manufacturer of plumbing supplies. With 19 plumbing-related patents to his name by 1897, he became interested in the burgeoning field of gasoline engines and is said to have manufactured his first stationary engine that year.

In late 1899 it was announced in the pages of *Motor Vehicle Review* that Buick and his partner, William Sherwood, were experimenting with the manufacture of motor carriages. Sometime between 1899 and 1901, with the assistance of employee Walter L. Marr, a brilliant mechanical designer, David Buick produced his first automobile. (Some hold the opinion that Marr was in fact responsible for building the whole car.) Having sold his interest in the plumbing business, David first formed the Buick Auto-Vim and Power Co. and later the Buick Manufacturing Co., both of Detroit.

David Buick had initially tried to fund his venture by himself with proceeds from the sale of his plumbing supply manufacturing business. He was later backed by Detroit businessman Benjamin Briscoe Jr. but was unsuccessful in finding additional capital to keep his business in that city. Even with reasonable success manufacturing various gasoline engines

for both stationary and marine applications, the pursuit of automobile manufacturing had left Buick short on cash. The financial support he needed was found some 60 miles north, in Flint, Mich., when, in September 1903, the Buick Motor Co. was purchased by the Flint Wagon Works, with James H. Whiting, president and general manager, and George L. Walker, vice-president.

Buick's Initial Contacts with Reid Manufacturing

At about the same time, the late summer of 1903, David Buick had heard rumors of Reid's intentions to enter the automobile business. Eager to generate sales, Buick placed a phone call to Harmon J. Hunt, secretary and manager of the Reid Manufacturing Co. With a year's supply of engines already on order, however, Hunt declined the meeting.

Reid was located at 21 Jones Street in Detroit, just four blocks north of Buick Manufacturing Co. at 416-418 Howard Street. On October 21, 1903, Reid announced its plans to enter the automobile business in the weekly automobile publication *The Horseless Age*. Its car would be called the Wolverine, a 1,500-pound vehicle powered by a 12 H.P. 2-cylinder opposed engine. In the business of manufacturing show cases and fixtures, Reid was among the growing number of automobile assemblers in the country, companies which bought components, as opposed to manufacturing their own, from various suppliers, assembled them into a car, and called it their own.

Buick was steadfast in his pursuit of new business. Upon learning that Reid was having problems with the engines it had purchased, he made another call, this time resulting in a meeting on December 1, 1903, in Hunt's Jones Street office. (Coincidentally, that was the same day that Walter L. Marr, Buick's former employee who had briefly manufactured his own automobile of the same name and had a proven talent for engine development, began working for Reid.)

David Buick discussed the merits of his company's new engine design with Hunt. Buick was quite protective of his engine designs and took with him no drawings or written descriptions. He would later quip, "we didn't care to furnish them a set of working drawings for the reason that we had heard that Mr. Albaugh, their mechanical man, had designed an engine. We didn't care to give our engine to every Tom, Dick, or Harry that came along which means Albaugh, of course." Buick may have also been referring to his former associate and, at the time of the business discussions, Reid employee Walter Marr.

Buick's Innovative Design

"At that time we had no design of an automobile engine, but we had one in mind," Buick told the court. "Mr. Richards and I were the designers of this motor." Buick was undoubtedly referring to Eugene C. Richard [sic] who was under contract as Buick's "designer and inventor and head of drafting department." "We manufactured the first one for the Reid Manufacturing Company," Buick said. "We claimed certain new advantages for our new engine and gear. We claimed that it was a new principle, that the inlet valve would work on the inside of the exhaust valve and would be kept cooler in that construction than it would be under ordinary circumstances."

In most engines of the era, intake and exhaust valves were located along the sides of the cylinder, either side-by-side (called an L-head) or on opposite sides (a T-head). On February 18, 1902, Eugene Richard had applied for a patent, which he assigned to the Buick Motor Co., for an engine where both intake and exhaust valves were located directly in the cylinder head above the piston. This was important because it allowed the use of relatively large valves, which allowed the engine to "breathe" more efficiently. It also allowed increased compression due to the reduction of wasted valve chamber space in the combustion chamber. Generically, this would be referred to as overhead valve (OHV), but Buick and its buying public would come to call it Valve-In-Head, and the technology would soon propel the company to a position as a performance standout in the automotive world. The patent would eventually be granted on September 27, 1904, but, in December 1903, Richard's application seemed to be caught in a cycle of U. S. Patent Office disallowances and resubmissions due to a claim for water-cooled valve guides. With such obstacles, it is likely that Buick and Richard continued to search for creative and inventive ways to improve upon their already successful gasoline engine designs.

Evidence suggests that Buick was already working on a 2-cylinder, horizontally-opposed OHV engine when he met with Hunt in early December, 1903. A drawing for the flywheel for Buick's 4-1/2" x 5" 2-cylinder engine, drawn by Richard and recently rediscovered, is dated September 24, 1903. That engine would be put to use in Buick's own automobile, the 1904 Model B, but, with the rocker arms extending beyond the cylinder head, it probably couldn't fit within the Wolverine's 32-inch hood, a stipulation owing to the fact that Reid had already purchased the bodies. However, with an L-head engine, with valves placed in chambers along the same side of the cylinder, this problem could be avoided.

Henry Ford, who had begun building cars just down the street from Buick, used an L-head for his 2-cylinder, horizontally-opposed engines. The valves in Ford's engine, however, were side-by-side, which required a larger valve chamber which in turn reduced compression and resulted, ultimately, in less power. By contrast, Buick's concentric-valve design minimized the size of the engine's valve chambers. Large valves would allow the engine to breathe better, similar to the OHV, and compression would be superior to that in a conventional L-head.

Hunt recalled that David Buick told him that "the engine he was going to make would be something different from what other people had, would have more power. He told me it would have concentric valves and that they would be cooled by one being inside the other." He continued by saying, "his arrangement of the valve pockets in the explosion chamber would give a great deal more compression . . . that the power of the gas engine depended upon the area of the compression chamber."

With its concentric-valve design, where a smaller valve operates inside a larger valve, there is no question that the engine Buick and Richard developed for Reid was novel. Because no detailed drawings of the engine are known to exist, only the written description, other methods must be used to understand the significance of Buick and Richard's technological premise.

A search of patent records indicates that neither Buick nor Richard applied for patents on the concentric valve design. A 1911 patent application filed by L. W. Brenner of Dayton, Ohio, for a "Sectional Valve for Gas Engines" looks like it fits Buick's description, yet it was filed seven years after Buick and Richard designed and built their engine for Reid.

Decades later, in 1955, a Bolivian named Hans Pick received a U.S. patent for a similar engine valve assembly. Pick claimed, among other benefits, "a concentric valve assembly wherein the intake valve deflects the incoming charge against the exhaust valve stem and head to facilitate the cooling of the same," a claim Buick had made half a century before.

Closer to home, in 1960, Theron E. Neir was issued a patent, assigned to General Motors, for a "Concentric Valve Internal Combustion Engine." Neir wrote that, in a concentric valve engine, "it is only necessary to provide a single valve opening or seat in the cylinder head to accommodate the valves, therefore, the valve seat or opening may be at least twice as large in diameter as is the case with an engine using side by side valves."

Although Buick and Richard had certainly worked through the basic design of the company's new, concentric-valve, 2-cylinder, opposed-end automobile engine, its application to the Wolverine automobile forced Buick into additional, unconventional design features. The horsepower needs of the Wolverine would lead Buick to use a large, 5-inch cylinder bore. The 32-inch size restriction would limit the piston stroke to only 4-1/2 inches.

William Beacraft, who began working at Buick in Flint on December 20, 1903, recounted during testimony in the 1906 trial that "on every one of the engines now being made by the Buick Co. the bore is shorter than the stroke." He was speaking, most likely, about the Buick Model B engine, which had a 4-1/2 inch bore and 5-inch stroke. "It is exactly the reverse with the engines in controversy here. That was on account of the figures given between the frame."

Charles Mitchell, a former Reid employee who had 25 years of experience as a machinist with automotive companies such as Winton, Detroit Automobile, Ford, Oldsmobile, Wayne and Cadillac, was more specific in his assessment. Mitchell observed that the bore and stroke proportion was "not practical in a gas engine, to have the piston larger than the stroke because the stroke is not long enough to take in sufficient gas to handle the machine." What Mitchell failed to consider was the inherently large valve opening used in Buick's design, which, as previously discussed, would permit the engine to breathe better than more conventional designs. Today, engines with larger bore to stroke ratios are commonplace and are frequently referred to as "short stroke" or "over square" engines.

Buick Agrees to Build Engines for Reid

At Hunt's request, David Buick made a pencil sketch of the design he had in mind. With a promise from Buick to deliver a written description, Reid placed an order on December 14, 1903, for a "sample motor." The Reid order stipulated that the engine must fit the 32-inch opening dictated by the design of the existing Wolverine body. "At the time he (Buick) took the original order," Hunt said, "I had bodies for that very detail and we kept those bodies and used them." The order also called for delivery of the first engine by the end of the year with future requirements to reach between 200 and 300 total units. The agreement would eventually have Buick supplying sliding gear transmissions and clutches designed specifically for the Wolverine. This was a business opportunity Buick could not afford to pass up.

Two weeks to build an entirely new engine was, to say the least, an unrealistic request on Reid's part, but David Buick understood the importance of the December deadline as Reid was busy preparing a car for the New York auto show to be held in January 1904. Buick said, "I realized the fact that the number of machines we might sell to the Reid Manufacturing Co. would depend upon the number of customers or sales they made. I was interested in getting the trade generally interested in our machine." The date came and passed. Delays were inevitable, despite working "nights, Sundays, Christmas and New Year's, paying double time for it."

Walter Marr had been hired by Reid on December 1, 1903. It's possible that he was hired expressly for the purpose of getting the Wolverine ready for the New York auto show. When Buick could not deliver the new engine in time, the originally planned engine from the Brennan Co. of Syracuse, New York, was used. With that work completed, Walter Marr, brilliant engineer that he was, received from Reid a check for $60 and a letter indicating that, as of January 5, 1904, although his work had been satisfactory, his services would be no longer required. Since the photograph of Marr next to the Wolverine car was taken in the winter—there's snow on the ground —it likely dates to December 1903.

Delays Encountered in Filling the Contract

With the opening of the new factory, David Buick moved to Flint on December 5, 1903. He traveled back to Detroit every weekend to spend time with his wife and children who, for the time being, still resided at their home on the city's east side. All the while, Buick kept Hunt posted of the progress, which was hampered by delays in receiving the patterns for castings. "I was pushing the patterns as hard as I could" Buick said, "it would be difficult to start to make a machine on a new design until after we had gotten the patterns."

Patternmaking was an essential element in the manufacture of cast metal components, but getting to that point was a lengthy process. The engineer or designer would first develop an idea through pencil sketches. These sketches would be further refined by a draftsman as detailed, two-dimensional drawings of each part. Using the drawings, or blueprint copies made from the drawings, the patternmaker then created three-dimensional wood models of the required parts. "We didn't know exactly how we were going to build our engine until after we got our patterns all made. It was a pretty hard matter to make a drawing and not run across some parts that want some slight changes," said Buick. It's likely that changes would have been communicated by writing the revisions on a blueprint rather than taking precious time to make new drawings.

With such lengthy production delays, Buick offered the services of Eugene Richard, his "co-designer, who was at the time residing in Detroit," to provide Hunt with "any information

he might need, in order to enable him to so construct the other parts of the car as to receive and use our engine and transmission gear." It was previously thought that Richard had left Buick in September 1903, and didn't return until June 1908. However, recently found drawings of Buick engine components, with Richard's initials and presumed to be drawn by him as well, are dated October 1903. David Buick's offer of Richard's services would indicate that he was still working for Buick, in some capacity, into January 1904. Further evidence of Richard's employment is found in patents for which he applied, and assigned to Buick Motor Co., on January 11, 1904, for a carburetor and on January 26, 1904, for a sliding-gear transmission. The first engine was not delivered until February 13, 1904.

Further production delays came when a March flood in Flint left the Barker & Hammel Foundry, which produced Buick's transmission case castings, under 8 feet of water. In retelling the story, David Buick said, "the patterns were in the foundry, and we were unable to get to them for several days, in fact, we only got to them by building a raft and going after them." The patterns were later expressed to the Central Foundry Co., of Detroit, to resume production. Buick's wit is apparent, pointing out that the flood "was not part of the process of making (the castings)."

Production Begins, and so do the Problems

After the first engine and transmission were shipped, Buick sent a bill for $255.00. Reid claimed that it hadn't received a transmission cover and shifting bar, so it returned the invoice unpaid. Reid also stated terms of doing business on 30-day credit, saying it was "very inconvenient for us to purchase goods in any other manner." David Buick accepted the terms under conditions that Reid give them a note "for use to us after 10 days after shipment of goods." Buick explained, "We ask this for the reason that we are occasionally in need of funds and could use paper of this kind very nicely."

Evidence of the first completed Wolverine touring car reached Buick April 23, 1904. "I was invited to come to Detroit and witness the demonstration, but I didn't come," said Buick. "I had a demonstration in either July or August with the car that Mr. Hunt drove."

James H. Whiting, a stockholder and director of the Buick Motor Co. as well as president and general manager of the Flint Wagon Works, admitted he knew nothing about gasoline engines, "I could not have explained it if I had tried," he said. Whiting recalled a visit Hunt made to Flint in May 1904. "[Hunt] told me that he gave a demonstration in the morning," Whiting said, "he went up some hill, passed a machine that was puffing and snorting and went past them in great shape, and he was so pleased that he took the train to come up and tell us what a wonderful engine we had. The first that I knew there was any fault found with this machine was when we asked them to pay for what they had received. At that time I was furnishing the money for the Buick Motor Company."

The ensuing months were filled with problems. Reid lodged complaints about irregularly ground piston rings, poor-quality bearing material, and inconsistency between parts. In one case, a lever used to operate the valves was hardened to a point that, in testing the engine while still in Flint, the lever "broke and dropped into the gearing and caused a hole to be broken in the bottom of the crank case." When asked how the man could make such a mistake, Buick's response was, "That happens you might say daily in a large factory. You will find pieces that are overhardened and some underhardend."

A letter from Hunt on May 4, 1904, directed Buick to "make exhaust 1-1/2" not 1-1/4", in exhaust flanges where you use 1/2" holes, don't use 7/16" screws but screws to fit." Another letter less than two weeks later acknowledged that Reid had received the inlet flanges but "these came different than those of the first motor and necessitates our changing our lengths of the intakes 1 inch, making us do this work twice." However, in the next sentence, Hunt stressed, "We must have more motors and transmissions and must have them quick." When David Buick was asked if he had been aware that parts were not being made of uniform size, he answered, "I knew they were not being made by jigs. I didn't inspect them. I simply saw them tested on the block. Jigs is where a template is made and the hole bored in the proper location and when you once get your jigs made satisfactory all the parts should come alike." Priorities, however, were placed on building engines, as Buick said, "You could not go on and build a new engine and get jigs out at the same time. We didn't have the jigs. We have been making the engine that we are making today for pretty near three years, and some jigs we haven't got yet." Buick depended on the men making the parts and, without jigs the men would depend on the drawings and blue prints, which they had at their disposal.

Between February and May 1904, Buick manufactured and delivered eight 2-cylinder automobile engines, sliding gear transmissions, and clutches, plus numerous replacement parts, to Reid Manufacturing Co. The eight that were delivered to Reid were supposedly assembled in Wolverine touring cars. A ninth engine was used for illustrative purposes at the trial. William Beacraft testified that he remembered the engines had been built for the Reid Manufacturing Co. in the early part of 1904, saying, "I assembled the first engine. I also assembled the first eight engines that were shipped to them. I superintended the construction of the engine which the Buick Motor Company has brought into this court." The engine had been run under its own power, as all engines were routinely run on a testing block for 10 to 20 hours. "It was taken off the testing block and put in the box in August 1904," Beacraft said. (Fig. 5).

Opportunities for Improvement

With the first Reid engine being, for all intents, a prototype design, it was to be expected that Buick and his team would identify improvements as production increased. Throughout 1904, when testing an engine for the first time, the engine would be flooded with oil to avoid damage. However, this could cause carbon deposits to form on the valves and other related parts. To fix the problem, Buick described how they "ran them with a belt first to ease them up and flooded them with oil." After they had the engines "eased up," as Buick put it, "we then put them on the stand when they were tested with their own power with gasoline and then it would not be necessary to use an immense amount of oil as we were compelled to use when belting them out."

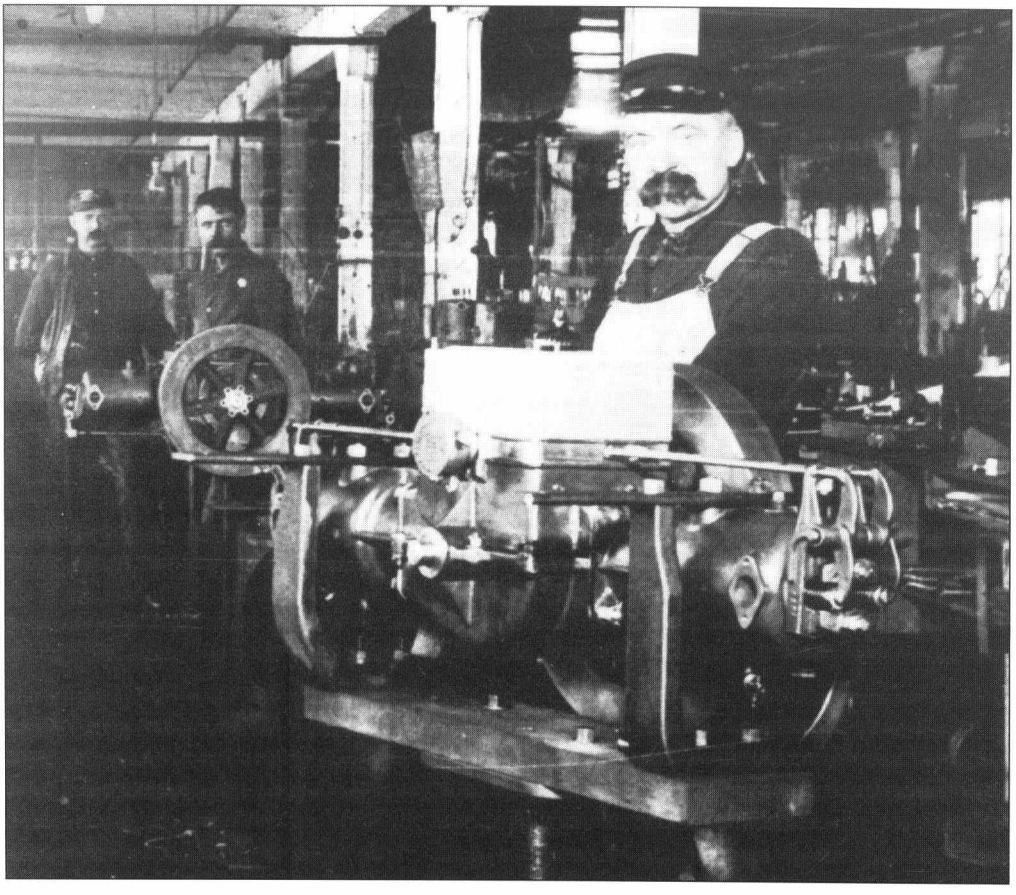

Fig. 5 – William Beacraft working on a Buick Model C engine, with pushrods on top, probably taken in late 1904.

One of the complaints Reid lodged about the first engines had to do with valves that were out of position. In the first engines Buick built for Reid, the valves were designed to be kept from rotating by use of a mechanical key. Modern engines employ designs that actually force the valves to rotate in their seats to reduce the chance of deposits forming thereby causing them to stick or overheat. This was apparently a lesson quickly learned by Buick, with Beacraft saying, "the improvement is that it is not a good thing for any valve to be seated in the same position all the time and it is better to have a valve that will turn; it keeps truer and in better condition in every respect." The last four engines shipped to Reid had the improved valve design. "We learned from experience in our shop and decided it would be an improvement, which is a big improvement over the old style of valves," Beacraft said.

Financial Woes Continue

On May 20, 1904, in a letter sent to Reid, David Buick admitted "we are extremely short of money, and as we have some large obligations to meet the early part of the week which we cannot see our way clear to take care of without your assistance." David Buick was not the only automotive pioneer to have financial difficulties. The amount of capital needed to develop, manufacture, and sell gasoline engines and automobiles was immense, and most investors and entrepreneurs were totally unaware of the fact. Detroit Mayor William C. Maybury led a group of investors backing Henry Ford who, according to automotive historian George S. May, had "almost nothing to show for over a year's work and with the costs of the operation approaching $86,000." May also noted that Ransom E. Olds was backed financially by men such as Edward W. Sparrow and Samuel L. Smith of Lansing but quickly burned through some $10,000 that had been deposited in the account of the Olds Motor Vehicle Co. without being a step closer to production.

Unlike Ford, whose quest for engineering perfection caused extensive delays in producing a car, Buick saw advantages in getting his products to market quickly and took risks in doing so. Buick's financial difficulties could not, however, be entirely placed on the business difficulties with Reid. In fact, with a new factory, located in a new city, new employees, new owners, single-unit sales of stationary and marine engines, and a car of his own still under development, a long-term contract for Buick to supply automobile engines to Reid could have brought much needed positive cash flow to the fledgling business.

Hunt visited the Buick plant again in June 1904. He had damaged the flywheel on his demonstration car and was in need of repair. Beacraft, recalling his conversation with Hunt, said, "He didn't know any other motor that would take such a damage as that and come out so successful as we did. He didn't compare it with any other gasoline motor, but he said it had all kinds of power, sufficient power to go anywhere." David Buick himself proudly recounted, "There was never an engine designed that was more near perfect on the first turning over in the plant than that particular engine."

On June 9, Buick received payment of $200 by check plus a 60-day promissory note for an additional $490. Buick responded that "it would be impossible for us to use the note as we have discounted our limit at our bank and it is necessary for us to have cash for this reason." Buick then made a demand to be paid, in cash, within 10 days of billing. By June 25, Buick was admitting that some of its creditors were pushing for settlement of their accounts. "We are extremely short of money and must insist upon having settlement," Buick told Reid at the end of June.

Part of the financial strain can be attributed to the development of Buick's new car, the Model B. As David Buick recalled, "We started to manufacture automobiles ourselves along, I should judge, in the latter part of June." In fact, history records July 9, 1904, as the date the first Flint-built Buick automobile was ready to run. Buick was asked what effect this may have had on producing the Reid engines, to which he responded, "I don't think that delayed our work."

In mid-July, David Buick visited Hunt at his Detroit office to seek payment in person. A follow-up letter states, "We are extremely short of funds and can you not send us a check for part and a short time note, such as the writer spoke to Mr. Hunt about? We would not be so persistent, but we have some creditors that are pushing us for settlement." A month later, having no success in collecting further payment, Buick filed its lawsuit against the Reid Manufacturing Co.

Buick's Legacy as an Engine Manufacturer

Of the millions of engines produced by Buick since the mid-1890s, only four pre-Model C engines are known to survive. There are no physical examples of the nine 5 x 4-1/2, opposed end, 16 H. P. "Reid" engines built. David Buick said that they "had photographs after the engine was built." In his biography of Buick, Gustin points to information that shows the photograph of the Reid engine to be the first produced by Buick in February 1904. Hulse had also interviewed the photographer, Fred Tiedeman, who was told it was the first 2-cylinder engine the Buick Co. had ever made for an automobile. It is now the only known visual evidence of this early engine.

The oldest known surviving Buick engine is a stationary model in the collection of The Smithsonian Institution in Washington, D.C. Bearing the number 567, it is believed to be among the last produced by the Buick Manufacturing Co. in Detroit. What is believed to be the second oldest is also a stationary engine, built in Flint, and last sold in 1958 by Charles Hulse to the Harold Warp Pioneer Village in Minden, Neb., where it is on display.

There is no indication of the serial number on the "sample" 5 x 4 1/2 dual opposed automobile engine Buick produced for the Reid Manufacturing Co. However, evidence introduced at the trial shows the subsequent seven carried the numbers 584, 602, 608, 619, 620, 637, and 647. All were produced between February and May 1904. If Buick employed purely sequential numbering for its engines, this would lead to the conclusion that Buick built no fewer than 63 engines in that four-month period, just prior to the successful test run of the Buick Model B.

As to Buick's 2-cylinder OHV engines produced in 1904, with push rods located on the bottom, only two examples of this configuration are known to exist. Buick apparently did not stamp a sequential production number on these engines, at least not on one examined for the writer by restoration specialist Skip Carpenter of Shrewsbury, Mass. Buick used this engine not only in the 37 Model Bs produced in 1904, but also offered it for sale to the public, advertising in publications such as *Cycle and Automobile Trade Journal*, at the same time.

During the trial, William Beacraft was asked, "Did the Buick Motor Co. make any motors for anybody else besides themselves, except for the Reid Manufacturing Co.?" Beacraft responded, "I think we made one or two in August." It can be assumed that he was referring to the Model B style of engine from 1904. Of the two known survivors, one was recently installed in a replica of a Model B, masterfully recreated, complete with body, by a private collector in California. The engine was purchased new from Buick and installed in a Thomas Flyer in the summer of 1904. If Beacraft's testimony is taken as absolute, it would indicate this engine to be one of the two built for manufacturers other than Buick or Reid in August 1904 (Fig. 6)

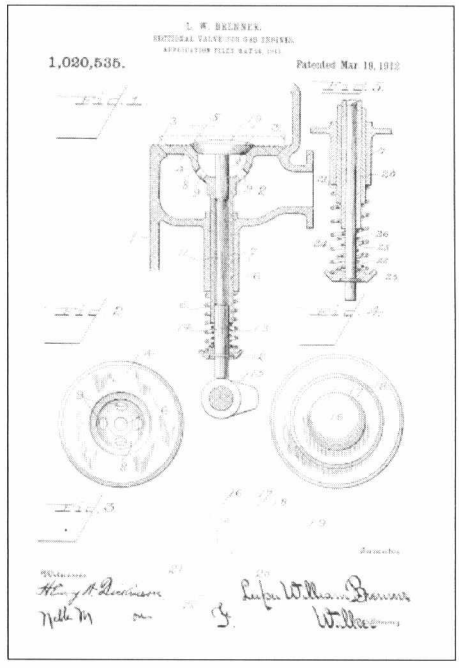

Fig. 6 – Model B engine shown in Buick advertisement, Cycle and Automobile Trade Journal, October 1, 1904.

The other Model B engine is being used in a replica of the stripped-down Buick which made the trial run between Flint and Detroit on July 12, 1904, owned by the Sloan Museum in Flint, Mich. According to Dunham, Hulse told him that, when he had worked at Buick, he found an old wooden crate and wondered what it contained. The crate was very old and, when he opened it, found a "complete and brand new, push rods on bottom Buick 2-cylinder engine." Dunham said, "Hulse had always had an abiding interest in the early history of Buick, and formed in his mind the idea of recreating the vehicle that Thomas Buick and Walter L. Marr had driven from Flint to Detroit. One thing led to another, and Hulse got Buick to donate the engine to the Sloan. In the meantime, Hulse had gotten the Sloan interested in building the replica, and the rest is history."

Conclusion

With the passage of more than 100 years and with records poorly maintained, historical events often have a way of being lost in time, re-written or, at the very least, misinterpreted. Such is the case of this brief, little known and less understood piece of Buick's history from a time when David D. Buick still ran the business which to this day bears his name.

When working with Gustin on his recent biography of David Buick and on subsequent research projects, the writer learned first hand exactly how little information existed about the life of this automotive pioneer. Due in large part to a lack of information on Buick's early life and career, many historians have summarily dismissed his technical expertise and business acumen, giving credit to his employees for technological breakthroughs while ascribing business difficulties with what was assumed to be a personal lack of business ability. David Dunbar Buick, the enigmatic namesake of one of the most successful and enduring automotive marques in the world, always appeared to be on the periphery of, but not fully engaged with, the business at hand.

However, the proceedings from the *Buick v. Reid* trial not only provide a new and unprecedented look into one of the most turbulent periods in the automotive industry, they also shed new

light onto one of the industry's least understood personalities. Much to the credit of its founder and namesake, David Buick, the Buick Motor Co. exhibited significant mechanical ingenuity, manufacturing flexibility, and marketing creativity as producers of stationary, marine, and automobile engines.

In the end, this short chapter in Buick's long history came down to a three-year legal battle over a little more than $1,200 in unpaid debts. By September 1904, the Buick automobile was being met with public acclaim, yet its faltering financial situation had led Buick's investors to seek help from Flint's own William C. Durant, who took control of the company later that year. On April 30, 1906, the jury found in favor of the plaintiff, the Buick Motor Co., and against the defendant, the Reid Manufacturing Co., for the sum of $1,308.55 plus legal costs. On September 20, 1907, the Supreme Court of the State of Michigan upheld the lower court's ruling. It appears that the Wolverine had long since disappeared from the scene. There are some indications that the company was acquired by the Craig-Toledo Co. of Dundee, Mich.

Whether the judgment was ever paid is unknown. It probably didn't matter. By that time, the Buick Motor Co. had produced nearly 8,000 automobiles and, within a year, would become the financial cornerstone of Durant's monumental automotive endeavor, General Motors.

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Memorandum of Agreement between Eugene C. Richard and Buick Mfg. Co., May 23, 1903, Detroit.

The following is a written description of the engine Buick produced for Reid. The description accompanied a letter written by D. D. Buick on January 15, 1904. It is presented here as it appears in the transcripts of the court case brought by Buick Motor Co. against Reid Manufacturing Co.

DESCRIPTION OF OUR 5 x 4-1/2 OPPOSED END 16 H. P.

Our reason for designing an engine with the diameter of bore larger than the length of stroke was to enable us to install this engine across the frame of the car in front. This engine is to be used in conjunction with our sliding gear transmission. This engine will go inside the 32". The cylinders are directly opposed one another instead of being off-set as is usually the case. In this construction the connecting rods are off-set but are made amply strong to take care of any strain that they might be called upon to stand. In this construction it brings both inlet connections on the front side of the engine, that is, towards the front of the car. This enables you to use a straight pipe from one inlet valve to the other without the usual bends in it. The carburetor is connected direct to the center of this pipe and can be carried anywhere that might meet with the assembler's views.

The exhaust valve openings are on the bottom of the valve casing. This also enables the assembler to make easy connections with the muffler. The exhaust valve is 3-1/4" in diameter and the inlet valve is in the center of the exhaust valve. Hence our reasons for making the exhaust valve so large. In this construction the exhaust valve is kept quite cool for the reason that the valve casing is fully water jacketed and the incoming gas passing through the center of the valve, it has a tendency to keep the exhaust valve at the same even temperature and by cooling it from the outside as well as the inside there is less chance of the valves becoming out of true. By designing the engine in this manner, we are able to work the four valves by two cams. On the inside of the crank casing is hung four levers. The upper end of these levers being pivoted to the trunion at the top of the crank casing and at the lower end of these levers is the roller bearing on which the cams act. The valve rods take their bearings at the center of these levers, that is, centrally between the roller bearing and the trunion. The roller bearing in this lever is guided by the slot so that the levers cannot become out of alignment. The crank case is made oil tight. The bearings are made of best bronze. We also make the valve rods on these engines dust proof. There is a hub cast on the crank case in which the valve rod passes through and also one cast on the valve chamber in which the other end of the valve rod passes through. These hubs are turned to a given size. We then take two pieces of tubing, of which one slips into the other. We then put them on the valve rods and when the engine is assembled draw these two pieces of tubing out so they can slop on these two bosses, then tighten them on to the bosses by small set screws, thus making the valve rod dust proof. This also assists in oiling the valve stem. Any oil is liable to come through this valve rod bearing from the crank case would naturally get inside of this tubing and flow along to the valve rod bearing in the valve chamber, keeping this part of the valve rod well oiled, which is essential in the gasoline engine.

We furnish with this engine, carburetor connected to the engine and sparking plugs. Price $175.00. F. O. B. Flint, Mich.

Creating Order Out of Chaos: Establishing Financial Security for NASCAR

by Harry E. Carpenter, III

Introduction

The success and popularity of stock-car racing under the auspices of the National Association for Stock Car Auto Racing (NASCAR) is undeniable today, but it wasn't always so evident. Many business experts doubted its long-term economic viability. As late as 1953, the editors of *Business Week* predicted that the economics of the sport did not allow for reasonable profits for promoters, track owners, car owners, and drivers. The few sponsors were local companies who offered relatively small sums. There was no coverage by either radio or television. The sport was almost totally dependent on the revenue from spectators. Unlike the midget racers that kept costs down by utilizing fairground tracks and were relatively inexpensive to build and operate, the costs of stock-car automobiles and the tracks devoted to their use were relatively high. There was just not enough money for everyone in the sport to make a reasonable profit, argued the editors of *Business Week*. But a decade later, NASCAR under the leadership of William ("Big Bill") France established itself as a viable concern by the mid-1960s with factory backing and an established fan base. The keys to France's success in this endeavor were ensuring profitability for promoters and race track owners (often the same people), making the sport as safe as possible while maintaining the appearance (if not the reality) of stock cars, and keeping the costs for car owners within reason. In meeting these goals, France demonstrated a willingness to experiment, some openness to suggestions while considering options, and an ability to take strong action to enforce his decisions. He also demanded loyalty from car owners and drivers.[1]

The 1930s: the Early Years

The city fathers of Daytona and Ormond Beaches feared severe financial losses for the area after Sir Malcolm Campbell and others who attempted land speed records moved their efforts to the Bonneville Flats in Utah. The crowds that they attracted to the area in February and March of each year brought money to the local economy in a season of little other tourist activity. Biker's Week or Spring Break did not exist to attract the large crowds to the Daytona Beach area as they do now. Mayor Edward H. Armstrong's unsuccessful attempt to get Edsel Ford to build an American record-setting car and bring it to Daytona Beach in 1935 was a desperate effort to save "Speed Week" by appealing to Edsel's patriotism. In an attempt to keep automobile speed-related events in the Daytona-Ormond Beach area, city officials convinced Sig Haugdahl to organize a road and beach race in March 1936. The city put up $5,000 in prize money. Haugdahl created a course of 3-1/5 miles, half along highway A1A and half on the beach. The 1936 race was a financial failure. Many people showed up before the ticket sellers arrived, and the race had to be terminated prematurely because the ruts developing in the sand made it unsafe. The city and Haugdahl tried again in 1937. The race was a popular success but the City of Daytona lost $20,000.[2]

An important participant in the Daytona Beach races in 1936 and 1937 was William France. A Washington, D.C., native, France began his racing career at the age of 16. Competing in his family's Model T Ford, France raced on the Washington-Baltimore Speedway, a 1-1/8th mile, high-banked, board track in Laurel, Maryland. He left school and took a job at a local service station learning the mechanic's trade. Using his earnings from his job, France and a couple of friends built a canvas-bodied, open-wheeled, single-seat race car powered by a Model T engine. France successfully raced this car on the dirt tracks of Maryland, Virginia, and Pennsylvania.[3]

In the fall of 1934, France, his wife, née Anne Bledsoe, and their infant son, William Clay ("Little Bill"), moved to Florida seeking better opportunities during the Great Depression. They visited Anne's relatives in New Smyrna Beach, just south of Daytona Beach and decided to stay. Speculations by NASCAR fans and chroniclers suggest that France and his family remained in the Daytona Beach area because the family car broke down and France could not afford to have it repaired. France himself ridiculed this conjecture; an experienced mechanic, he was capable of fixing any car problem and continuing the trek, if he and Anne desired to do so. It is not unlikely that the upcoming and heavily touted attempt by Sir Malcolm Campbell to pass 300 mph on land made the Daytona Beach area attractive to France. Having relatives nearby while establishing a new home for their family must have had some appeal. For whatever reason, the Frances settled in the Daytona Beach area in the fall of 1934.[4]

The city officials of Daytona Beach decided to quit promoting automobile racing after losing $20,000 in the 1937 race. France and Haugdahl decided to promote a race over the Labor Day weekend of 1937 with the help of the local Elks Club. Amazingly, with a purse of only $100, 21 drivers entered the race. The race was scheduled for 16 laps along the same 3-1/5 miles long road and beach course used before. The race was a success from the drivers' viewpoint because of better management and much improved track conditions, but, once again, it was a financial failure for the promoters. The Elks Club lost $20,000 on the race and the membership refused to sponsor any more races. If no one stepped forward, automobile racing in Daytona Beach was finished.[5]

France found a partner, Charles ("Charlie") Reese, to post the purse for a new attempt at racing at Daytona Beach. Reese was a wealthy restaurant owner who owned an automobile that France raced several times at Daytona. France took charge of driver recruitment and track preparation. On July 10, 1938, France and Reese promoted a 150-mile race on the road and

beach course. France finished second in the race. The two partners enjoyed a modest profit of $100 and decided to hold a second 150-mile race over the Labor Day weekend. For France and Reese this race was an even bigger success. They made a better profit and France won the race. The partners successfully saved automobile racing in Daytona Beach.

From 1939 through 1941, the promoting partnership sponsored three races a year at Daytona Beach. France continued competing elsewhere in races in the Southeast, the Midwest, and Pennsylvania. He enjoyed his best year as an automobile racer in 1940, winning races in Salisbury, N.C.; Spartanburg, S.C.; the July road/beach race at Daytona Beach; and a 200-mile race in Fort Wayne, Indiana. After winning a qualifying race, he placed second in a race at Langhorne, Pennsylvania, sanctioned by the American Automobile Association (AAA). This success in three separate regions of the United States gave credence to France's claim as the 1940 "unofficial" national stock-car racing champion. France was especially successful at Daytona Beach. He competed in 16 of the road and beach races held there from 1938 through 1941 earning two wins and another seven of the top ten finishes.

The Japanese attack on Pearl Harbor on December 7, 1941, ended automobile racing in the United States, except for an occasional unsanctioned event. Wartime shortages and rationing created a dearth of the necessary fuel, tires, and steel.[6] During World War II, France worked for Daytona Beach Boat Works, helping to build and maintain submarine-chasers, leaving as the war ended. The Federal government's easing of the rationing of gasoline and tires made automobile racing possible again.

The Immediate Postwar Era

France resumed racing automobiles and promoting automobile races on dirt tracks in the Carolinas and Georgia in 1945. There were a confusing and maddening variety of sanctioning bodies for stock-car racing after World War II. To name a few, there were the Mutual Racing Association, Southeastern Speedway Association, Stock Drivers Association of America, National Championship Stock Car Circuit, not to mention the AAA, ICMA and CSRA. Each organization defined stock cars differently, with rules that made equipment legal at one race but illegal at the next. Unscrupulous promoters cheated fans and competitors alike. Promoters advertised drivers they knew would not be at the race. Some paid less prize money than promised. Worse still, some promoters departed with the ticket sales proceeds during the race leaving the drivers high and dry. Some drivers showed little loyalty to promoters and tracks. If a rival promoter offered appearance money, drivers moved from one race to another disappointing the fans at the first track. Stock-car racing was a business in desperate need of horizontal integration to end the chaos if it was to grow or even to survive.

France got a clear indication of the need for organization of stock-car racing in October 1945. While in Charlotte to promote a race at the 1/2-mile dirt track at the county fairgrounds, he visited the sports editor of the *Charlotte Observer*, Wilton Garrison, seeking free publicity for the race. France presented the race as a national sports event, a notion that Garrison rejected. Garrison pointed out that most of the expected competitors lived in the Charlotte area or nearby northern South Carolina, and that the race was not a national sports event. He advised France that if there was to be a true national stock-car championship, there needed to be an umbrella organization to supervise it. Rules needed to be consistent. The definition of a stock-car needed to be the same at every race. A point system, based on finish order, needed to be developed. An organization was needed to enforce consistent rules and guaranteed purses. Garrison suggested that any new organization needed the approval and support of the Contest Board of the AAA. In other words, stock-car racing needed horizontal integration and France set out to create an organization to provide it. At first, he tried to work with the AAA Contest Board but was rebuffed. He decided to create his own organization, one which became NASCAR.[7]

The Creation of NASCAR

On December 14, 1947, France called to order the first in a series of meetings at the Ebony Room of the Streamline Hotel in Daytona Beach. The choice of meeting place demonstrated a characteristic of William France that appears throughout his tenure as leader of NASCAR: enlightened self-interest. The Streamline Hotel was the tallest and finest hotel in downtown, giving the meetings a classy environment that could not help but increase the credibility of the new organization. It did not hurt that France owned the Ebony Room. The meetings lasted three days, from midmorning to around 4 p.m., with lunch breaks. An important attendee was full-time New York racing promoter, William ("Bill") Tuthill, who resided in Hartford, Connecticut. He served as the chairman of the meetings. France leaned on Tuthill for much advice about how to set up the new organization. France supplied the broad outlines, Tuthill filled in the details. The group elected a varied group of men associated with automobile racing as promoters to serve as officials of the organization. France was the new President; Indianapolis racing legend E.G. ("Cannonball Bill") Baker, the National Commissioner; Edward ("Eddie") Bland, the Vice President; Tuthill, the Secretary; and racer and mechanic Marshall Teague, Treasurer. Louis ("Red") Vogt, a well-known mechanic from Atlanta, is generally credited with coming up with the name National Association for Stock Car Racing. NASCAR has never been a track or race-car owner or a race promoter; it has always been a sanctioning body, pure and simple. The owners of the stock of the private company, NASCAR, Inc., were France, Tuthill, and Daytona Beach attorney Louis Ossinsky. France separated his activities as a race promoter and a race sanctioner. The actual incorporation of the new organization occurred two months later, on February 21, 1948.[8]

The leaders of NASCAR intended to create three divisions of competition: (1) a "Strictly Stock" series of street-legal, showroom automobiles, (2) a Modified Stock series, and (3) a Roadster series. Because of a post-World War II shortage of new models of automobiles, NASCAR postponed the "Strictly Stock" series for one year, fearing a negative reaction from fans if they witnessed rare late model cars being destroyed in wrecks at the races.

The new organization started with a fairly simple structure and a simple set of rules, partly because of the delay of the

"Strictly Stock" series. The "1948 Rules and Specifications" by NASCAR was a relatively simple document. It was printed on one 8-inch square sheet of heavy paper that was folded to create four pages. The first page listed the organization's officers. Baker was National Commissioner. The Board of Governors consisted of France as President; Tuthill and Eddie Bland of Jacksonville, Florida, representing race promoters; Bob Osiecki of Atlanta and Fred Dagavar of New York City, representing car owners; Red Byron of Atlanta and Buddy Shuman of Charlotte representing drivers; Marshall Teague of Daytona Beach and Red Vogt representing mechanics; and Ed Bruce and Jack Peters of Berea, Ohio, serving as the Roadster Advisory Committee. The page also listed two working committees, the Technical Committee chaired by Ed Samples and the Competition Committee with Fred Dagavar as chairman. The National Headquarters address was 39 Goodall Avenue, Daytona Beach, Florida.[9]

The second page covered the general rules of NASCAR. The organization required an inspection of any track before sanctioning the track for a race. Races ended when the leading racer received the checkered flag. Other positions were decided by distance. Any competitor or owner had ten minutes to protest the decision of the judges and scorers, and needed to post a $500 bond in order to do so. If the protest was denied, the bond was forfeited to a hospital fund started by NASCAR. This rule allowed protests of decisions but discouraged frivolous protests; $500 was a substantial sum of money in 1948. Competitors could file written appeals of the judges' decisions to the Board of Governors. The Board considered the protests at the national convention but the payout of the race could not be changed, just the point totals for the championship. Thus, payouts for races were not tied up in protests at a time when the car owners and races needed the funds to continue competing. The Competition Committee enjoyed the right to change the rules and enforce them after the National Headquarters sent the changes to all NASCAR members.[10]

The last two pages covered the technical rules. These allowed models of automobiles from 1937 through 1948 model years to race, but to improve safety, four-wheel hydraulic brakes were allowed on pre-1948 models even though they were not stock. NASCAR required chassis and bodies used on the cars to be manufactured from the same year. The rules banned foreign cars; NASCAR was for an American championship for American cars.[11]

Many of the rules addressed safety concerns. While allowing convertibles, NASCAR required their tops to be in place during racing and equipped with safety hoops mounted to the frame. All doors had to be welded, bolted, or strapped shut. All stock bumpers and mufflers had to be removed. Mufflers were apt to fall off in racing conditions and the loud noise of cars is part of the racing experience for fans. All glass had to be safety glass. The rules required the removal of headlamps and taillamps, full windshields, rearview mirrors, and crash bars. Drivers had to secure themselves with safety belts welded to the frame at two points and utilizing aviation latch-type belts with quick releases in case a car fire necessitated a quick departure. Drivers had to wear regulation crash helmets.[12]

Other rules defined what constituted a "stock" car. Automobiles must be "stock," i.e., as originally manufactured, in length, width, and wheelbase. NASCAR rules allowed oversized blocks but limited engine displacement to 300 cubic inches unless a larger engine was offered by the vehicle manufacturer for the model. The rules allowed leeway from original specifications in various parts such as ignition systems, radiators, water pumps, fly wheels, batteries (except magnetos), valve springs, cam shafts, and rear end arrangement. NASCAR allowed any model manufactured cylinders with flat heads and allowed machining to increase engine compression. Finally, the Technical Committee had the right to inspect any automobile at any time to ensure rule compliance.[13]

Driver safety seemed important to NASCAR at its inception. Auto racing is an inherently dangerous sport, but NASCAR attempted to mitigate the danger as much as possible. Some critics argue that fans attend stock-car races to see crashes, but they truly want to see competitive racing. Other rules tried to create as even a playing field as possible with different models of automobiles and to maintain some control on the costs of racing. Until sponsorship of competitors by automobile manufacturers and others became common, cost control was very necessary if everyone from promoter to car owner to driver is going to make a profit in racing.

The 1948 Season

By most accounts, the 1948 NASCAR season was a success, but not an unqualified one. NASCAR sanctioned 54 races in its first season, beginning with the road and beach race at Daytona on February 15 and ending in Columbus, Georgia, on November 14. Bob ("Red") Byron narrowly won the Modified Stock championship with 2,996.50 points over second place Tim "Fonty" Flock, who had 2,963.75 points. Byron drove an automobile built by Red Vogt and owned by Raymond Parks. Prize money for the 54 races exceeded $100,000 and 20 drivers shared $5,000 in point money.

NASCAR was not a regional organization. It sanctioned races in the South, the Northeast, and the Midwest. The West was not represented because, before the Interstate Highway System, which was authorized in 1956, it was not practical to compete there to any great extent. Any race in the West required a week's travel to and a week's travel from in order to compete.

Under France's leadership, NASCAR proved willing to experiment. It supported races on asphalt paved midget tracks in the Northeast, sending several top drivers to race in Lonsdale, New York, in a race promoted by Tuthill. In cooperation with the Speed Corporation of America, based in Paterson, New Jersey, NASCAR sanctioned a series of night races that earned national championship points in Honesdale and Allentown, Pennsylvania; Fonda and Palmyra, New York; Kingston, Rhode Island; and Lewiston, Maine. The races were weekly starting in May, covering every night of the week except Sunday. This experiment failed mainly due to the absence of a sufficient number of top drivers to participate in each of these races. Travel time was excessive for anyone trying to compete at all the tracks. But the actual physical problems of running races under the lights proved surmountable.

NASCAR began a very successful experiment, sanctioning local races that created a regional champion. This later developed into the short-track Winston Series until the

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Cash prizes, based on point money for the season, will be distributed to the 20 leading drivers in two divisions this season.

Prizes will be awarded to leaders in the Modified Division.

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Another feature will be the presentation of the beautiful NASH trophy to the winner for 1949.

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With the $10,000 timing equipment used by the City of Daytona Beach for speed tests in past years available, NASCAR will sanction speed tests for strictly stock cars on the famous beach stand during the winter months. These events will be open to all NASCAR members. Full details will be provided members throughout the year.

Join NASCAR now for all details, bulletins, decals, membership pins and all other material provided by the organization.

NATIONAL ASSOCIATION FOR STOCK CAR AUTO RACING, INC.

800 MAIN STREET DAYTONA BEACH, FLA.

NASCAR, INC.
800 Main Street
Daytona Beach, Fla.

Date .....

I am enclosing $10.00 for my 1950 Membership Dues in NASCAR. Please list me under the following classification and forward me my membership card, pin, decal, and ($10.00 worth of coupons good for all NASCAR-sanctioned races in 1950—for fan members only). Check classification.

..... Driver ..... Car Owner ..... Track Owner ..... Mechanic ..... Official ..... Fan.

Name ..... Birth Date .....

Place of birth ..... Present Address:

Street ..... City ..... State .....

Fig. 1 – NASCAR membership application advertisement, Speed Age, *December 1949.*

federal tobacco settlement forced the dropping of sponsorship by R. J. Reynolds in 2000. The series is now called the NASCAR Weekly Short Track Series. The first of the regional series was created in cooperation with Ohio Raceways, Inc. The Ohio Speedway Association, an affiliate of NASCAR, sanctioned 26 races at tracks in Berea, Dover, and Norwalk, beginning on April 25, 1948, and ending on September 26 with the Harvest Classic, the NASCAR Midwest championship race. The races featured two divisions, modified stock and roadster.[14]

NASCAR's safety record for the season was fairly good for the times. Only one fatality occurred in a NASCAR-sanctioned race. W. R. ("Slick") Davis died in a five-car wreck in Greensboro, N.C. "Shorty" York and C. L. Grant suffered back injuries during the season and the NASCAR hospital fund paid their hospital bills and medical expenses. After NASCAR driver Buck Mathis died in an unsanctioned race, France began the annual Buck Mathis Memorial Race in Daytona Beach in August 1948 and donated $500 from the proceeds to Mathis's widow.[15]

The 1949 Season

France sent 24 questions to the members of NASCAR for their opinion before the Technical and Competition Committees considered any changes in the rules at their meetings on January 13-14, 1949. Some issues related to safety, such as whether to require safety steering wheel hubs and shoulder harnesses. Most issues were technical and related to competition, such as whether to disallow 1937 models, or to allow alcohol fuel or superchargers. The last question stands out, "Should foreign cars be permitted to compete?"[16] The answer was a resounding "No."

When NASCAR celebrated its 50th anniversary, it calculated the time beginning, not in 1947 when the organization was created, or 1948 when it first sanctioned races, but in 1949 when the "Strictly Stock" series started (this division is the beginning of both the Sprint Cup and Nationwide Series).[17] The first points race of the Strictly Stock series was held on June 19, 1949, at Charlotte Speedway, a 3/4-mile dirt track. Charlotte was a logical place to begin the Strictly Stock series for competitive reasons. Olin Bruton Smith of Charlotte had started a new organization, the National Stock Car Racing Association, in 1949, in direct competition to NASCAR. France chose to take the battle to the competition's backyard. Stock-car racing was popular in North Carolina, and NASCAR needed to defeat any competition in that state.[18]

A full slate of 33 drivers competed at Charlotte. The competitors drove nine different makes of automobiles: Lincoln, Hudson, Ford, Olds, Cadillac, Buick, Chrysler, Kaiser, and Mercury. It is interesting to note that NASCAR allowed women to race. Sara Christian competed in a car owned by her husband, Atlanta mechanic Frank Williams. One could interpret this as an attempt by NASCAR to differentiate itself from AAA whose rules did not allow women in championship races. Also, Louise Smith, who began by racing in France, promoted races before the creation of NASCAR.

France and NASCAR demonstrated a willingness to enforce the rules at this Charlotte race. Glenn Dunnaway in a 1947 Ford finished first but NASCAR officials disqualified him for using non-stock rear springs, the type used by moonshine runners to handle the heavy weight of loads of illegal liquor. Officials awarded the win to Jim Roper (This disqualification places doubts on the contention by the late Tim Flock that his disqualification at a Daytona Beach race in 1952 for using a wooden roll bar was personal. Flock claimed he had approval for the wooden roll bar before the race). Hubert Westmoreland, co-owner of the Dunnaway car, unsuccessfully sued NASCAR for $10,000 in a North Carolina court. This case established the precedent that NASCAR could make and enforce its rules without government interference.[19]

The Strictly Stock series continued for seven more races in 1949, at Daytona Beach; Hillsboro and North Wilkesboro, North Carolina; Langhorne and Pittsburgh, Pennsylvania; Hamburg, New York; and Martinsville, Virginia. Four of the races were of 100 miles. The race at Charlotte was 150 miles, the one at Daytona Beach 166 miles, and the races at Hillsboro and Langhorne 200 miles. Some interesting trends appear in this inaugural season for the Strictly Stock series. Three women competed in the series: Sara Christian, Louise Smith, and Ethel Mobley. The point system favored consistent high finishes over wins. Red Byron won the 1949 championship, competing in six out of eight races, winning two and finishing in the top five in two more. He won $5,800 that year. Lee Petty beat Bob Flock for second place with one win compared to Flock's two wins. Petty passed Flock by driving more consistently. Petty finished in the top ten in five of the six races in which he competed. Flock finished out of the top ten in three of the six races in which he competed.[20]

NASCAR sanctioned 87 races in 1949, including the Modified and Roadster series. Its 1949 safety record was excellent. More than 500 drivers competed in NASCAR races in 1949 without a fatal accident.

The 1950 Season

This safety record helped France to obtain insurance coverage for drivers, mechanics, and race officials for the 1950 season. NASCAR guaranteed its insurance company a minimum premium of $30,000 based on a premium of $100 per sanctioned race. France successfully convinced the insurance actuaries that they could quantify the risk to the drivers, mechanics, and race officials. This meant that NASCAR needed to sanction at least 300 races in 1950, more than tripling the number of events sanctioned in 1949. France met this requirement with ease; NASCAR sanctioned 395 races in 1950.[21]

The 1950 season was an interesting one for NASCAR. (Fig. 1) First, France changed the name of the premier series from Strictly Stock to Grand National. France felt "strictly stock" was more appropriate for the rules, and not as the name of the race series. He hoped Grand National would remind the general public of the great thoroughbred races of England.

NASCAR sponsored its first 500 mile race in 1950. France opposed a race of that length at first. He feared public reaction if the stock-cars failed to complete the race and he had great doubts about their ability to compete for 500 miles, but his hand was forced. Harold Brasington, a South Carolina peanut farmer, attended the 1948 Indy 500 and decided a similar race for stock-cars could succeed. He began construction on a track in Darlington, South Carolina, and in December 1949 he

convinced the Central States Racing Association (CSRA) to sanction a 500-mile stock-car race at his track on Labor Day weekend 1950. The CSRA was a sanctioning body for stock-car races in the Midwest and a competitor of NASCAR. In July, Sam Nannies announced that he would stage a 500-mile stock-car race for American and foreign stock-cars at his Lakewood Speedway outside Atlanta before Labor Day.

France's strict enforcement of NASCAR's rules against racing in non-sanctioned events paid off. The rules called for the stripping of all championship points earned to date for any driver competing in a non-sanctioned or "outlaw" race. Red Byron, the 1949 Strictly Stock champion, lost his early lead in 1950 because he raced in an "outlaw" event. In July, Lee Petty was third in points and only 24-1/2 points out of first place. During a three-week lull in the NASCAR season he competed in a non-sanctioned race and was stripped of the 809 points he had accumulated during the season.

Because of France's strict enforcement of the "outlaw" rule and the drivers' doubts about a 500-mile race, Brasington lacked enough entries to run his race. France convinced Brasington, and Mason Benner, president of CSRA, to let NASCAR co-sponsor the race. They agreed, and NASCAR and CSRA co-sponsored the first Southern 500 on September 4, 1950. The combination of NASCAR sanctioning and a record purse of $25,000 resulted in more than 75 drivers wanting to enter the race, the limit that had been specified. Excessive tire wear proved the biggest problem the drivers faced during the race. Most NASCAR races were on dirt tracks and the paved Darlington track ate up the tires. In one sense, France's fears proved true. Only 28 of the 75 starters finished the race. But the public did not react negatively probably because tire problems did not reflect on the ability of the automobiles to compete.[22]

The 1951 Season

By the 1951 season, NASCAR and AAA had emerged as the main competitors in stock-car racing. While the stock-car racing division of AAA was not its most important racing division, it did crown a national champion and competed with NASCAR in the Northeast, Midwest, and sometimes in the South. By now, NASCAR dominated the South, competed in the Northeast and the Midwest, and opened some tentative forays into the West. AAA dominated racing in the West.

NASCAR sanctioned a 250-mile race in Detroit in 1951. The city was celebrating its 250th anniversary that year, and a stock-car race in the city of car manufacturers seemed appropriate. This race served two purposes for France, to add another race to compete with AAA in the Midwest and to impress the car manufacturers in Detroit. Marshall Teague convinced the Hudson Motor Car Company to provide factory backing for his race team in 1951 with the hope that a good show in Detroit would impress the other car manufacturers. NASCAR drivers put on a good show in Detroit with a Grand National record 14 lead changes.

Another experiment emerged in 1951; NASCAR started a Short Track series, 11 races held with Grand National type cars on tracks of 1/2-mile or less in length. During this competition with AAA, France again demonstrated an openness to experimentation and willingness to crackdown on those winners who defied the NASCAR rules.[23]

The 1952 Season

During the 1952 season, the rivalry with AAA intensified. To compete with AAA in the type of racing it alone sanctioned at the time, NASCAR started a Speedway division for open wheel racers much like the Indy 500 cars. During "Speed Week" in February, NASCAR introduced the new NASCAR Speedway automobiles with a series of time trials won by NASCAR veteran, Buck Baker. This division raced in seven races in May and June but the races drew a small number of entries, the most competitive race was at Darlington Speedway with 21 drivers. By July, promoters shied away from the Speedway division. They feared that the low number of entries would grow because of the national steel strike. NASCAR postponed further races in the Speedway division.. The strike was settled in August, but that failed to revive the Speedway division. Buck Baker was crowned the division champion.[24]

Seeing an opportunity to hurt its rival, AAA moved into the South. AAA convinced the owners of the newly-built Southland Speedway; a paved, banked, 1-mile track in Raleigh, N.C., to bring in an AAA national championship points race for its opening race on July 4. This was the first time AAA had sanctioned a national championship race in North Carolina since 1926. France quickly added a July 4 race for the Modified division in Darlington. The AAA race in Raleigh drew 25,000 spectators but only 12,000 attended the NASCAR race.[25]

In spite of some setbacks in its rivalry with AAA, NASCAR enjoyed a few financial successes in 1952. Pure Oil Company contributed thousands of dollars in contingency money during the races and time trials of "Speed Week" along with free gasoline for competitors. Automobile accessory manufacturers Champion Spark Plugs, Wynn's and Miracle Power recognized the advertising value of NASCAR and contributed money to the points fund. This intensified a growing problem in NASCAR; many drivers refused to fill out entry forms ahead of time or, after filling out the forms, failed to show up at races. This obviously upset race promoters and track owners who wanted to advertise the entry of the popular drivers, but now the accessory manufacturers saw this as a problem also. France solved this problem in 1953. After several pleas to drivers failed to change their ways, NASCAR began enforcing a rule that if a driver did not send in an entry form to the race promoter and NASCAR by the deadline, NASCAR would award no championship points to that driver were he to compete in the race.[26]

The 1953 Season

Safety became a concern in NASCAR again at the end of the 1952 season. "Cannonball" Baker, the National Commissioner of NASCAR, invited race promoters, sanctioning organizations, and the racing press to a meeting in Philadelphia on October 17, 1952, to discuss safety issues in automobile racing. (Fig. 2). The attendees created the "Auto Racing Safety Council" to study safety issues and recommend action for all types of auto racing. France's efforts proved prophetic. Safety became a major issue in 1953. Various parts, spindles, hubs,

axles and suspensions, began failing with regularity. Two drivers died before the end of June. Glenn "Fireball" Roberts barely escaped death when his seat belt broke during a rollover crash in a Modified Division race at the Asheville-Weaverville Speedway. France urged car owners and drivers not to take shortcuts that compromised driver safety. NASCAR adjusted its rules to allow "severe usage" kits that Hudson, Oldsmobile, and Lincoln supplied to car owners who had worked out individual arrangements with the manufacturers.[27]

In 1953, France stepped up the competition with AAA. NASCAR challenged the virtual monopoly that AAA enjoyed in travel information. For the benefit of NASCAR's 11,000 fans France created the NASCAR Auto Association, which, for a fee, would supply travel information and recommended affiliated hotels, motels, restaurants, and garages. France thought he started a viable competitor with AAA, but the auto club only lasted three years. Many of the affiliates grew angry seeing their empty motel rooms and restaurant seats while driver and car owners patronized nearby Mom and Pop operations. Again, we see France's willingness to experiment and eventually recognize and accept experimental failures.[28]

Fig. 2 – Three NASCAR officials: (l to r) "Cannonball" Baker, Commissioner; Bill France, President; Ed Otto, Vice President. Speed Age, *March 1956.*

France tried another experiment in 1953. Critics argued that NASCAR drivers were not the best drivers in the world because they only turn left on the oval tracks. France decided to introduce road racing to NASCAR. On a two-mile paved road course created at Linden Airport in Linden, New Jersey, NASCAR held its first road race. To spice up interest, France allowed foreign-made cars for the first time. Al Keller won the race driving a Jaguar, and Jaguars finished fourth, fifth, and sixth as well. The experiment failed to improve the reputation of NASCAR drivers or American cars and NASCAR stayed away from road racing and foreign-manufactured cars for years.[29]

After 1953

By 1956, NASCAR rules made clear that NASCAR intended to maintain the appearance of racing "stock" cars in the Grand National division (Fig. 3). The rules allowed only late model (1954, 1955, and 1956), American-made passenger car production sedans. NASCAR limited 1954 and 1955 models to those that had been produced in 1,000 units or more. For 1956 models, a manufacturer needed to demonstrate that it would produce at least 1,000 units of a model. The manufacturer was required to nationally advertise the model of car and make the model available to the general public. NASCAR allowed no increase in clearance or alterations of fenders. The rules banned sports cars, jeeps, suburbans, station wagons, and pickup trucks. The minimum weight required was the factory-specified curb weight of each model. To the racing fans, the drivers needed to race cars that at least appeared the same as their cars at home.[30]

One of France's major concerns seemed to be limiting costs. NASCAR restricted engines to those cataloged by the manufacturer for a specific chassis and body. Prior approval was needed for any factory parts that increased horsepower. NASCAR rules banned any equipment designed solely for law enforcement or racing. Ignition and fuel systems had to be standard. To control costs for car owners and reduce the number of engine failures in races, owners could overbore their engines to compensate for engine wear and lengthen the life of the engines. In a compromise between limiting costs and maintaining appearances, NASCAR allowed cars with damaged bodies to race an additional race before the damage was repaired.[31]

Improving safety was another major concern. One area that NASCAR allowed substantial deviation from stock was in the steering and suspension systems. NASCAR encouraged car owners to reinforce both the steering system and the wheels. Reinforced hubs or hubs of steel were allowed as long as they appeared standard. All cars were required to have strong roll bars.

The modifications from stock improved the safety and controlled the costs somewhat of the cars on the Grand National circuit while maintaining the all-important appearance of stock cars.

A side effect of the improved steering and suspension was greater speeds. France seemed unconcerned about maintaining any competitive balance in the Grand National division. He made no attempt to limit Chrysler's racing efforts or its superior hemispheric-head engine. Tim Flock dominated the Grand National division in 1955 with 18 wins in a Chrysler C-300. Other drivers of the C-300 did well on the circuit that year also. Perhaps France thought domination by one manufacturer would encourage other manufacturers to counter the publicity for Chrysler with increased support of NASCAR racers.[32]

Drivers and car owners suffered financial problems into the early 1960s. Automobile factory backing was nonexistent in 1960. Drivers and owners sometimes convinced local car dealerships or other local business to advertise on the cars but these were for small amounts, often around $200. The experience of Ned ("Gentleman Ned") Jarrett of Newton, N.C., as an owner/driver illustrates the financial problems of car owners and drivers. Jarrett joined the Grand National Circuit in 1959. Without any factory support, he won five races in 1960 and finished fifth in the points standings. In spite of the fact that he took no salary as a driver from his racing operation that year, Jarrett lost $1,500. He continued competing in NASCAR because he obtained a $10,000 loan. In 1961, the year that Jarrett won his first championship, he switched from Fords to Chevrolets. Chevrolet offered unofficial sponsorship support that year. When Ford began officially sponsoring NASCAR competitors in 1962, Jarrett switched back to driving Fords. Even with factory backing and successful seasons, it took Jarrett until the end of the 1963 season to repay his loan.[33]

The experiences of Curtis ("Old Lead Foot") Turner and Olin Bruton Smith in their efforts to build a modern racetrack in the Charlotte area points out that track owners and promoters could enjoy profits in the early 1960s only if they maintained control over construction costs. Turner, a native of Floyd, Virginia, began automobile racing in the Mount Airy, N.C. in 1946 at the age of 22 and entered NASCAR racing three years later. Smith was and still is a race promoter in Charlotte. Both men recognized a potential for a larger and faster track in the Charlotte area. They began independent efforts to build such a track in 1960. They pooled their resources and the result was the Charlotte Motor Speedway (CMS), a 1-1/2 mile, high-banked, oval track just outside nearby Concord, N.C. Construction costs exceeded all projections because the contractors reached solid rock only a few feet below the surface and were forced to use much more dynamite than planned to build the racetrack. In spite of a successful opening in 1960 and profitable races in 1961, CMS accumulated debts in excess of $850,000 by the end of 1961. Both Turner and Smith failed to raise extra funds needed to avoid bankruptcy for CMS. Other investors in CMS forced Turner and Smith out of the operation before they committed the funds needed to keep the track open.[34]

The Teamsters' Attempt to Unionize NASCAR

NASCAR driver discontent, Turner's attempt to recover from his ouster as president of CMS, and the International Brotherhood of Teamsters efforts to expand their union base led to an attempt by the Teamsters in 1961 to organize drivers and mechanics. To understand the Teamsters' effort to organize the NASCAR drivers and mechanics, we need to examine the legal and organizational problems of the Teamsters at that time. The Teamsters were the largest union in the United States in 1961. The union spread into many industries, organizing workers not directly related to the hauling of freight. The leadership of the Teamsters aggressively and constantly looked for opportunities to expand. As early as 1905, the union addressed the issue of owner-operators belonging to the union. Should an employer or potential employer be allowed to join the union? Could a union fight for higher wages and better benefits if employers belonged? The 1905 compromise allowed owner-operators to join the Teamsters if they owned only one team or vehicle. Later, the union allowed owners of multiple vehicles to join if they drove themselves and accepted union scale and working conditions for their employees. The economic problems of the Great Depression and the new labor laws of the New Deal led many shipping companies to pressure their drivers to buying the trucks they drove and become self-employed owner-operators. These companies wanted to avoid the expenses of social security taxes, vacation pay, unemployment insurance, and worker's compensation insurance. To protect their member drivers, the Teamsters increased their organizing efforts among the owner-operators. Legislation and common law made the issue of organizing the self-employed legally doubtful. Court cases muddied that matter further with a series of conflicting rulings from Federal and state courts.[35]

By the 1950s, the Teamsters under the leadership of Jimmy Hoffa faced legal and public relations troubles. The AFL-CIO kicked the Teamsters out in late 1957 over accusations of corruption and ties to organized crimes. The Federal Justice Department began investigating the union that year also. The National Labor Relations Board (NLRB) asserted its right to determine union jurisdiction in any inter-union conflict in late 1960. This assertion concerned the Teamster's leadership; they saw it as an attempt to limit their expansion opportunities. The bad relations between Attorney General Robert Kennedy and Hoffa added to the concern. To maintain its traditional aggressive stance, the Teamsters Executive Board declared jurisdiction over any unorganized worker in early 1961.[36]

The Teamsters leadership saw professional sports as an excellent target for expansion. Race drivers seemed analogous to owner-operator truck drivers and had demonstrated openness to unionization. In 1946-1947, a group of West Coast drivers and car owners organized the American Society for Professional Auto Racing (ASPAR) to seek better conditions at tracks and a larger share of the attendance revenue. ASPAR threatened a boycott of the Indianapolis 500 and indeed many ASPAR drivers sat out the race in 1947. The organization quickly faded and was not a factor in the 1948 Indy 500, but it set a precedent of race driver unionization.[37]

Encouraged by the discontent in the ranks of drivers, the Teamsters targeted NASCAR for an organizational effort in 1961. Drivers complained about a lack of growth in the purses of most of the races, inadequate health, accident, and life insurance, and a lack of any pension plan. Negotiations between

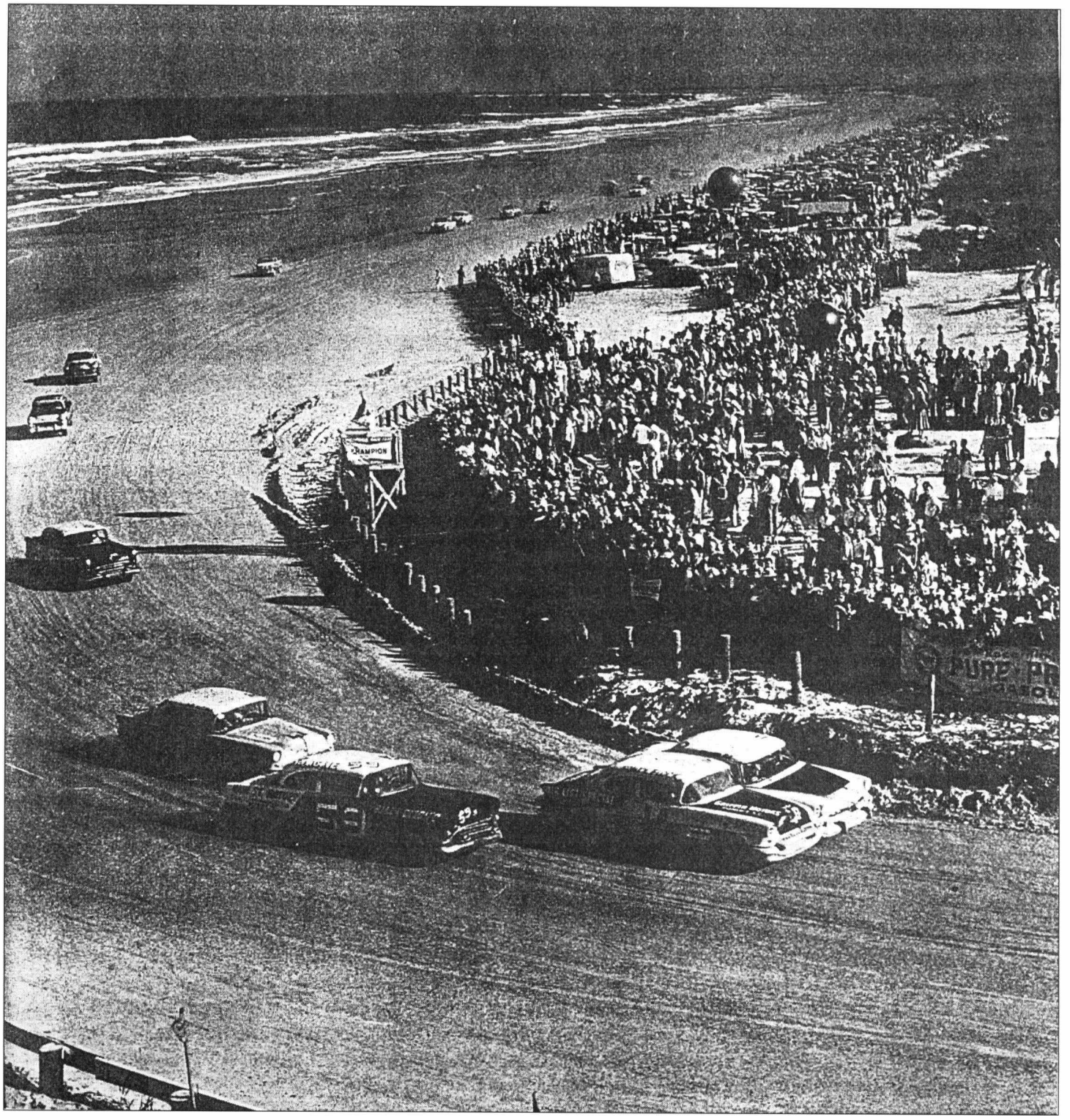

Fig. 3 – Road and beach race, Daytona Beach, FL., 1955 (courtesy The Henry Ford).

Curtis Turner and the Teamsters started in the summer of 1961. When France heard rumors of a unionization effort by early August, he and NASCAR executive director Pat Purcell made a trip to Chicago to investigate the rumors. France learned the truth when on August 9 when Nick Torgeshi, a representative of the Federation of Professional Athletes (an affiliate of the Teamsters), and Turner, now an officer of the federation, claimed they had signed union applications and received $10 in dues from a majority of the NASCAR drivers. Turner and Torgeshi announced efforts to organize drivers for the United States Auto Club (USAC) and the Midwest Auto Racing Club (MARC). The union membership elected Glenn "Fireball" Roberts to the office of union president reserving the vice president post for a MARC driver. According to Turner, only one NASCAR driver refused to join the union. Turner announced goals of larger purses, a pension plan, an increase in hospitalization and

medical benefits, an increase in insurance death benefits, and a college scholarship fund for the children of deceased drivers. Purses lagged behind costs increases. The cost of competing in a race of 100 miles had doubled since 1951 while the top prize amount remained flat. Promoters and track owners improved their financial position relative to drivers. For example, promoters of the race in Bristol, Tennessee, in July grossed $200,000 while paying the drivers a total purse of $15,000, $4,000 of that supplied by manufacturers of automobiles and automobile-related products. Turner opined that his plan to introduce pari-mutuel betting would benefit all involved in racing by increasing revenues.[38]

France reacted quickly. He spoke with drivers in Winston-Salem, N.C. for an hour before a race on August 9. Ten drivers immediately signed cards canceling any union membership application and committed not to join any labor organization. France announced the banning of any driver from NASCAR who still belonged to the union by the next race. He vowed to plow up his relatively new racetrack in Daytona Beach and plant corn before accepting a union for drivers, decried Turner's plan to introduce pari-mutuel betting in racing, and threatened to use his pistol to enforce the ban on union drivers. France argued that drivers organizing hurt his efforts to bring in factory support by automobile manufacturers. This was a weak argument because automobile manufacturers worked with a unionized workforce themselves. According to France, the Teamsters paid Turner and Roberts to sign up drivers and mechanics. Turner answered with a charge of Sherman Anti-Trust Act violations by France and NASCAR and threatened to seek an injunction by Hoffa and the Teamsters to stop all NASCAR races until NASCAR recognized the union. Turner promised strike benefits to all drivers who did not race.[39]

France took further steps to combat the union effort. First, he convinced other track owners in NASCAR to publicly oppose the union. Nelson Weaver, president of Atlanta International Speedway; Duke Ellington, vice-president and general manager of CMS; and Bob Colvin, owner of Darlington Speedway, all announced their opposition to unionized drivers. He persuaded USAC president Tom Bindford to oppose the union also. Next, France sought to move the issue of recognition of the union to the NLRB. This move is usually one tried by unions rather than management but by then a majority of the NLRB was comprised of Kennedy appointments and the Justice Department, under Attorney General Robert Kennedy, opposed Hoffa's leadership of the Teamsters. Lastly, France sought to answer the accusation that he ran NASCAR in a dictatorial method by setting up a representative Grand National Circuit advisory board, consisting of two Grand National drivers, two car owners, two race promoters, and two NASCAR officials. He offered the board the choice of four different pension plans and increased medical and death benefits. The Grand National Circuit advisory board created an outlet for discussion of any problems between drivers, car owners, promoters, and NASCAR without depriving France of any real power. Ed Otto's calming influence probably convinced France to address some of the drivers' complaints.[40]

The unionization effort collapsed, and even Roberts resigned from the Teamsters. Only Turner and Tim Flock remained as vocal supporters of the union. Turner's antitrust suit against NASCAR and France failed. The status of drivers as independent contractors rather than employees allowed France to take the drastic action he did, while denying the drivers the legal protection that any fledgling union needs. NASCAR banned Turner and Flock. France lifted Turner's banishment in 1965 and he returned to racing for a short while. Flock never returned to NASCAR racing. By taking drastic action, making a massive effort, and addressing some of the drivers' concerns, France killed the union effort in NASCAR and maintained his control of the organization.[41]

Conclusion

By the mid-1960s, NASCAR was a viable concern. By first insuring profits for the promoters and race track owners, France secured venues for NASCAR racing. By keeping safety a major concern and bringing the somewhat independent car owners and drivers under control, France increased the popularity and respectability of the sport of stock-car racing thereby attracting more sponsorship money and eventually factory support. By measures to control costs, France allowed the sport to continue when prize money was minimal. By putting NASCAR on a solid footing, France proved the editors of *Business Week* wrong and readied NASCAR to exploit the opportunities that R. J. Reynolds' sponsorship brought in the early 1970s.

Footnotes

[1]"Stock Car Racing 'A Smash Hit' But Will It Last?" *Business Week*, September 19, 1953, pp. 66-72; Hall, Randal L.; "Carnival of Speed: The Auto Racing Business in the Emerging South, 1930-1950," *The North Carolina Historical Review*, LXXXIV (July 2007), pp. 245-75.

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Reviewing Canadian Commercial Vehicles

by R. Perry Zavitz

Introduction

As a Canadian, I am surprised and pleased to see the interest automotive historians worldwide have in Canadian cars. But, of course, there is another side to Canada's automotive history of equal importance, and that is its trucks. Canada's truck history began near the end of the 19th century and is still going strong in the 21st century.

These trucks have used gasoline, steam, diesel, electricity, gasoline-electric, and diesel-electric power. They originated in large cities and small hamlets from British Columbia to the Maritime provinces. Many were not successful, but some others have survived for over half a century. They ranged from sedan deliveries and small pickups to the world's largest hauler. The commercial side of Canadian automotive history is every bit as fascinating, and at least as full of innovations and surprising quirks as the passenger car side.

Here is information on about 60 different brands of trucks and buses unique to Canada. They are reviewed briefly in chronological order.

CANADIAN (I), 1898-1899: *Canadian Motor Syndicate, Toronto, Ontario.*

Recognized as the first truck manufactured in Canada, the Canadian was an electric three-wheeler. A large four-wheel delivery truck, based on a horse-drawn wagon, was also developed. Its rear-mounted electric motor was double acting; the armature and field coils revolved in opposite ways to power each rear wheel.

In a 1900 reorganization, the company came under British control and the name was changed to Canadian Motors Ltd. The new company continued in business building delivery trucks, a 15-passenger tally-ho bus, electric taxis, and passenger cars.

CMV, 1905: *Commercial Motor Vehicle Co. Ltd., Windsor, Ontario.*

The Canadian government commissioned CMV to build a truck it wanted to use to promote emigration to Canada among Britons. In association with a Detroit company, CMV built a van with attractive displays of the good life on Canadian farms. This was a gasoline-electric vehicle on a 156-inch wheelbase. Track width was 81 inches. Evidently, this one truck constituted CMV's total production.

RUSSELL, 1905-1914: *Canada Cycle & Motor Co. Ltd., Toronto, Ontario.*

Soon after getting into car production, Russell added trucks to its product line in 1905 with a 2-cylinder delivery model. The next year, production expanded to include sightseeing buses, police patrol vehicles, ambulances, and fire trucks.

But by 1910, production centered mainly on a 3/4-ton delivery truck. For use in World War I, 40 armored cars were built on Jeffery Quad truck chassis imported from Wisconsin. Russell cars were made from 1905 to 1916. Under the CCM trade name, it made, among other things, tricycles and wagons for children, and bicycles.

Scarcely known, is the fact that CCM made some motorcycles. One of these is on display at the St. Marys Museum, Ontario. Canada Cycle & Motor is still in business. Today, CCM makes all kinds of hockey and sports equipment from ice skates to hockey sticks and safety sports helmets.

BICKLE 1906-1956: *Bickle Fire Engines Ltd., Winnipeg, Manitoba, and Woodstock, Ontario.*

R. S. Bickle and Co. started making both horse-drawn and motorized fire fighting equipment in Winnipeg, Manitoba, but moved to Woodstock, Ontario in 1915. There it concentrated only on motorized fire equipment. Pumper units were built in the 1920s under license from Ahrens-Fox of Cincinnati, Ohio and mounted on Ford, Gotfredson, Packard, and Ruggles chassis. V. B. King, Bickle's nephew, designed a line of Bickles based on the Ahrens-Fox models in 1926 which used a Rolls-Royce-style radiator. With pumping capacities up to 850 gpm, they sold quite well. The company also built Pirsch ladder trucks under license. By 1926, Bickle had the Seagrave franchise for Canada. But in 1956, it was bankrupt. So King took over to produce King-Seagrave apparatus. (See King-Seagrave.)

MENARD, 1910-1919: *Menard Motor Truck Co., Windsor, Ontario.*

At first, Menard made high-wheeler passenger cars, but, after reorganization, it started building trucks of 1- to 3-1/2 ton capacities. A 1-1/2 ton model was unique because of its worm drive. One, possibly more, fire trucks were built. Production ended when the assets were sold to Mapleleaf in Montreal. (See Mapleleaf.)

CANADIAN (II), 1911-1912: *Commercial Motor Car Co. Windsor, Ontario.*

This company is believed to be the first Canadian manufacturer dedicated solely to the production of commercial vehicles—its name notwithstanding. This truck had a 2-cylinder, horizontally opposed motor, which developed a respectable 22 hp. With a 2-speed planetary transmission and double chain drive, it drove both rear wheels to "Deliver the Goods the Canadian Way," as its slogan proudly proclaimed. It featured a screened-in body.

CLINTON, 1911-1912: *Clinton Motor Co. Ltd. Clinton, Ontario.*

A small company in a small town which built mostly small trucks. They ranged in size from 1/2-ton up to 3 tons. The larger models used chain drive and had solid rubber tires. A very innovative vehicle was the Combination model. This was a small pickup in which benches could be installed to carry passengers or removed for cargo.

SUPERIOR, 1911-1912: *Petrolia Motor Car Co., Petrolia, Ontario.*

Perhaps better remembered as a carmaker, this little company probably built more trucks than cars. Its 4-cylinder light trucks used the same chassis as its cars. In some of the trucks, seats could be mounted in the back, like the Clinton. (see Clinton.) The company was in a bad financial position when fire destroyed its factory in 1912. Operations never resumed after that. Total production of both trucks and cars is believed to have been between 25 and 50.

JENNINGS, 1911-1914: *Jennings & Co., Montreal, Quebec.*

Blacksmith Arthur Jennings turned to building wagons and truck bodies primarily for Gramm. In 1914, he built a complete truck and also three fire trucks. They were the first motorized fire fighting vehicles used in the city of Montreal.

OXFORD, 1911-1913: *Woodstock Automobile Mfg. Co. Ltd., Woodstock, Ontario.*

Oxford, named after the county in which it was made, was a 1/2-ton truck. Most had express bodies and were made by the same company that built the Every-Day car (1911-1913). Both the truck and the car used the same chassis and 2-cylinder engine. At first, the engines were air-cooled, but later were water-cooled.

Only a very few cars were made, but 33 trucks were produced. Head of this enterprise was W. F. Craig who, it is believed, was an American. In 1915, the building, where the Oxford was made, was sold to R. S. Bickle. (See Bickle.)

McLAUGHLIN, 1911-16: *McLaughlin Motor Car Co., Oshawa, Ontario.*

While McLaughlin cars were largely based on American Buicks, their trucks were also basically like Buick trucks during Canadian production. One exception was an ambulance, which was designed for use in Europe during World War I.

BRANTFORD, 1911-1916: *Brantford Motor Truck Co. Ltd., Brantford, Ontario.*

The first Brantford trucks used dash-mounted radiators and offered models in the 2/3- to 1-1/2 ton range. It began the idea of removable bodies so a body could be left at a loading dock and then get another body elsewhere to keep the truck on the move.

In 1917, when Ford got into serious truck production, this company elongated Model TTs, and added chain-drive to 1-ton pickups. They were called Brant-Fords. The company remained in business several years making truck bodies and trailers.

WATSON, 1912: *Watson Carriage Co. Ltd., Ottawa, Ontario.*

This small firm in Canada's capital built light delivery trucks using Hupmobile engines and friction drive. (Hupp was building trucks in Detroit at this time.) Watson also made at least half a dozen taxis.

AMHERST 40: 1912: *Canadian Two-in-One Capital Auto Co., Amherstburg, Ontario.*

The numerical part of the Amherst 40 name denotes the horsepower output of its 4-cylinder engine. Usually considered a car, it was also easily converted into a truck. By removing the rear seats, it became a pickup with a 1,500-pound cargo capacity. After the first model was displayed at the factory, it was shipped—not driven—to Toronto. There it was exhibited at the Canadian National Exhibition. Only two more car/trucks were built before the company failed.

TATE, 1912-1914: *Tate Electric Ltd., Walkerville (now part of Windsor), Ontario.*

From this firm, which also made the Tate electric car (1912-1914), came a choice of four truck models. They ranged from 1/2-ton deliveries to 2-ton stake models. All were electrics. The light models, on an 86-inch wheelbase, were shaft driven, while the larger models used chain drive.

After the company's demise, the Chalmers Motor Car Co. eventually bought the plant for car assembly in Canada. The factory eventually went into the hands of the Chrysler Corporation of Canada. It was there where Dodge and Fargo trucks were made for many years. (See Fargo.)

SYMES 1912-1914: *Symes Motor Truck Co., Chatham, Ontario.*

Elegant looking 1/2- and 1-ton trucks were made for farm and merchant use. In addition, 3- to 5-ton trucks could be built on special order. The company also converted passenger cars into delivery trucks.

FORD, 1912 to date, *Ford Motor Company of Canada Ltd., Windsor, Ontario.*

Ford truck production in Canada began in 1912, when 80 Model Ts were made. The biggest year before World War II was 1926, when nearly 39,000 were produced. If Canadian Model T trucks were similar to Canadian cars, there were some minor differences.

The Ford Motor Company of Canada began offering dual rear wheels on certain 1929 Model AA trucks. That was one year before Ford made dual wheels a factory option in the United States.

During World War II, Ford of Canada was heavily involved in the production of defense vehicles. Among the several types was the Canadian Military Pattern, or commonly known as the CMP trucks (Fig. 1). Built from 1943 to 1945, they were designed to meet Canadian defense requirements. These trucks were built by both Ford and Chevrolet. They looked identical, except for the oval Ford logo at the top of the grille of Fords, and the bowtie logo on the Chevrolets. Each sounded different because they used their own engines. Fords had V-8s, of course. (See Chevrolet.)

REDCLIFF, 1913-1914: *Redcliff Motors Co. Ltd., Redcliff, Alberta.*

After unsuccessful attempts to get sufficient backing in Minneapolis, Minn., for greater production, E. G. Wallof, in a surprising move, came to Canada. He settled in the little town of Redcliff, Alberta. The vehicles he built there, about 15 of them, were available in 1-1/2-ton truck or bus form. He also built an ambulance equipped with carpeting and a toilet.

DREDNOT, 1913-1915: *Drednot Motor Trucks Ltd., Montreal, Quebec.*

This company built quite a variety of models for this era. Models ranged from 1- to 3-ton capacities. Two- and 4-cylinder

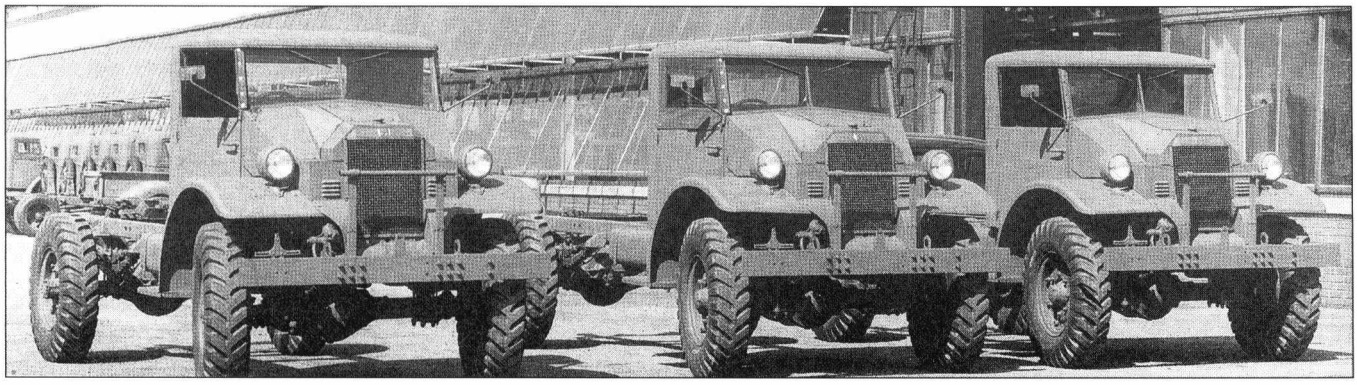


Fig. 1 – The Ford Motor Company of Canada built a the run of Army trucks during World War II. Known as CMP, for Canadian Military Pattern, they, and the look-alike Chevrolet CMPs, were admired overseas by both friend and foe.

engines were offered. In 1914, a prototype of an armored car was built, but actual production was probably never realized.

NATIONAL, 1915-1925: *National Steel Car Co., Hamilton, Ontario.*

This company was a major manufacturer of railway rolling stock in Canada's steel city. As an adjunct to its main product, it went into truck manufacturing, and played a significant role for a decade in that respect. Models were built in the 1- to 5-ton range and most used driveshafts. National developed a notable export business, with offices in England, France, and Russia.

WALTHAM, 1915: *Orillia, Ontario.*

An attempt to manufacture a line of trucks ended abruptly when fire destroyed the factory in the town of Orillia, Ontario. Only two trucks had been made and one was destroyed in the fire. There was no attempt to resume the business.

WHITE, 1916-1981: *White Motor Co. of Canada Ltd., Montreal, Quebec.*

White Motor Company of Canada was established in 1916. Its products were virtually the same as those made in the United States. However there was one outstanding exception.

Due to certain advertising restrictions in the 1930s, Labatt's Breweries decided to operate a fleet of spectacular trucks that would be noticed as they plied the highways. The outstanding stylist Count Alexis de Sakhnoffsky designed an amazing streamlined cab, and a trailer to complement it.

The cabs were built in Toronto by Smith Bros. Body Works, and fitted to White chassis. These transports certainly accomplished their purpose. It seemed there were at least 50 of these White streamliners on the roads, but actually just 10 were built. If there were ever a Classic Truck category, these White streamliners should be accepted immediately and without question.

BARTON & RUMBLE, 1917-1923: *Barton & Rumble, London, Ontario.*

Barton & Rumble made a range of trucks from 1- to 5-ton capacities. Their huge cast iron radiator shell easily identified its larger models. Lycoming engines were used.

Rumor has it that after the company went out of business in 1923, a spare truck frame was found when the building was being renovated for the next occupant. It was tossed into a pit on the property, which was filled up, and cemented over. What a memorial for the 50-some tough trucks produced by this Southwestern Ontario firm!

BEAVER, 1918-1923: *Beaver Truck Corp. Ltd., Hamilton, Ontario.*

Two-ton models were the initial trucks produced by this company. Later, the range was expanded both ways to include 1-1/2- to 3-ton models. A 1922 model was named the Beaver Bullet. At its peak, this manufacturer claimed to be Canada's biggest truck maker. Their trucks were popular on the fruit farms in the nearby Niagara region.

SEAGRAVE-LOUGHEAD, *1919-1923: Seagrave-Loughead Co. Ltd., Sarnia, Ontario.*

A strange marriage: Sarnia (located opposite Port Huron, Mich.), a munitions maker and the defunct Canadian Seagrave engine branch from Walkerville (Windsor), joined forces to make trucks. The company specialized in heavy trucks of up to 7 tons. But lighter trucks with pneumatic tires were also produced. It was their intention to make fire trucks too, but that did not materialize before the company closed its doors.

However, before that, the company made at least one truck powered by a V-8 engine. The origin of this engine, and many of its details, are unknown. Seagrave-Loughead claimed theirs was the first V-8 truck anywhere. I was skeptical, but automotive historian Walter McCall has pictures, which substantiate the fact that there was a V-8 Seagrave-Loughead truck. Was there any other V-8 truck before about 1922 or 1923? If not, then this Sarnia, Ontario, firm established a world first.

MAPLELEAF, 1919-1922: *Mapleleaf Mfg. Co. Ltd., Montreal, Quebec.*

An assembled truck, this was little more than a continuation of the Menard of Walkerville. (See Menard.) However, the range was extended upwards to 5-ton models. A heavily ribbed radiator was an identifying visual feature. Special rims were used to fit tires better able to handle snow.

GOTFREDSON, 1920-1932: *Gotfredson Truck Corp. Ltd., Walkerville (now part of Windsor), Ontario.*

Originally known as G & J for Gotfredson & Joyce Company, this was an American company. However, its Canadian

operations were definitely larger than its Yankee branch. The trucks were assembled from such components as Buda engines, Brown-Lipe and Fuller transmissions, Ross steering gear, and Timken axles.

Gotfredson had a handsome cast aluminum radiator frame. Models from 3/4-ton to 7 tons were produced, and also some 6-wheel buses.

At its zenith, in the latter 1920s, Gotfredson production reached 2,000 vehicles annually. Most sales were across Canada and in Britain. The British particularly liked the Gotfredson 12/14-passenger coaches. The American branch came to a halt in 1929, but the Canadian side continued until 1932.

In Detroit though, a reorganized company kept going as a custom operation, supplying GMC with cabs and fenders. It also became Cummins' sales and service representative for Michigan.

LEYLAND, 1920-1939; 1948-1958. Leyland Motors Ltd.: *Toronto, Ontario, Montreal, Quebec, and Vancouver, British Columbia.* (Fig. 2)

The long-established British truck maker branched into Canada in 1920. Most of its trucks had Canadian designed cabs and body panels, which made them distinctive. Over the years, Leyland trucks bore the model names of Cub, Badger, Hippo, Lynx, and Terrier. In 1925, the Lioness bus, later called the Canadian Lioness, became quite popular for long distance highway travel.

Diesel power was introduced in 1932, and in four years Leyland claimed to have captured 80 per cent of the Canadian diesel truck market. Hayes used Leyland diesel engines in some of its trucks, which resulted in the Hayes-Leyland line. (See Hayes.)

From 1939 to 1948, Leyland was out of production in Canada. Then postwar production began in Longeuil and Montreal, Quebec where the distinctive Beaver, Bison, and Bull Moose models were produced, but in smaller numbers than in the prewar years.

Canadian Car & Foundry took over production in 1956. A new line of Leyland powered trucks was produced, with International Harvester cabs. Unfortunately that effort did not succeed, so production ended in 1958. (See Cancar.)

VETERAN, 1920: *Sherbrook, Quebec.*

Started by World War I veterans, this truck manufacturer had a policy of hiring only ex-servicemen. The company built a 3-1/2-ton truck powered by a 4-cylinder Buda engine. It featured an all-steel, fully enclosed cab. It is believed that some Veteran trucks were sold to the Canadian Post Office.

INTERNATIONAL HARVESTER COMPANY OF CANADA, 1921 to date: *Chatham, Ontario.*

Although the head office was in Hamilton, where the farm machinery division was headquartered, all Canadian truck production has taken place in Chatham, Ontario. This began in 1921 when International took over the Chatham Wagon Works. For many years, the trucks built there virtually matched their models made Stateside.

However, in 1944 and 1945, there was model made for the Royal Canadian Air Force (RCAF), which was unique to Canada. It was the normal panel truck, but with a raised, glassed- in section at the back end of the roof. It was high enough for a person to stand up. It looked something like a railway caboose. These vehicles were used as mobile control towers for the RCAF in areas where the terrain was suitable for a temporary airstrip. Most of these vehicles were painted air-force blue, but some were yellow.

International's truck division became independent when the farm implement division merged with the J. I. Case firm in the early 1980s. Once on its own, the truck section reorganized.

Its previously-busy Fort Wayne, Indiana truck plant was closed. Production was concentrated in the Springfield, Ohio, and Chatham, Ontario plants.

There has been no duplication of models since then. The Chatham plant produces certain medium-duty and some heavy-duty models, which were not made in Springfield. This is a great example by a truck manufacturer of using the Canada-U.S. Auto Pact to its advantage. The Pact was an agreement between Canada and the United States to allow vehicles and their parts to be imported by both countries free of custom duties.

Production ran close to 10,000 units a year in Canada, compared with around 75,000 at Springfield. This is a rather high ratio, considering Canada has a population of less than 10

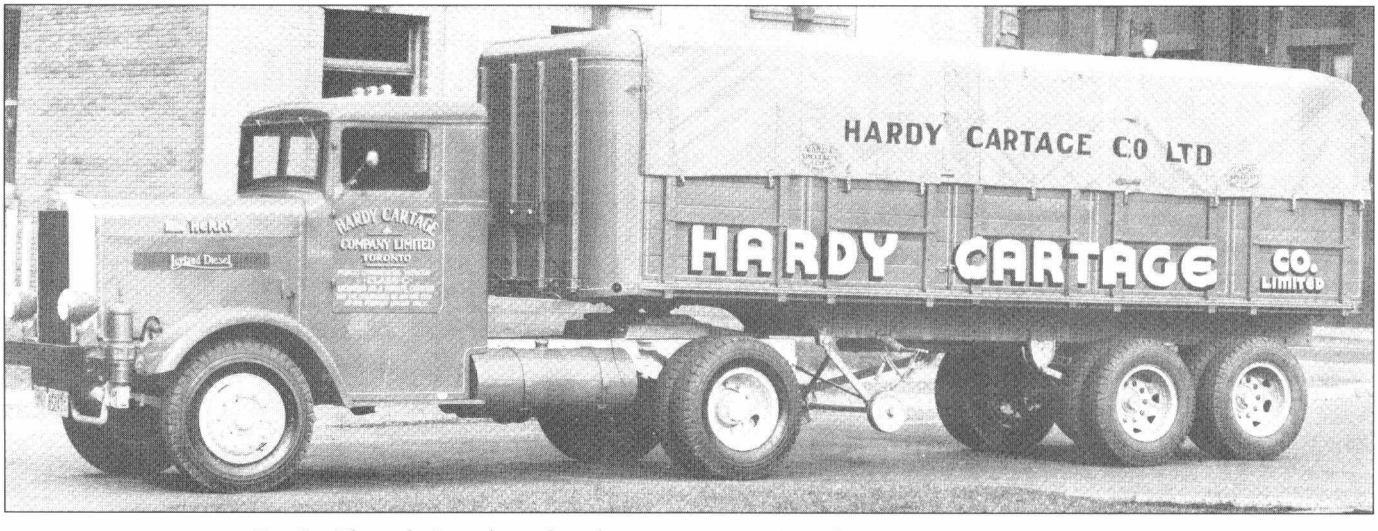


Fig. 2 – The only British truck maker to operate in Canada to any extent was Leyland.

percent of the United States. The Navistar name was used on the Chatham-made trucks, but now has reverted to International.

HARMER-KNOWLES, 1925-1926: *Toronto, Ontario.*

This truck is listed in at least two sources, but no description is given.

BROOKS, 1927-1928: *Brooks Steam Motors Co., Stratford, Ontario.*

Brooks is the best-known Canadian made steam car (1923-1929). Not well known is the fact that Brooks made a steam-powered bus. It was capable of building up to 750 lbs. per sq. in. pressure in a mere 40 seconds. Fully loaded, this vehicle could reach a speed of 60 mph.

Only one Brooks bus was completed, and it featured an aluminum parlor car body, and 4-wheel air brakes. This bus was in use until 1937, although it had been converted to gasoline power in its later years.

At the Brooks factory in Buffalo, an ACF (of Detroit) bus was converted to steam power, but nothing more happened with that endeavor.

HAYES, 1928-1975: *Hayes Manufacturing Co. Ltd., Vancouver, British Columbia.* (Fig. 3).

Hayes-Anderson was the original name of one of Canada's longest running, independent truck makers. Hayes became a major hauler in the B.C. logging business, with models ranging up to 15-tons. But they carried loads of 50 tons or more. A variety of diesel engines, like Continental, Hercules, and Leyland, powered Hayes trucks.

In the 1930s, probably inspired by the Doane truck of San Francisco, Hayes offered a series of trucks with dropped frames. Those low-riders were a hit for dockside and warehouse work. The firm also built buses and sold some to Greyhound Lines.

In 1936 Hayes became the British Columbia distributor for Leyland, and a close relationship with Leyland followed. Hayes used Leyland diesel engines in some of their trucks, which were called Hayes-Leyland. (See Leyland.)

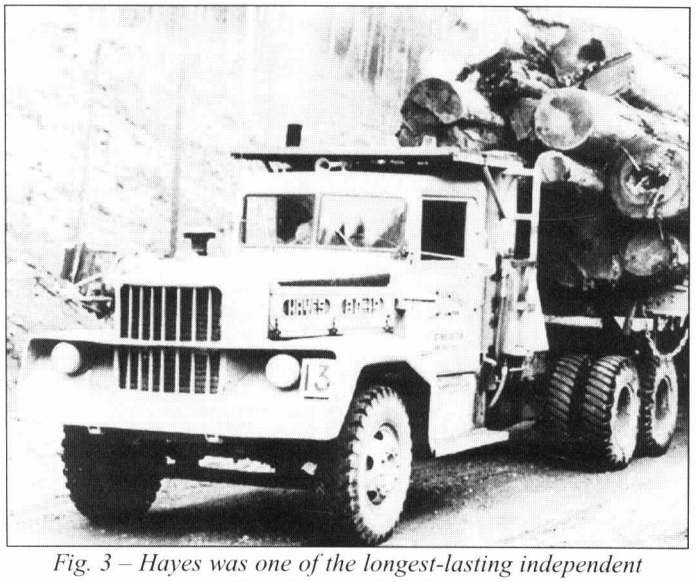


Fig. 3 – Hayes was one of the longest-lasting independent Canadian truck makers.

After World War II, Hayes added highway tractors to its range. These used Caterpillar, Cummins, Detroit Diesel, and Rolls-Royce engines. The biggest Hayes truck, model HDX 1000, used a V-12 Detroit Diesel coupled to an Allison 5-speed transmission.

Bus production was discontinued in 1947, but the highway tractors market proved to be quite successful.

Mack Trucks bought a two-thirds interest in 1969. Then in 1974, the company was sold to a branch of Pacific Car & Foundry of Seattle. The next year, the owner shut down the Hayes operation. But many Hayes trucks remained in constant use for years after. Hayes transports were seen in long-distance service at least as late as the early 1990s.

WESTERN FLYER, later FLYER, 1930 to date: *Western Flyer Coach Co. later Flyer Industries Ltd., Winnipeg, Manitoba.*

Western Flyer, now known just as Flyer, made bus bodies before making complete highway coaches. Models were the Standard and Canuck. The Bruck (a combination bus and truck) was quite a different model. The front portion was a bus so it had seats for passengers, but a rear enclosed compartment was made for carrying cargo. Flyer's model 700, a transit bus, was introduced in 1968; a trolley bus version was also made.

Flyer made bus shells for AM General of South Bend, Indiana, and later licensed AM General to build Flyer buses in the United States. AM General began as a subsidiary of American Motors Corporation, but became an independent company before Chrysler bought AMC. AM General is best known as the company that developed and manufactured the Hummer. Flyer was later taken over by the Manitoba government.

In 1987, the company was reorganized as New Flyer Industries. A redesigned New Flyer line of buses used diesel, electric, or compressed natural gas power.

DODGE, 1930 to date: *Chrysler Corporation of Canada Ltd., Windsor, Ontario.*

During some of the early years of Dodge truck production, Canadian built cabs were not quite identical to the American cabs. Fargo trucks also used these Canadian cabs. (See Fargo.)

FARGO, 1936-1972: *Chrysler Corporation of Canada Ltd., Windsor, Ontario.*

Chrysler organized its dealer network in Canada into two divisions. Plymouth and Chrysler cars were sold together, as were the Dodge and DeSoto brands. The Dodge-DeSoto dealers sold Dodge trucks. To make a level selling field, a truck had to be available for the Plymouth-Chrysler team, thus, beginning with the 1936 model year, Fargo trucks were introduced for them to sell. (Fig. 4)

With slight visual differences, Fargos were really Dodges, and available in all the same models as Dodge. In some of the early years, Canadian-built cabs were slightly different from the American built ones. (See Dodge.) The light-duty 1939-41 Fargos looked the same as the American-made Plymouth trucks. Beginning with the 1948 models, Fargos looked identical to Dodges except for the nameplates.

As a matter of interest, DeSoto came to the end of the road in Canada with the 1960 models. The 1961 models were neither made nor sold in Canada. Beginning with the 1961 model year,

Fig. 4 – The Fargo, developed for Chrysler-Plymouth dealers in Canada to sell, was introduced in 1935 as a 1936 model.

Dodge dealers were given Chryslers to sell, in competition with the established Plymouth-Chrysler dealers.

The Fargo nameplate last appeared in 1972. Beginning with the 1973 models, Plymouth-Chrysler dealers sold Dodge trucks in competition with the Dodge-Chrysler dealers.

CHEVROLET, (ca) 1935-1952: *General Motors Products of Canada Ltd., Oshawa, Ontario.*

From the mid 1930s, Chevrolet trucks in Canada offered a series of medium- and heavy-duty trucks under the model name of Maple Leaf. They differed from the normal Chevrolet trucks because they had sturdier chassis and bigger, more powerful GMC engines. The only external difference was the Maple Leaf nameplate on each side of the hood. These models gave Chevrolet truck dealers in Canada a line with similar specifications to the trucks GMC dealers were offering.

The Sanford Evans Truck Data Book for 1953-54 states, "Maple Leaf Name Plate on Chevrolet 1700 Series Trucks cancelled in 1952." Note the difference in the names between this Maple Leaf and the earlier Mapleleaf. (See Mapleleaf.)

During World War II, Chevrolet produced a good number of Canadian Military Pattern (CMP) trucks, which looked identical to CMP Fords. They differed from Fords by having the Chevrolet bowtie emblem on the grille, and using Chevrolet's stove-bolt six engines. (See Ford.)

The CMP trucks saw service in many battle areas throughout the world. One of these CMP Chevrolets is in the World War II Victory Museum in Auburn, Indiana. It has German insignia on it, indicating its capture and use by Germans during the war.

MCI, 1937 to date: *Fort Garry Motor Body Co., later Motor Coach Industries, Winnipeg, Manitoba.*

In 1932, Harry Zoltok and D. F. Sicinski set up a business to make truck and bus bodies. Fort Garry (the original name of the city of Winnipeg) built its first complete bus in 1938. Looking like General Motors' Yellow Coach and using a front mounted International engine, it was designed to better handle the special needs of western Canada, i.e. gravel roads and severe winters.

The company name was changed in 1942 to Motor Coach Industries. After the war, the company began selling its rear-engined Courier buses to Greyhound Bus Lines.

In 1950, Greyhound Lines bought MCI and expanded the plant to meet the demand for more buses. Seven years later Greyhound Lines of Canada was established, and it became the owner of MCI and its Canadian franchises.

In 1959, MCI began producing a new style bus, called the Challenger. It was not a separate make, as is sometimes thought; it was an MCI model.

One outstanding model was the MC-6, of which only 100 were made. It was the only MCI model to use a V-12 motor. As an experiment, it had a width of 102 inches—six inches wider than most jurisdictions allow. MCI hoped that this bus would change the rules, but it did not. Of course, those made were used only in areas where they were legal.

In 1963, a branch assembly plant was established in Pembina, N.D. Using shells supplied from Winnipeg, it completes the buses, and supplies the U.S. and foreign markets. Winnipeg fills Canadian orders.

SICARD, 1938-1968: *Sicard Inc., Ste. Therese, Quebec.*

Specializing in municipal vehicles, Sicard started in 1927 by mounting a snow blower on an FWD chassis. In 1938, the company started building its own chassis, for a snow hauling and unloading vehicle. Not a dump truck, it unloaded the snow by means of a large blade at the front of its box, which a cable pulled to the back and the snow fell out the back end.

Various types of refuse trucks were built and street cleaners as well. An American branch was established in Watertown, N.Y. Highway truck production began in 1958. Sicard also built Kenworth and KW-Dart trucks, many bearing the Sicard name.

Pacific Car & Foundry of Seattle bought Sicard in 1967. Then, typical of Paccar, the company was closed down about a year later. Total Sicard production amounted to around 2,000 trucks.

THIBAULT, 1938-1990: *Pierre Thibault (Canada) Ltd., Pierreville, Quebec.*

Charles Thibault began making hand-drawn fire apparatus as early as 1908. Later, he made horse-drawn fire fighting equipment. Charles' son, Pierre, took over the company in 1938. That was when its first complete fire truck was built. It was sold under the name Richelieu. An airport crash truck was developed during World War II.

After the war, a new fire truck was developed and sold as a Thibault. (Fig. 5) Detroit Diesel engines were normally used in conjunction with Ford, GMC, and International chassis. Enclosed cabs were custom-built. Tibocar pumpers were standard equipment for Tibault fire trucks.

Its range of trucks also included aerial ladders, foam trucks and salvage vehicles. (See also Pierreville.) A variety of truck chassis were used. They included Fargo and Mercury. Walter McCall, expert authority on fire apparatus, remarks, "You can't get much more Canadian than Thibault-Fargo and Thibault-Mercury. (See Fargo, and Mercury.)

SUNNYSIDE, 1940-1945: *Sunnyside Auto Body Works, Calgary, Alberta.*

Very little information is available about this company and its products. It is known, though, that it made bus bodies prior to

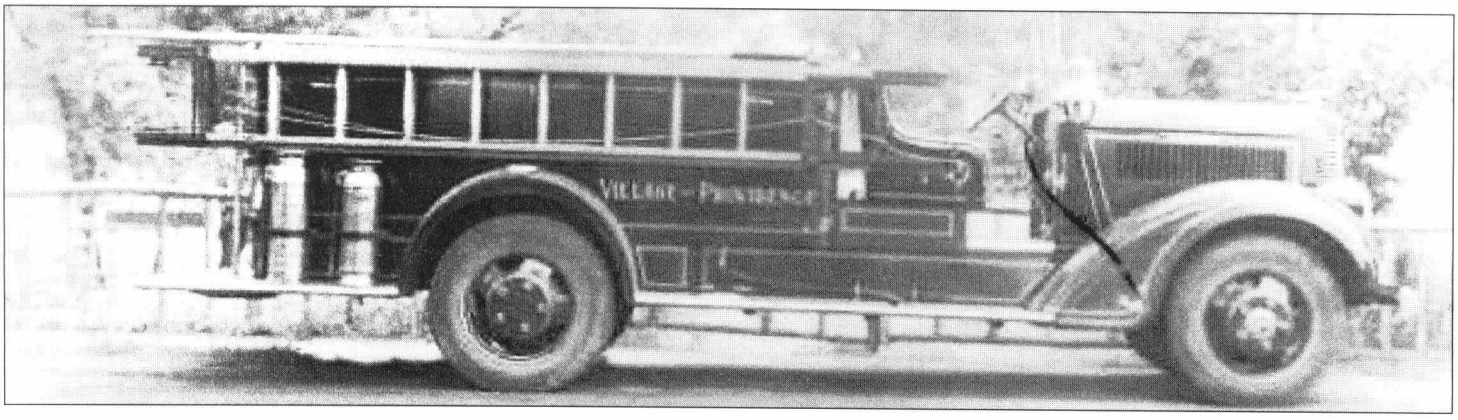


Fig. 5 – Thibault fire apparatus mounted on a Fargo chassis is about as all-Canadian as a truck can be.

1940. That year, however, it built its own complete bus, and continued bus production in a small way till 1945. After that, it stayed in business by building truck bodies.

PONTIAC 1940-1958: *General Motors of Canada Ltd., Oshawa, Ontario.*

Pontiac entered the commercial market so its dealers could sell sedan deliveries just as Chevrolet dealers were doing in Canada. The Pontiac version was basically the Chevrolet model but with a Pontiac six-cylinder engine (1941 to 1954) and typical Pontiac trim. This vehicle continued in production through to the 1958 model. For 1955, and to the end, the base engine was a GMC 261 cid six, but the 265 cid V-8 was optional.

During the years 1949 to 1953, when Pontiac sedan deliveries were also produced in the United States, the smaller Chevy based models remained in production in Canada. Interestingly, when the American Pontiac sedan delivery production ended in 1953, the Canadian version had its peak year of production. A total of 2,038 were built that year. Altogether, 12,792 Canadian Pontiac sedan deliveries were produced.

CANCAR, 1945-1962: *Canadian Car & Foundry Co. Ltd., Fort William (now Thunder Bay), Ontario, later Montreal, Quebec.*

Originally, Cancar was a producer of railway rolling stock. However, it made bus bodies for chassis of the British firms of AEC and Leyland prior to World War II. In 1945, it made a deal with ACF-Brill, of Philadelphia, to produce complete Brill IC-41 highway coaches. Cancar's expertise with aluminum was helpful to Brill in this working arrangement.

A 44-passenger trolley bus was introduced and offered in 1946. It was a modified version the ACF-Brill. Gasoline power was discarded for modified AEC flat 6-cylinder diesel power. This helped Cancar to build a reliable reputation and a successful business.

In 1956, Cancar dropped the Brill name, because that company had gone out of business three years earlier in the U.S. Also in 1956, Cancar expanded into making trucks. It took over the production of Leyland trucks, but that endeavor ended shortly in 1958. (See Leyland.)

About that time, Cancar also began using air-suspension in its buses. A squarish looking 43- and 51-passenger transit bus was introduced in 1960. It was made in Montreal, where the company had moved. This model was not a success and Cancar production came to an end in 1962, after only 138 of that model had been made. But altogether, about 4,400 Cancar buses and 1,100 trolley buses were built in 17 years.

MERCURY, 1946-1967: *Ford Motor Company of Canada Ltd., Windsor, later Oakville, Ontario* (Fig. 6).

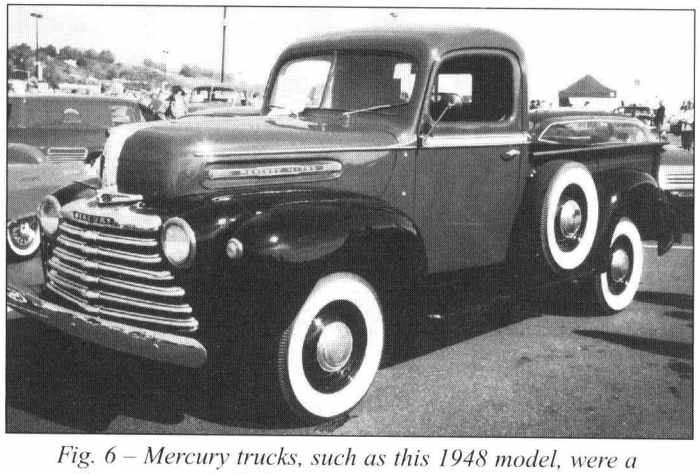


Fig. 6 – Mercury trucks, such as this 1948 model, were a Canadian vehicle for Mercury-Lincoln dealers to sell.

When World War II ended, Ford in Canada revised its dealer network. Instead of just Ford dealers, who also sold Mercury and some imported Lincolns, a Mercury-Lincoln line of dealers was established. Because Mercury was a larger car than Ford, a Ford-based Mercury was produced so Mercury dealers had a car to sell in the Ford size and price class. To distinguish the two Mercurys, the Ford-based model was called Mercury 114 and the regular model Mercury 118. The numbers were their respective wheelbases in inches. With the redesigned 1949 models, the Mercury 114 name was changed, to make it less confusing, to Meteor. (See Meteor.)

To level the other side of the dealer playing field, a Mercury-based car called Monarch was concocted, so Ford dealers had a car to sell in the true Mercury class. That equalized the car situation, except Mercury dealers had no trucks to sell. This was quickly corrected when a truck line was devised for them to handle. It was a complete line of Mercury trucks.

They were really Ford trucks with different grilles and nameplates, but otherwise the same. There was a Mercury truck model to match each Ford truck model.

The 1946-47 Mercury trucks had a very different grille. It consisted of broad horizontal chrome bars unlike Ford's ivory painted vertical bars. With the redesigned 1948 models, the grille difference was much less. Mercury had four horizontal louver-like chrome bars instead of Ford's five horizontal flat fronted bars.

From 1951 on, Mercury trucks were virtually identical in appearance to Ford trucks. There was a difference in model codes. All Mercury model codes had the prefix "M" instead of "F" for the Fords.

Because some Ford trucks were not made in Canada, they had to be imported from the United States. The Mercury versions of these imports were shipped to Canada partially finished, and then the Mercury details were added upon arrival. The last Mercury trucks were built in 1967. After that, Mercury-Lincoln-Meteor dealers sold Ford trucks.

PACIFIC, 1947-1991: *Pacific Truck & Trailer Ltd., North Vancouver, British Columbia.*

Vic Barclay, Mac Billingsley, and Claud Thick, former executives of the Hayes company, began Pacific. Not surprisingly, these B.C. men started by making logging trucks. Pacific's first truck was sold to Bowaters logging operation in Newfoundland. Since Newfoundland was not part of Canada until 1949, this truck was really exported.

Later, Pacific extended its range to include construction and oil industry vehicles. Fire engines were also built, as well as highway tractors. Cummins and Detroit Diesel engines were used.

International Harvester took over the company in 1970, and it became a wholly owned subsidiary and later sold the company to Inchcape Berhad of Singapore. Pacific Truck & Trailer is still in business as a wholesale distributor of truck parts, but truck production ended in 1991.

PREVOST, 1945 to date: *Prevost Car Inc., Ste. Claire, Quebec.*

Eugene Prevost set up a woodworking company is 1924. He specialized in school furniture and church pews. In the 1930s, he was asked to supply wooden bus bodies for Reo truck chassis. Prevost made its first bus, an all-metal model, in 1945. The company was early in the industry to use stainless steel sides, and air suspension.

The 1967 Champion model featured air-conditioning, three axles, and a split-level design. The 1971 Prestige model was possibly the first North American bus to have 42-inch high windows that curved into the roof. Another model, the Le Mirage, catered to the sightseeing and charter business. Prevost claimed that "There just isn't a poor seat on the Le Mirage" and you can "Sit anywhere, see everything."

Most Prevosts have been 96-inch wide models. However, they did build some 102-inch versions.

In 1995 Volvo of Sweden with Henly's Group of Great Britain bought Prevost. Volvo is the original company, builder of trucks and heavy-duty construction equipment. (Volvo Cars is owned by the Ford Motor Company, so has no connection with the original company.) In 2003, Volvo took over full ownership of Prevost. This change in ownership has led to significant modernization and efficient production procedures.

From personal experience, the author can say without hesitation that current Prevost buses are superior. They are the best riding and most comfortable of North American-built highway coaches.

Besides buses, Prevost supplies shells for custom-built, prestige motor homes. The largest supplier of such Prevost conversions is the Marathon firm in Oregon. Prices of new models can run as high as $2,000,000.

Prevost has now become North America's second largest bus manufacturer—second only to MCI. (See MCI.)

METEOR, 1952-1960: *Ford Motor Company of Canada Ltd., Windsor, later Oakville, Ontario.*

With the redesigned 1952 Ford products, Meteor began offering a Sedan Delivery. It remained in production through the 1960 model year. In addition, there was a Meteor Ranchero to match the Ford Ranchero. Only a few of these were made in the 1957 and 1958 model years, but none for 1959.

KAISER-JEEP, 1955-1970: *Kaiser-Jeep Corporation of Canada, Windsor, Ontario.*

When Kaiser stopped producing Kaiser and Willys cars in the United States, the company expanded its Jeep division, and set up a small plant in Windsor, Ontario. The popular off-road CJ model was made there, along with the Gladiator pickup truck.

In the latter 1960s the Windsor plant produced nearly 3,000 Jeep trucks a year. Production continued until American Motors Corporation bought Kaiser-Jeep in early1970.

KING-SEAGRAVE, 1956-1984: *King-Seagrave Ltd., Woodstock, Ontario.*

V. B. King, nephew of R. S. Bickle, took over the defunct Bickle-Seagrave fire apparatus company to continue producing such equipment. (See Bickle.)

An innovative model was its 1975 Mini Pumper. On a light truck chassis, usually with four-wheel-drive, it carried a 200 imperial gallon water tank. A Hale pump was included which was driven by a power take-off from the truck's transmission.

There were many advantages this truck offered. Its cost was about one-third the price of a conventional pumper. It had better maneuverability in heavy traffic, meaning that it arrived sooner at a fire scene. Its lower height allowed it to get into places, such as parking garages, which were inaccessible to normal fire trucks. Though it would never replace conventional fire trucks, it seemed to have a very useful role. But, for some reason, fire departments ignored it. Only 20 had been sold in five years.

King-Seagrave hoped that there would be a good export market in the United States, but the Canada-US Auto Pact did not apply to the type of vehicles that it produced. The demise of King-Seagrave in 1994 brought an end to the Bickle family dynasty that had lasted 78 years.

PENINSULA, 1961-1962: *Switson Industries Ltd. Peninsula Truck Division, Welland, Ontario.*

Strange as it may seem, a vacuum cleaner manufacturer branched out—way out—to make trucks. On- and off-road trucks were assembled, using Cummins, General Motors, or Rolls-Royce diesel engines, Fuller transmissions, and Timken axles. Styling for these cab-over-engine trucks was very plain and unattractive.

Situated in the Niagara peninsula – hence the name – this company was also distributor for Diamond T and Berliet trucks. They sold no Berliets, so the demonstrators were shipped back to France. (Perhaps the would-be truck salesmen returned to selling vacuum cleaners.) Peninsula production lasted for about a year and amounted to only ten or a dozen units.

TOR TRUCK, 1963-date: *TOR Truck Corporation, Mississauga, Ontario.*

This manufacturer builds heavy-duty snowplows and snow blowers. However it specializes in the construction of huge trucks capable of carrying large cranes. Distinctive of these vehicles is the fact that they have up to six or seven axles. Most, or all, wheels are both powered and steerable. So, despite their size, TOR Trucks are remarkably maneuverable. Amazingly, these huge trucks are built by a company which has just 16 employees.

The company is a wholly owned subsidiary of the R.P.M. Group of Quebec City, and it exports to many countries throughout the world. A service center was established in 1999 at Mechanicsburg, Pennsylvania.

WESTERN STAR, 1968 to date: *Western Star Trucks, Kelowna, British Columbia.*

Starting out as an adjunct of White trucks, a new line of heavy-duty, premium trucks was engineered at White's headquarters in Ohio. However, production took place in a 250,000 sq. ft. area plant in Kelowna, British Columbia.

Originally, Western Star was designed for mining, logging, oil and gas exploration, and other rugged applications. But in the 1970s, it quickly became a hit as a highway tractor as well. Catering to driver comfort and convenience paid off. With roomy and luxurious cabs and sleepers, Western Star became a popular Class 8 truck.

Another factor, which has made Western Star so desirable, is its emphasis on customization. A wide variety of engines, transmissions, axles, and chassis are only a small part of nearly 8,000 options offered.

As the company's fortunes grew, Western Star acquired other manufacturers. In the 1990s it bought Orion, the Toronto bus-maker. (See Orion.)

Then in 2002, Western Star truck production was transferred to Portland, Oregon. So, the rest is history—American history.

PIERREVILLE, 1969-1997: *Pierreville Fire engines Ltd., Pierreville, Quebec.*

After Pierre Thibault died (See Thibault), five of his nine sons formed a new company, and it successfully competed with their father's firm of fire truck manufacturing. They built about 110 units a year, and offered a full range of fire fighting trucks. A variety of chassis were used, such as Ford, GMC, International, Kenworth, Mack, and Pemfab.

Many Pierrevilles were exported to the United States and the United Kingdom, with additional sales in Latin America and the Caribbean.

TEREX, 1969-1981: *General Motors of Canada Ltd., London, Ontario.*

General Motors shifted production of Terex earth-moving vehicles to part of the GM diesel locomotive plant in London, Ontario. A variety of sizes and types of models was produced solely in Canada. By 1975, production of the Terex model 33-15 had totaled 60 units.

By far, the most impressive was the Titan model 33-19. This monster was a 350-ton earthmover, which had a 3,300-hp V-16 diesel engine with a displacement of 10,320 cubic inches, or 169.5 liters. Supplied by GM's locomotive division, it developed power for a generator, which in turn drove four traction motors—one for each of the rear sets of dual wheels.

The tires were 40.00X57 and fit 29-inch rims. These tubeless tires were over 11 feet in outside diameter, and weighed 3-1/2 tons each. Front tread was 21-1/2 feet wide. That made wide-track Pontiacs look pretty puny. The box measured 36' 8" long, 23' 6" wide, and 7' 6" deep.

The cab floor was over 14 feet above the ground. For the operator, it must have felt like driving a two-story house from the upstairs balcony. This Terex Titan was the world's biggest truck.

After the Titan was on public display in front of the factory, it was dismantled, loaded onto eight railway flatcars and shipped to California's Eagle Mountain Mine. There it was re-assembled and used by the Kaiser Steel Corp. Only one was built, because a second order was never received.

RUBBER RAILWAY, 1970-(ca) 1974: *Rubber Railway Co., Cambridge, Ontario.* (Fig. 7).

This was a big, heavy-duty truck which was about as offbeat as its name. The cab looked like a big, customized International. Steering this 4-axle brute was by means of two hydraulic cylinders connected to the front and rear frame sections. The frame was hinged in the middle with two axles in front and two at the back. Turning the steering wheel operated the cylinders, which turned both frame sections. It had both front and back steering—not 4-wheel steering, because it had 16 wheels. But the effect was similar.

Most of these RRCs, as they were often called, carried mobile cement mixing equipment. In its first five years of production, about 100 had been built.

SCOT, 1972-1979: *Atlantic Truck Mfg. Co. Ltd., Debert, Nova Scotia.*

This aggressive truck maker was part of the Irving Group, which owned many different businesses in Atlantic Canada. Irving gasoline is probably the best known.

Early Scot trucks used Ford Louisville cabs and Cummins diesel engines. Later, COE cabs of their own design were used for garbage hauling, and aircraft refueling work. Fire truck chassis were also made.

In 1976, highway tractor production began. In its first five years, production reached about 1,000 trucks. Scots were not an uncommon sight in Canada's Atlantic provinces, nor in the neighboring New England states.

Production ended when it became a money-losing business due to the low value of the Canadian dollar in the

Fig. 7 – Rubber Railway's steering system was hinged in the middle so that the front and rear sections could be steered in the desired direction.

1970s. It is reported that 70 per cent of the Scot's components were imported from the United States.

ORION, 1977 to date: *Orion Bus Industries, formerly Ontario Bus & Truck Industries Ltd., Mississauga, Ontario.*

Arold Wollschlaeger was a transport officer in the German army on the Russian front during World War II. He emigrated to Canada in 1955. After 10 years, he formed Ontario Bus & Truck Industries which later assembled minibuses for Toronto's Dial-A-Bus service.

When Flxible dropped out of the compact urban bus market, Wollschlaeger wanted to jump into the gap. So, he designed and developed a suitable bus, but could not get conventional financing, even though he had 63 Canadian and several hundred American orders. He overcame this problem by selling U.S. and foreign rights of his design to the Transportation Manufacturing Co. of Roswell, N.M., which is owned by Greyhound.

Finally, Orion production got underway in 1977 for a model just 30 feet long. With a turning radius of only 28 feet, its agility made it a hit. Other attractive features included economical fuel consumption, full air ride, improved driver and passenger visibility, simple placement of lower body panels, seven safety exits, two roof hatches for better ventilation, and a front entrance adaptable for a wheel chair lift. Wollschlaeger died in 1979, but the company continued.

In early 1980, the Ottawa-Carleton Regional Transportation Commission bought Orion's 100th bus, which was the 28th in their fleet. Orion's arrangement made with the Transportation Manufacturing Co. restricts Orion sales to just Canada. The same bus is made in the U.S. under the name Citycruiser, which is hailed as an all-American bus.

AMERTECH, 1989-1993: *Belgium Standard, Woodstock, Ontario.*

Belgium Standard of Waterloo, Ont. took over the defunct King-Seagrave facilities in Woodstock, Ont. (See King-Seagrave.) Its main product was crash trucks for the United States Army. However, it did build a half dozen or so fire trucks before going out of business in 1995.

NOVA BUS, 1993 to date: *Nova Bus, Saint Eustache, Quebec.*

This is the latest stage in a series of Canadian-built buses dating back to the Rapid Transit Series developed by General Motors Diesel Division in the 1970s. This division was bought by MCI (see MCI) in 1987, and then reorganized in 1993. That was when Nova Bus came into being. It is a wholly owned subsidiary of Prevost. (See Prevost.)

The company continued making the Classic model till 1997. Due to stiff competition, Nova Bus closed assembly plants in Roswell, New Mexico, and Niskayuna, New York, in 2002. Since then it has concentrated on the Canadian market.

Lately the company has produced the LFS model, which is a low-floor and wheelchair-accessible 40-foot urban bus. In addition, Nova Bus offers a 40-foot Suburban model with single or two-door styles, and a 40-foot Shuttle bus.

A green bus is offered. It is a hybrid electric bus, which uses an Allison hybrid drive system.

About the time this article appears, Nova Bus expects to have a 60-foot articulated bus available.

Nova Bus is very proud of the fact that is the first North American urban bus manufacturer to achieve company-wide ISO 9001 and ISO 14001 certification.

STERLING, 1998 to date: *Sterling Truck Corporation, St. Thomas, Ontario.*

When Ford decided to discontinue its heavy truck lines, it sold that portion of the company to Freightliner. With little change, other than engines and a new name, Sterling, Freightliner began making these trucks at its St. Thomas plant. The plant had already been making Freightliner trucks since 1992.

But in preparation for Sterling production, a 40 per cent plant expansion was made. That, and the retooling cost $60 million Canadian. Production can reach as high as 86 trucks per day. Sterling trucks are sold by more than 340 dealers throughout Canada and the United States. Right-hand drive models are shipped to Australia and New Zealand.

The Sterling plant was proud to be at the top of the 2003 J. D. Power & Associates medium-duty truck customer satisfaction study. This also brings honor to the whole Canadian truck manufacturing industry.

Conclusion

Not included in this review are well-known American brands built continually, or sporadically, in Canada. Models were virtually the same as their parental counterparts, although there may have been a few minor Canada-only variations. GMC, Mack, Freightliner, etc. are some of the most common American examples.

Stewart had an assembly plant in Fort Erie, Ontario, across from its home base in Buffalo, N.Y. There was a time when Stewart sold more trucks per capita in Canada than in the United States. Other American-brand trucks built in Canada include Gramm in Walkerville, Denby in Chatham, Ruggles in London, Reo in St. Catharines, Graham and Rugby in Toronto.

If I have omitted any Canadian commercial vehicles, please contact the author, through the *Automotive History Review*, with adequately documented information.

Carrossier van Rijswijk & Zoon of Holland

by Frans Vrijaldenhoven

The Dutch coachbuilder Carrossienfabriek B. T. van Rijswijk & Zoon was founded in 1903, with its first home at Wagenstraat 20a in The Hague. But the street proved too narrow for easy entrance and exit of big cars with their newly-built bodies, so the company moved to van Alphenstraat 61 (Fig. 1) in Voorburg, a small village next to Huis ten Bosch, a residence of the Dutch royal family. Two "zoons" were associated with B.T. in the business, P.M. and his slightly younger brother, Leonardus (Fig. 2).

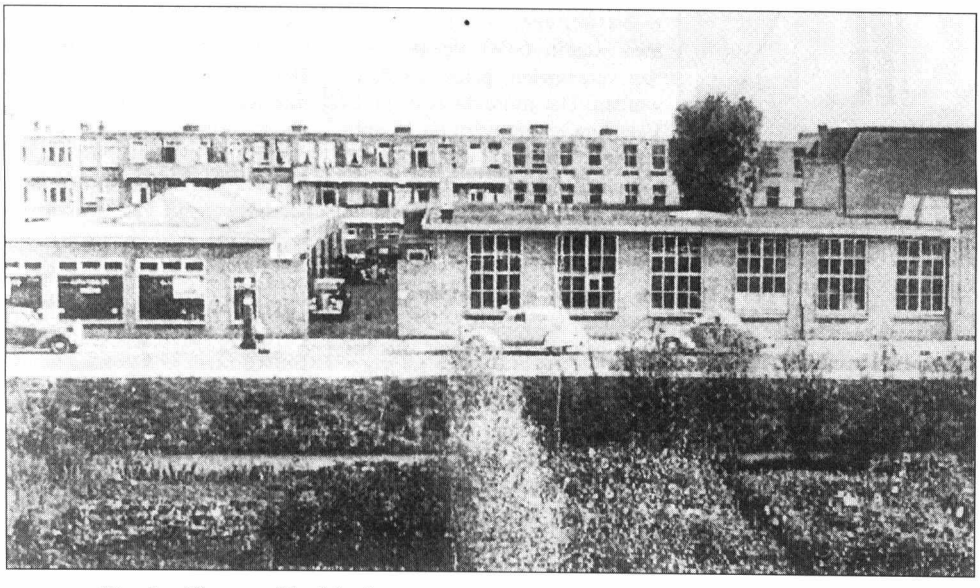


Fig. 1 – The coachbuilder's premises on van Alphenstraat, Voorburg, c. 1938.

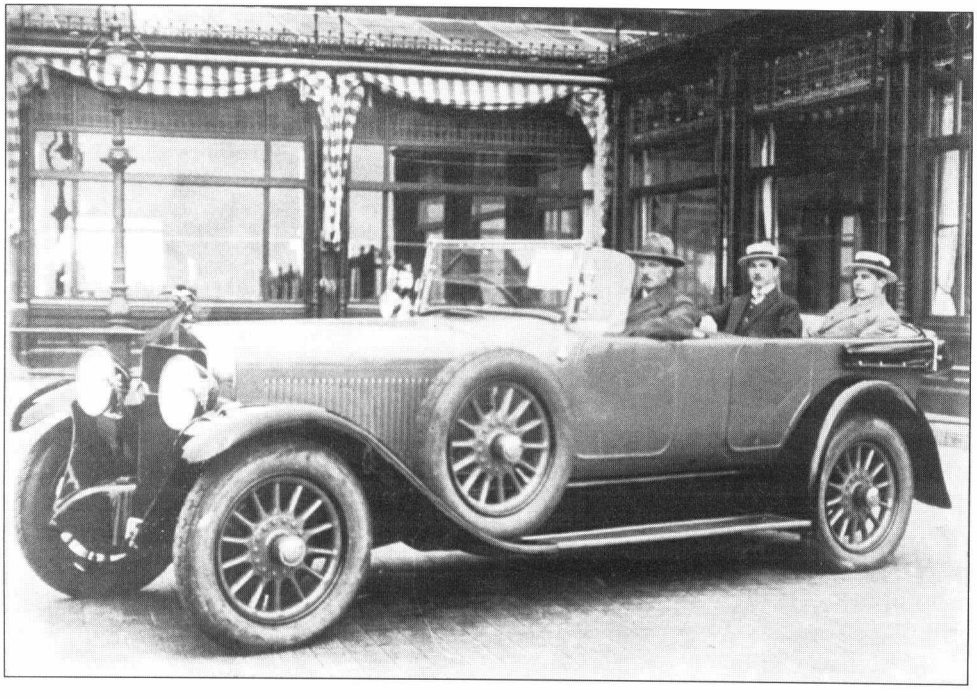


Fig. 2 – Van Rijswijk and one of his sons, in an Isotta Fraschini.

I recall very well visiting the premises when I was a boy in the 1930s. My father was a broker of cars who had many conversations with his customers about coach-built convertible bodies, and he often took me along on his visits to van Alphenstraat 61. In the early years, they repaired carriages after accidents. My first impression was that they were still manufacturing all kinds of leather accessories and old-fashioned horse-drawn carriages. I can see it now, the blacksmith and his fire, painters with brushes, workmen with hammers and screwdrivers, the sound of sewing machines humming and above all the perfume of metal, leather, and paint – so unlike ordinary car shops to me (Fig. 3).

When my father and I entered the drawing room, we saw large technical drawings about a body that he had ordered for a customer. Such a sketch was a real work of art. They call them "designers" today, but then there were no schools or other institutions where a young man could get training to build bodies. They started as apprentices in a coachbuilder's shop and when they showed that they had a particular "feeling," there was the possibility of promotion to "designer."

After we had visited the drawing room, I sometimes climbed the steep staircase to a loft, filled with light and air where beyond a trapdoor was stored all kinds of wood, scaffoldings with sliced tree trunks from all over the world. You would have thought you were in a tropical forest because all these trees came from Africa and America, as well as ash and elm from the southern part of the Netherlands. The wood from America was seasoned, compared with that of the Netherlands which required five years to dry. Another staircase led to the second floor where the most exclusive wood was stored, such as mahogany, maple, and rosewood. When these were taken downstairs, large machines sawed these into smaller shapes used for dashboards and window surrounds.

Meanwhile, the blacksmiths were cutting metal parts and bending them into shape, or welding them, according to the dimensions specified. To prevent rattles, they placed rubber strips

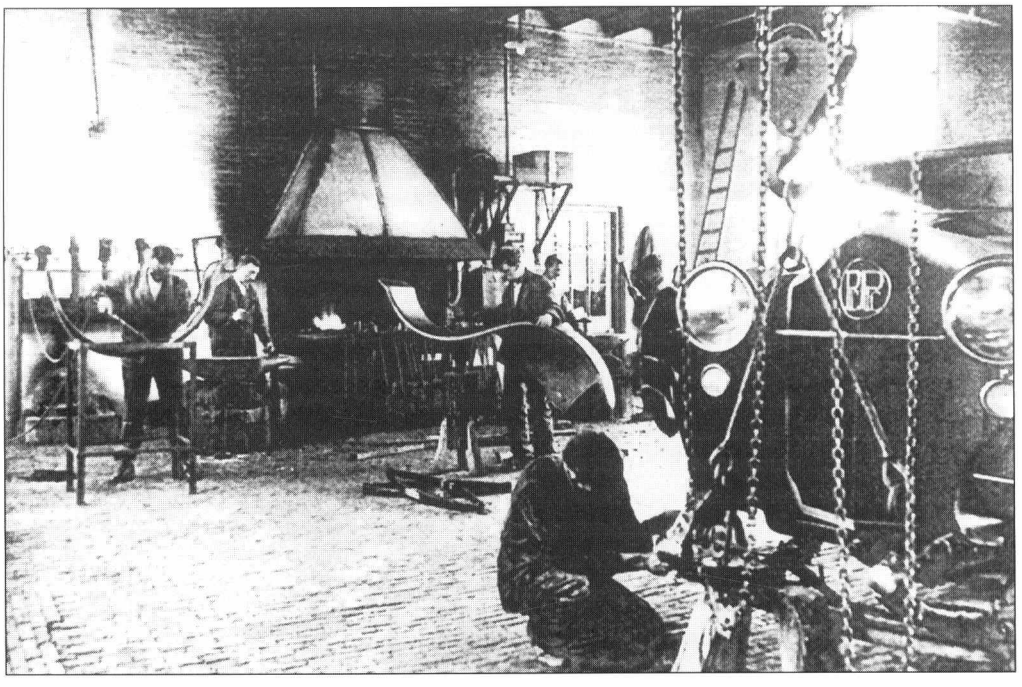
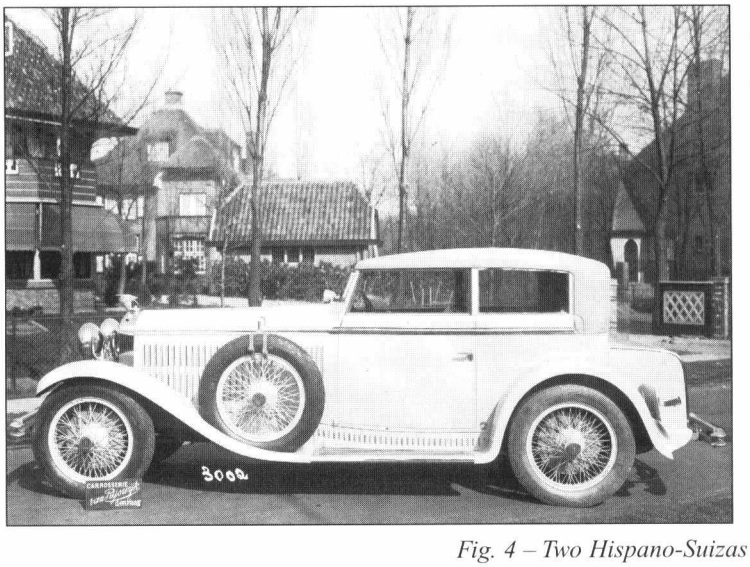


Fig. 3 – The coachbuilder's workshop in the 1920s, a Swiss Picard-Pictet in the foreground, probably in for repairs.

between the joints. Finally, when every part was finished by the carpenters and blacksmiths, all the parts are assembled together including the fenders and running boards. The doors were hung on their hinges. At that moment, the body was ready for the paint shop. This room was hermetically sealed, temperature-controlled, and, of course, not the slightest speck of dust. In the paint shop, primer would be applied to the body seven times, then sandpapered, twice painted, sandpapered again, and painted four more times by the most skilled workmen as Mr. van Rijswijk couldn't stand hearing any complaints.

Off to the side was the upholstery shop, wonderful smells from skins in all colors you could imagine. The skins would be placed over wooden models and cut in the



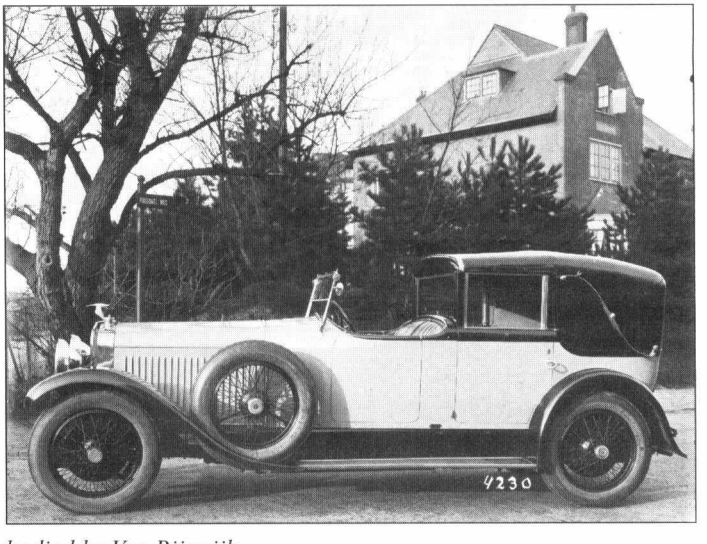


Fig. 4 – Two Hispano-Suizas bodied by Van Rijswijk,

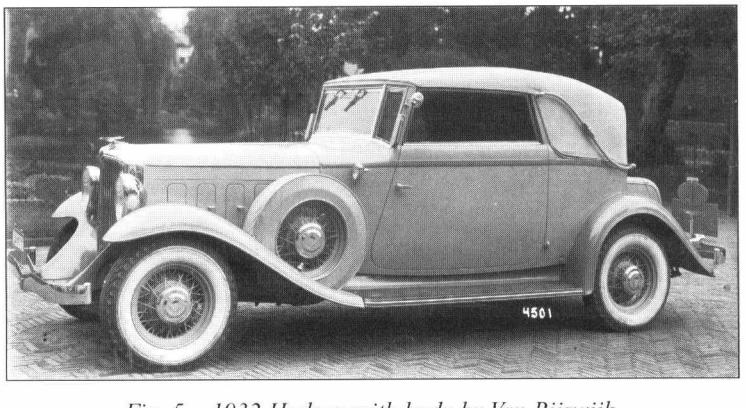


Fig. 5 – 1932 Hudson with body by Van Rijswijk.

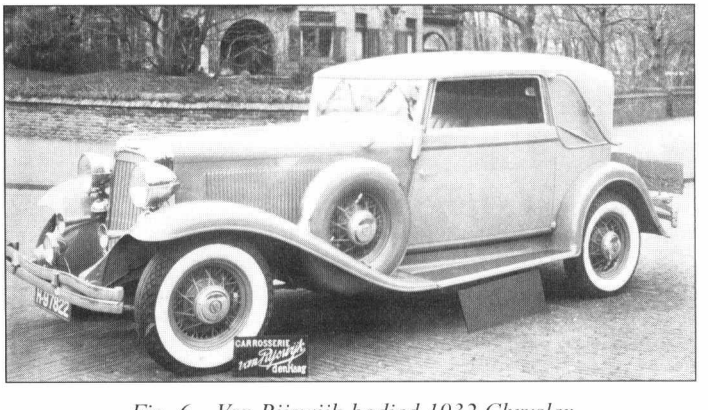


Fig. 6 – Van Rijswijk-bodied 1932 Chrysler.

Fig. 7 – Side elevation of 1938 Chevrolet by Van Rijswijk.

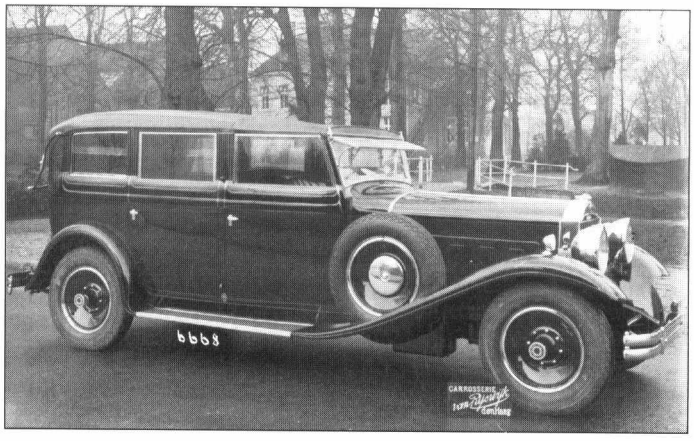


Fig. 8 – Body by Van Rijswijk on Packard chassis.

Fig. 9 - Advertisement of 1938 Delage with body by Van Rijswijk (from the editor's collection).

shape of the seats and door panels. The seats were filled with kapok and steel springs in order to get as close to living-room comfort as possible. After coming out of the paint shop, the seats were placed in the body (and jump seats if the car was a seven-seater). Much care was given to installing the tops of convertibles, a very difficult job. As they used to say, "If you don't install the hood the right way the first time, it will never be a good job," and they would have to start again.

Before leaving, I always liked to look in the general store where, on nicely trimmed shelves, rested all kinds of screws, cans of paint, nuts, rubber strips, all in different sizes and easy to reach.

Who were the customers of such an establishment, and what were the chassis supplied for the custom bodies? Of course, only the "highest society" could afford a van-Rijswijk-bodied car which cost about 15,000 Dutch florins (Dfl). By comparison, a Ford V-8 was priced at Dfl 1,850. Even cheaper were the Fiat 500 and DKW, about Dfl.950. Obviously in those years of the '30s one didn't see many of this coachbuilder's exotic creations. Some bodies found homes on the most exclusive chassis of Hispano-Suiza (Fig. 4), Isotta Fraschini, Minerva, Excelsior, Mercedes-Benz, Voisin, and Rolls-Royce. Also, lesser chassis were supplied, from Graham, Hudson (Fig. 5), Chrysler (Fig. 6), and Hupmobile. Shortly before World War II, convertible bodies were built on chassis from Buick, Chevrolet (Fig. 7), Packard Fig. 8), Nash, and Delage (Fig. 9). For those customers who did not want a

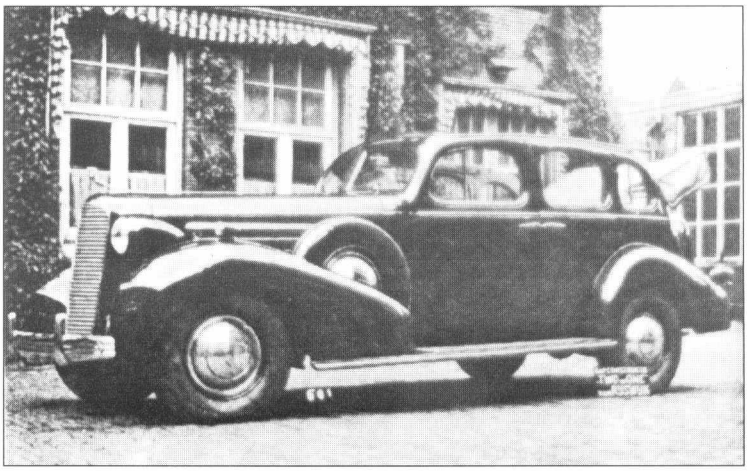


Fig. 10 – 1936 Cadillac with folding top, by Van Rijswijk.

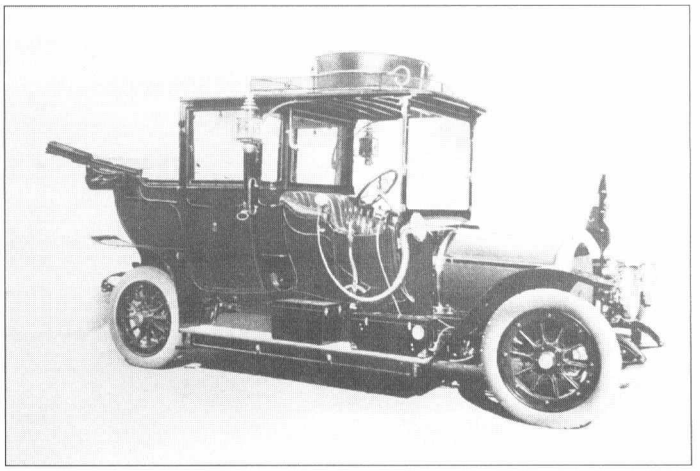


Fig. 11 - The 1911 Spyker built for Queen Wilhelmina.

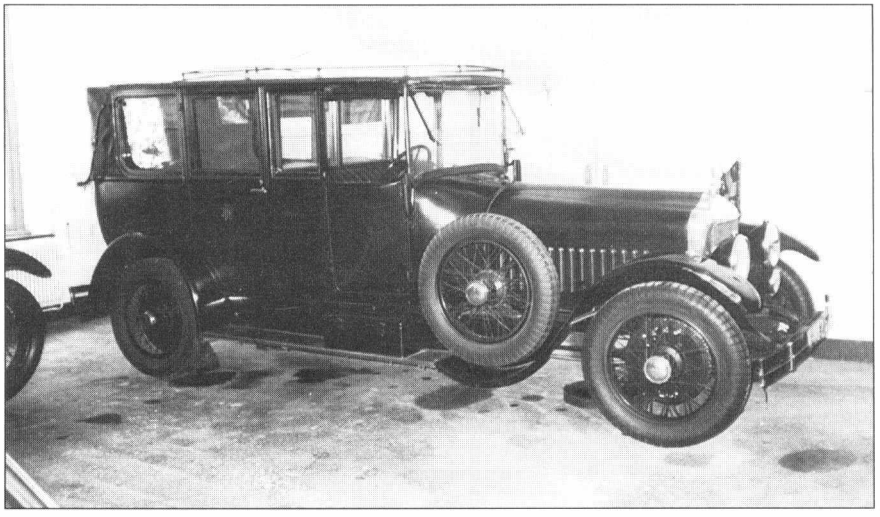


Fig. 12 – Prince Hendrik's 1925 Minerva, Type AC, with sleeve-valve Knight engine.

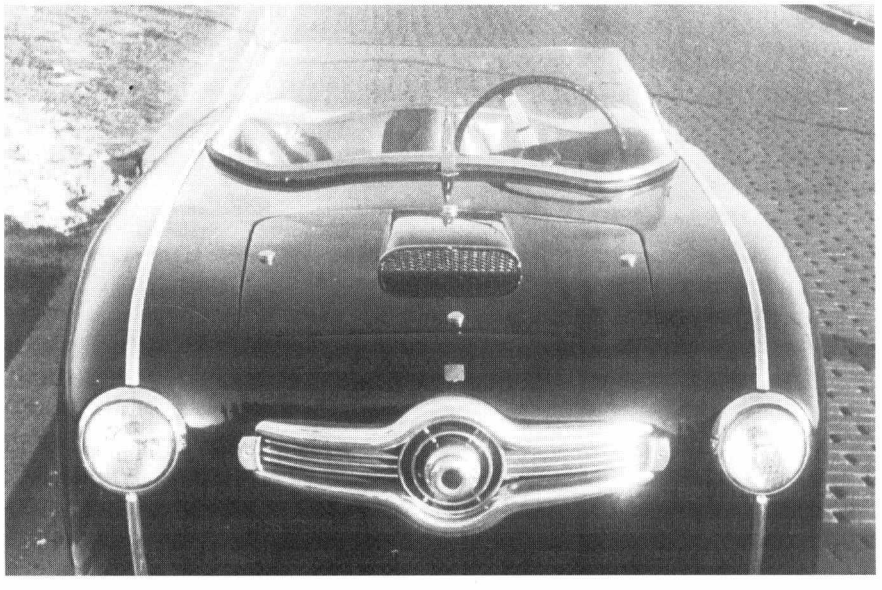


Fig. 13 – The last of the Van Rijswijk cars, the 1950 Panhard Dyna Sprint Roadster.

fully-open car, the firm installed sliding cloth roofs on sedans (Fig. 10). Some of these cars won several Concours d'Elégance in Holland. Perhaps the two most exclusive cars to leave Alphenstraat 61 were the 1911 Spyker made for Queen Wilhelmina (Fig. 11), and a 1925 Minerva with a body specially designed for Prince Hendrik, husband of Queen Wilhelmina, who awarded a Royal Warrant to the firm (Fig. 12).

Pennock & Zoon was the other Dutch coachbuilder of note, also building cars that could compete with those bodied by Chapron, Glaser, and Park Ward. But the beginning of the Second World War in September 1939 ended the glory days. At that time, van Rijswijk was planning an elegant Lancia convertible for the never-held 1940 Paris Salon. After the end of the war, the company bodied only one car, a "sprint roadster" on a Panhard Dyna chassis, for the junior managing director of the company importing Panhards, Englebert's Autohandel. (Fig. 13) This was in 1950. From that time on, the company existed as a repair shop until going bankrupt in 1994. The last van Rijswijk, P.M., the son of the founder, had left the firm many years before, in 1965.

Its fate was shared by most other carrossiers. More and more the auto industry was building unit-construction steel bodies, and the costs of hand-built bodies were economically infeasible. Today we look back on these "good old days" with respect for the professional skill and creativity of these artists and craftsmen.

Abstract

Making Room for the Automobile: The Development of the Garage in Rural Belgian Flanders

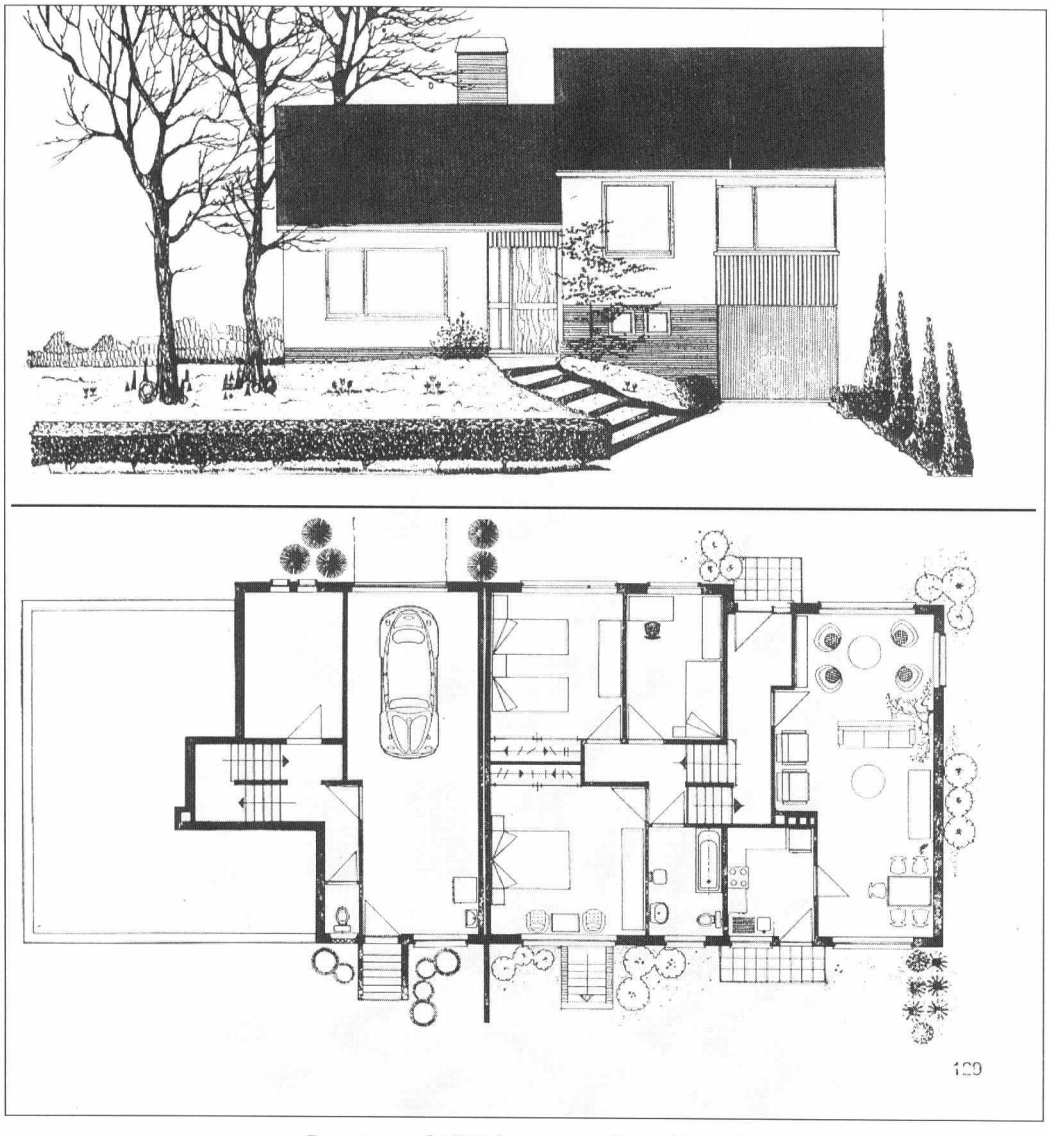
by Els de Vos

During the 1960s, Belgium and her European neighbors saw widespread growth in the numbers of cars on their roads. At the end of that decade, nearly half of Belgian families owned a car. This presented a challenge to architects, urban planners, and occupants of homes to find an appropriate place for the car in relation to the single-family dwelling. How did the increasing use of cars shape domestic architecture? Who were the stakeholders of the garage? Who was steering that process, so specific for the countryside? What was the role of home occupants in that process?

The process that would finally give rise to the birth of what we now call a garage was complex and non-linear since it was answering to functional as well as symbolic considerations. By discussing the housing policy of two organizations, the paper covers the development of the garage in Belgium for the 1950-1980 period.

The paper relies upon discourse analysis and graphical interpretation of case studies focusing on the plans of (model) houses of two rural organizations, enhanced by interviews with its members/occupants of these houses. While the first series of case studies are derived from the National Society for Small Properties, the NMKL, the second series concerns the Farmers Association and its female branch, the Association of Farming Women. The NMKL was a rural social housing company that established clusters of individually owned housing combined with small-scale farming on separate plots. The Farmers Association was an economic, religious, and socio-cultural organization which, in the postwar age, addressed farmers as well as non-farming people living in the countryside. Especially, its female socio-cultural branch, the Association of Farming Women, was an important communicator of modern domesticity. Besides publications, exhibitions and model homes, the association raised numerous "exemplary dwellings," kind of "show houses" built and occupied by members. By investigating the homes built by these two organizations, a large sector of the rural population is covered.

The topic is approached by the concept of "domestication" as introduced in the 1990's by Roger Silverstone, Eric Hirsch, and David Morley, active in the field of cultural and media studies. They introduced it for analyzing the consumption of technology in the domestic sphere and the "moral economy of the household." This concept allows the examination of the cultural, social, and functional meaning of the garage.



Drawings of 1971 house type D, in Abtsdal.

EDITOR'S NOTES *continued from p. 2*

Student Paper. This year the winner is *Els De Vos*, a doctoral candidate in architecture, urbanism, and planning at the Catholic University of Louvain (Katholieke Universiteit Leuven) in Belgium. The title of Ms. De Vos's paper is "Making Room for the Automobile: The Development of the Garage in Rural Belgian Flanders." At the recommendation of her faculty advisor, Ms. De Vos has submitted her paper for publication in *Technology and Culture*, the journal of the Society of the History of Technology, and for that reason asked that we not publish it. Instead, you will find an abstract of her paper.

On the facing page you will find guidelines for submission of articles to be published in the *Review*, to ensure consistency of style.

Finally, below, you'll find the solution to the crossword puzzle that appeared in No. 48 (Fall 2007), contributed by *Phil Mathews*.

Once again, I am grateful to Mountain Laurel Press, Arena Press, and our proof readers *Pat Chappell* and *Kit Foster* for their dedicated efforts in putting out yet another issue of the *Review*. I would note that this issue represents the 20th to appear under the current editorship, and p. 12 is cumulatively the 1,000th page to appear in Issue Nos. 30-49. I must confess that when I see the errors that appear in each issue, despite our precautions (see Corrections below), I feel a bit like Miss Lillian Carter, mother of President Jimmy, bad bro Billy, and daughters who were respectively an evangelist and a motorcycle rider. She remarked that when "I look around and see my children, I say to myself, 'Lillian, you should have remained a virgin.'"

CORRECTIONS

Review No. 48 (Fall 2007)

"The Road Less Traveled: The Automobile in French Colonial Indochina"

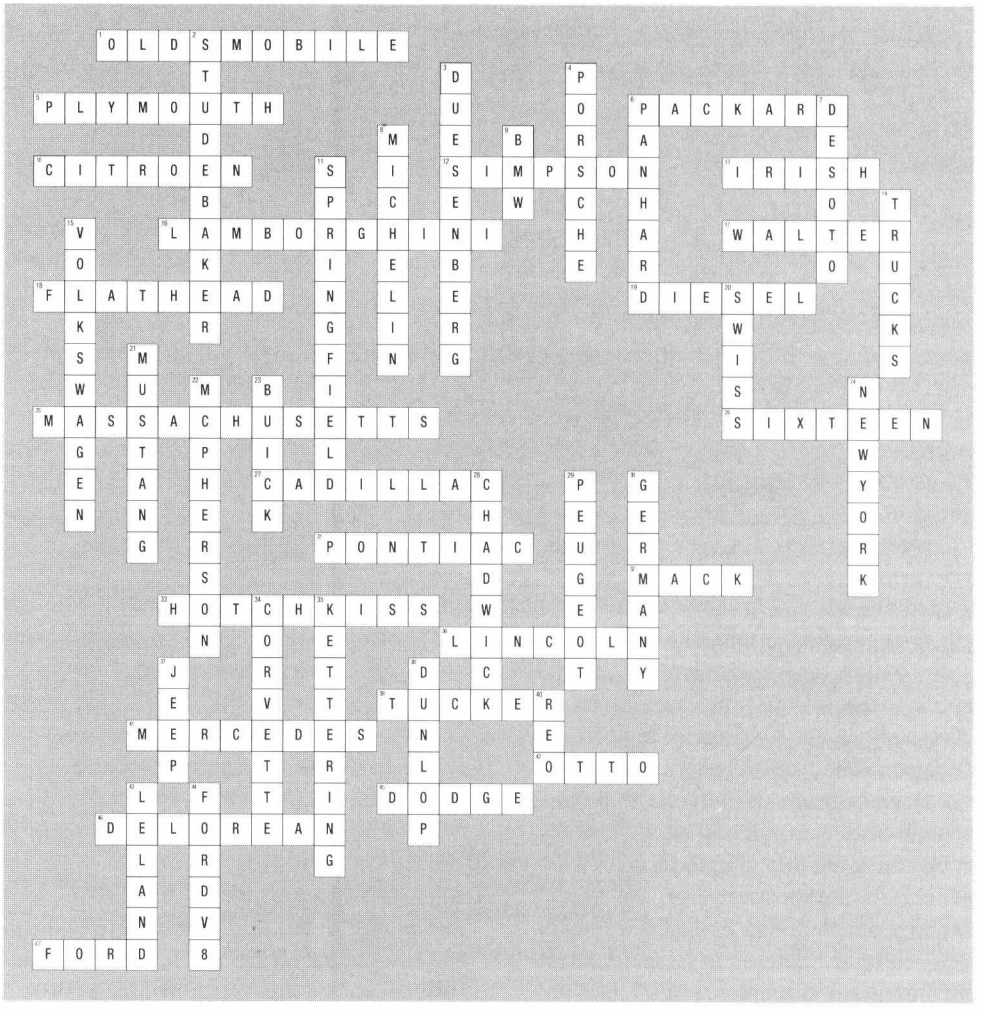
Page 7: The correct caption for Figure 4 is: *Citroën Traction of the type sold in Indochina, displayed in 2004 on the lawn of the former residence of the colonial Governor General in Ho Chi Minh City (Saigon)*. Photograph by Ryan S. Mayfield.

Page 7: Figure 6 should be Figure 5.

"Elegant and Mysterious: Mr. Anasagasti's Dream"

Page 27: Figure 1 should be Figure 2.

Answer to Automobile History Crossword, *Review* No. 48



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). Paragraphs should be indented, with the tab key and not a manual space indent.

   The appropriate translation of tables, figures, and graphs can only be accomplished when sent in Word format since all files must be converted to Adobe Acrobat pdf format for publication in the *Review*. Remove any hidden commands (i.e., track changes) prior to submitting your electronic file. Incorporate tables in the text, rather than providing them separately.

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

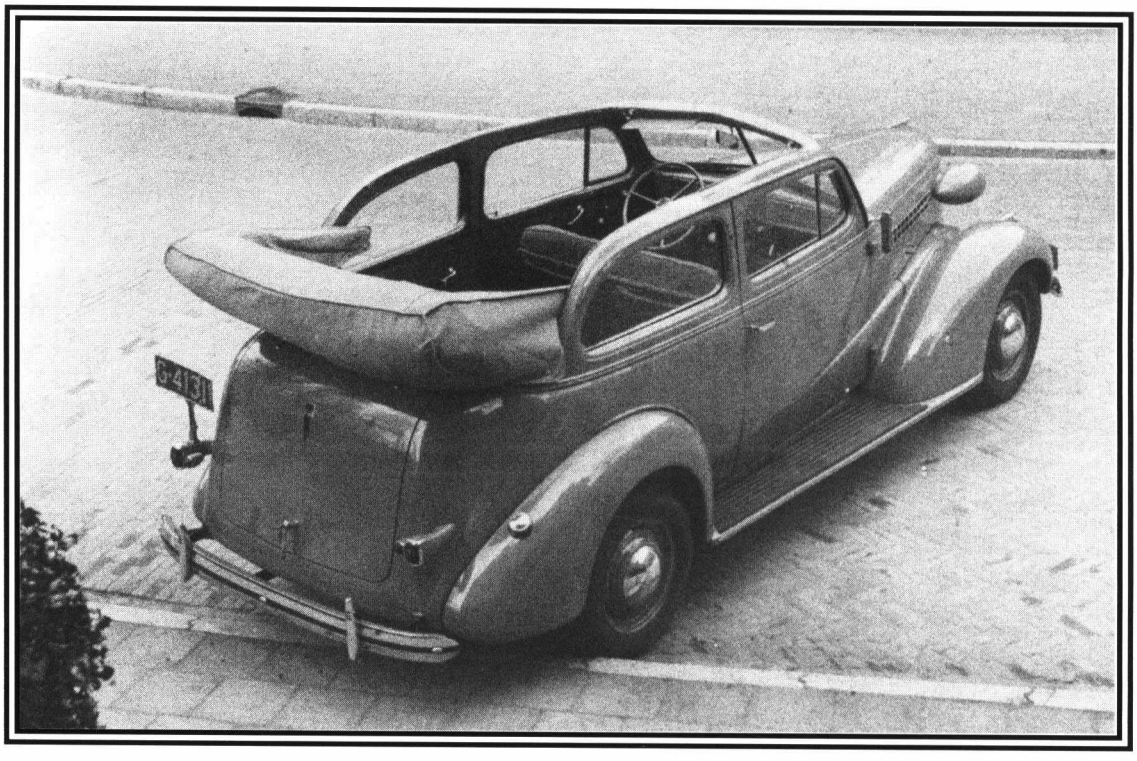
SAH 40th ANNIVERSARY COMMEMORATION

In October 2009, the Society of Automotive Historians will observe the 40th anniversary of its founding in Hershey, Pennsylvania.

The Board of Directors would like to commemorate our "ruby" anniversary with a symposium on the topic "The Future of Automotive History" that would appear in Issue No. 52 (Fall 2009) of the *Automotive History Review*. But to accomplish that, we need to have suggestions and ideas from our membership; won't you help us? Please send them to the editor via e-mail (ztv@comcast.net) or by post (1314 Trinity Drive, Alexandria, VA 22314-4726)

The deadline for Issue No. 52 is May 1, 2009.

Taylor Vinson



The Society of Automotive Historians, Inc.
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