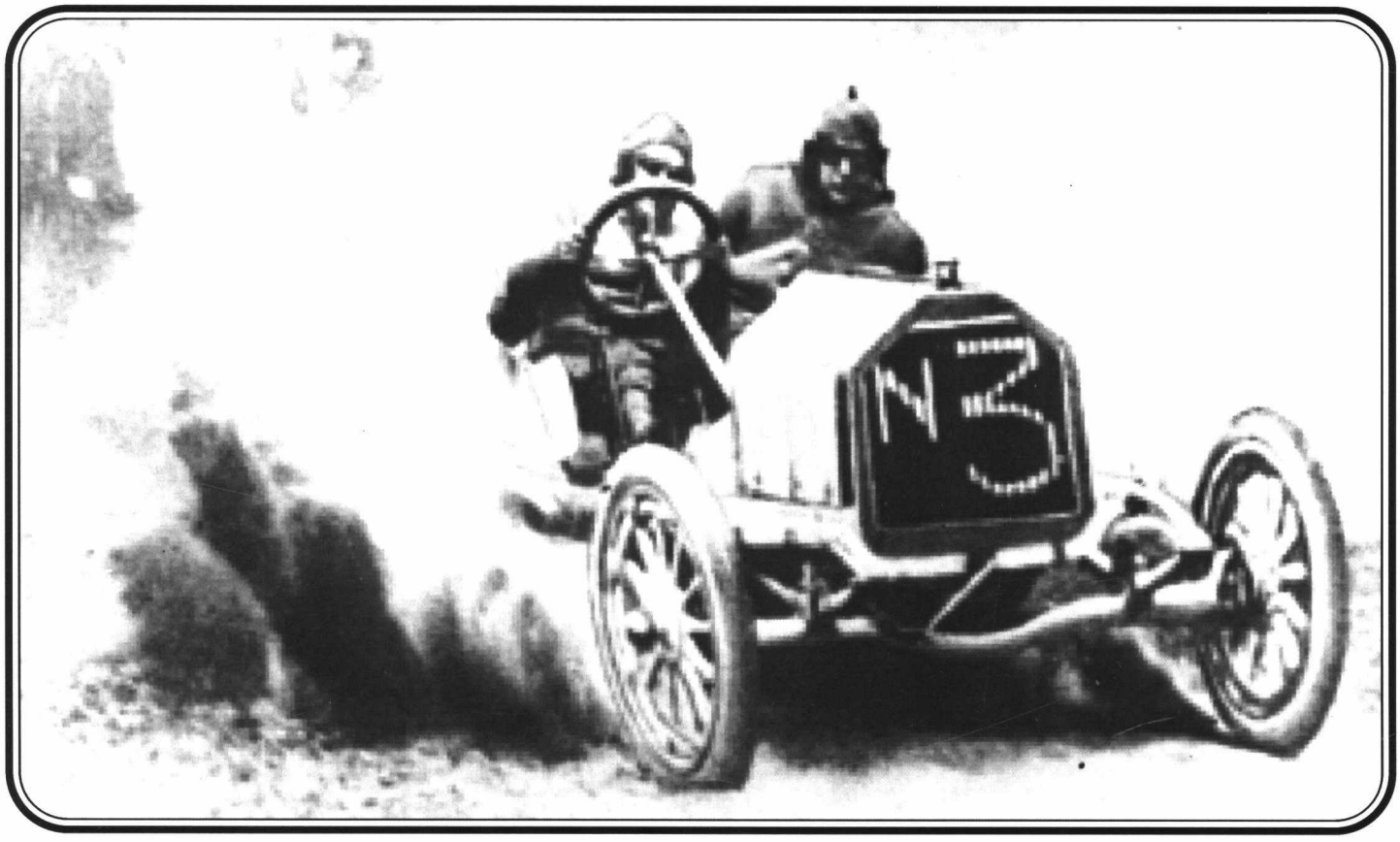
AUTOMOTIVE HISTORY REVIEW

Fall 2008 Issue Number 50



**Proceedings of Seventh Automotive History Conference:
"The Search for Performance and Reliability—
Competition and the Development of the Automobile,"
Nashville, Tennessee, April 2-5, 2008**

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

Editor's Notes

This issue of the *Review* is SAH's biennial effort to capture the flavor of the Automotive History Conferences through publication of papers, and abstracts of papers, that were presented. The Conference is held every other year in conjunction with the National Association of Automotive Museums (NAAM).

The Seventh Conference was held at the Airport Marriott in Nashville, Tennessee, with the nearby *Lane Motor Museum* as the principal host.

Wednesday, April 2, the SAH Board met during the day, and joined the welcoming reception for SAH and NAAM attendees in the evening. The Conference was structured so that the first day of presentations (Thursday) was separated from the second (Saturday) by a free day. On Thursday, there were no joint meetings of SAH and NAAM except for lunch. There, *Bill Warner*, founder and chief executive of the Amelia Island Concours d'Elegance, provided humorous insights into his participation in the "Cannonball" Baker coast-to-coast race. Friday morning, two tours were offered, one to Franklin, Tennessee, and other nearby sites associated with the American Civil War (1861-65), and the other to the Country Music Hall of Fame and Museum. Several intrepid souls braved the rainy day to tour the Corvette assembly plant and museum at Bowling Green, Kentucky, 75 miles away.

Friday afternoon, we all reunited at the *Lane Motor Museum*, graciously welcomed by curator Susan Lane and director Jeff Lane, who started the collection. The Museum is noted for having the largest collection of Czech cars in the United States (25 Tatras for example). Included in its 300-vehicle inventory are oddities such as the Martin Stationette, a British rear-engined Trojan, and a Peel, also from Britain, seemingly no larger than a Converse basketball shoe. Although the lower storage floor is off-limits to the public, we were given a guided tour of its treasures. The Lane is well worth a trip to Nashville if you're interested in vehicles that are offbeat and not likely to be seen elsewhere.

Saturday morning was notable for its SAH/NAAM joint seminars. The first of these featured Bill Pryor of Nashville, who spoke on the Marathon car, built in Nashville, from 1907 to1914. The second seminar presented "Corky" Coker who reminisced about the history of the tire company started by his family. The final seminar was a panel discussion of how SAH and NAAM might work together towards the future. Representing SAH were former presidents *Michael Berger* and *Kit Foster*, who was the SAH chair for the first six Conferences. Michael Spezia of the Gilmore Museum, and *Susan Sanborn* of the Toyota Museum spoke for NAAM. One of the ideas that arose that I liked was that the member museums of NAAM also become members of SAH.

The final presentations were made on Saturday afternoon. That evening, *Hagerty Insurance* hosted the closing reception and banquet. The speaker was retired driver Sam Posey, whose racing career included a 3rd place at Le Mans and a 5th at the Indianapolis 500. Living with Parkinson's, Sam structured his remarks around the four drivers who had been his heroes: Juan Manuel Fangio, Jim Clark, Mark Donohue, and David Hobbs. I asked him afterwards who were his heroes today. He thought a moment and replied "Heroes fill a need, and I have none." As he spoke only from notes, I'm sorry I can't provide you with the text of what I regarded as a remarkable talk.

The theme of the Conference was "The Search for Performance and Reliability—Competition and the Development of the Automobile." *Joe Freeman* was the SAH chairman for this Conference. The Conference, as always, included some presentations that were essentially PowerPoint or relied almost exclusively on slides, both of which are difficult to reproduce in a print medium such as the *Review*.

Now, for Issue No. 50. Our articles begin with SAH Director *Douglas Leighton*'s "From Aerodromes to Race Courses: The Evolution of Sports Car Racing in Southern, Ontario (Canada), after World War II." Doug is associate professor of history at Huron University College, London, Ontario, Canada. This was Doug's fifth presentation at an automotive history conference. His previous topics included "Canadians, Americans, and the Early Automobile Industry," *Review* No. 46 (Fall 2006), "Displaying the Automobile: Early Auto Shows in London, Ontario," *Review* No. 42; "Mr. Ford Comes to London, Ontario, 1916," *Review* No. 39; and "Early Automobile Manufacturing in London, Ontario, *Review* No. 32. These appeared as abstracts. Doug's "Dreaming of What Might Have Been: William Stansell, London Motors, and the London Six" was published in full in *Review* No. 36. He wishes to thank Julie Bennett, a Faculty Assistant at Huron University College, for her timely help with the mysteries of jpeg files.

"Barré Lyndon, the Motoring Bard: How One Writer Influenced the Popularity of Motor Racing in Prewar England," was a colorful presentation by the Rev. Dr. *Richard L. Knudson*. It must have been exciting to have been young in England in the '20s and '30s, and to read racing tales in magazines such as *The Modern Boy*, if not actually traveling to the frequent trials and hill climbs that characterized those decades. Dick captures the feeling nicely. Being member No. 197, Dick is among the earliest SAH members. He is the author of "M.G., The Sporting Car America Loved First: an Illustrated History of M.G.s in the U.S.A." At the South Bend Conference in 2006, he spoke on "The Effect of Record Breaking and Racing on M.G. Sales in the 1930s." (See abstract, *Review* No. 46). He lives in Oneonta, New York.

Making his first presentation at a History Conference with "The Race That Wasn't a Race: The Annual Mobilgas Economy Run: 1936-1968" was *John A. Heitmann*, Alumni Chair in Humanities and Professor of History at the University of Dayton (Ohio). Although his research was not finished at the time of the Conference, John made a special effort to complete his article for this issue of the *Review*.

A fine paper outside the Conference parameters is "History and Performance of the South Korean

continued on page 54

Automotive History Review (ISSN 1056-2729) is a periodic publication of The Society of Automotive Historians, Inc.

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.

Printed by
Arena Press, Washington, DC

Design/Layout
Mountain Laurel Press, Silver Spring, MD

AUTOMOTIVE HISTORY REVIEW

Fall 2008 **Issue Number 50**

Proceedings of Seventh Automotive History Conference: "The Search for Performance and Reliability—Competition and the Development of the Automobile," Nashville, Tennessee, April 2-5, 2008

Front Cover: Leaders on every lap. Easter and Thompson won the 1908 Motor Parkway Sweepstakes in a Buick (photo furnished by Terry B. Dunham).

Rear Cover: 1984 Ford (UK) RS 200 with Cosworth-derived engine (from the Editor's Collection).

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

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, 49 and the Index) for $140.00 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.

SAH's Forthcoming 40th Anniversary

As noted in Issue No. 49 (Spring 2008), p. 39, the Society will observe the 40th anniversary of its founding in October 2009. The Board of Directors would like to commemorate this with a symposium on "The Future of Automotive History" which would appear in Issue No. 52 (Fall 2009).

SAH Secretary *Arthur Jones* comments that "Today's researcher enjoys the benefit of a wealth of resources compared to the meager shelf available to peers in 1969. Statistics showing the growth in the number of books and magazines on automotive history published then and now would be interesting." Arthur also suggests that possible subjects could include:

Changes that have occurred in the industry during the past 40 years will be the subject of the automotive history of the future. Globalization, corporate mergers, cross-badging and cross-marketing of competitor's products have blurred the well-defined boundaries of the past. National automotive identities have been lost in an industry where each country's products seem to have come from the same shop. In the future, understanding these new strains of automotive history will require taking a wider view.

The automotive history of the past records the work of extraordinary designers, engineers and business leaders whose individual contributions set standards for the industry. In today's giant corporations, the role of individual creators, if in fact they exist at all, are submerged within many layers of team effort. Corporate leaders are given public credit for the innovations of their staffs and the individual contributions have become a closely-guarded secret. The automotive historian of the future will have the difficult task of discovering and celebrating the true innovators in this thicket of claims.

Despite the tremendous amount of work that has been done, there remain areas of the past that need to be explored and documented. The industries of many of the developing countries and, in fact, some of the European producers of the past have not received adequate coverage. Likewise the history of the global automotive trade and its influence on and from the turbulent international economy of the first half of the 20th century. And there are several important American companies that lack a thorough treatment, although much of the research has been done. Can we provide a wish list for the future?

The automotive historian of the future will need to reach out to a new public for whom the motor vehicle has lost its iconic position in favor of the world of electronics and information technology. Is energy utilization the new frontier and can its exploration generate the excitement that has brought many of us to our field? Will social issues created by the automobile assume a larger part? What will be the subject matter of automotive history in the future?

We are asking our members to provide their ideas and comments on these and other issues. Please send them to the editor by e-mail: ztv*at*comcast.net or by post (1314 Trinity Drive, Alexandria, Va. 2314-4726).

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

Taylor Vinson

CORRECTION:

Review No. 49 (Spring 2008)

"David D. Buick and the Wolverine"

Page 10: Author Kevin Kirbitz points out that the caption for Figure 6 is incorrect and in fact illustrates the Brenner patent discussed in the first six lines on page 7.

LETTERS TO THE EDITOR:

"Reviewing Canadian Commercial Vehicles"

The otherwise excellent and enjoyable article by R. Perry Zavitz in the Spring 2008 issue of AHR contains one statement about Canadian Pontiac Commercial Vehicles that is somewhat misleading. It is stated, relative to Pontiac sedan deliveries, that "For 1955, and to the end (1958), the base engine was a GMC 261 cid six, but the 265 cid V-8 was optional." The 261 cubic inch six that is referred to was, in fact, the base engine in Canadian Pontiac models built from the '55 through '62 model years. And that same 261 cubic inch six was also base equipment on light-duty Canadian-built GMC trucks of the same general time frame. But, it was NOT truly a GMC engine! Rather it was basically a Chevrolet "235" six with a larger bore. This Chevrolet "261" was introduced in the '54 model heavy-duty Chevrolet trucks, and was subsequently used for other Canadian applications as already mentioned.

I mention this as something, once printed, tends to be accepted as gospel. And there are already enough people who confuse the GMC "270" six (and its "228," "248," and "302" brethren) with the Chevrolet "216," "235," and "261."

Roy Nagel
Michigan USA

"Guidelines for Articles for the *Automotive History Review*"

I can sympathize with the amateur author who is still in the typewriter stage, manual or electric. He must rely on a professional or public stenographer. How much this may inhibit any future author is yet to be determined. I know that in my case it was late in the 1990s before I succumbed to a computer, and I am still fighting the uphill battle of being a "Dummie."

G. Marshall Naul
Maryland USA

Point noted, but as I wrote Marshall, virtually all submissions to the Review *these days arrive as e-mail attachments. Anyone interested in writing should not be "computer-phobic" as the keyboard is identical to that of a typewriter.*

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

by Douglas Leighton

Introduction/Setting

Automobile racing today is a highly expensive and technologically sophisticated business. Simply to exist, racing teams require factory help and a multitude of commercial sponsorships. European manufacturers such as Ferrari, Porsche and Daimler-Benz have long regarded racing as a regular part of their commercial activity, creating customers for their road cars while stimulating and challenging their design and manufacturing processes. Audi, for example, has used its recent Le Mans victories to publicize its diesel technology. Nearly every square inch of a modern racer, moreover, is covered by a confusing array of brand trademarks and slogans, some of which have no direct connection with automobiles or with racing. A modern McLaren, Audi or Ferrari represents the very edge of automotive design, but resembles nothing so much as a high-speed billboard.

Racing at the highest international level has always contained these elements. Rival marques battled one another from the beginning of races and endurance contests. Manufacturers used victories in such events to establish reputations, to attract investors or to bolster sagging sales. So Marmon, Stutz ("The Car That Made Good In a Day") and Duesenberg profited from their participation at Indianapolis. Some car makers found themselves unprepared for the commercial success created by racing victories. The Thomas company of Buffalo, New York, for example, was never able to capitalize properly on its legendary victory in the New York to Paris Race of 1908. Suppliers of automotive equipment, from tires to spark plugs to gasoline, lined race courses with their advertising in an age before cars themselves were "branded." Even national pride became involved: a victory for Mercedes was a victory for Germany, a win for Bentley was proof of British engineering superiority. Personalities often entered the scene; the Italian Ettore Bugatti, manufacturing cars in a part of France once controlled by Germany, could dismiss the Englishman Walter Owen Bentley, his chief rival at Le Mans in the 1920s, as a manufacturer of "elegant lorries." These commercial, national and personal rivalries continue to play a role in modern racing.

For approximately 25 years following World War II, 1945-1970, a different model of racing activity reached its high point in North America. Amateur racing had flourished alongside its more glamorous professional cousin from the automobile's beginning, but this period was a golden age for amateur, weekend sports-car racing in North America. This was predicated on three elements: the leisure time to pursue such activity; the availability of suitable, affordable cars; and accessible, inexpensive venues for racing events. Post-war prosperity provided many amateurs with both the income and the leisure time to engage in racing on a club basis. The importation of reasonably-priced automobiles from the United Kingdom in particular, but also from Italy, France and Germany, made races, rallies and gymkhanas part of the general recreational landscape in North America. Marques such as MG, Austin-Healey, Jaguar, Renault, Fiat and Porsche soon became well-known. Smaller firms such as Bristol, Allard, AC, Lister, Lotus and Abarth earned the interest and respect of knowledgeable autosports participants. These cars were genuine dual-purpose automobiles: they could be driven reliably on a day-to-day basis, but taken to a track on weekends and raced with minimal preparation, usually involving the taping over of headlights and the taping on of numbers and class letters. They became known simply as sports cars and their dual nature was often emphasized by their makers. The slogan for the MG, for example, was "Safety Fast."

Dealership networks soon appeared to lend support to the owners of such cars which still seemed exotically foreign and different to the population at large. Owners and drivers also took pride in being different: throughout the 1950s, it was quite customary for drivers of open two-seaters, regardless of make, to flash their headlights when passing one another on public highways. Even early owners of the more prosaic Volkswagen "Beetle" greeted one another this way. This sense of camaraderie was furthered by the creation of local and regional clubs, sometimes based on the ownership of certain makes, but often dedicated to weekend racing or cross country rallying. Magazines dedicated to these activities marked the maturation of these emergent interests. *Road and Track* appeared as early as 1947, joined later by others such as *Sports Cars Illustrated* (now *Car and Driver*) and *Motor Trend*.

Car clubs formed during these years in southern Ontario, a prosperous industrial and agricultural region framed by the northern shores of the lower Great Lakes. The British Empire Motor Club (BEMC) of Toronto was the largest of these, but there were groups based in other cities as well. The Western Ontario Sports Car Association (WOSCA) and the London Auto Sports Club (LASC) were both located in London, 120 miles southwest of Toronto. The industrial city of Hamilton, known for its steel mills, was only 42 miles from Toronto along the Lake Ontario shoreline, but had long been a rival in many areas, notably football. It possessed a vibrant autosports community, perhaps because it was until the mid-1960s the North American headquarters of the British Motor Corporation and possessed a huge parts warehouse for the many makes of that company. Rare machines—for the time – sometimes made appearances in this fertile context. Ray Carter of Hamilton raced a Jaguar XKSS in the later 1950s while the Heimrath family of Toronto was long associated with Porsche. By the latter part of the decade, a national Canadian car magazine, *Canada Track and Traffic* (*CTT*), had made its appearance.

By this time too, North American auto companies had taken notice of the imported sports car competition and resolved to meet it. Nash Motors produced the Nash-Healey from 1951 to 1954, in part because of a chance meeting of George Mason, Nash's president, and the English car designer Donald Healey. General Motors produced the Corvette beginning in 1953, although with its 6-cylinder motor and two-speed automatic transmission it was little more than a boulevardier until it got "teeth" in 1955-1956, thanks to the legendary Zora Arkus-Duntov. General Motors continued to be influenced by European design until the mid-1960s, with such cars as the rear-engined, air-cooled Corvair, the rear-transaxled Pontiac Tempest and the front-wheel drive 1966 Oldsmobile Toronado. Ford, of course, produced the two-seat Thunderbird from 1955 to 1957. The sports car "counter-culture" was clearly becoming mainstream by 1960.

The Evolution of Club Racing After 1945

Finding an appropriate and inexpensive racing location was the third element in the emergence of post-war sports car culture. Public roads were obviously off-limits and authorities were hostile to European-style temporary road closings for staging races. Clubs like BEMC and LASC existed on "shoestring" budgets and could not afford to buy land or to construct purpose-built race courses. Their dilemma was solved when abandoned wartime airfields became available. With their wide aprons and strongly-constructed runways, former air bases were ideal locations for weekend racing. As a July 1961 article in *CTT* put it,

> ...the discovery of these mouldering airfields was like finding gold in the Yukon. The locations dotted across the country were ideal: far from communities, the clear ready-to-use concrete strips were perfectly suited to undeveloped racing; drivers would spin harmlessly off into the acres of grass far from the spectators.

These World War II airfields (aerodromes was the English term, often used by Canadians up to and during the war) were the product of a remarkable international agreement among member countries of the British Commonwealth. Originally signed in 1939, the British Commonwealth Air Training Plan (BCATP) was revised in 1942 and then "wound down" as the war neared its end in early 1945. More than 200 airfields and training schools were created across Canada, which acted as the BCATP's "host." Most of these facilities were constructed hastily in 1940, using prefabricated building techniques. Their existence took on a new urgency after the fall of France in June 1940 and the subsequent aerial Battle of Britain during the summer and early autumn. Germany's invasion of the Soviet Union in June 1941 and Japan's attack on Pearl Harbor on December 7 that year widened the conflict, but aerial bombing remained the chief method of assault on Germany until D-Day in 1944.

The BCATP was intended to produce nearly 1,500 pilots, air observers, navigators and wireless operators/air gunners every four weeks, requiring some 19,968 recruits a year. Its bases transformed the regions where they were located both physically and socially. Small rural communities were inundated by regular infusions of hundreds of recruits from all around the world. In the case of bases which trained members of free national forces such as the Poles and the Norwegians, the newcomers could seem very exotic indeed. Support staff payrolls brought local prosperity, if only temporarily. The buildings themselves outlasted the war, forming the nuclei of community airports after 1945, or being transformed into industrial parks or, in at least one case, a "speedway" for drag racing and oval track events. In the case of abandoned bases, old barracks, mess halls and control towers could still be seen as much as a quarter century after the war's end.

While bases were constructed across Canada, two regions were particularly affected by the BCATP. The southern prairies of the provinces of Manitoba, Saskatchewan, and Alberta, gently rolling and often flat, were especially suited to quick airfield construction. Southwestern Ontario also possessed open, flat countryside with the added advantage of proximity to population centers, heavy industry and transportation hubs. More than a dozen bases grew in the area bordered by the lower Great Lakes.

The end of war and the termination of the BCATP had an equally dramatic impact. What was to be done with these now-redundant locations? Some, like Clinton, where top-secret radar research had been conducted, retained their status as active postwar Royal Canadian Air Force (RCAF) bases for the next two decades. Others, as we have seen, were recycled in a variety of ways. Some, like Fingal, were simply abandoned. Some expropriated lands were simply returned to their original owners or auctioned for lease or sale by the government's Crown Assets Disposal Corporation. Owners found themselves with abandoned airstrips on their properties which, for the moment, were not suitable for agricultural production. They were willing to rent or lease these lands in order to gain some income from them.

It was, of course, just at this point, that local or regional car clubs were looking for racing locations. Here was a momentarily perfect match. Landowners could extract some income from properties made unproductive by the needs of war. Weekend racers could exercise their cars in relatively safe conditions. A January 1960 article in *CTT* recalled that "Sportscar racing soon began on old unfenced airdrome circuits. Those who weren't driving did the organizing and anyone who possessed four wheels and a means of motivating them was eligible to enter. Rules were decided upon on the spot after a short discussion with all concerned." Another observer noted that these early airfield races were "terribly unprofessional, terribly disorganized" but that participants were "having the time of their lives."

By modern standards, these early race meetings were very casual. All that had to be done was to "borrow, lease or rent these facilities... from a local farmer.... A few thousand straw bales (also obtainable from the farmer) and you had your own little Silverstone.... There weren't enough racers, so the organizers could not refuse almost anyone driving anything. Racing was, in a very real sense, a classless affair."

The Courses

Edenvale

One of the earliest airfields converted to track use was a former Service Flying Training School located near Stayner, Ontario, about a one-and-a-half-hour journey northwest of Toronto. The BEMC acquired a lease and opened a course there

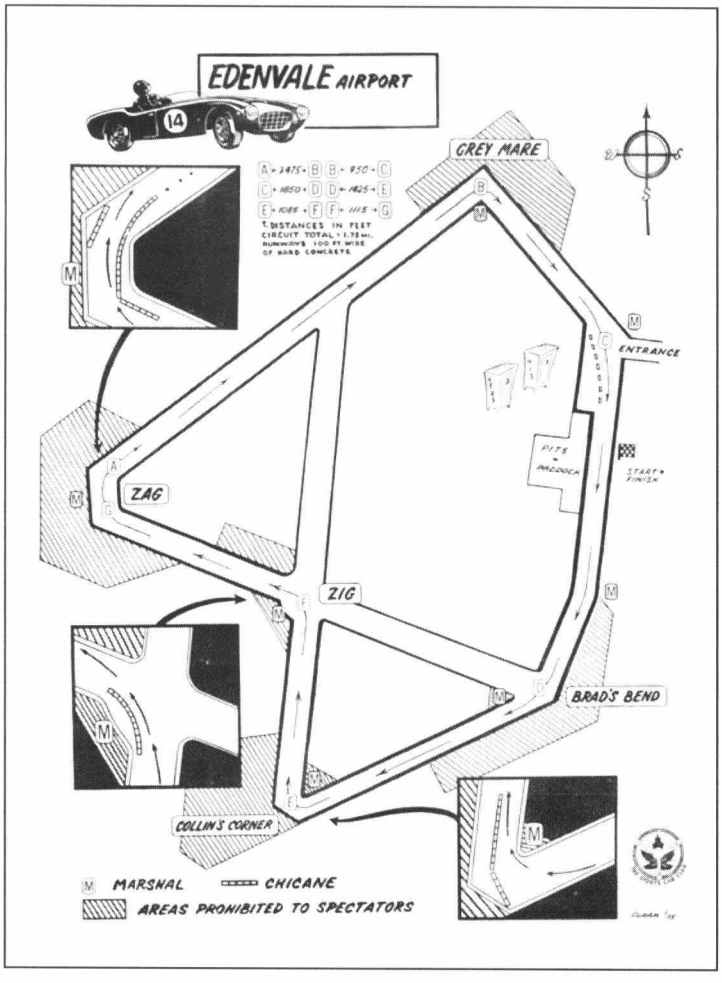


Fig. 1 – Edenvale Circuit, about 1955.

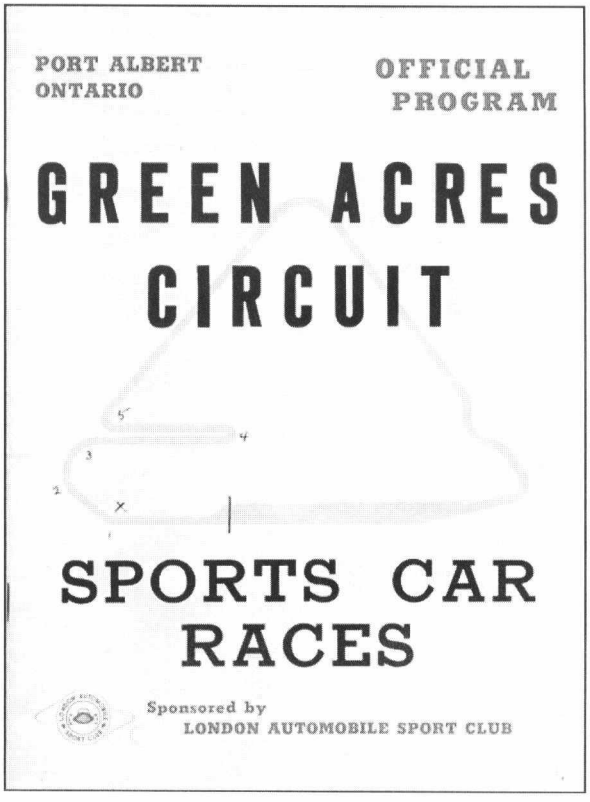


Fig. 2 – Harewood Acres Circuit, 1959-70.

in 1951, which it named Edenvale, after a nearby hamlet. Organized Sports Car Trophy races were held here each summer, usually in August, until 1955 (Fig. 1). Using the 100-foot-wide former runways, the course had three sharp corners, varying from 90 degrees to 135 degrees, a straightaway of some 2,475 feet and a total length of about 1.75 miles. The club installed basic pit and paddock facilities and elementary washrooms for the spectators. In 1955, the owner decided he could make a better return by changing the style of racing at the track and confining the races to professionals. BEMC and other clubs which had used Edenvale now found themselves homeless. The owner's business acumen was less than stellar: the track eventually failed and currently exists as an overgrown ruin.

Harewood Acres

Fortunately for the BEMC, a second former airfield became available in time for the 1956 summer racing season, located in farm country about two hours southwest of Toronto, near Lake Erie. Originally opened as No. 1 Bombing and Gunnery School near Jarvis, Ontario in August 1940, it had closed in February 1945, after processing more than 12,000 trainees and briefly playing a background role in the wartime movie "Captains of the Clouds" starring James Cagney. Part of a 750-acre holding owned by the Hare family, the 150 acres of the old airstrip were leased by the BEMC in 1956 for five years. Runways were generally 30 feet wide with some aprons reaching 200 feet, providing several challenging corners and straightaways up to nearly half a mile in length (Fig. 2). Newly-renamed Harewood Acres, the track became the premier site for sports car racing in eastern Canada until the opening of Mosport, a purpose-built facility east of Toronto, in 1961. The first race for sports cars was held at Harewood on June 16,1956 (Fig. 3).]

Fig. 3 – The Le Mans start of a 100-mile event at Harewood Acres, 1956.

Harewood also witnessed the increasing professionalization and internationalization of the sport of motor racing. By 1958, it was clear that Canadian racing was moving away from its amateur roots. Costs were increasing, safety standards were rising and competitive cars were becoming more sophisticated and expensive. These developments were not welcomed by all, but the formation of the Canadian Racing Drivers Association (CRDA) was a sign of changing times. On May 9, 1959, the CRDA sponsored the first professional race in Canada at Harewood, a 500-mile event witnessed by a crowd estimated at 10,000 people and offering prize money of $4,000. Much to the crowd's delight, Ray Carter of Hamilton, driving a Jaguar XKSS, won. By 1960, Harewood's last year under BEMC affiliation, internationally-known drivers like Olivier Gendebien and Roger Penske had raced there in exotic machines such as Maserati Birdcages and Porsche RSK's (Fig. 4).

Harewood would enjoy another decade of club racing and other events before its final closure in 1970 (Fig. 5). In the later 1960s, a massive industrial development transformed the region, involving the construction of a huge steel mill, a large hydro-electric project and the establishment of an oil refinery. The Hare family reaped the benefit of rising real estate values and sold the site to Texaco. Nothing now remains of this airfield-cum-racetrack which was so historically important in the evolution of Canadian autosports.

Green Acres

Like its sister sites at Edenvale and Harewood, Green Acres began as a BCATP airfield. A chain of such bases had been built north of London, Ontario, including those at Centralia, Clinton, Grand Bend and Goderich. The most northerly of the group was No. 31 Air Navigation School, located just outside the village of Port Albert on the eastern shore of Lake Huron. Here trainees flew twin-engined Ansons on regional flights, involving long distances over both land and water. The flat farmlands provided ideal conditions for the production of trained aircrews who would soon enough see action over the North Sea and occupied Europe. Abandoned in 1945, the former base mouldered through the next decade, its buildings disappearing, though its runways and aprons remained. In 1958, the London Auto Sports Club (LASC) leased the property for its weekend races (. 6). For the next four years, Green Acres became the focal point of sports car racing in the area.

Green Acres attracted large and enthusiastic crowds to its events. There was an informal excitement there: drivers and machines were more accessible to spectators than at other sites. Green Acres never had the resources of its competitors, which meant that a happy amateurism flourished, but that proper track maintenance was unaffordable. Folks on summer holidays and cottagers came to events because Green Acres was located on a major provincial highway (#21, known as the "Bluewater Highway") in an area which had been attracting

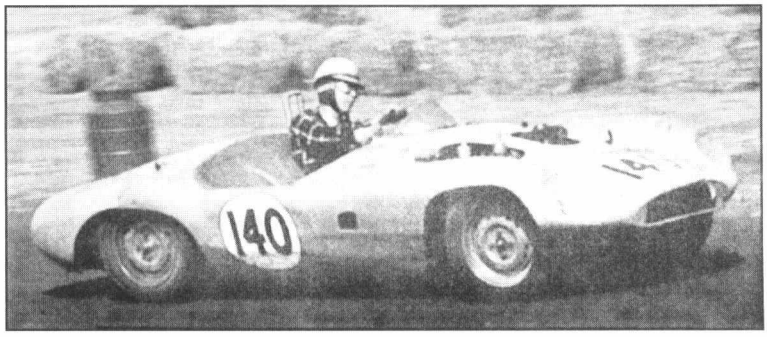


Fig. 4 – Danny Shaw in a Devin SS, Harewood Acres, 1960.

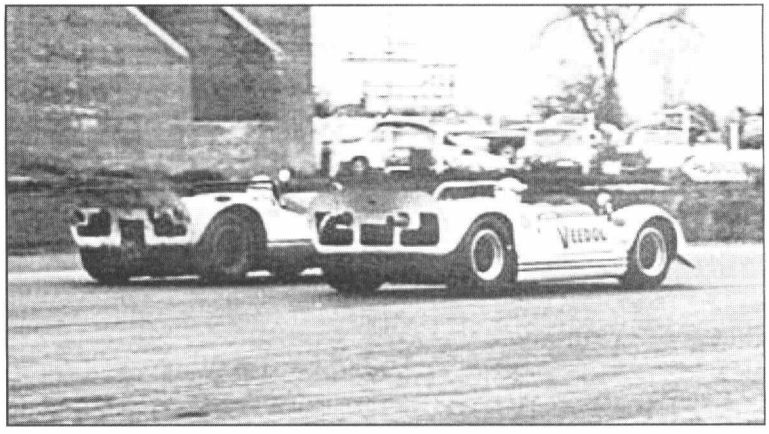


Fig. 5 – A pair of Fejer-designed Chinooks at Gunnery Corner, Harewood Acres, 1967. George Fejer is in the car at the left, and Nat Adams, at the right.

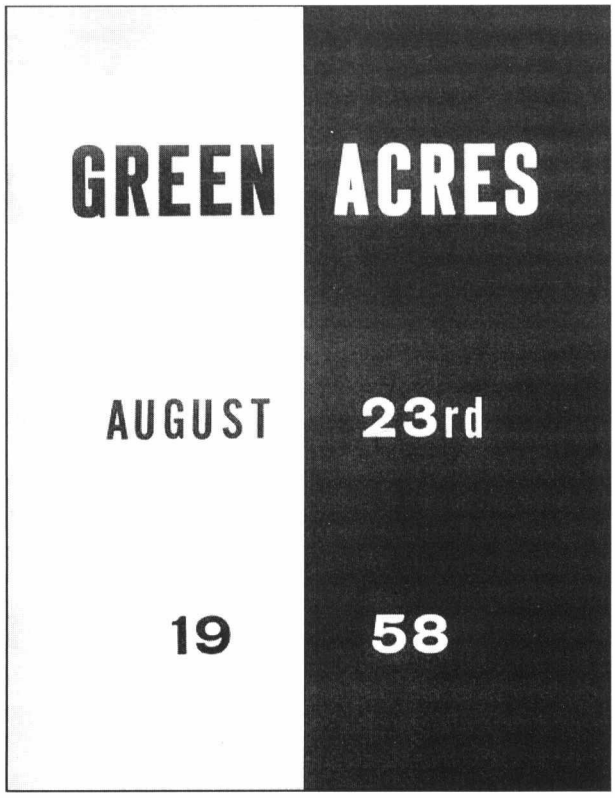


Fig. 6 – cover of Green Acres program, 1958.

vacationers for three generations. Serious followers of motorsports could easily get to the track from several urban areas less than two hours away.

The physical punishment of racing soon took its toll on Green Acres' aging concrete. By 1961, LASC was considering alternatives. The opening of the very professional Mosport course presented the club with a timely opportunity, because of BEMC's withdrawal from Harewood. By 1963, LASC's weekend races had moved there, staying until Harewood's closure in 1970. Green Acres returned to farmland. For many years, a small Quonset hut continued to stand at what had been the circuit's main entrance on Highway 21, bearing the sun-faded logo of LASC and the words "Green Acres." Now the hut too has disappeared: there is nothing at the site to mark either the airfield or its brief reincarnation as a sports-racing circuit.

The Races and Their Impact

It is now nearly 40 years since Harewood closed and almost half a century since postwar amateur sports car racing was at its height in southern Ontario. Many of those involved in these activities have died. Records were not particularly well kept: few, if any, thought they would ever be of any historical significance. *Canada Track and Traffic* has long ceased publication and the very nature of motor racing has changed. Modern day events at Mosport, for example, take place in a very different world than the one of immediate postwar Canada. All these factors make the study of amateur racing difficult for the historian.

Fortunately, most of the events of these years were covered by photographers, amateurs and professionals, individuals and media-sponsored. Through surviving photos, one can get a sense of the excitement surrounding these events and sometimes be surprised by the types of cars being used and the prominence of some of the drivers. Many of the events of the 1950s were started in traditional Le Mans style: cars angle-parked on one side of the starting area, drivers lined up on the other, prepared to run to their machines at the starting signal. At one such race at Harewood in July 1956, six cars are visible, three of them Chevrolet Corvettes. Beyond the drivers is a huge crowd of several thousand people, indicating the popularity of such events. At a similar start four years later, a field of nearly 20 cars seems to include Triumph, Porsche, Lotus, MG, Jaguar and Austin-Healey in front of an equally large crowd.

The amateur racing culture of the 1950s created two by-products which should be explored in greater detail. The first was the emergence of commercial sponsorship for teams of cars and drivers, which in turn led to "professional grade" racing. Chuck Rathgeb of the Comstock Construction Company provided such resources for a variety of contests, culminating in the acquisition of Ford GT40 cars to race at Daytona. The death of one of the team drivers at that event in 1966 led to Rathgeb's withdrawal from racing. In the 1970s, the wealthy Montreal entrepreneur Walter Wolf sponsored similar attempts to enter international competition. Neither of these efforts produced a lasting Canadian presence in motorsport. The second product of the 1950s was an ongoing interest in the design and construction of racing cars themselves. The most gifted Canadian constructor was probably Bill Sadler of St. Catharines, Ontario, who attempted to marry European handling with reliable, large-displacement North American engines. The results were not always happy. Sadler was able to obtain huge amounts of power from his specially prepared motors (usually large Chevrolet V8s), but could not design clutches, transmissions (sometimes Chevrolet's two-speed Powerglide) or suspensions that would withstand the tremendous forces they created. Sadler's innovative but problem-ridden designs were followed by those of other builders. Dave Greenblatt's Dailu and Peter Broeker's Stebro had European overtones. Wayne Kelly produced a promising line of Formula Vee racers in the late 1960s before his untimely death. These early experiments led to attempts at factory production of cars like the Manic GT in Quebec and the notorious Bricklin in New Brunswick, though they were no more successful than Sadler. For a time in the 1980s, the Aurora, made near Toronto, was regarded as one of the best of many AC Cobra replicars.

At least two themes emerge from a study of Canadian sports car racing in the two decades following World War II. Growing professionalization is clearly one of them. Early attempts at design and manufacture, awkward and incomplete as they were, might form another.

Modern Canadians who are interested in motorsports are aware of professional events at Mosport or Mont Tremblant in Quebec, of Indy car races in public spaces in Toronto, Vancouver or Montreal, of public personalities like Gilles and Jacques Villeneuve or Paul Tracy. Few of them probably know that these current events and drivers are rooted in amateur racing on surplus airfields half a century ago.

A NOTE ON SOURCES

There is, of course, copious literature about the Second World War. One of the best sources on the BCATP is W.A.B. Douglas, "The Struggle For a National Air Force ," vol. II of the "Official History of the Royal Canadian Air Force" (Toronto: University of Toronto Press, 1986), especially part 2. The statistics for the BCATP used in this paper are drawn from Douglas. The pictures and quotations from *Canada Track and Traffic* are taken from the author's own collection, a broken run extending from 1959 to 1968. Some observations are personal ones: the author saw and heard night races at Harewood from the cabin of a summer camp about a mile from the track and passed the entry hut at Green Acres many times over several summers. "Captains of the Clouds" may still be viewed from time to time on programs like TV Ontario's "Saturday Night at the Movies." Oral history has played a role as well: a few former students and acquaintances were involved at Harewood and Green Acres. Finally, a website, canadianracer.com, proved invaluable as a source for pictorial and program material.

There is, as yet, no secondary literature on this subject, but it is a real pleasure to acknowledge the doctoral thesis by a former student, Dean Ruffilli, "The Car in Canadian Culture, 1898-1983," Ph.D. thesis, University of Western Ontario, 2006), especially Chapter 4. Dr. Ruffilli won the SAH's student essay competition some years ago.

Barré Lyndon: How One Writer Reflected the Popularity of Motor Sports in Prewar England

by the Rev. Dr. Richard L. Knudson

Barré Lyndon, the nom de plume of Alfred Edgar.

Introduction

There was very little writing on motor racing in the United States until after World War II. But the situation was different in England where there was a tradition of weekend motor sports, well reflected in the works of Alfred Edgar Frederick Higgs, writing first as "Alfred Edgar," and later as "Barré Lyndon."

On the American Side of the Pond

> It was a good French road, string straight and lined with poplars that had watched two wars. The trees slid past the bellowing Maserati like something in a nightmare. Lonetti knew every pebble in the road.

Most automobile enthusiasts over 50 will probably recognize those sentences from Ken Purdy's classic story "Change of Plan" that was originally published in *The Atlantic Monthly* of September 1952. That story has been included in more than a dozen short story collections since it first appeared because it is an outstanding piece of writing.

Purdy is better known for his influential book "The Kings of the Road" published by Little, Brown and Co. of Boston in 1949 (Fig. 1). I say "influential" because this one book can be credited with giving the antique car movement in North America a jump start after World War II. Purdy introduced thousands of readers to the joys, mystique, and passions of Bentleys, Bugattis, Duesenbergs, Mercedes, Mercers, M.G.s, Rolls-Royces, as well as to some of the famous people who either made them or drove them. Purdy's success came from his enthusiasm, his vivid writing style, and his meticulous research. I personally have heard people claim that this one book turned them into antique car hobbyists. Through several editions, the book not only remained in print for over 17 years but also sold well as a paperback.

Don Stanford, another freelance writer from the 1950s specializing in cars, certainly influenced many sports car

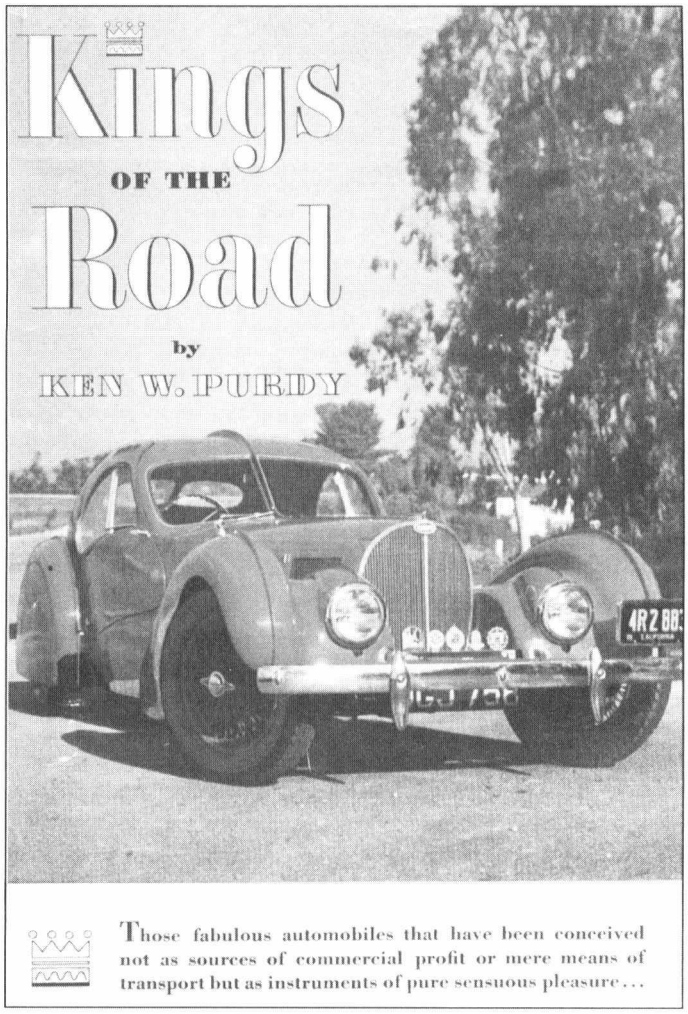


Fig. 1 – In every enthusiast's library, mid-20th Century: Ken Purdy's "The Kings of the Road" (1949).

enthusiasts with his memorable novel, "The Red Car" (Fig. 2). This book was published for teenaged readers back in 1954 and is still in print today, over 50 years later. Hardback, paperback, foreign editions all considered, "The Red Car" must have sold more than two million copies. If you do not know this book, it's about a wrecked M.G. TC that a teenaged boy buys, fixes, and then races. Stanford personally owned a TC that he remembered this way: "I loved that TC and drove it cross-country many times, beating girls off with a stick as I drove. Irresistible little car." Read how he describes it in "The Red Car":

> It was red, fire-engine red. It was low, as Steve's M.G. was low, but it had none of the chunky look of the yellow car

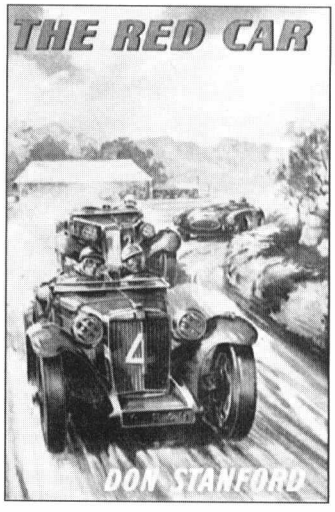


Fig. 2 – Another mid-century classic, "The Red Car" (by Don Stanford, 1954)

> outside. This one was lean and racy and angular, with fenders that made no attempt to curve or blur into the bodylines, but stood out in a clean sharp sweep over the wheels.
>
> The wheels were enormous; they were almost ludicrous, at first glance. They were gleaming silvery wheels, standing high and narrow with the rakish scarlet body of the car slung low between them, looking even now as through it were crouched close to the ground ready to spring forward. The car looked almost alive. It had a personality all its own—an arrogant, insolent, challenging way of looking you right in the eye and saying, "Drop dead!"

Briefly, then, Purdy and Stanford impacted the American postwar automobile hobby significantly. Many of today's enthusiasts were motivated by what they read. Vicarious experiences from reading impact people in a very direct way. We have all read of world class drivers who trace the spark of their interest back to some book they read. For example, Dan Gurney credits George Monkhouse's "Motor Racing with Mercedes-Benz" as being the book that triggered his imagination and enthusiasm for racing.

But Things Were Different in England

However, back in the 1930s old cars were not generating much enthusiasm on this side of the Atlantic and motor racing was pretty much confined to the Indianapolis 500. In England, on the other hand, motor sports were extremely popular during that period even in spite of the world crippling economic depression. The depression in England was much worse than in North America. Here, we consider that the Great Depression started in 1929; in England, however, it began in 1919 caused by the economic struggle the country experienced after World War I. Unemployment ran upwards of 30 per cent and the pound sterling was seriously devalued.

Because of this, car ownership in England was not high. The average worker just could not afford a car; yet, racing venues such as Brooklands, Donington, Phoenix Park and Newtownards in Ireland, and the Isle of Man prospered by consistently drawing huge crowds of spectators who made their way to the races on public transportation, by bicycle, and by foot. Other competitions such as trials and hillclimbs attracted many fans as well (Fig. 3). For example, contemporary newspaper reports estimated that almost a half million people witnessed each of the Tourist Trophy races held in Northern Ireland from 1928 to 1936. Big crowds by any standards, but the numbers are even more impressive when one considers that the high level of interest had to have come from reading. There was no television to excite the fans, nor was radio a serious factor. These fans were motivated mainly by the vicarious experiences of reading about racing in various publications.

We need to remember that most of these 1930s fans were teenagers or younger in the 1920s and their introduction to cars and racing came from reading the pulp magazines aimed at boys. The pulp magazine was printed on cheap paper made from lumber mill scraps. We have to remember also that those teenagers did not have TV for entertainment. If a boy had just two pennies, however, he could buy the weekly pulp magazine of his choice. With the magazine in hand, a few hours of escape were possible. The content of the magazines ranged from science fiction to adventure. Usually there would be at least one racing story...either auto or motorcycle. The editors knew "...the importance of the automobile in the life of the young and its crucial role in rites of passage or initiation into manhood."

Those youngsters who read *The Modern Boy* in the 1920s grew up to become adults of the 1930s who read the publications

Fig. 3 – MG in British hill climb competition, 1930s.

Motor Sport, *The Autocar*, *Speed*, and *The Motor* among others (Fig. 4). In the case of *The Modern Boy* in the 1920s, a man named "Alfred Edgar" authored the motoring stories. Edgar, in fact, wrote for several other weekly publications and used at least ten pseudonyms, including Jake Denvers, Roger Fowey, Hylton Gregory, Tom Rogers, Steven Ryder, John Samson, Edgar Sayers, Howard Steele, and, beginning in 1930, that of "Barré Lyndon."

Alfred Edgar Frederick Higgs was a very accomplished wordsmith who always wrote about motoring in a fascinating way. He was born in London on August 12, 1896. An imaginative, bright youngster, he did well in school winning prizes for his scholarship. There wasn't money for higher education, but Edgar (that's what his family called him) was able to complete the Higher Elementary School. His father was a train conductor, an honest occupation but hardly high-salaried.

As a boy Edgar was a great reader. His sister Clarice remembers that, "He was always in a book. He'd read nights—all of the time. He even used to read to us. Some books he got from the library, some he borrowed from friends."

World War I broke out in 1914. The elder Mr. Higgs died during the first year of the war, and Edgar joined the army shortly after that. He served in France with the infantry's transport section. This tour of duty enabled him to refine his love of motorcars as well as satisfy his thirst for adventure. No doubt, the experience also enhanced his technical knowledge of cars. Army life added authenticity to some later novels, short stories, and screen plays.

During World War I, Edgar started to write seriously. His sister remembered that Edgar would come home on leave and spend hours writing in longhand at a corner of the same table where their mother sewed. After the death of his father, the family had quite a financial struggle, and Mrs. Higgs had to take in sewing from a London factory to get along. Upon discharge from the army, Edgar worked for a sanitary engineer for a short time, but as soon as he was able to sell a few short stories, he relied upon his writing ability to earn a living.

His sister remembers that he was always "...very mad about motoring. He wasn't a member at Brooklands, but he certainly spent much of his time there. He was always picking up information there which helped him with his motoring books and stories."

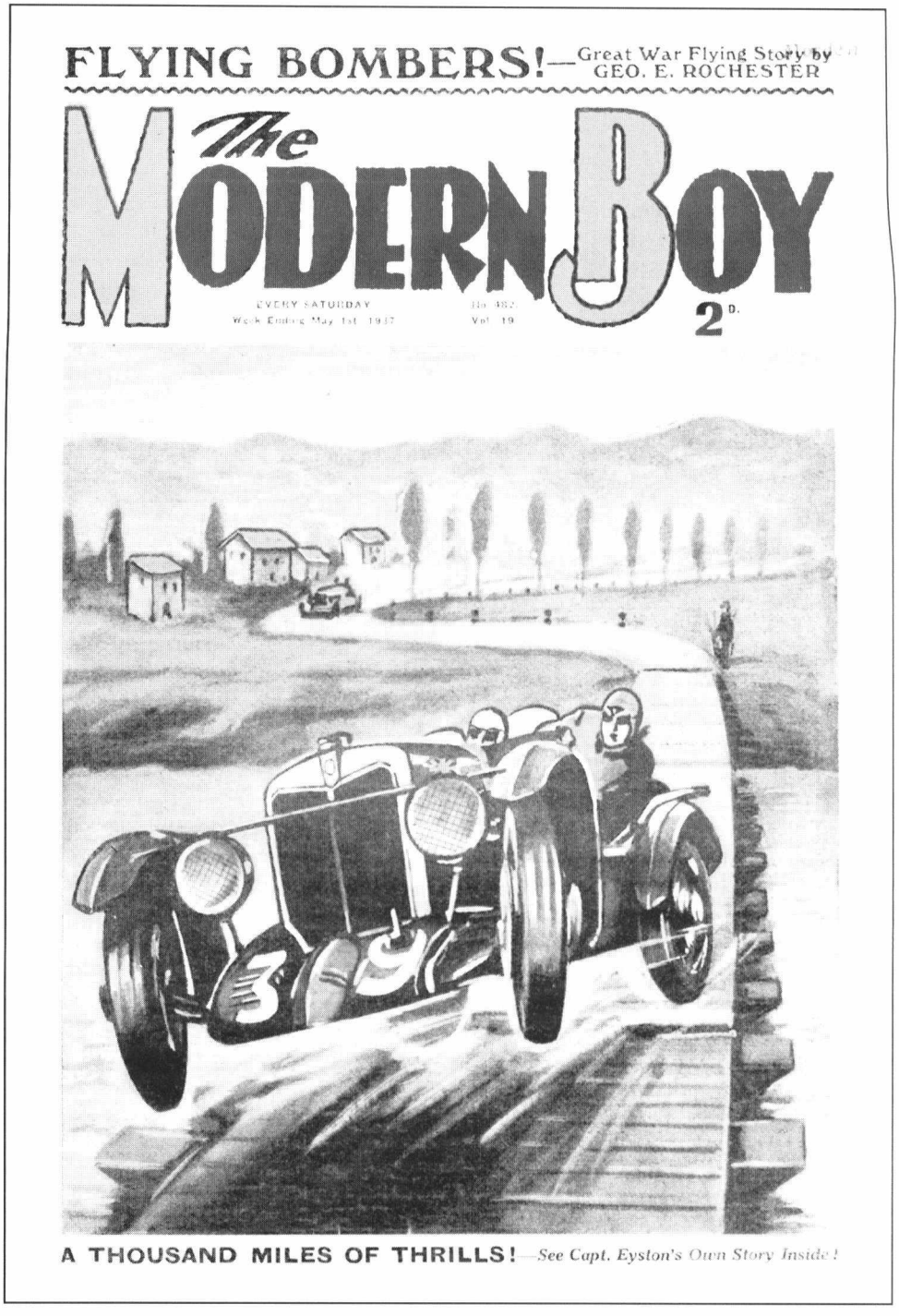


Fig. 4 – Typical of the action covers that exemplified The Modern Boy *magazine.*

Roger Lyndon, his son, recalls, "I remember him as a loving father. We used to go to a lot of places together. My favorite one was Brooklands. We'd go there several times a year. He knew many of the drivers and was particularly close to Malcolm Campbell. Dad was the ghostwriter for Campbell's racing novel 'Salute to the Gods.' Donald Campbell was about the same age as I, and we palled around while our fathers talked."

Edgar's first motoring book was "Knights of the Wheel," published by George G. Harrop & Co., Ltd. in 1923. His first motoring story also appeared in 1923, "The Hoodoo Car!" in *The Boys' Friend* for August 26. Writers for the pulp magazines

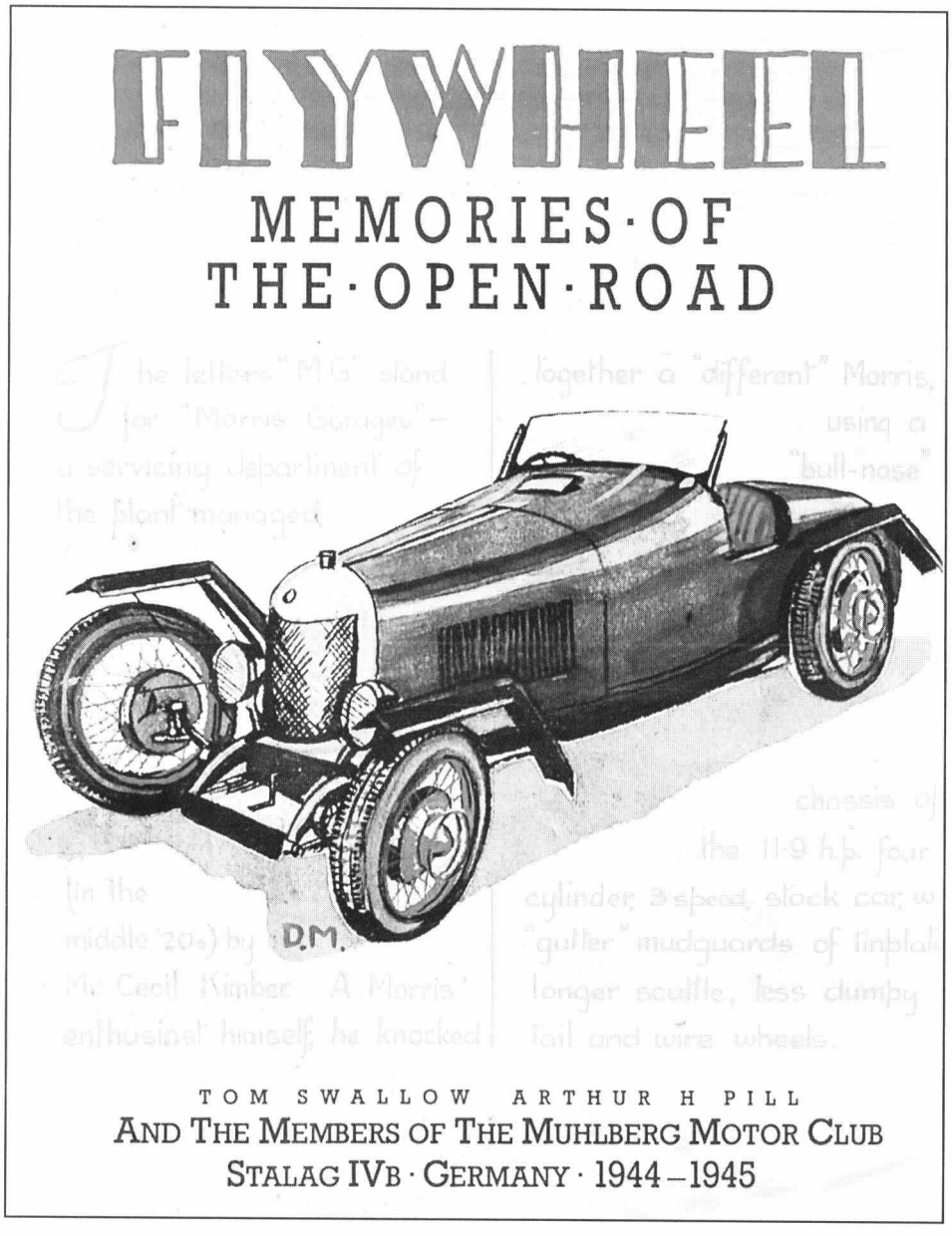


Fig. 5 – Cover of "Flywheel," a compilation of motoring stories by Brits who were German POWs in World War II.

were paid less than a cent a word, so anyone wanting to made a living had to produce a great deal of material. W. Ryerson Johnson, a pulp writer who went on to write scores of paperback novels through the 1960s, summed it up in the title of his memoir: "Freelance Odyssey: We Don't Want It Good, We Want It Wednesday." Truman Capote accused the pulp magazine authors of being more typists than writers. Edgar, however, was the exception to the rule because he crafted his stories with solid style, and his fans always found his work most readable.

"Alfred Edgar" also wrote several novels for boys over the next few years. His sister remembers that Edgar always thought that boys were extremely tough critics. He told her that if he made a mistake the boys would come after him in droves via letters to the editor. Don Stanford agreed about this important point as he remembered his editor, Bill Sloane, telling him, "If you write a book about a car, it will be read by boys who don't read much but who like cars, and they will know cars, and if you get the wrong number of cylinders into a Bugatti, your publisher will get 5,000 letters the next morning all beginning, 'Dear Sir, Who is this schnook?' "

As previously noted, many of the boys who read Alfred Edgar grew up to become dedicated automobile enthusiasts as men. Nothing illustrates this better than the story of the World War II prisoners of war in Stalag IVb, Germany, during 1944-1945.

Surviving as POWs required determination and creativity. Two prisoners at Stalag IVb were Tom Swallow and Arthur Pill who grew up reading *The Modern Boy* before graduating to the adult motoring magazines. These two men formed The Muhlberg Motor Club in the prison camp to entertain the other car enthusiasts incarcerated there. Not only did they have regular meetings to talk about their passion for automobiles, but they also produced a stunning magazine for the members. This magazine was all hand drawn and scripted in a most delightful manner. The issues helped the men remember better days at home and helped them deal with the dismal prison camp life. Content ranged from technical articles to manufacturer histories. They wrote of memorable trips, car shows, and even included a letters to the editor section.

What made this sanity-preserving effort possible was the intense enthusiasm of the organizers originating from their reading about cars at an early age. These magazines were reprinted in an outstanding book called "Flywheel" that is a startling testimony to evolutionary automobile enthusiasm (Fig. 5).

Enter Barré Lyndon, exit Alfred Edgar

The author named Alfred Edgar disappeared from the pulp magazines during 1933, though he authored two motoring books later in the decade, "Where the Cars Roar" (1937) and "The Wandering Speedmen" (1939), both published by George G. Harrop & Co. Ltd. of London. For several years he had co-existed with "Barré Lyndon" beginning with the book "Speed Fever" (1930), published by Thomas Nelson & Sons, London, and the article "The Speed Duel," which appeared in the August 23, 1930, issue of *John Bull*. However, he increasingly turned away from motoring themes.

During the early 1930s, Edgar began to write plays for the London theatre that really foreshadowed the future for him. His sister recalled that these theatrical publishers insisted he choose

a different name, perhaps to separate him from the juvenile work he had been doing. The pseudonym he chose was Barré Lyndon, the name by which he is best remembered today.

Ever since the first automobile appeared, there have been men and women writing about cars; however, automobile journalism is a genre distinguished by the undistinguished. When we consider the literature of the automobile, we have to face the fact that there are few memorable works that could be given "classic" status. Lyndon's books that chronicle M.G.'s glory days in the early 1930s must be considered in any choice of classic automobile literature. If I could have only three books in my motoring library they would be Lyndon's "Combat" (1933), "Circuit Dust" (1934), and "Grand Prix" (1935). This trilogy of early M.G. and British motor racing history sets a standard for outstanding writing in the literature of the automobile.

Lyndon combined a novelist's style with a journalist's eye for the heart of a story. In addition, he had an historian's integrity for textual accuracy. All of his books motivated his readers to keep turning the pages. Lyndon's writing was no rehash of someone else's work: Lyndon was there. He knew the people and events he was writing, and he was present when the history was being made. Lyndon's first-hand knowledge of motor sport gave his writing an eyewitness quality that leant authenticity to all of his work.

Look how he described Brian Lewis' performance driving his Scuderia Ferrari Alfa-Romeo in the 1934 Isle of Man Mannin Moar Race:

> By the time ten laps had been completed, Brian Lewis had mastered his car, and his style of driving changed. He began to use his brakes earlier before each turn, so that the Alfa-Romeo remained completely steady, because the brakes were but lightly applied; he cornered very carefully, and when he accelerated beyond the corners he did so without haste. This would have slowed him considerably, had he not made up time along each straight, putting his foot down hard once the machine was well under way after each curve and corner. His average speed lifted as a result of his steady driving, and his lead increased from Rose-Richards, who slowed his Bugatti when he came along the Promenade on his fourteenth lap, pulling in towards his pit.
>
> Steam was spurting from the vent-pipe on his radiator, and the engine was obviously overheating. After refilling the radiator, a mechanic laboured desperately on the crank handle in an effort to start the engine up again. It is often very difficult to restart the highly tuned power unit of a racing car once it is thoroughly warmed up, and it is still more difficult if the temperature of the engine is higher than it should be. Some minutes were lost before the Bugatti responded, and Rose-Richards had dropped from second place to the end of the field by the time that he got away. The engine began to boil again before the car had completed another lap, and the driver stopped once more. Now he found that the spindle of his water pump had broken, and the machine was pushed off.

The description of Lewis' driving technique reveals Lyndon being at various observation spots around the circuit as well as having interviewed the driver. The further discussion of the Bugatti problems means that Lyndon was in the pits when the action was taking place. So much of the writing about cars today centers on facts completely divorced from any human interest. This brief extract from Grand Prix is completely captivating because it includes the details that show us what took place in the Bugatti pits. I am afraid that many writers would have merely written that the Bugatti retired with overheating problems because that is all they could ascertain from reading the race report in one of the weekly magazines.

A Matter of Style

Lyndon's style is absolutely riveting for the reader because the author describes the complete story of a race from preparation at the factory to the checkered flag. The reader gets to know the names of the drivers as well as many of the mechanics...even using nicknames. Lyndon's motoring books must be hailed as ground breaking true reportage just as Truman Capote achieved years later in his acclaimed "In Cold Blood" in which he makes a nonfiction work read as if it were fiction.

I call Lyndon the motoring bard because he rose to fame as a playwright for the London stage where he attracted the attention of Hollywood. He went to California in the late '30s and had a long career as a screenwriter, beginning with adaption of his plays "The Man in Half Moon Street," "The Lodger," and "Hangover Square." It is important to note that his "The Greatest Show on Earth" won the Oscar for best picture in 1952, competing the same year against the acclaimed film "High Noon."

As might be suspected, at least one of his plays, "Hell for Leather," had a motor racing theme. It is remembered as the first play on a London stage to have a real racing car make an entrance. And what an entrance it was, as the review from *Speed* stated: "Unquestionably the high spot of the show is when the hero wins the race – a situation which is relieved of tedium by the fact that he crashes at the psychological moment of victory, demolishing his own pit pretty thoroughly in the process, at vast expense to the management and the inconvenience of the prop man."

Speed further says, "Those who are not necessarily motor racing enthusiasts will share the enjoyment of their more enlightened fellow playgoers, for 'Hell for Leather' is, withal, a very fine piece of realism."

The *New York Times* review reads this way, "Chief credit for 'Hell for Leather' by Barré Lyndon must go to the producer Claude Gurney, for the realism with which he presents the authentic atmosphere of an automobile race on the stage of the Phoenix Theatre. Streamlined racers, helmeted drivers and the racing jargon of the track pits all lend to the atmosphere of speed on the track and the climax is a thrilling crash at the end of the race."

If you are an old movie fan who watches late night television, it does not take long to catch a Barré Lyndon screenplay: "The Amazing Dr. Clitterhouse," "Sundown," "The Night has a Thousand Eyes," "The Sign of the Cross," "To Please a Lady," "War of the Worlds," " Man in the Attic," "The Conquest of Space," and "The Greatest Show on Earth." Film critics feel his two sinister psychological thrillers "The Lodger"

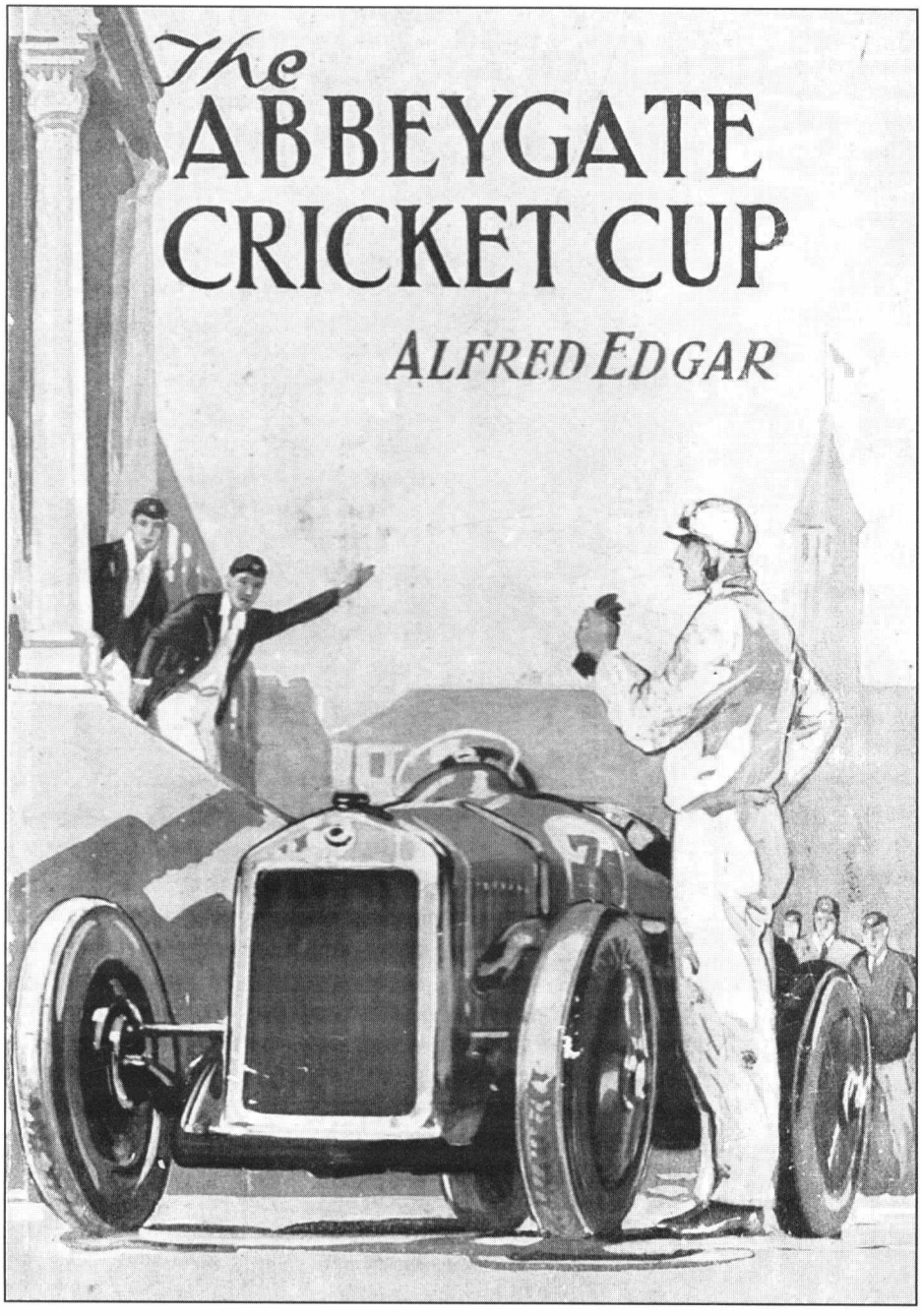


Fig. 6 – Cover of "The Abbeygate Cricket Cup," by Alfred Edgar (1929).

(1944) and "Hangover Square" (1945) are minor classics of the American screen. Both were directed by John Brahm and starred Laird Cregar. In addition to movies, Lyndon also wrote many television scripts including several for the long running "The FBI Story."

"To Please a Lady" starred Clark Gable and Barbara Stanwyck. It's an entertaining car racing film about an American Indy and midget driver. Strictly speaking, one could argue that a serious motor racing movie has yet to be made, but the combination of the stars, the racing sequences, and Lyndon's script helped this one at the box office. The film was later re-released as "Red Hot Wheels" and did well the second time around.

After Lyndon's death in 1972, his second wife gave the bulk of his papers to The Margaret Herrick Library at the Academy of Motion Picture Arts and Sciences, Beverly Hills, California. Several feet of shelf space contain the collection that includes virtually all of his screenplays and many television scripts. There are several working papers that give an insight into his writing methods: this was a writer who took time to revise and edit ruthlessly. Interestingly enough there is virtually no correspondence, and that leads this writer to think that he must have used the telephone a great deal. I know that he did a great deal of his work by Dictaphone. Barré Lyndon was certainly the most accomplished writer ever to document motoring history in the '30s. From syntax to semantics no automobile writer has ever written any better. In January 1937, *Speed* published an article about motor racing books and listed about 50 titles that seemed to be the extent of the genre, as the author knew it. The publication dates of those books range from 1912 to 1936, and most enthusiasts would recognize virtually all of the titles. It is interesting to note that Barré Lyndon or Alfred Edgar authored 12 of the 50.

Lyndon must be considered one of the best primary sources of automotive history in the 1930s that we have.

Alfred Edgar Bibliography

Books

Knights of the Wheel, George G. Harrop & Co. Ltd., London, 1926.

Burst Tyres, John Hamilton, Ltd., London, No Date.

Skid Kennedy—Speed King, John Hamilton, Ltd., London, No Date.

The Abbeygate Cricket Cup, Frederick Warne and Co., Ltd., London, 1929 (Fig. 6).

The Nine O'Clock Mail, Frederick Warne and Co., Ltd., London, 1930.

The Schoolboy Airmen, Frederick Warne and Co., Ltd., London, 1931.

Invaders From Mars, Amalgamated Press, London, 1931.

The Iron Speedman, Amalgamated Press, London, 1931 (Fig. 7).

The Insect Men, Amalgamated Press, London, 1936.

Where The Cars Roar, George G. Harrap & Co. Ltd., London, 1937.

The Wandering Speedmen, George G. Harrap & Co. Ltd., London, 1939.

Magazine Stories and Articles

Author's Note: As can be easily seen, Alfred Edgar/Barré Lyndon produced a great deal of writing. Please do not think that this bibliography is at all complete. He wrote under the following pen names that I have not taken the time to research: Jake Denvers, Roger Fowey, Hylton Gregory, Patsy Hendren (ghosted

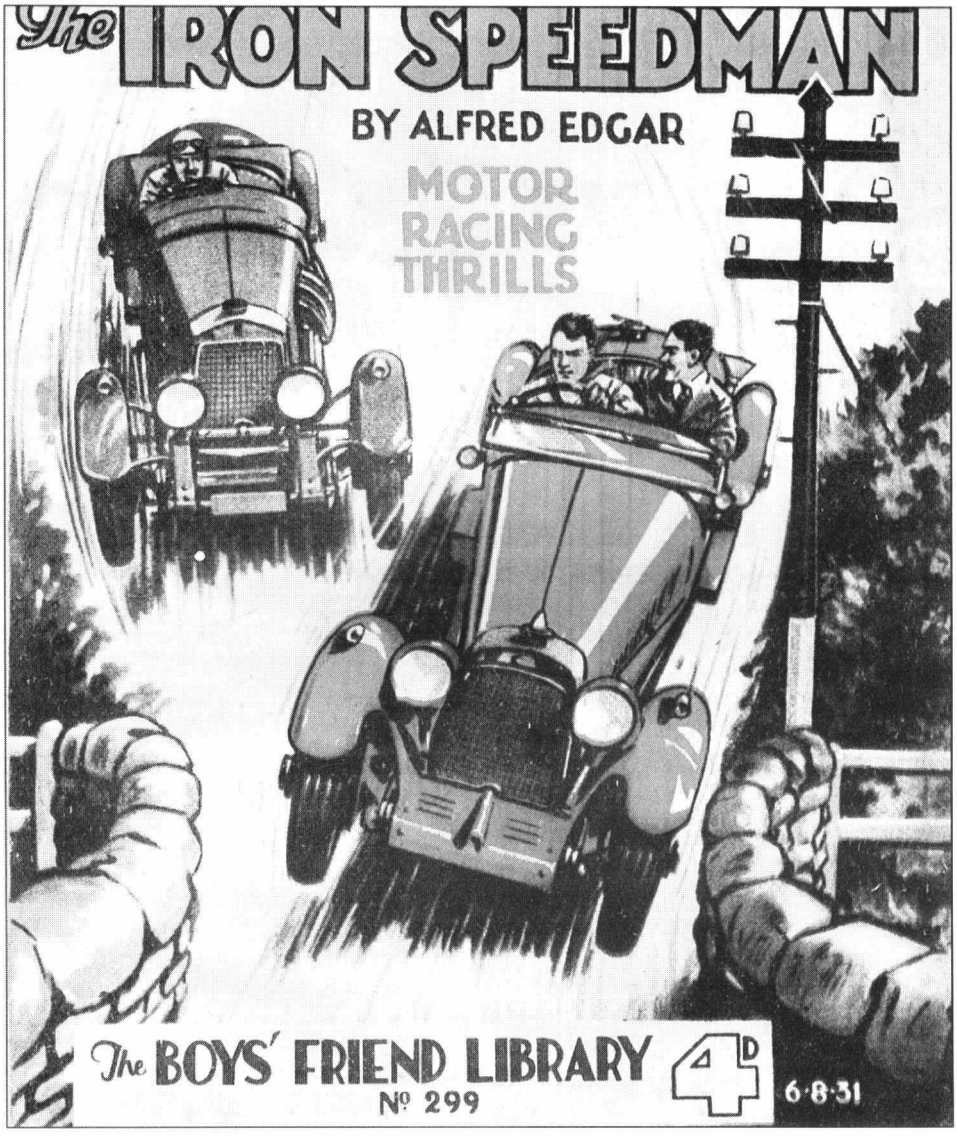


Fig. 7 – Cover of "The Iron Speedman," by Alfred Edgar (1931)

for the famous cricketer), Tom Rogers, Steven Ryder, John Sansom, Edgar Sayers, Howard Steele, and the ever popular Anon.

In the bibliography below, "n" indicates a novel, "nv" a novelette, "ss" short story, "sl" serial, and "ar" article. Material in brackets represents a compilation of short stories that were subsequently published as a novel by that name.

"Lawless Justice" (n.), *Sexton Blake Library,* #232, 1922.

"The Power of the Unknown" (n.), *Sexton Blake Library*, #212, 1922.

"The Sign in the Sky" or "The Secret of the Tong" (n.), *Sexton Blake Library,* #254, 1922.

"The Hoodoo Car!" (nv), *The Boys' Friend*, Aug. 26, 1923.

"The Secret of the Safe" (n.), *Sexton Blake Library,* #268, 1923.

"The Spendthrift Sportsmen!" (nv), *The Boys' Friend*, Dec. 12, 1925.

"Kings of Speed!" (ss), *Greyfriars Holiday Annual*, 1925.

"Motor Mick!" (sl), *The Boys' Realm of Sport and Adventure*, July 11, July 18, July 25, Aug. 1, Aug. 8, and Aug. 15, 1925.

"Racing the Flood!" (ss), *Greyfriars Holiday Annual*, 1926.

"The Spendthrift Sportsmen!" (nv), *The Boys' Friend*, Dec. 12, 1925.

"Garage Jim!" (ss), *The Boys' Friend, Jan. 2, 1926.*

"Taming a Road-Hog!" (ss), *The Boys' Friend*, Jan. 9, 1926.

"Smarty Gets the Wind Up!" (ss), *The Boys' Friend*, Jan. 16, 1926.

"The Flying Fords!" (ss), *The Boys' Friend*, Jan. 23, 1926.

"The Night Rider!" (ss), *The Boys' Friend*, Feb. 6, 1926.

"A Square Deal!" (ss), *The Boys' Friend*, Feb. 13, 1926.

"Making a Man of Him!" (ss), *The Boys' Friend*, Feb. 20, 1926.

"Foiling a Faker!" (ss), *The Boys' Friend*, Feb. 27, 1926.

"A Hun of the Highway!" (ss), *The Boys' Friend*, Mar. 6, 1926.

"Raising the Wind!" (ss), *The Boys' Friend* Mar. 13, Mar. 20, 1926.

"From Garage Hack to Racing Car!" (ss), *The Boys' Friend*, Mar. 27, 1926.

"Garage Jim's Star Turn!" (ss), *The Boys' Friend*, Apr. 3, 1926.

"Rivals of the Road!" (ss), *The Boys' Friend*, Apr. 10, 1926.

"Speedway Luck" (ss), *Greyfriars Holiday Annual*, 1928.

Mick O' the Midnight Mail!" (ss), *The Magnet Library* v. 32 No.1035, Dec. 17, 1927.

"The Cup-Final Mystery" (n.), *Sexton Blake Library* (Second Series) #90, 1927.

"Jack on the Job" (ss), *The Modern Boy*, Feb. 11, 1928, ["The Skid Merchant"].

"The Heroes of the Hill Climb" (ss), *The Modern Boy*, Feb. 18, 1928, Vol. 1 No. 1 ["The Skid Merchant"].

"Neck or Nothing" (ss), *The Modern Boy*, Feb. 25, 1928, ["The Skid Merchant"].

"At Grips with the Cracks" (ss), *The Modern Boy*, Mar. 3, 1928, ["The Skid Merchant"].

"The Luck of the Speedway" (ss), *The Modern Boy* Mar. 10, 1928, ["The Skid Merchant"].

"The High Speed Parade" (ss), *The Modern Boy*, Mar. 17, 1928, ["The Skid Merchant"].

"The Record Smasher" (ss), *The Modern Boy,* Mar. 24, 1928, ["The Skid Merchant"].

"The Devil's Pike" (ss), *The Modern Boy,* Mar. 31, 1928, ["The Skid Merchant"].

"The Red Knight Wins!" (ss), *The Modern Boy*, Apr. 7, 1928, ["The Skid Merchant"].

"Won on the Mountain Circuit" (ss), *The Modern Boy*, Apr. 14, 1928, ["The Skid Merchant"].

"The Red Knight Takes the Record" (ss), *The Modern Boy*, Apr. 21, 1928, ["The Skid Merchant"].

"Speed Fever!" (ss), *The Modern Boy*, May 5, 1928.

"Whizzing Wheels" (ss), *The Modern Boy*, May 12, 1928.

"The Mile a Minute Acrobat" (ss), *The Modern Boy*, May 19, 1928.

"The Racing Buccaneers" (ss), *The Modern Boy*, May 26, 1928. Sharp Practice" (ss), *The Modern Boy*, June 2, 1928.

"Out to Win" (ss), *The Modern Boy*, June 9, 1928.

"Jack on the Job" (sl), *The Modern Boy*, June 23, June 30, July 7, and July 14, 1928.

"Marooned on Mars" (ss), *The Modern Boy*, July 21, 1928.

"The Planet of Peril" (ss), *The Modern Boy*, July 28, 1928.

"The Fungus Folk" (ss), *The Modern Boy*, Aug. 4, 1928.

"The Revolt of the Flying Dwarfs" (ss), *The Modern Boy*, Aug. 11, 1928.

"The Menace of the Mechanical Men" (ss), *The Modern Boy*, Aug. 18, 1928.

"The Master Man of Mars" (ss), *The Modern Boy*, Aug. 25, 1928.

"The City of Burning Ice" (ss), *The Modern Boy*, Sep 1, 1928.

"Good-bye to Mars" (ss), *The Modern Boy*, Sep 8, 1928.

"Kings of the Speedway" (ss), *Chums*, Oct. 2, 1928.

"The Iron Crown!" (ss), *Chums*, Dec. 11, 1928.

"The Desert Speedway!" (ss), *Chums*, Dec. 25, 1928.

"The Ghost of the Grand Prix!" (ss), *Greyfriars Holiday Annual* 1928 1929.

"The Trail of the Traitor" (n.), *Sexton Blake Library*, (Second Series) #185 1929.

"Speed Irons!" (ss), *Chums*, Jan. 8, 1929.

"The Dirt Track Airman!" (ss), *Chums*, Jan. 22, 1929.

"Speed-Struck" (ss), *The Modern Boy*, Jan. 26, 1929.

"The Bandit Speedman!" (ss), *Chums*, Jan. 29, 1929.

"Full Throttle!" (ss), *The Modern Boy*, Feb. 2, 1929.

"Singed Speed" (ss), *The Modern Boy*, Feb. 9, 1929.

"Thunderbolt" (ss), *The Modern Boy*, Feb. 16, 1929.

"The Invaders from Mars" (ss), *The Modern Boy*, Feb. 23, 1929, ["Invaders from Mars"].

"The Terror from Mars" (ss), *The Modern Boy*, Mar. 2, 1929, ["Invaders from Mars"].

"The Advance of the Martians" (ss), *The Modern Boy*, Mar. 9, 1929 ["Invaders from Mars"].

"The Fall of London" (ss), *The Modern Boy*, Mar. 16, 1929, ["Invaders from Mars"].

"The Armies from Mars" (ss), *The Modern Boy*, Mar. 23, 1929.

"The Stonghold of the Martians" (ss), *The Modern Boy*, Mar. 30, 1929.

"The Electric Guns" (ss), *The Modern Boy*, Apr. 6, 1929.

"The Vengeance of Mars!" (ss), *The Modern Boy*, Apr. 13, 1929, ["Invaders from Mars"].

"The Schoolboy Speedmen" (ss), *The Modern Boy* Apr. 20, 1929, ["Schoolboy Speedmen"].

"The Speed Slide" (ss), *The Modern Boy*, Apr. 27, 1929, ["Schoolboy Speedmen"].

"The Leather Demon" (ss), *The Modern Boy*, May 4, 1929, ["Schoolboy Speedmen"].

"The Speedway Cavaliers" (ss), *The Modern Boy*, May 11, 1929, ["Schoolboy Speedmen"].

"Flying Cinders!" (ss), *The Modern Boy*, May 18, 1929, ["Schoolboy Speedmen"].

"The Gravel Pit Mystery" (ss), *The Modern Boy*, May 25, 1929, ["Schoolboy Speedmen"].

"The Grey Comet" (ss), *The Modern Boy*, June 1, 1929 ["Schoolboy Speedmen"].

"The Flying Irishman" (ss), *The Modern Boy*, June 8, 1929.

"Yeoman of the Cinders" (ss), *The Modern Boy*, June 15, 1929.

"The Golden Championship" (ss), *The Modern Boy*, June 22, 1929.

"Dynamo Pit" (ss), *The Modern Boy*, July 6, 1929.

"Danger—10,000 Volts" (ss), *The Modern Boy*, July 20, 1929.

"The Blue Flash" (ss), *The Modern Boy*, July 27, 1929.

"The Trembling Chimney" (ss), *The Modern Boy*, Aug. 10, 1929.

"Fighting the Yellow Peril" (ss), *The Modern Boy*, Oct. 19, 1929.

"Saving the Big Special" (ss), *The Modern Boy*, Sep 21, 1929.

"The Freak" (ss), *The Modern Boy*, Sep 28, 1929.

"The Schoolboy Engine Drivers" (ss), *The Modern Boy*, Oct. 26, 1929.

"The River Pirate" (ss), *The Modern Boy*, Nov. 2, 1929.

"Ghost Wharf" (ss), *The Modern Boy*, Nov. 9, 1929. "The Bullion Ship" (ss), *The Modern Boy*, Nov. 16, 1929.

"The Burning River" (ss), *The Modern Boy*, Nov. 23, 1929.

"The Chinese Joss" (ss), *The Modern Boy*, Nov. 30, 1929.

"The Undersea Hawk" (ss), *The Modern Boy*, Dec. 7, 1929.

"The Christmas Ship" (ss), *The Modern Boy*, Dec. 14, 1929.

"Yuletide Salvage" (ss), *The Modern Boy*, Dec. 21, 1929.

"The Ghost Tug" (ss), *The Modern Boy*, Dec. 28, 1929

"The Black Pennant" (ss), *The Modern Boy*, Jan. 4, 1930.

"Hill Climbing Champion" (ss), *The Modern Boy*, Jan. 11, 1930.

"Riding for a Win" (ss), *The Modern Boy*, Jan. 18 ,1930.

"The Big Alarm" (ss), *The Modern Boy*, Feb. 1, 1930.

"The Frozen Fire" (ss), *The Modern Boy*, Feb. 15, 1930.

"Fire Masks" (ss), *The Modern Boy*, Feb. 22, 1930.

"The Flaming Escape" (ss), *The Modern Boy*, Mar. 1, 1930.

"Burst Tyres" (ss), *The Modern Boy*, Mar. 8, 1930.

"The Scared Speedman" (ss), *The Modern Boy*, Mar. 15, 1930.

"The Blue Star" (ss), *The Modern Boy*, Apr. 19, 1930.

"The Speed King's Crown" (ss), *The Modern Boy* Apr. 26, 1930.

"When Time Took Charge" (ss), *The Modern Boy* May 3, 1930.

"The Underground Raiders" (ss), *The Modern Boy*, May 10, 1930.

"The Country of the Krooms" (ss), *The Modern Boy*, May 24, 1930.

"The Scourge of the World" (ss), *The Modern Boy*, May 31, 1930.

"England Invaded" (ss), *The Modern Boy*, June 14, 1930.

"Back from the Future" (ss), *The Modern Boy*, June 21, 1930.

"Fought to the Flag" (ss), *Chums*, June 24, 1930.

"Cinder Struck" (ss), *The Modern Boy*, June 28, 1930.

"The Cyclone Star" (ss), *The Modern Boy*, July 5, 1930.

"The School for Speedmen" (ss), *The Modern Boy*, July 12, 1930.

"The Speedway Rough Riders" (ss), *The Modern Boy*, July 19, 1930.

"The Haunted Forest" (ss), *The Modern Boy*, Sep 13, 1930.

"The Whistling Dagger" (ss), *The Modern Boy*, Oct. 4, 1930.

"The Green Sack" (ss), *The Modern Boy*, Oct. 11, 1930.

"The Shaking Isle" (ss), *The Modern Boy*, Oct. 18, 1930.

"Thunder of Guns!" (ss), *The Modern Boy*, Nov. 15, 1930.

"Under Fire" (ss), *The Modern Boy*, Nov. 22, 1930.

"Dispatch Runners!" (ss), *The Modern Boy*, Nov. 29, 1930.

"The Undersea Sword" (ss), *Chums*, Dec. 30, 1930.

"Green Cannon" (ss), *The Modern Boy*, Jan. 10, 1931.

"The Thunder Plant" (ss), *The Modern Boy*, Jan. 17, 1931.

"The Grey Arrow" (ss), *The Modern Boy*, Jan. 24, 1931.

"The Spotted Schoolboys" (ss), *The Modern, Boy* Feb. 14, 1931.

"The Devil's Helmet" (ss), *The Modern Boy*, Feb. 21,1931.

"Blazing Speed" (ss), *The Modern Boy*, Feb. 28, 1931.

"The Forbidden Race" (ss), *The Modern Boy*, Mar. 7, 1931.

"Faster Than the Fastest" (ss), *The Modern Boy*, Mar. 14, 1931.

"Rod of the Red Devil" (ss), *Chums*, Mar. 31, 1931.

"Greased Lightning Racers!" (ar), *The Modern Boy*, Oct. 3, 1931.

"Defying Death in High-Speed Cars" (ar), *The Modern Boy*, Oct. 17, 1931.

"The Speed Syndicate" (ss), *The Modern Boy*, Oct. 24, 1931.

"The Speedman's Warning" (ss), *The Modern Boy*, Oct. 31, 1931.

"Slashing Speed!" (ss), *The Modern Boy's Annual*, 1931 1930.

"The Roaring Railway" (sl), *The Modern Boy*, May 16, May 23, May 30, June 6, June 13, June 20, June 27, July 4, July 11, July 18, July 25, and Aug. 1, 1931.

"Roghi the Bandit" (ss), *The Modern Boy*, Nov. 14, 1931.

"Fighting Speedirons" (ss), *The Modern Boy*, Nov. 28, 1931.

"Secrets of Stonemoor" (ss), *The Bullseye*, Nov. 28, 1931.

"Secrets of Stonemoor: Convict No. 13!" (ss), *The Bullseye*, Jan. 30, 1932.

"Secrets of Stonemoor: High Treason!" (ss), *The Bullseye*, May 21, 1932.

"Secrets of Stonemoor: King of the Convicts!" (ss), *The Bullseye*, Nov. 21, 1931.

"Secrets of Stonemoor: Rebellion!" (ss), *The Bullseye*, Nov. 7, 1931.

"Secrets of Stonemoor: Soldier of Fortune!" (ss), *The Bullseye*, Feb. 6, 1932.

"Secrets of Stonemoor: The Black Hole" (ss), *The Bullseye*, Oct. 17, 1931.

"Secrets of Stonemoor: The Hand of the White Nun!" (ss), *The Bullseye*, Oct. 24, 1931.

"Secrets of Stonemoor: The Man with the Twisted Thumbs!" (ss), *The Bullseye*, Oct. 31, 1931.

"Secrets of Stonemoor: The Escape of the Numbered Men!" (ss), *The Bullseye*, Nov. 14, 1931.

"Secrets of Stonemoor: The Sign of the Silver Star!" (ss), *The Bullseye*, Dec. 5, 1931.

"Secrets of Stonemoor: The Prison-Breakers!" (ss), *The Bullseye*, Feb. 13, 1932.

"Secrets of Stonemoor: The Black Nun!" (ss), *The Bullseye*, Mar. 26, 1932.

"Secrets of Stonemoor: The Guild of the King's Gentlemen!" (ss), *The Bullseye*, May 7, 1932.

"Secrets of Stonemoor: The Laughing Convict!" (ss), *The Bullseye*, May 14, 1932.

"Secrets of Stonemoor: The Man Who Saved Stonemoor!" (ss), *The Bullseye*, Apr. 30, 1932.

"The Return of the Phantom: The White Crusader!" (ss), *The Bullseye*, Dec. 3, 1932.

"Martin Holt Detective: On Secret Service!" (ss), *The Bullseye*, Jan. 20, 1934.

"The Broken Road!" (ss), *Greyfriars Holiday Annual*, 1931 1930.

"All Out for the Grand Prix!" (ss), *The Modern Boy's Annual*, 1933, 1932.

"The Chinese Champion" (ss), *Chums Annual*, 1938 1937.

"The Devil's Finger" (ss), *Chums Annual*, 1938 1937.

"They Called Him a Jonah" (ss), *The Modern Boy's Annual*, 1940.

"The Stolen Mail" (ss), *The Modern Boy's Annual*, 1941.

"Green Faces: The Mask of Vengeance" (ss), *The Bullseye* Nov. 7, 1931.

"Green Faces: The Haunted Signpost!" (ss), *The Bullseye* Nov. 14, 1931.

"Green Faces: The Face in the Safe!" (ss), *The Bullseye* Nov. 21, 1931.

"Green Faces: The Purple Phial!" (ss), *The Bullseye* Nov. 28, 1931.

"Green Faces: The Concrete Dungeon!" (ss), *The Bullseye* Dec. 5, 1931.

"Martin Holt, Detective: The Menace of the Metal Men!" (nv), *The Surprise* July 1, 1933.

"Martin Holt, Detective: The Palace of Peril!" (nv), *The Surprise* July 8, 1933.

"Martin Holt, Detective: The Vengeance of Chang!" (nv), *The Surprise* July 15, 1933.

"Martin Holt, Detective: The Invisible Menace!" (nv), *The Surprise*, July 22, 1933.

"Martin Holt, Detective: The Dwarf Tong!" (nv), *The Surprise*, July 29, 1933.

"Martin Holt, Detective: The King of London!" (nv), *The Surprise*, Aug. 5, 1933.

"Martin Holt, Detective: The Terror in the Thames!" (nv), *The Surprise*, Aug. 12, 1933.

"Martin Holt, Detective: The Black Bandit!" (nv), *The Surprise*, Aug. 19, 1933.

"Martin Holt, Detective: The House of the Red Disc!" (nv), *The Surprise*, Aug. 26, 1933.

"Martin Holt, Detective: The Secret of the Black Island!" (nv), *The Surprise*, Sep 2, 1933.

"Martin Holt, Detective: The Monster from Mongolia!" (nv), *The Surprise*, Sep 9, 1933.

"Martin Holt, Detective: The Stinging Beam!" (nv), *The Surprise*, Sep 16, 1933.

"Martin Holt, Detective: The Metal Mole!" (nv), *The Surprise*, Sep 23, 1933.

"Martin Holt, Detective: The Black Pyramid!" (nv), *The Surprise*, Sep 30, 1933.

"Martin Holt, Detective: The Phantom of St. Paul's Churchyard!" (nv), *The Surprise*, Oct. 7, Oct. 14, 1933.

"Martin Holt, Detective: The £1,000,000 Wager!" (nv), *The Surprise*, Oct. 21, 1933.

"Martin Holt, Detective: The Dark Island!" (nv), *The Surprise*, Nov. 4, 1933.

"Martin Holt, Detective" (nv), *The Surprise*, Nov. 11, 1933.

"Martin Holt Detective: The House of the Coloured Lights!" (ss), *The Bullseye*, Dec. 9, 1933.

Barré Lyndon Bibliography

Books

Speed Fever, Thomas Nelson and Sons, Ltd., London, 1930.

Combat, William Heinmann, Ltd., London, 1933.

Salute To The Gods, (for Malcolm Campbell), Cassell & Co., London, 1934.

Circuit Dust, John Miles, Ltd., London, 1934.

The Luck of the Game Again, The M.G. Car Company, Ltd., Abingdon, 1934.

Grand Prix, John Miles, Ltd., London, 1935.

This is Motoring, The M.G. Car Company, Ltd., Abingdon, 1935.

Motor Racing and Record Breaking, (with George Eyston), Batsford, London, 1935.

The Amazing Dr. Clitterhouse, Random House, New York, 1937.

Sundown, Frederick A. Stokes, New York, 1941.

The Man Who Could Cheat Death, (with Jimmy Sangster), Avon, New York, 1959.

Magazine Stories and Articles

"The Speed Duel," (ss), *John Bull*, Aug. 23, 1930.

"Speed Storm" (novelette), *Argosy*, June 1931.

"Fast Enough to Kill" (ss), *John Bull*, Oct. 31, 1931.

"A Circuit of the Circuits" (6 part article describing a trip to 17 racing courses in 13 days), *The Autocar*, Nov.-Dec. 1934.

"The Man Who Could Vanish" (ss), *The Passing Show*, Jan. 19, 1935.

"Revolt" (ar), *The Autocar*, Apr. 12, 1935.

"Slit" (ss), *The Thriller*, Aug 3, 1935.

"Speed Fever" (ss), *The Thriller*, Aug 24, 1935.

"Famous Racing Circuits" (a multi-part article), *Speed*, July-Sept. 1935.

"Morning in the High Street" (ss), *The Evening News*, Oct. 14, 1935.

"Alfred of the X-Ray Eyes" (ss), *The Passing Show*, Nov. 30, 1935.

"Havoc Trench" (ss), *War Stories*, Dec. 1935.

"Four Dud Shells" (ss), *War Stories*, Jan. 1936.

"Fate Takes a Jolt" (ss), *The Evening News*, Jan. 24, 1936.

"Famine Prices" (ss), *The Passing Show*, May 2, 1936.

"The Big Idea" (ss), *The Passing Show*, June 20, 1936.

"Battle Police" (ss), *War Stories*, Dec. 1936.

"The Man Who was Rude" (ss), *The Star*, Aug. 17, 1937.

"When the Crowds Gasp" (ar), *The Modern Boy's Annual*, 1937.

"She Said It Fifteen Times" (ss), *The Daily Mail*, May 19, 1939.

"The Man with a Tricky Mind" (ss), *Britannia and Eve*, June 1939.

"And Furthermore, Mr. Boody..." (ss), *Punch*, Nov. 6, 1939.

"The Smoky Road" (novelette), *Blue Book*, Mar. 1940.

"Sundown" (novel-six part serial), *The Saturday Evening Post*, Jan./Feb. 1941.

"Monaco Madness" (novelette), *Blue Book*, Mar. 1941.

"The Drums of Galla" (serial), *Adventure*, Apr. and May 1945.

"The Sword of Qualoon" (serial), *Adventure*, Feb., Mar, and Apr. 1943.

"Not in Tea Leaves" (ss), *The Evening News*, Mar. 24 1966.

Plays

"Hell for Leather" aka "Greased Brakes" (1936)
"Plenty of Trumpets" (1936)
"The Amazing Dr. Clitterhouse" (1938)
"The Man in Half Moon Street" (1939)
"They Came by Night" (1940)
"The Lodger" (1944)
"Hangover Square" (1945)
"The Man Who Could Cheat Death" (1959)

References

Stanford, Don; interview with Knudson, 1989.

Stanford, Don; *The Red Car*, Funk & Wagnalls (New York, 1954), pp. 8-9.

Yates, Brock; "Automobile Journalism" a talk delivered at the Watkins Glen Motoring Library.

Dettelbach, Cynthia Golomb; *In The Driver's Seat*, Greenwood Press, Westport, CT (1976), p. 9.

Lofts, W. O. G., and Adley, D. J.; *The Men Behind Boys' Fiction*, Howard Baker, London (1970), p. 127.

Knudson, Richard L.; "M.G.'s Best Selling Author," *The Sacred Octagon*, Feb. 2008, pp. 36-37.

Swallow, Tom, and Pill, Arthur; *Flywheel, Memories of the Open Road*, Fraser Stewart Books Limited, Waltham Abbey, England (1987).

Lyndon, Barré; *Grand Prix*, John Miles Ltd., London (1935), pp. 115-116.

"Hell for Leather," *Speed*, Dec. 1936, p. 1067.

"'Hell for Leather' Opens," *New York Times*, Nov. 27, 1936.

Sidney, Eric; "A Speed Library," *Speed*, Jan. 1937, pp. 1111-1112.

The Race That Wasn't a Race: The Mobilgas Economy Run 1936-1968

by John A. Heitmann

Introduction

On April 22, 1953, Les Viland, piloting a Ford Mainline 6, arrived at Sun Valley, Idaho, and won the Mobilgas Economy Run Sweepstakes Trophy, averaging 27.0335 miles per gallon.[1] Viland covered 1,206.1 miles over a course that varied in altitude from 19 feet above sea level to 7,383 feet. A Ford engineer with previous experience in the *Carrera Panamericana* in Mexico, Viland, his relief driver, and two observers from the American Automobile Association (AAA), wound their way from Los Angeles through Bakersfield, Fresno, Stockton, Carson City, Reno, Boise, and Twin Falls, before arriving at the final resort destination. For his efforts, Les collected a bonus of $500 from his employer. Yet, in retrospectively reviewing this accomplishment and drawing on documents for the Ford Archives, it appears that Viland's victory was tainted, for Ford executives working in Dearborn deliberately broke contest rules.

1954 Mobilgas Economy Run finish, J. C. Agajanian with flag (supplied by the author, courtesy Joe/Freeman/Russo collection).

Prior to the Run, *Detroit News* automobile editor Ralph Watts had reassured readers that despite charges that previous winners were not driving stock vehicles, "cars are chosen without advance warning from factories, dealers' showrooms, and even boxcars by the American Automobile Association...."[2] Thus, according to Watts, Viland's forthcoming victory was based on driving skill, not the particular vehicle that he drove.

Indeed, the mileage achieved by an ordinary customer driving an ordinary car probably differed from that of Viland's, not only due to the factor of driving ability, but also as a result of mechanical issues.[3] As it turned out, a large number of cars were specially prepared and shipped to Southern California in anticipation of the event. Some 50 specially-readied cars, with engine tolerances modified and engines balanced, were sent to Los Angeles showrooms and the Long Beach factory in anticipation of the AAA Contest Board vehicle selection. At Ford factories, even production schedules and tire sizes were changed so that more economical versions could be homologated. While one cannot be sure that Viland actually drove one of these special cars, certainly his results must be called into question.

To single out Ford, however, would be wrong. To the company's credit, it appears that Ford Motor Company left the only records that illustrate what perhaps took place on a broader scale.

Given this story, were the Mobilgas Economy Runs merely a sham? What can be salvaged from what was considered as one of the most important automobile competitions of the era? Clearly Ford executives valued the competition so highly that they were willing to subvert the rules to gain a victory. Finally, what can be learned from this study at the intersection of Big Oil with the Big Three?

Ask anyone who read automobile magazines during the 1950s or 1960s, or who paid attention to auto advertising during that "car crazy" era, and they will immediately, but usually only vaguely, remember the Mobilgas Economy Runs. During the 1950s and 1960s, these annual competitions were the most publicized of all corporate promotions. However, unlike "authentic" racing events that have been the topic of numerous histories, these tests of machines and drivers have seemingly been lost in time.[4]

Given our historical sense of the 1950s and 1960s, the Mobilgas Economy Runs seem curious anomalies. The post-World War II Runs were held during a time of stable and relatively inexpensive petroleum prices coupled with rising levels of per capita real wages. Furthermore, as the decade of the 1950s unfolded, this wave of prosperity enabled consumers to demand more powerful engines and accessorized vehicles. And Detroit made them. "Affluenza," not thrift, characterized the economic lives of most Americans after 1950. Given this social and economic context, why did so many Americans care about a competition that calculated miles per gallon to the second decimal point? What is the deeper meaning of this event beyond a superficial recounting of routes, winners, cars, and corporate history? As an avenue to explore the complex post-World War II

American experience, what did the Runs suggest about Americans and their priorities? Apparently, until collective memories of the Great Depression faded, Americans continued to place a high value on thrift.

Between 1936 and 1968 the Run evolved in scale and scope, and ended as a coast-to-coast event. Statistically, the Run left some impressive numbers. Between the years 1936 and 1967 (it was not held between 1942 and 1949), a total of 815 entrants traveled 1,504,117.8 miles, averaging 21.5019 miles per gallon. Even by today's standards, its winners had remarkable fuel economy numbers; for 4-cylinder vehicles, a 1936 Willys finished with 33.21 mpg; a 6-cylinder 1961 Ford Falcon 32.68 mpg; an 8-cylinder 1938 Ford V-8 28.85 mpg; and finally, a 12-cylinder 1938 Lincoln Zephyr, 23.47 mpg.[5] As the 1953 Ford victory suggests, we must ask whether these numbers were a total distortion.

Early Economy Runs and the Gilmore Years, 1906-1941

The Run's origins were modest and grassroots, but they were often tied to automobile manufacturers. They celebrated the American ideals of utility and economy, held even among the upper classes. For example, in 1906, the Automobile Club of America sponsored a two-gallon fuel contest in an effort to see how far each competing car could go. And while a 4-cylinder Franklin won, the criteria for the event involved multiplying weight by distance, and thus an unfair advantage was given to heavier vehicles, a pattern that would be followed in many of these events in the years to come with the ton-mile often used.[6] A second run took place in 1912 between Philadelphia and Atlantic City, and included such marques as American, Lenox, Columbia, Flanders, Moon, Michigan and Krit. Fuel averages ranged from 10 to 22 mpg.[7]

Mobil first became involved in these competitions in 1916, when King and Pathfinder cars used Mobil oils in what was labeled "high gear and fuel economy runs."[8] More significantly, 1916 marked the beginning of the Camp Curry Runs, an annual promotion held until 1926 that was created to show the motoring public how easy and inexpensive it was to drive from Los Angeles to Yosemite. The Camp Curry Runs were small-scale competitions featuring "amateur" participants. In 1926, for example, two of the 12 amateur pilots were women who asserted that "feminine drivers are more careful than men."[9]

Other examples of early events included the Dallas, Texas *Times-Herald* Durability and Economy Tour of 1920, where the ton-mile as opposed to the miles per gallon was used as the key performance criterion. Taken from previous Glidden Tour competitions, the ton-mile supposedly leveled the playing field, but in fact conferred a distinct advantage to heavier vehicles. It would be the key statistic used to determine sweepstakes winners in the Mobilgas Runs until 1959, and certainly was a factor in public suspicions about the legitimacy or believability of the event.[10]

Texas was also the scene of similar economy run competitions sponsored by Ford dealers during the 1920s.[11] Local events culminated in a state-wide run that determined an overall winner.[12] These and many other economy runs of the 1920s made sense for the times. They reflected widespread concerns throughout the decade that petroleum reserves were limited and that gasoline might become scarce quite suddenly.[13] Indeed this fear of running out of oil prompted Charles Kettering and his GM researchers not only to develop the copper-cooled engine but also anti-knock additive tetraethyl lead during the 1920s.[14]

Economy Runs also made sense during the Depression-era years.[15] It was then that developments took place foundational to the first Mobil Economy Runs—or at least Runs sponsored by a West Coast Oil Company that was eventually absorbed into the Mobil corporate structure. The sponsor was Gilmore Oil, and by the 1930s Gilmore was a flourishing firm with numerous branch plants and distributors in California, Oregon, and Washington State. Gilmore also had strong brands, including "Red Lion," "Blu-Green," "Roadamite," "Smacko," and "Lion Head."[15] Gilmore's strength was marketing, and one of its key executives, Clarence Bessemeyer, was responsible for the early Gilmore Runs that officially started in 1936.

Gilmore's economy run promotions began as early as 1930, and even then women were one focal point of these promotions. For example, in June 1930 at a 185-mile AAA-sanctioned event that started and ended in Seattle, it was proclaimed that the "Fair Sex Will Test Skill as Motor Misers."[16] By the mid-1930s Gilmore had hired professional driver Austin Elmore who quickly distinguished himself as the economy driver in America. Elmore not only gained great publicity for Gilmore with his record-setting 1935 run from Los Angeles to Reno via San Francisco– 34.04 mpg in a V-8 car—but as the firm's troubleshooter. Elmore handled complaints by demonstrating to owners that one could get 11 to 41 per cent better mileage by practicing "good driving habits." Using a "mileage vizometer," consisting of two visible reservoirs mounted to the windshield, Elmore effectively demonstrated that smooth acceleration, maintaining a steady speed, shifting into higher gears whenever feasible, avoiding brakes unless necessary, and always thinking ahead saved substantial as Motor Misers."[17]

The first Gilmore Yosemite Economy Run, also publicized as the Gilmore Yosemite Mileage Run, took place in 1936.[18] A Willys 4 led the field by getting 33.21 mpg, but the sweepstakes winners were all heavier automobiles with high ton-miles-per-gallon figures – a Graham Supercharged Six (55.47), Chrysler Airflow 8 (53.35) and Studebaker Dictator 6 (50.98). By comparison, the Willys 4 only achieved 49.48 ton-miles-per-gallon, despite its high mpg. The Graham Supercharger 6 would repeat as sweepstakes winner in 1937 and 1938, and a Studebaker Commander 6 took the honors in 1939 and 1940. In 1941 the Gilmore Run's route was lengthened to include San Bernardino, Barstow, Las Vegas, Hoover Dam, and Kingman, ending at the south rim of the Grand Canyon. Again, while a Willys Plainsman earned top honors in mpg with an average of 29.06, heavy Lincolns placed first and second in the sweepstakes. Obviously, the emphasis on ton-miles perpetuated a distortion of true economy, yet assuaged American automobile manufacturers who profited handsomely with every large car coming off the assembly line.

While the automobile companies capitalized on the competition results in their own advertising and promotional campaigns, Gilmore Oil profited most on these events. Gilmore

marketing executives asserted that using its "Red Lion" gasoline resulted in more power and more thrift.[19] Put simply, it was claimed that Gilmore gasoline was the best, and as Clay Moore, the driver of the 1938 sweepstakes winner observed, "I get more miles per gallon from Red Lion than any other gasoline."[20]

A Post-World War II Restart

After nearly a decade in abeyance, 1950 was a propitious time to begin the Economy Run anew. Automobile industry executives were touting new engine designs that were more fuel efficient and powerful. GM vice-president for engineering J. M. Crawford stated that "the engineering emphasis of the future will be directed to more economical motoring," the consequence of work on higher compression engines that were bottlenecked only by the availability of higher octane fuels.[21] To that end, GM engineers in May 1951 announced the development of a carefully timed, high compression engine with a better combustion chamber design which gave 40 per cent more mpg than the Kettering V-8 in a Cadillac.[22] Concurrently, the Texas Company developed a new high efficiency engine that combined fuel injection with combustion chamber design and spark ignition.[23] And up for discussion in technical circles was a single-valve engine design of Alex Taub and his associates that claimed enormous efficiency gains. Finally, the Chrysler Corporation unveiled its hemispherical head engine, or Hemi.[24]

But the most powerful impetus towards gasoline conservation was the onset of the Korean War. Again there were fears of gasoline rationing similar to World War II, and by the Fall of 1950 California oil was in such demand that it was no longer shipped eastwards.[25] As one oil industry publication made clear, there was a "new national need for conservation of gasoline."[26]

As in the past with the Gilmore Runs, the key individual related to the success of the early Mobilgas Economy Runs was Clarence Bessemeyer. One publication went so far as to name Bessemeyer the "Big Chief" of the Run. Bessemeyer was assisted by Frank Meunier, advertising manager for General Petroleum and the leading corporate advocate for the Run after the former left the Socony-Vacuum Mobil organization in 1953.[27] Bessemeyer's imprint on the Run was enduring, for he was a showman extrordinaire, and that style continued throughout the history of the Runs.

Consequently, the Run was seen by many as a continuous cocktail party for the press and hangers-on. One year the closing featured a celebration of Navaho tribesman, and the next year a Hopi war dance. Ending at resorts that included the Lodge at the Grand Canyon and the Sun Valley Resort, one could only wish to be the lucky newspaper reporter who was on the bus or express train following the race route.

In addition to Bessemeyer and Meunier, other prominent figures in the early 1950s Runs included speedway designer and AAA Chief Steward A. C. Pilsbury; all-time racing great and Referee Tommy Milton; Honorary Referee and vice-president of the Indianapolis Speedway T. E. "Pop" Myers; and Steward Earl Cooper, one of racing's most famous drivers.[28] And for years, the starter's flag was dropped in downtown Los Angeles at 3 a.m. by the colorful and flamboyant J. C. Agajanian.

The rules and procedures associated with the Run changed little between 1950 and 1968.[29] Most significantly, it was a contest for American cars of the current year; imports were not allowed, although separate, small-scale events for foreign cars were organized towards the end of the 1950s to placate a changing marketplace and consumer. Cars were classified according to cost and engine size, and were selected by the AAA Contest Board from showroom floors, dealer lots, or factory assembly lines. These vehicles were no different than those the average American would own, and certified as stock. Minor changes could be made in terms of carburetor jets, timing, and tire pressures. Break-in runs were allowed, and that was when the rules were stretched. Tires were scrubbed to reduce rolling resistance, brakes worn down as much as practically possible, and support cars dragged chains in front of the race vehicle so as to have as much dust and sand as possible enter engines minus air cleaners. Cars were impounded and sealed before the race, but despite the precautions, tweaking and break-in resulted in cars that were quite different from an everyday vehicle.

Routes were chosen so as to vary both altitude and temperature. Cars were often greeted by high school marching bands as they stopped in smaller towns along the way, yet, the early Mobilgas Runs were more than a crowd-pleasing spectacle. It was big business; since Socony-Vacuum initially centered its $9 million advertising budget on the event; thus, a payback was expected, and early indications suggested a 9.8 per cent sales increase in the Western region in 1951.[30]

The auto industry, or at least segments within it, also became enthusiastic supporters of the event, providing that its cars did well. For example, Studebaker focused its 1951 advertising on the slogan "The Thrifty One in 1951," and Lincoln, a Sweepstakes winner, displayed 120 cars painted exactly like the contestant vehicle in West coast showrooms. Car manufacturers began mentioning the event in sales brochures, making sure that the AAA Contest Board seal was inserted. For example, in 1953 Dodge distributed the brochure "Dodge Tops All 8s in 1953 Mobilgas Economy Run."[31] (Fig. 1) The copy went on to assert that "this great new '53 Dodge Coronet Sedan provided absolute proof of the basic design superiority of the 140-horsepower Red Ram V-Eight engine.... Hemispherical combustion chamber provides the ideal shape for maximum thermal efficiency. It squeezes more power out of every drop of fuel." Competitors — including brands made by divisions within the Chrysler Corporation — must have cringed when reading the last page of the brochure, in which nine other class participants were listed in order of finish (Fig. 2).

With time, the complexity and the cost of the event grew. Literally hundreds of Mobil employees became involved, and executives soon included it in corporate strategy. In an undated memorandum from the 1950s entitled "How to Realize More Productive Attention for the Mobilgas Economy Run," four main outcomes were listed: 1) a direct effect upon sales; 2) enhanced prestige from the sponsorship "with what is becoming the most widely known type of auto performance trial in the world;" 3) the opportunity to connect with auto manufacturers and safety organizations; and 4) the ability to make news of interest to the public.[32] Two internal committees within the company were charged with steering this event in such a manner that these outcomes would be realized — the Advertising and Sales Promotion Committee and the Publicity Committee. The former

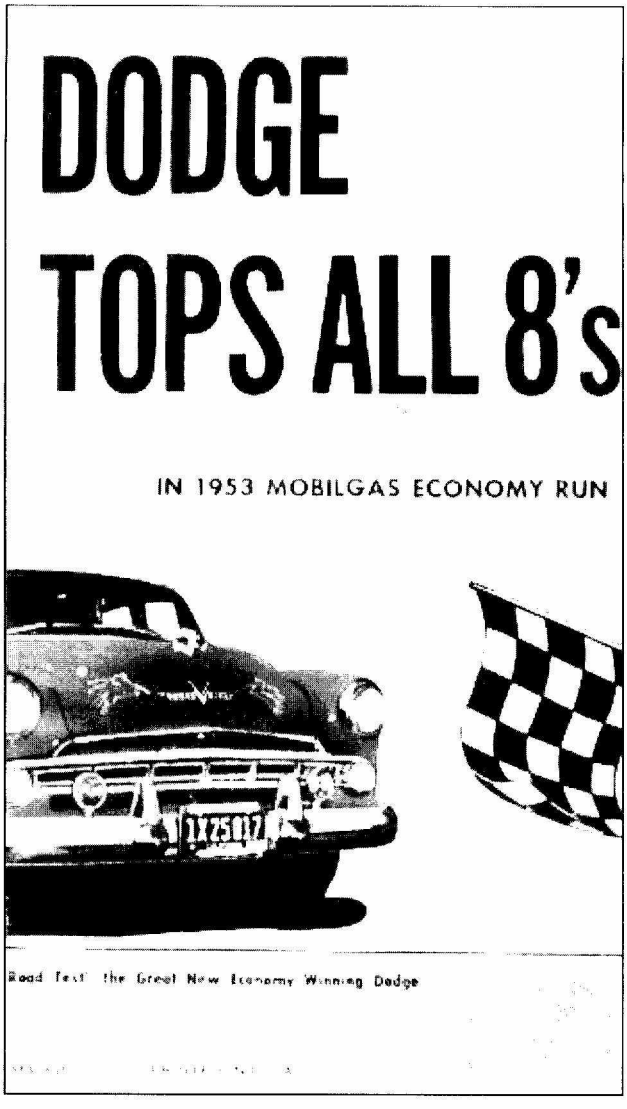
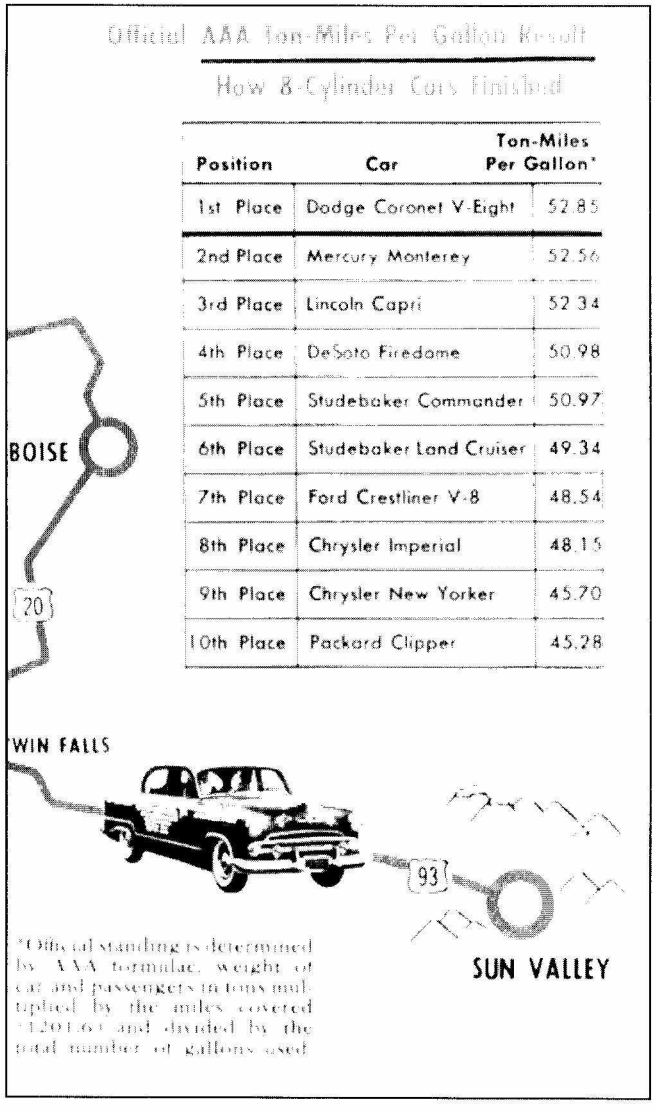


Fig. 1 Dodge direct-mail sales folder touting the performance of its first V-8 engine car in the 1953 Mobilgas Economy Run (from the editor's collection).



Position	Car	Ton-Miles Per Gallon*
1st Place	Dodge Coronet V-Eight	52.85
2nd Place	Mercury Monterey	52.56
3rd Place	Lincoln Capri	52.34
4th Place	DeSoto Firedome	50.98
5th Place	Studebaker Commander	50.97
6th Place	Studebaker Land Cruiser	49.34
7th Place	Ford Crestliner V-8	48.54
8th Place	Chrysler Imperial	48.15
9th Place	Chrysler New Yorker	45.70
10th Place	Packard Clipper	45.28

*Official standing is determined by AAA formulae, weight of car and passengers in tons multiplied by the miles covered (1,201.6) and divided by the total number of gallons used.

Fig. 2 Dodge dares to compare its Economy Run performance with other cars manufactured by Chrysler Corporation (from the editor's collection).

group was charged with creating the printed material to promote the event, to inform salespersons and dealers, to formulate a variety of contests, and to film the Run. The Publicity Committee, on the other hand, was on the ground throughout the competition, hosting guests and press, touching base with local newspaper editors, and making sure that everyone was comfortable and entertained. Both were daunting jobs, made logistically more challenging as the route lengthened from several hundred to several thousand miles. In sum, there were many specific tasks to perform before, during, and after the event.[33]

The drivers spanned the spectrum of racing experience, talent, and social class, although particularly in the early 1950s, many were highly qualified.[34] One of the best was Les Viland, an engineer educated at the University of Southern California and Cal Tech, who was a sweepstakes winner in 1951 and 1953, and who got the best mpg in 1955 (Fig. 3). Popular racer Mickey Thompson won his class driving Pontiacs in 1962 and 1963. The family of Mel Asbury, a Hollywood Chrysler dealer—sons Mal and George, wife, and daughter-in-law—won numerous times during the 1950s. With women entering the field in 1957, former sports car drivers Mary Davis, Myra Buchanan, Marian Pagan, Ina Mae Overman, Marilyn Miller (the wife of famous racer Al Miller), and Betty Skelton distinguished themselves while at the same time demonstrating that women were, if not better than, at least equal to men in economy driving events. The 1959 class B winner Mary Hauser wrote that

> You men probably think, because I'm a woman, that I'm a lousy driver and don't know the first thing about how to get good gas mileage. So you're surprised, maybe even a little peeved, that I managed to win a class in the 1959 Mobilgas Economy Run. Well, I'll admit that many women are stupid drivers. So are many men. They have their minds on a thousand other things.[35]

Big Money, an Ambitious Scale, and International Events

As the scale and scope of the Run gradually evolved over the 1950s, so did its geographical locus. Beginning in 1954, the Mobil Run went international, first in France, then in 1955 in

Fig. 3 – 1955 Mobilgas Economy Run refueling station
(supplied by the author, courtesy Joe Freeman/Russo collection).

Fig. 4 – A common hold up to Economy Run traffic in New Zealand, 1959
(supplied by the author, courtesy of Exxon Mobil collection,
Center for American History, University of Texas).

Great Britain, Australia, New Zealand (Fig. 4), and South Africa.[36] Some staggering mpg numbers were recorded resulting in the ban of coasting; nevertheless, in 1955 a Renault 750 traveling through the English Midlands achieved 76.36 mpg! Subsequently, events were also staged in the Philippines, Rhodesia, and Malaya. With the petroleum shortages caused by the 1956 Suez Crisis, the event became western European in 1958, with a 2,700 km route that began at the World's Fair in Belgium, and then traversed Holland, Luxembourg, Switzerland, Italy, and France.

With the relatively huge influx of foreign cars in the U.S. after the brief recession of 1958, foreign car events were staged briefly on the East and West Coasts and on a limited scale.[37] Between 1958 and 1959 Mobil sponsored rallies in California, and predictably, small displacement European marques put up impressive economy statistics. For example, in 1958 a Fiat 750 won its class with slightly more than 50 mpg; even a class D Volvo sipped gasoline with a 36 mpg result. In 1960 a similar event started in New York City, and a small Renault got more than 49 mpg.

The rise in interest over miles per gallon that typified American thought between 1958 and 1962 also forced race organizers to rethink the use of the ton-miles per gallon as the criterion for determining the sweepstakes trophy winner. It seemed illogical that heavy cars should win an economy event, yet, that is what happened, as in the case of the 1958 Run, when a Chrysler Crown Imperial won the overall contest.[38] Thus in 1959 the switch to mpg was made, and the Independents—American Motors and Studebaker—topped the field. Yet, figures were disappointingly low across the board, as low-priced, 6-cylinder cars barely squeezed 20-22 mpg, and the event-winning Rambler American Deluxe only got 25.3 mpg.[39]

As the 1960s unfolded, the Run became bigger and more complex than ever.[40] Likewise, there was more hoopla involved, whether a $100,000 sweepstakes and car giveaway for dealers and their employees, or the remarkable exhibit at the 1964 World's Fair in New York.[41] At the Mobil exhibit a complex electronic computer system with individual consoles was set up so that 36 fairgoers at a time could test their skills while behind the wheel of a simulator. Each participant received a sticker, and each group winner a certificate. Some 1.2 million visitors were expected to get behind the wheel. All of this outreach cost plenty of money. For example, Mobil's expenses related to the 1966 Run amounted to nearly $550,000, and the company spent an additional $440,000 to advertising the results.

Not only were women drivers featured, but also teenagers—Chevrolet fielded an entire team of teens in 1964.[42] The first African-American teen driver, Marty Payne, entered the competition in 1966, with some trepidation on the part of Mobil executives who were concerned about racial incidents that might take place along the route.[43]

An End to the Runs?

Courtly, white-haired Frank Meunier, a throwback to the General Petroleum days of the 1930s, remained the leading advocate for the event. However, the Run, and indeed all Mobil-

sponsored competitions, including their involvement in the Indianapolis 500, came under scrutiny.[44] As he approached retirement, Meunier's long standing arguments in favor of the event began to fall on deaf ears. A new generation of advertising executives was now on the scene at Mobil, and they were asking hard questions concerning the event's effectiveness in promoting corporate objectives.

Consumer researchers, including Alfred Politz, were consulted on the value of the Run, and his views markedly contrasted with R. S. Brophy's in-house study. Politz argued for the Run's continuance, stating that "The motorists' fascination with gas mileage seems not to wear out – just as sex appeal has held its ground over the ages."[45] Brophy countered this view by stating that "It is interesting to note that the one area of greatest effort, the Economy Run, cannot be related to any meaningful difference...." Brophy also harnessed the results of a consumer survey, citing that some 42 per cent thought that professional drivers were used, 35 per cent had concluded that cars were especially adjusted, and 16 per cent doubted the miles per gallon results.[46]

Among the points that were debated were the following. First, while performance events factored little into consumer gasoline purchases, getting more miles per gallon did. Ironically, and perhaps with some embarrassment, most consumers did not recognize Mobil as the best gasoline in terms of mileage; rather it was Shell. Thus in 1966 a group of Mobil executives concluded that "at present the Run does not offer a favorable opportunity for our use in a national advertising campaign." Indeed, Mobil's ad agency, Doyle, Dane, and Bernbach was not interested in using any performance events in their advertising strategy. Yet, the Run was not scrapped at that time. Recommendations were made to reduce costs, shorten the route, and cut the number of ads.

The Run continued for two more years. The 1968 event was underway when the assassination of Martin Luther King forced organizers to end the race in Indianapolis instead of New York City.[47] In December 1968, Mobil rather abruptly announced the end of the Run. The decision was based on perceptions of changing consumer attitudes along with changes in engine pollution controls and a shift in corporate advertising strategy. The America of 1968, despite its internal strife and controversy over the Vietnam War, was experiencing an unparalleled prosperity, low gasoline prices, and an expanding youth market. Yet around the corner was a burgeoning second wave of imports, coming this time not from Germany, but from Japan. And only five years later, in 1973, the U.S. experienced its first "Oil Shock," an event of profound long-term economic and social significance. While "your mileage may differ," gasoline supply and usage emerged as national concerns, at least for a while.

Currently, Americans are facing another oil crisis, and issues of drilling on protected lands, carbon emissions, vehicle design, and economical driving are at the forefront of daily news discussions. Despite its shortcomings, perhaps it is time to bring back the economy run, if for no other reason than to raise public awareness concerning the values of thrift and conservation.

Notes

[1]"Mobil Economy Run General Information 1936 through 1967," p. 3. Box 2.207/F20, File Marketing Advertising Proofs of Performance, Exxon-Mobil Collection, Center for American History, University of Texas at Austin.

[2]Clipping, Ralph Watts, "Auto Economy Run Test Drivers' Skill," *Detroit News*, Apr. 18, 1953. National Automotive History Collection, Detroit Public Library, Vertical File, "Contests—Economy #1."

[3]See "1953 Mobilgas Economy Run Proposed Organization and Planning;" G. P. Montagnet to C. T. Dorman, February 5, 1953; C. E. Bowie to E. B. Richard, "Special Awards – Mobilgas Economy Run," May 13, 1953; C. E. Bowie to G. A. Moss, February 24, 1953. All in Accession 568, File 1953 Mobilgas Economy Run & 1953 Indy Pace Car, C. H. Donohue Records, Car Sales (1950-53), Box 3, Benson Ford Research Center.

[4]To my knowledge, there are three very brief commentaries of the history of the Mobilgas Economy Runs in the literature. See Bryant, David; "The Mobil Economy Run," *Car and Driver*, Feb. 1981, pp. 45-46; "Tech Tidbits," *Road & Track*, Sept. 2003; Knoll, Bob; "Coast to Coast in the Pursuit of Economy," *New York Times*, December 24, 2006. Leo Levine, in his important *Ford: The Dust and the Glory: A Racing History* (New York: Macmillan, 1968), mentions the Run on three occasions in passing, although he infers that Ford allocated considerable resources to this event.

[5]"Mobil Economy Run General Information 1936 through 1967," Exxon-Mobil Collection.

[6]Clipping, "Mechanical Features of Some Winning Cars in the Automobile Club of America's Two-Gallon Fuel Contest," *Scientific American Supplement*, No. 1585, May 19, 1906, in Vertical File "Contests—Economy #1," National Automotive History Collection.

[7]"Economy Run History," news release, Mar. 23, 1958, in Accession 1930, Ford Motorsports Records, Box 2, file Mobilgas Economy Run, 1956, 1958, 1959, 1960, 1965, Benson Ford Research Center.

[8]"The King Car Test," *Gargoyle*, July 1916, p. 5; "Best Entire Runs: Gargoyle Mobiloils Efficiency Helps Pathfinder and King Cars Break Records on High Gear an Fuel Economy Runs," *Gargoyle*, Nov. 1916, p. 3.

[9]Bluvett, Hershel; "25 Years Ago . . . Along Auto Row," *Los Angeles Evening Herald & Express*, Tuesday, Mar. 20, 1951, reprinted in Clymer, Floyd; *The 1951 Grand Canyon Economy Run* (Los Angeles: Floyd Clymer, 1951), p. 56.

[10]"Times Herald Durability and Economy Tour," *Magnolia Oil News*, Nov. 1920. A ton mile per gallon is determined by taking the weight of car and passengers in tons, multiplying by miles traveled and then dividing the result by gallons of gasoline consumed.

[11]The Ford Motor Company sponsored events were called Ford Economy Mileage Test Runs. *Magnolia Oil News*, Feb. 1927, p. 9.

[12]For example, see "Gasoline and Alcohol as Fuels of the Future," *Scientific American*, June 1923, p. 381; "Stretching the Gasoline Supply," and "Doubling the Automobile Mileage Per Gallon," *Scientific American*, Mar. 1926, p. 185; Shepard, William G.; "300 Miles to the Gallon!," *Collier's*, Oct. 5, 1929, pp. 10-12, 59-60.

[13]Leslie, Stuart W.; *Boss Kettering* (New York: Columbia University Press, 1983), pp.123-180.

[14]Studies conducted during the early 1930s definitively connected speed with gasoline consumption and that pegged 30-

40 mph as the most efficient speed in which fuel was conserved. See "Motor Test Shows How Speed Affects Fuel Use," *Business Week*, February 16, 1932, pp. 16-17.

[15]File, Basic Training Text 500, Mar. 1956, Box 2.207/E213, Exxon Mobil Collection, Center for American History, University of Texas at Austin; Alan Darr, "The Gilmore Oil Company, 1900-1945," HYPERLINK "http://mlsandy.home.tsixroads.com/Corinth_MLSANDY/rt118.html" http://mlsandy.home.tsixroads.com/Corinth_MLSANDY/rt118.html, accessed 10/22/2007.

[16]Clipping, "Northwest Women Drivers to Make Economy Run," *Seattle Sunday Times*, June 1, 1930, Exxon Mobil Collection, 2.207/H90, Center For American History, University of Texas at Austin.

[17]Clipping, "Austin Elmore Smashes All Previous Economy Records with New Red Lion!," *Tacoma Times*, Mar. 20, 1935, in file 2.207/H90, Exxon Mobil Collection; "Secrets of More Miles Per Gallon," *Popular Mechanics*, Feb. 1935), pp. 222-223.

[18]For a cursory history of the Gilmore Runs, see E. J. Sanders, "The History of the Economy Runs 1936 to 1950," in Clymer, Floyd; *The 1951 Grand Canyon Economy Run* (Los Angeles, Clymer, 1951), pp. 53-55.

[19]See for example, "Extra Power of Speed Gives Red Lion Thrift," *Gilmore Graphic*, Mar. 1935), p. 2; "How Much Gas Did You Use?," *Gilmore Graphic*, Aug. 1935), 2; Clipping, "Vote for Red Lion," *The Tacoma Times*, Oct. 23, 1936; Clipping, "No Blackout of Mileage in Gilmore-Yosemite Run," *Seattle Daily Times*; Clipping, "It's Mileage Proved," *The Seattle Star*, May 18, 1937, all in Exxon Mobil Collection, Box 2.207/H90.

[20]Clipping, *Seattle Post-Intelligencer*, May 19, 1938, Mobil Exxon Collection, 2.207/H90.

[21]"Car Industry Looks Ahead," *Science News-Letter*, Jan. 28, 1950), p. 50.

[22]"Days of High Compression is Nearer," *Business Week*, (May 5, 1951), pp. 42-43.

[23]"Mechanical Octanes," *Fortune*, May 1951, pp. 116-119.

[24]Francis, Devon and Rowsome, Frank Jr.; "Chrysler Lifts Hood on Most Powerful Car Engines," *Popular Science*, Mar. 1951, pp. 134-138.

[25]Likely, Wadsworth; "U.S. Pumps Oil for Korea," *Science News-Letter*, Sept. 16, 1950, pp. 186-187.

[26]"Mobil Products Set Mileage Records," *Doings in General*, 1951, p. 3.

[27]Betty L. to H. Reid; Mar. 8, 1973, in General Petroleum Corporation Correspondence, Box 2.207/E213, Exxon Mobil Collection.

[28]Clymer; *The 1951 Grand Canyon Economy Run*, p. 43.

[29]Ibid., pp. 47-52.

[30]"Economy Test Sells Gas as Well as Cars," *Business Week*, Apr. 28, 1951, pp. 86-87.

[31]"Dodge Tops All 8s in 1953 Mobilgas Economy Run," Manufacturer's Sales Folder.

[32]"How to Realize More Productive Attention for the Mobilgas Economy Run," n.d.

[33]The timing and complexity of the tasks involved is best seen in a 1960 promotional manual prepared for international events. See "Mobil Economy Run Promotional Manual ," n.d. [1960?], Mobil Exxon Collection, Box 2.207/F23, File Marketing, Proofs of Performance & Racing, International Economy Run, 1960.

[34]Ford executives were particularly interested in learning about their drivers. See W. Barry McCarthy to A. Bruce Ewing, et al., Apr. 11, 1952, in Accession 536, Public Relations Res. Library, Catalogued Releases, Etc. Box 74, file Mobilgas Economy Run Biography Drivers, Benson Ford Research Center.

[35]Hauser, Mary; "Woman Driver Tells How to Save Gas," *Popular Science*, July 1959, pp. 68-69. The stereotype of the bad woman driver wasting gas was certainly prevalent during the late 1950s. See Francis, Devon; "How I Taught My Wife to Save Gas," *Popular Science*, Mar., 1957, pp. 94-98;" All We Women did . . . ," *Time*, Apr. 18, 1960, p. 84.

[36]"French Mobilgas Economy Runs Win Motorists Enthusiasm in '54, '56;" "United Kingdom has Been the Scene of Two Mobilgas Economy Runs, 55-56;" "The Mobilgas Economy Run Goes International in a Big Way," The Flying Red Horse, Autumn, 1958. All in Exxon Mobil Collection.

[37]"2nd Mobil Mileage Rally Held in California," Nov. 17, 1959; "Mobil Mileage Rally Results, New Rochelle, Oct. 30, 1960." All in Exxon Mobil Collection. See also "Hilly Run Puts Foreign Cars to Gas Test," *Business Week*, Oct. 25, 1958, pp. 32-33.

[38]"Victory for the Heavies," *Time*, Apr. 28, 1958, pp. 88-89; "The Run into Texas," *Newsweek*, Apr. 28, 1958, p. 78.

[39]"Victory for Rambler," *Time*, Apr. 20, 1959, p. 94; "Rambling In," *Newsweek*, Apr. 20, 1959, pp. 90-91.

[40]On the complex logistics, see Thoms, Wayne; "Behind the Bedlam of the Featherfoot Fleet," *Motor Trend*, Mar. 1966, pp. 61-62. On specific annual results, see "Grand Grind," *Newsweek*, Apr. 6, 1962, p. 85; "Mobil Economy Run," *Motor Trend*, June 1963, p. 80; "Mobil Economy Run, 1962 & 1963," HYPERLINK&"http://www.thompson-motorsports.com/econ.html"&www.thompson-motorsports.com/econ.html, accessed 9/5/2007.

[41]"Entry Blank," Box 2.207/F21, Exxon Mobil Collection, File, Mobilgas Economy Run 1961. "The Only Audience Participation Show at the Fair," Box 2.207/E205, File 1963-1965, Exhibits World's Fair New York, Exxon Mobil Collection.

[42]"Teen Age Driving Skill," *Hot Rod*, July 1964, pp. 91-93.

[43]"Teen-Age Driver Sets Precedent," *Ebony*, July 1965, pp. 49-50. Payne finished a respectable third in his class. On concerns over his trip, see R. B. Snow to R. A. Wiener, "Mobil Economy Run Possible Racial Queries," Box 2.207/F21, File, 1965 Mobilgas Economy Run.

[44]"Mobil Economy Run. Purpose. To Resolve the Future of the Mobil Economy Run" [1966].

[45]"Excerpts from Alfred Politz' Letter Dated June 26, 1966, to J. B. Merrell Regarding Mobil Economy Run."

[46]R. S. Brophy; "Evaluation of Performance Events," June 2, 1966.

[47]"Mobil's Annual Run for the Money," *Business Week*," Apr. 13, 1968, pp. 54, 58, 64.

History and Performance of the South Korean Automobile Industry in the Domestic and United States Markets

by Robert Ebert and Mariel Montoney

Introduction

The Republic of South Korea (RSK) produced 23,000 motor vehicles in 1971, which was 0.06 percent of world output.[1] In 2006, South Korea produced nearly 3.8 million motor vehicles or 5.6 percent of world output. During the 20 years from the mid-1980s to 2005, both the domestic South Korean automobile market and the market for South Korean vehicles in the United States expanded significantly.

While the literature provides considerable background on the globalization process of the South Korean automobile industry, particularly in Europe, there has been little work done on the development of demand in the Korean domestic auto market or in principal foreign markets for Korean automobiles such as the United States. Here, historic developments in the South Korean Automobile Industry are summarized along with addressing the following questions: what factors led to the expansion of South Korean domestic demand and United States demand for Korean vehicles in the 1987 to 2005 period and how might the market position of the South Korean vehicles be changing in the post 2005 period?

Literature Review

The automobile industry plays a key role in the South Korean economy and is the largest industry in the manufacturing sector.[2] Between the years of 1998 and 2005, production increased annually by 6.86 per cent and 59.1 per cent overall.[3] Helping stimulate the growth of the South Korean automobile industry was its expansion in the United States market during the 1998 through 2005 period, where the sales of South Korean built vehicles increased 22.6 per cent annually and 316.4 per cent overall.

One factor that led to the expansion of the South Korean automobile manufacturers to the point of becoming major competitors in the global market was a shift in governmental policies. The country's automobile industry emerged in the early 1960s with the first national economic development plan. In this early stage, most vehicles were knock-down models; i.e., a kit containing most components which was shipped from another country such as Japan and then assembled in South Korea. At that time, Kia Industry Co., Ha-dong-Hwan Motors, and Saenara (which later was taken over by Shinjin Motors) were the only established South Korean automobile firms.[4]

The South Korean government put its second national economic development plan into effect between 1967 and 1971. During this period the government began to play an active role in trying to turn around the economy. For example, government regulations designed to stimulate the achievement of economies of scale in the auto industry led to local content reaching over 90 per cent by the early 1980s.[5]

The domestic market was protected until the late 1990s due to the government's nationalistic and protectionist policies and its placing of restrictive regulatory barriers on foreign direct investment inflows into the automobile sector.[6] Therefore, South Korean automobile manufacturers dominated their domestic market with little foreign competition until 1999.

Along with the influence of the government, the *chaebol* played a role in the development of the South Korean automobile industry. *Chaebol* can be formally defined as large, diversified industrial groups. These groups benefited mainly from government-controlled entry into the industry, access to raw materials, and financing from the government. When the Korean economy began to prosper after the rough years of World War II, the *chaebol* were given credit for the growing success of the economy. Then in the 1980s, economic performance began to decrease and at that point it was questionable whether the monopoly and anti-competitive practices of the *chaebol* could assure the maintenance of a successful economy any longer.[7]

The RSK's protectionist and nationalistic policies and early support for the *chaebol* were in part a way for the government to protect its domestic firms in what it perceived as the nation's best interests. Taking into account the importance of the automobile industry to the South Korean economy, the government strongly encouraged the development of domestic firms and even mandated that each firm build a new model (as opposed to from knock-down kits) with 95 percent local content by 1975.[8] Foreign direct investment was limited by the government for this reason, and as a result, the dominant players in the South Korean automobile sector were domestic automakers until the end of the 20th century. South Korean government policy began to change in the late 1990s, in part to save a major auto plant in Pusan, then run by Daewoo, from being closed. Policies began to switch from a protectionist orientation to liberalization, allowing foreign automakers to take over domestic automakers.[9]

"Leap-Frogging"

Due to South Korea's relatively late entry into the automobile industry compared with other regions such as North America, Western Europe and Japan, companies had to catch up with the industry in these regions in order to compete. This catching-up strategy is described by Lee and Kim as "leap-frogging." For example, stage-skipping catching-up occurs where the latecomer firms follow the traditional path to an extent but skip some stages to save time.[10]

In order for South Korean automakers to compete with established automobile manufacturers, leap-frogging was a necessary step towards becoming technologically independent.

This stage-skipping process was made possible through importing advanced technology from overseas sources. If it were not for the availability of technology through outside sources, South Korean auto manufacturers would not have saved nearly as much time because major car assemblers are not likely to share their technology with competitors.[11]

Throughout the 1990s, the South Korean automobile industry focused mainly on its European market due to increasing demand on that continent. Therefore, most prior research on the industry was concerned with years before the beginning of the 21st century and emphasized the industry's role in the European market. Since then, South Korean manufacturers have begun to explore aggressively new areas for growth. Here we expand the scope of research on the South Korean automobile industry by examining the determinants of the growth of the industry in the United States and in the South Korean domestic economy.

South Korean Automobile Industry Profile

The South Korean Automobile Industry (SKAI) consists of both relatively small and very large firms. The current structure of the industry is a result of corporate failures and consolidations over a period of approximately 40 years.

Ssangyong Motor Company. This is a relatively small sport-utility motor vehicle builder that sold only 121,196 units in 2006. It traces its history to 1954 when Jeeps were built for the U.S. Army by the Ha-Dong-Hwan Motor Workshops. That firm was sold to the Ssangyong Group in 1988 which sold a controlling interest to Daewoo in 1997. When Daewoo faced financial problems in 2000, it sold its interest in Ssangyong which then became independent. In 2004, a 49 per cent interest in Ssangyong was purchased by Ssangyong Automotive Industry Corporation of China.[12]

Samsung Business Group. The Group attempted to enter the SKAI in 1995, allocated up to $13 billion to the effort, and built a plant with annual capacity of 500,000 units.[13] However, even that sizeable commitment did not assure success. Overcapacity in the SKAI created financial problems for Samsung which went bankrupt in 1999. Controlling interest in Samsung Motors was purchased by Renault of France in 2000. Renault Samsung Motors built 118,438 vehicles in 2005, primarily for the South Korean Market.[14]

Daewoo. Daewoo entered the SKAI in 1962 as Saenara Motor Company which was taken over by Shinjin Motor in 1965.[15] By the 1970s, Shinjin was South Korea's leading automobile manufacturer. In 1972, General Motors took a 50 percent investment share in the firm. Faced with increasing competition in the SKAI in 1982, GM sold its interest in Daewoo to the Daewoo Group Chaebol.[16] The Daewoo-GM relationships ended in 1992 over management disagreements. Faced with the debt problems and weakening markets due to the Asian Financial Crisis of 1997-1998, Daewoo put its automotive operations up for sale. GM showed renewed interest in Daewoo and completed a takeover of what is now known as GM Daewoo in 2002.[17] For domestic and global markets, including the United States, GM Daewoo builds vehicles that compete with low-priced Kias and Hyundais. The GM Daewoo operation is successful with combined domestic and export sales exceeding 1.5 million units in 2006.[18]

Hyundai-Kia. The dominant SKAI auto producer is Hyundai-Kia. In 2006, the SKAI produced 3.8 million motor vehicles of which 2.7 million or 71 percent were built by Hyundai-Kia.

Hyundai and Kia had been separate companies until 1998 when Hyundai purchased Kia after the latter had gone through bankruptcy.[19] Kia began in 1944 as Kyungsung Precision Industry. After building bicycles and a three-wheeled truck, the Kia K-360, it produced its first passenger car in 1974. Kia became the second largest South Korean auto producer and expanded rapidly until the Asian financial crisis of 1997-98 caused a decline of 49 percent in domestic South Korean auto sales in 1998. Kia was declared bankrupt in 1998.[20]

Hyundai Motor Company was founded in 1967 as the automotive affiliate of the Hyundai Group Chaebol. Hyundai Motor expanded rapidly in its first decade and was able to attain a 54 percent domestic South Korean market share by 1977.[21] In its *2005 Annual Report*, Hyundai claimed its plant in Ulsan is one of the largest automobile manufacturing complexes in the world with an annual capacity of 1.6 million units.

The Hyundai Group's Engineering and Construction Company was reorganized in 2000 to restructure its debt. That restructuring led to the separation of the Hyundai Motor company from its *Chaebol* partner and Hyundai Motor became an independent company.[22]

Hyundai began exporting cars to the U.S. market in 1986 and Kia in 1994. The Hyundai-Kia combined sales in the U.S. exceeded 730,000 units in 2005. The U.S. Hyundai assembly plant in Alabama began production in 2005 and Kia has begun work on a U.S. assembly plant in Georgia.

South Korean Domestic Automobile Market

The development of the domestic market for motor vehicles (automobiles and trucks) in South Korea is the focus of this section. Macroeconomic data on the South Korean economy from the *World Economic Outlook* of the International Monetary Fund (IMF), and data from several sources including the United States Energy Information Administration (USEIA), the Korean Automobile Manufacturers Association (KAMA), and Korea Automobile Import and Distributors Association (KAIDA) constitute the sources of the statistics used in developing a statistical model of demand for automobiles in South Korea.

The significance of economic cyclical forces and macroeconomic variables as determinants of demand for automobiles in South Korea is suggested by publications of the Korean Automobile Manufacturer Association (KAMA). For example, KAMA's explanation for weakness in vehicle sales in South Korea in 2006 was economic recession, an unstable employment situation, and higher oil prices.[23]

Figures 1 and 2 show automobile sales in South Korea compared to the unemployment rate and the Gross Domestic Product (GDP) volume index. The data plotted in Figures 1 and 2 suggest a cyclical relationship exists between these economic variables and auto sales in South Korea.

Based on the evidence, therefore, we developed a statistical model to test the hypothesis that the sales of vehicles

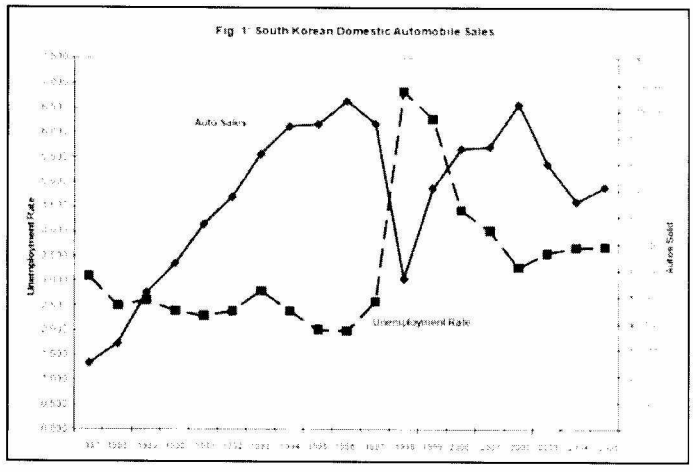
in South Korea are a function of the GDP as measured in terms of the volume of output of the economy, the unemployment rate, and the market price of a barrel of oil. (We decided not to include the price of the South Korean vehicles as an independent variable to be tested in either the domestic South Korean or U.S. markets. Because the number and variety of the models produced by the South Korean manufacturers have changed significantly during the past 20 years and have spanned a wide range of price levels, model sizes, etc., we believed to use average price per vehicle sold would have led to a distortion of the statistical results due to a lack of consistency. The changing model mix of South Korean automobile manufacturers is a topic covered later in this article.) The expected relationship of the variables included in the model is explained below. The time frame that is covered for the development of the model is 1987 through 2005.

The reliability of statistical data on the South Korean automobile industry prior to 1987 is problematic. Our analysis concludes with 2005 because that was the last year for which reliable economic data were available at the time the study was undertaken.

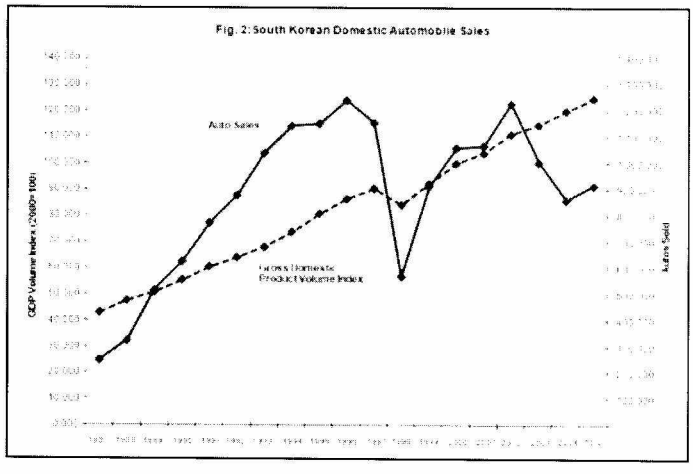
We used statistical techniques to attempt to determine the factors associated with the demand for all automobile, commercial vehicle, and imported vehicle sales in South Korea (annual data 1987 through 2005). We found the following economic factors to be statistically significant determinants of demand for vehicles in the South Korean domestic market. (Note: data used in this analysis and the detailed statistical results are available in the appendix to this article and in Table A-1.)

> Gross Domestic Product of South Korea on a volume basis (GDPVOL) (i.e., reflects actual quantity of output), GDPVOL, annual data 1987 through 2005 (International Monetary Fund data). There is a positive relationship between GDPVOL and the total sales of motor vehicles in South Korea. That is, as GDPVOL increases it is expected that economic conditions are expanding which establishes an environment where motor vehicle sales will increase.
>
> The percentage rate of unemployment in South Korea, annual rate, 1987 through 2005, (International Monetary Fund data). There is a negative relationship between the unemployment rate and the total sales of motor vehicles in South Korea. That is, as the unemployment rate increases, rising unemployment reduces the number of potential purchasers of motor vehicles and, therefore, contributes to a decline in vehicle sales.

The real (inflation adjusted) price of oil per barrel, average annual price in the United States, 1987-2005 (United States Energy Information Administration data). We assume that the price of a barrel in the U.S. reflects general price trends for oil as a commodity on world markets in general. There is a negative relationship between oil prices and the sales of motor vehicles in South Korea. An increase in the price of a barrel of oil becomes reflected in rising prices for motor fuel which increases the cost of operating motor vehicles. An increase in the cost of motor vehicle operation is expected to depress the demand for new vehicles in South Korea.



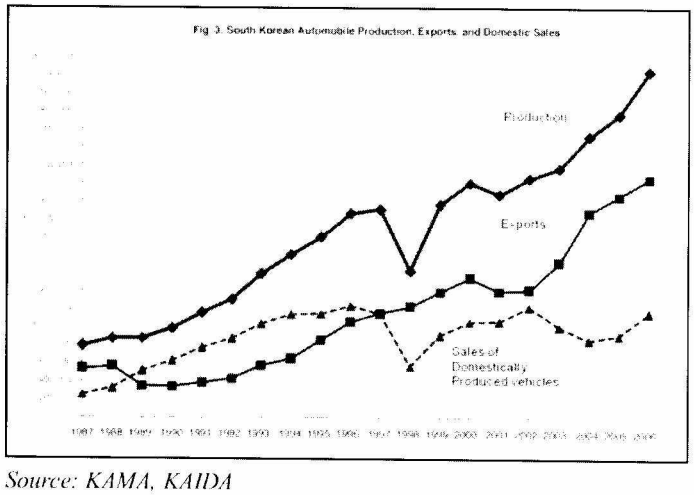
Source: KAMA, IMF, KAIDA



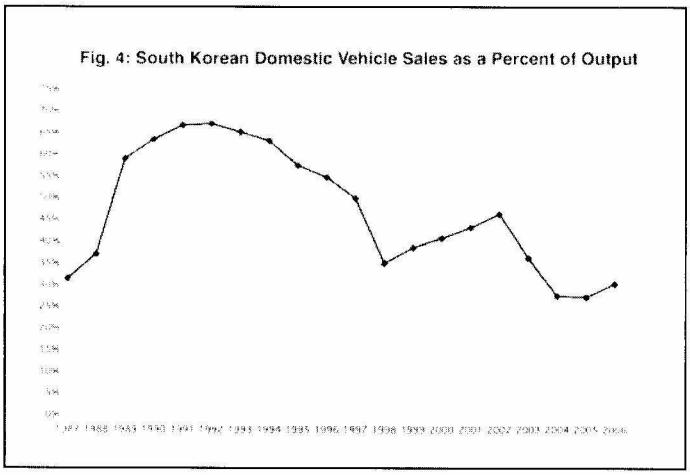
Source: KAMA, IMF, KAIDA

Therefore, we conclude that the hypothesis is valid, that sales of vehicles in the South Korean domestic market are dependent on growth in the volume of Gross Domestic Product, changes in the rate of unemployment, and the price of oil.

Figure 3 shows the pattern of production and demand for vehicles in the South Korean domestic market. Production of the SKAI has been on a steady upward trend over the period



Source: KAMA, KAIDA



Source: KAMA, KAIDA

covered by this study, except for the sharp decline during the Asian financial crisis of 1998. Domestic sales of vehicles have not kept up with production with the result that the SKAI is highly dependent on its export markets. Figure 4 shows that domestic sales as a percent of production have declined from the range of 70 percent in the early 1990s to 30 percent by 2006.

The SKAI views the world market as being intensely competitive. The strong Korean *won* in recent years led to more sluggish growth of exports than in the 2000 to 2005 period. Even with these potentially negative factors in the market, the export demand for South Korean vehicles is expected to remain relatively strong because of expansion of sales networks and an improved quality image for South Korean cars in the global market.[24] Since 2002, domestic sales of vehicles in South Korea have been relatively weak due to macroeconomic and cyclical factors in the country's economy. The evidence suggests that at least in the near term, continued output expansion for the SKAI within South Korea is going to be dependent on the industry expanding and strengthening its global operations.

Imported vehicles in South Korea do not command a significant market share, although in the first decade of the 21st century that share has steadily increased from well below one percent to over four percent. A detailed analysis of the market for imported vehicles in South Korea is beyond the scope of this paper. It is instructive to observe, however, that the Korea Automobile Imports and Distributors Association (KAIDA), has become particularly aggressive in promoting imports into South Korea since 2000. At the same time that KAIDA has been promoting imports through major auto shows and "Import Car Driving Tours," the expansion of interest by South Korean consumers in imported vehicles has led to entry into the market since 2000 of such luxury brands as Audi, Mercedes-Benz, Maybach, Ferrari, Maserati, and Rolls-Royce.

Although the share of the South Korean domestic automobile market absorbed by imports is relatively small at slightly more than four percent, the potential implications for the SKAI are profound. Given the relative weakness of demand for domestically produced automobiles in South Korea in recent years the increased market penetration of imports indicates the SKAI will have to be quite aggressive in continuing to develop its export markets if it is to succeed in fully utilizing its domestic production capacity.

South Korean Automobile Industry in the United States Market

Since its entrance into the United States automobile market in 1986, the South Korean automobile industry has steadily increased its market share and significance in the U.S. Here, we profile three significant South Korean firms that market their vehicles in the U.S.

Daewoo in the U.S. Market

In 1993, Daewoo accounted for 20 per cent of the South Korean domestic market. Hyundai, on the other hand, accounted for about 50 per cent. Therefore, in order to expand and survive, Daewoo decided on a globalization strategy. By 1997, Daewoo was managing 11 manufacturing and 10 marketing subsidiaries in 9 different countries. Daewoo believed that in order to compete with Hyundai, the company had to achieve economies of scale and, therefore, had to expand rapidly. Daewoo wanted to increase capacity rapidly and decided to do so by buying failing carmakers at low cost rather than developing its own markets in the United States and Western Europe. For example, in 1994, Daewoo acquired automakers FSL and FSO in Poland and Rodae Automobile in Romania. The managing director of Daewoo, Mr. In-Young, later observed the strategy failed because the company moved too quickly without necessary financial and managerial resources to manage its domestic expansion.[25]

Daewoo and GM began a joint venture relationship in 1978 when Daewoo obtained Shinjin Motors, which had a joint venture with GM. GM did not allow Daewoo to export abroad with its own brand, nor was Daewoo allowed to develop its own technology to design a new car or engine.[26] Therefore Daewoo decided it was essential to break free from GM. In doing so, Daewoo set out on its globalization strategy in 1992 that eventually, as discussed earlier, was unsuccessful. In 1999, Daewoo fell into bankruptcy.

GM took over Daewoo in 2002 and renamed the firm GM Daewoo. GM Daewoo began selling the Chevrolet Aveo in the United States in 2003 with 5,677 vehicles sold. By 2005, the Chevrolet Aveo sold 68,085 units.

Kia in the U.S. Market

Kia's presence in the United States began with the Festiva, which it produced for sale by Ford beginning in 1987. Ultimately Kia established its own dealer network in the U.S. because it was unsatisfied with the marketing decisions of its partner, Ford, and therefore broke the partnership. Kia began independent exporting to the United States in 1994 with the Sephia. In 1997, faced with problems from the Asian financial crisis, Kia had debts of more than $6 billion. The company was put up for sale and many believed that Ford would place the highest bid. However, Ford decided not to bid on Kia which ended up being sold to Hyundai. The resulting new Hyundai-Kia combination controls a dominant 71 percent share of the Korean domestic market.[27] By 2006, Kia sales in the U.S. were strong enough (see Figure 5) that Kia Motors Corporation announced it would build

a $1.2 billion assembly and manufacturing plant in West Point, Georgia that will serve as Kia's first manufacturing plant in America. The U.S. plant is scheduled to open in 2009.

Hyundai in the U.S. Market

In 1976, Hyundai developed its first independent car model, the Pony, and made its first foreign export to Ecuador. Hyundai began to target the North American market by setting up a sales subsidiary in Canada in 1983. Two years later it developed its second car model, the Excel, which was a success in the U.S. market.[28] Hyundai then decided to open its first Research and Development center in the U.S. in 1986 and in 1988, to build its first manufacturing subsidiary in North America in Canada. In the early 1990s, the North American market suffered rapid contraction and Hyundai had to look for other markets resulting in the closure of its manufacturing operations in Canada. Hyundai then concentrated more on research and development in the North American market to obtain technological knowledge and market information.[29]

When sales in the U.S. grew rapidly after 1998 (see Fig. 5), Hyundai once again wanted production facilities in North America. The company opened its first assembly and manufacturing plant in the United States on May 20, 2005, known as Hyundai Motor Manufacturing Alabama (HMMA). As of 2007 the plant was operating at full capacity producing 300,000 vehicles per year and employing 2,700 persons. The models produced for 2007 in Alabama were the Hyundai Sonata and the Santa Fe.[30]

Quality Issues

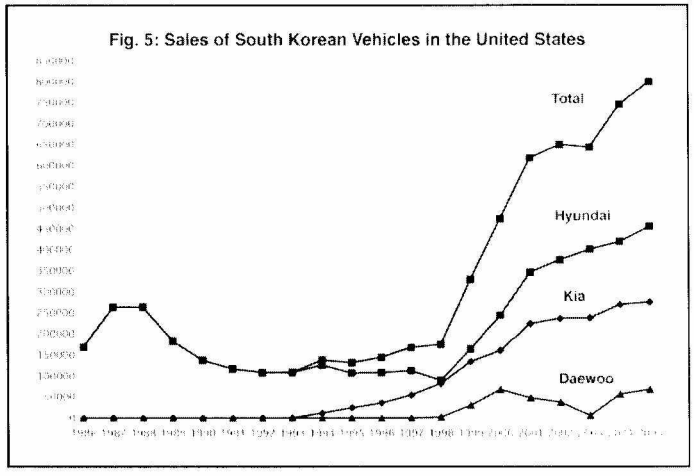
The quality of South Korean vehicles sold in the United States has been an issue for the past two decades. In the statistical analysis reported in the next section of this article it is determined that quality has been one of the significant factors influencing the demand for South Korean vehicle in the U.S.

In the 1990s, Hyundai and Kia faced serious image problems as a result of poor quality. After initial strength in the U.S. market in the early 1980s, sales of South Korean cars in the U.S. declined sharply through the early 1990s. (See Fig. 5). Data in Table A-2 in the Appendix show that the quality of South Korean cars as measured by *Consumer Reports* declined during this period.

In September 1998, Hyundai responded to the image and marketing problems caused by the poor quality ratings with the introduction of a five year 60,000 mile comprehensive vehicle warranty and a 10 year or 100,000 mile powertrain warranty. At this time, the standard industry warranty was three years or 36,000 miles for most things and an added two years for the powertrain. Hyundai acknowledged that people viewed buying a Hyundai as a substantial risk because of the quality problems.[31]

Following its purchase by Hyundai, Kia had to confront its quality issues. In July 2000 Kia also introduced a five year 60,000 mile basic coverage and a 100,000 mile limited powertrain warranty.[32]

The improved warranties reflected improved quality in Hyundai and Kia vehicles. That improved quality was the fruit of a commitment of top management of the firms to zero-defect manufacturing. Designers, engineers, factory managers and workers were forced to work as a team to identify and eliminate potential defects.[33] The effort paid off and with the extended warranties as evidence of commitment to quality was an important element in the growth in popularity of South Korean cars in the U.S. in the early 2000s.[34]



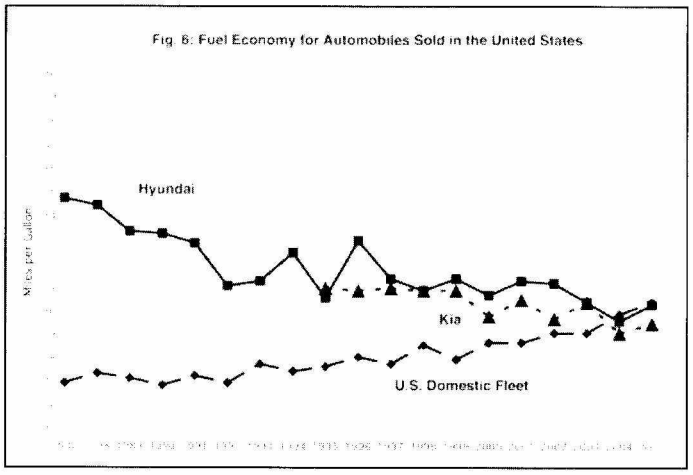
Demand for South Korean Vehicles in the U.S. Market

Our analysis of demand for South Korean vehicles in the United States examines several factors that are suggested to have affected South Korean vehicle sales in the U.S. market in the 1987 to 2005, the period for which consistent data series were available. The factors that were tested and found to be statistically significant and having a determining effect on the sales of South Korean vehicles in the U.S. are: (details of the statistical analysis and its results may be found in the Appendix).

Quality Index Average: The expectation is that a rise in the Quality Index Average will, in turn, increase sales of South Korean vehicles in the United States. The quality index is adapted from quality rankings in annual issues of *Consumer Reports* magazine as reported by actual vehicle owner experience, and is measured given a quality number of 1-5; one being the worst, and 5 being the best with 3 considered average. We assumed that an average or above average vehicle in quality is more desirable than a low-quality vehicle. Over the 1987-2005 period we found that improved quality was associated with increased sales.

Average Interest Rate for Loans for New Cars: A rise in interest rates for loans for new cars raises the effective price of, and has a negative effect on, sales of South Korean vehicles in the United States.

Fuel Costs in Cents per Gallon of Unleaded Gasoline: Earlier we showed in the analysis of the domestic South Korean automobile market that fuel price changes have a negative effect on vehicle sales. That is, higher fuel prices in South Korea raise the cost of operating a vehicle and depress sales. However in the United States market South Korean vehicles are viewed as relatively fuel efficient compared with other vehicles sold in the U.S. Both Kia and Hyundai have consistently exceeded the average U.S. Corporate Average Fuel Economy (CAFE) performance of



Chrysler, Ford, and GM.[35] Although the fuel economy ratings, as measured in miles per gallon, between Hyundai and Kia cars and the U.S. domestic fleet have been converging, for most of the period covered in this study the principal South Korean vehicle manufacturers had a substantial fuel economy advantage. (See Fig. 6). With rising gas prices, U.S. consumers are more likely to purchase a vehicle that has higher fuel efficiency. Therefore, the expected relationship between U.S. fuel prices and sales of South Korean vehicles in the U.S. is positive.

In the statistical analysis of the sales of South Korean vehicles in the United States we decided to omit from the dependent variable data the sales of South Korean built vehicles sold in the U.S. by U.S.-based manufacturers These vehicles consisted of the Ford Festiva, made in conjunction with Kia, and the Chevrolet Aveo and the Pontiac Lemans both made by General Motors and Daewoo at various points in time. None of these vehicles have been sold in the U.S. on a continuous or consistent basis for the period covered by this study. Likewise, these vehicles have been marketed under U.S. brand names by GM and Ford. The lack of a continuous time series for their sales and the branding as U.S. makes could have resulted in a bias in the data. Therefore, sales of South Korean vehicles in the U.S. included here are those of Hyundai, Kia and Daewoo. (The Daewoo data are included only for the 1998-2002 period when its products were marketed under the Daewoo name).

The statistical analysis led to the acceptance of the hypothesis that Total South Korean Vehicle Sales in the United States are associated with average interest rates for new cars, fuel costs in cents per gallon of unleaded gasoline, and the measure of quality. This suggests that the success of the South Korean automobile sales in the United States in the 1987-2005 period was influenced by a combination of lower interest rates, increasing fuel prices, and improved quality.

Conclusion

The question raised in this study was: What are the factors that have lead to the expansion of domestic demand and United States demand for South Korean vehicles? In answering that question we found that the South Korean automobile industry underwent significant restructuring in the decade of the 1990s. The restructuring and consolidation has resulted in the Hyundai-Kia and the GM Daewoo combinations emerging as dominant producers in South Korea and as important participants in the United States automobile market.

In the domestic South Korean market, the volume of Gross Domestic Product was found to have a positive association with the demand for vehicles while the unemployment rate and price of oil per barrel were found to have a negative association with the demand for vehicles.

In the United States market, the demand for South Korean vehicles, undergoing rapid growth in the 1987-2005 period, was found to be positively associated with the quality rating of those vehicles and the price per gallon of regular gasoline. The interest rate for new loans was found to have a negative association with the demand for South Korean vehicles in the United States.

The results suggest that demand for vehicles in South Korea will be highly dependent on the development of the South Korean economy. In the United States market, the South Korean manufacturers will be faced with the challenge of having to maintain the momentum of the past decade and a half. There is evidence that will be a major challenge.

In recent years, both Hyundai and Kia sales in the United States have been increasing, but at a decreasing rate. From 1995 to 2000, the average annual rate of growth for Hyundai was 17.88 per cent and 45.37 per cent for Kia. In the following five years, from 2000 to 2005, the rate of sales increase declined for both automakers. Hyundai's average annual rate of growth fell to 13.24 per cent and Kia's average fell to 11.43 per cent. Between 2005 and 2006 the annual rate of growth for the Hyundai-Kia combination in the United States Market was 2.6 per cent, and between 2006 and 2007 it was 3.1 per cent.[36]

There are several factors that are influencing the slowing rate of sales growth. For one, saturation of the market may be an issue in the United States. Also, both South Korean manufacturers need to continue their focus on maintaining and improving quality and customer service. A third suggestion is that the appreciated value of the South Korean *won* has weakened the profitability of vehicles, resulting in less revenue for the corporations if prices are maintained, or if prices are increased, risking a loss of the low-price niche for South Korean vehicles in the U.S. and possibly a loss of sales.

Another consideration is that in recent years a new era in the history of the South Korean automobile industry may be in the process of being written. Hyundai in particular appears to be moving away from its traditional market niche of lower-priced, fuel efficient vehicles. For example, while in 2008 Hyundai continued to offer its low-priced Accent model (base price of $10,775), and mid-priced Sonata (base price of $18,120), it now offers the Azera which it markets as a high quality premium sedan at a 2008 base price of $24,600. For 2009 Hyundai is introducing the Genesis which is being marketed as a luxury sedan competing with the low end of the Mercedes-Benz, BMW, and Lexus lines. In addition, the Hyundai line now includes sport utility models such as the Tucson, Santa Fe and Veracruz and a minivan, the Entourage.

Kia in 2008 also markets a much more expanded line than its traditional low-priced offerings from the 1980s and 1990s. Included is a subcompact economy model, the Rio (base price of $11,540), but also a premium mid-size sedan, the Amanti (base price $26,220) and a broad range of other sedans (Spectra and

Optima), sports utility vehicles (Rondo, Sportage, Sorento), and a minivan (Sedona).

The expansion and moving upscale of the model offerings of the South Korean automobile manufacturers provides a marketing opportunity to capitalize on improved product quality and to raise the expectations of consumers relative to image, styling, and performance. However, these marketing efforts also suggest that factors that historically have influenced the sales of South Korean vehicles such as low price and fuel economy, especially in their export markets such as in the United States, may be less important in the future.

The South Korean auto firms have a challenge to maintain growth in the U.S. market. At the same time, a weak or stagnant domestic South Korean vehicle market will test the ability of the South Korean vehicle builders to maintain production growth. The economic factors tested here are significant through the years of our study, but may not hold in the future years due to South Korea's changing economy and a changing model mix of the manufacturers. The progress of the South Korean automobile industry in both the U.S. and domestic Korean markets is likely to provide fertile ground for future research and analysis as its history evolves.

Additional References

IMF International Monetary Fund. n.d. International Financial Statistics. Retrieved October 12, 2006 from: HYPERLINK "http://www.imfstatistics.org"http://www.imfstatistics.org.

KAIDA Korean Automobile Importers and Distributors Association. n.d. "Market Share by Year." Retrieved November 28, 2006 from HYPERLINK "http://www.kaida.co.kr/eng/dbase/databasemain.jsp"http://www.kaida.co.kr/eng/dbase/databasemain.jsp.

KAMA, Korean Automobile Manufacturing Association. "Korean Automobile Industry, 2006."

Retrieved January 10, 2007 from HYPERLINK "http://www.kama.or.kr/eng/k_eng_main.jsp" http://www.kama.or.kr/eng/k_eng_main.jsp.

United States Energy Information Administration, 2005. Annual Energy Review, Table 5.18.

Retrieved November 20, 2006 from HYPERLINK "http://www.eia.gov/emew/aer/pdf/aer.pdf" http://www.eia.gov emew/aer/pdf/aer.pdf

Kia Motors, The Power to Surprise. Retrieved May 14, 2008 from HYPERLINK "http://www.kia.com" http://www.kia.com

Hyundai. Retrieved May 14, 2008 from HYPERLINK "http://www.hyundai.com" http://www.hyundai.com.

Determinants of Demand for South Korean Domestic Vehicle Sales 1987-2005

DOMSALES = Sales of all automobile and light trucks in the domestic South Korean Market

DOMSALES = 337345.8 + 3540719 *GDPVOL—126705.1 * UNEMPR – 25616.75 * OILPRR

(9.48) (-3.74) (-3.86)

Adjusted R2 = 0.8397

That is, 83.97 percent of the variation in the dependent variable of DOMSALES is associated statistically with variations in the Gross Domestic Product, (GDPVOL), Unemployment Rate (UNEMPR), and Oil Prices (OILPRR) in South Korea.

The t statistics are in parenthesis and indicate all three independent variables are significant at the 95 percent confidence level.

Determinants of Demand for South Korean Vehicle Sales in the United States 1987-2005

TSKSUS = Total South Korean Vehicle Sales in the U.S.,

TSKSUS = 68840.99 + 84053.24 * QA + 2668.98 * FCGUR – 28636.23 * AIRNC

(3.87) (3.28) (-3.38)

Adjusted R2 = 0.866

That is, 86.6 percent of the variation in the dependent variable of TSKSUS is associated statistically with variations in the quality of South Korean Vehicles (QA), the price of unleaded regular gas (FCGUR), and the interest rate on auto loans (AIRNC).

The t statistics are in parenthesis and indicate all three independent variables are significant at the 95 percent confidence level.

						UNIT SALES OF VEHICLES
–	OILPRR[1]	UNEMPR[2]	GDPVOL[3]	AUTOPROD[4]	AUTOEXP[5]	DOMSALES[6]
1987	21.040	3.100	42.989	793,125	535,231	249,448
1988	16.62	2.500	47.564	872,074	564,511	323,561
1989	20.19	2.600	50.772	871,898	347,273	514,484
1990	24.55	2.400	55.420	986,751	339,672	626,126
1991	19.59	2.3	60.626	1,158,245	378,600	772,548
1992	18.51	2.400	64.188	1,306,752	427,515	876,262
1993	16.12	2.792	68.125	1,592,669	572,402	1,037,488
1994	14.61	2.400	73.941	1,805,895	648,385	1,140,399
1995	15.87	2.020	80.720	2,003,146	856,368	1,149,409
1996	19.67	2.000	86.370	2,264,709	1,056,400	1,238,940
1997	18.06	2.590	90.387	2,308,476	1,155,893	1,151,287
1998	11.27	6.840	84.191	1,625,125	1,228,144	568,063
1999	15.9	6.280	92.178	2,361,735	1,390,071	910,725
2000	26.72	4.430	100.000	2,602,008	1,544,473	1,057,620
2001	21.33	4.020	103.837	2,471,444	1,397,015	1,065,161
2002	21.61	3.280	111.074	2,651,273.0	1,413,723.0	1,225,210.0
2003	25.93	3.570	114.515	2,767,716	1,720,124	1,001,874
2004	33.7	3.680	119.931	3,122,600	2,276,576	857,977
2005	44.82	3.700	124.682	3,357,094	2,456,525	913,550

Table A-1: South Korean Macroeconomic Data and Auto Production and Sales

[1]Oil price per barrel in constant inflation adjusted 2000 dollars
[2]Unemployment Rate (percent) in South Korea.
[3]Gross Domestic Product of South Korea Index on a year 2000 = 100 basis
[4]Production of vehicles in South Korea
[5]Export of vehicles from South Korea
[6]Domestic sales of vehicles in South Korea

Source: International Monetary Fund, International Financial Statistics and KAMA

–	TSKSUS[1]	QA[2]	FCGUR[3]	FCGUR[3]
1987	263610	3	94.8	10.7
1988	264282	3	94.6	12.6
1989	183261	1.5	102.1	12.7
1990	137448	1.5	116.4	12.6
1991	117630	1.5	114	12.4
1992	108549	1.3	112.7	9.8
1993	109488	1	110.8	9.5
1994	138258	1	111.2	9.8
1995	132118	1	114.7	11.2
1996	144742	1	123.1	9.8
1997	168511	1	120	7.1
1998	175510	1	105.9	6.3
1999	329571	1	116.5	6.7
2000	473357	1	138.2	6.6
2001	618258	1.5	146.1	5.7
2002	633861	3.7	135.8	4.3
2003	637692	3.6	159.1	3.4
2004	688670	3.1	188	4.4
2005	730863	3	229.5	5.8

Table A-2: South Korean Vehicle Sales in the United States Independent Variable Data

Sources: Ward's Motor Vehicle Facts & Figures 2006, 1996, 1992, Economic Report of the President 2006; Consumer Reports, *Miscellaneous Issues.*

[1]South Korean Vehicle Sales in the United States.
[2]Quality Index based on Consumer Reports annual quality ratings.
[3]Fuel prices in cents per gallon for unleaded regular gasoline in the United States.
[4]Average Interest Rate for Loans for New Cars.

Appendix

Statistical Results

The following statistical results are the basis for the conclusions of the research presented in the text of the article. The statistical technique utilized is basic multiple regression analysis. Tables A-1 and A-2 give the data used for these analyses.

Endnotes

[1]*Motor Vehicle Facts and Figures.* Ward's and Motor Vehicle Manufacturers Association, selected issues, 1972-2007.

[2]Hyun, Jae Hoon; *Korean Automotive Foreign Direct Investment in Europe* (New York: Palgrave Macmillan, 2003), p. 59.

[3]Production and sales data used in this paper are taken from the annual *Automotive News Data Book* (available in print and

online) and Ward's *Motor Vehicle Facts & Figures*, published annually.

[4]Hyun, op. cit., p. 62.

[5]Ibid., pp. 62-63.

[6]Park, B.; "Politics of Scale and the Globalization of the South Korean Automobile Industry," *Economic Geography*, vol. 79, pp. 173-194.

[7]Kennett, David; *A New View of Comparative Economics* (Mason, Ohio: Thomeon-South Wislern Publishing Co., 2004), pp. 314-323.

[8]Hyun, op. cit.; pp 62-63.

[9]Park; op. cit. pp. 179 and 190-192.

[10]Kim, B. and Lee, Yoonseok; "Global Capacity Expansion Strategies: Lessons Learned from Two Korean Carmakers," *Long Range Planning*, vol. 34, pp. 309-333.

[11]Ibid.

[12]"Ssangyong History, Five Decades of Leadership and Innovation." Retrieved Jan. 17, 2007 from overview/history_3.jsp.

[13]Gadaez, Oles; "Samsung tags $13 billion by 2010 for car business," *Automotive News,* February 6, 1996, p. 8.

[14]Renault; "Renault Samsung Motors." Retrieved Jan. 24, 2007 from http://www.renault.com.

[15]Kang, Jong-Yeol; "The Production System of the Korean Automobile Industry," Massachusetts Institute of Technology Center for Technology, Policy, and Industrial Development, International Motor Vehicle Program, FY97 Working Paper.

[16]Asia Pulse Pty Ltd.; "Daewoo Motor's History and Future tied to U.S., G.M." April 30, 2002. Retrieved Jan. 10, 2007 from http://www.accessinglibrary.com/cars2/summary_0286.25301261_ITM.

[17]Kirk, Don; "G.M. Complete Financing for Auto Venture in Korea." *New York Times,* October 17, 2008, p. W1.

[18]Choe, Sang-Hun; "Daewoo Motor Becomes a Bright Spot for G.M." *New York Times*, May 30, 2006, p. C4.

[19]"Hyundai Wins Auction to Take Over Kia Motors," *New York Times*, October 19, 1998, p. A7.

[20]Cho, Namjer; "Kia Motors Forced Into Receivership," *Wall Street Journal*, April 16, 1998, p. 1.

[21]Hyun; op. cit., p. 65.

[22]"DaimlerChrysler Hyundai Stake," *New York Times*, September 7, 2000, p. C4.

[23]"Korean Automobile Industry 2006." KAMA, Korea Automobile Manufacturing Association, Retrieved Jan. 10, 2007 from http://www.kama.or.kr/eng/k_eng_main.jsp.

[24]Ibid.

[25]Kim and Lee; op. cit., pp. 311 and 238.

[26]Ibid.

[27]Ravenhill, J.; "National Champion to Global Partnerships: The Korean Auto Industry, Financial Crisis and Globalization." Working Paper, Massachusetts Institute of Technology, Japan Program, p. 11.

[28]Ibid, p. 2.

[29]Kim and Lee; op. cit.

[30]"About HMMA." Hyundai Motor Company, Retrieved April 18, 2007 from http://www.hmausa.com/company.aspx?id=28.

[31]Simison, Robert L.; "Hyundai Plans Turbo-Charged Warranty," *Wall Street Journal*, September 23, 1998 p. 1.

[32]"Kia Stretches Warranty Coverage." *Automotive News*, July 17, 2000.

[33]Schuman, Micheal, Fonda, Daren, and Sikora, Frank; "Hyundai Grows Up–No More Snide Jokes" *Time*, June 27, 2005.

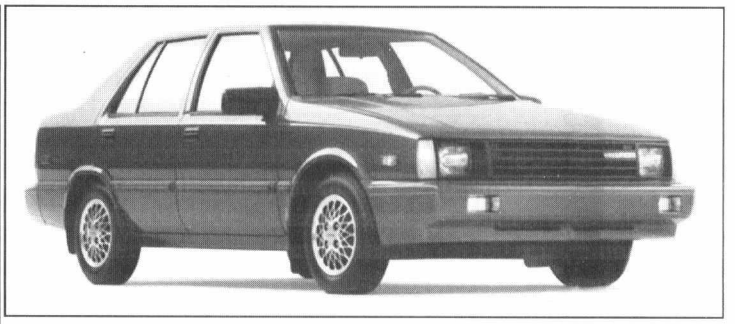
[34]Gibney, Frank J.; "Hyundai in High Gear," *Time*, July 16, 2001.

[35]*Ward's*, op. cit., 2006, p. 84.

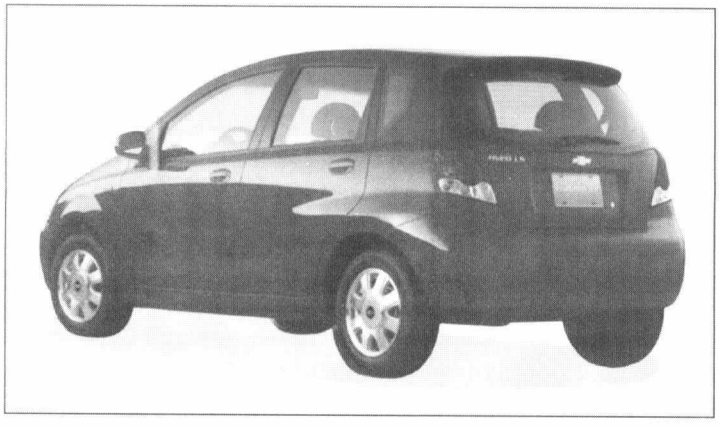
[36]"U.S. Light-Vehicle Sales," *Automotive News*, Jan. 8, 2007, p. 40 and Jan. 7, 2008, p. 34.

Korean Automobiles Sold in the United States

Chevrolet-Badged Daewoo Matiz, sold in Europe.

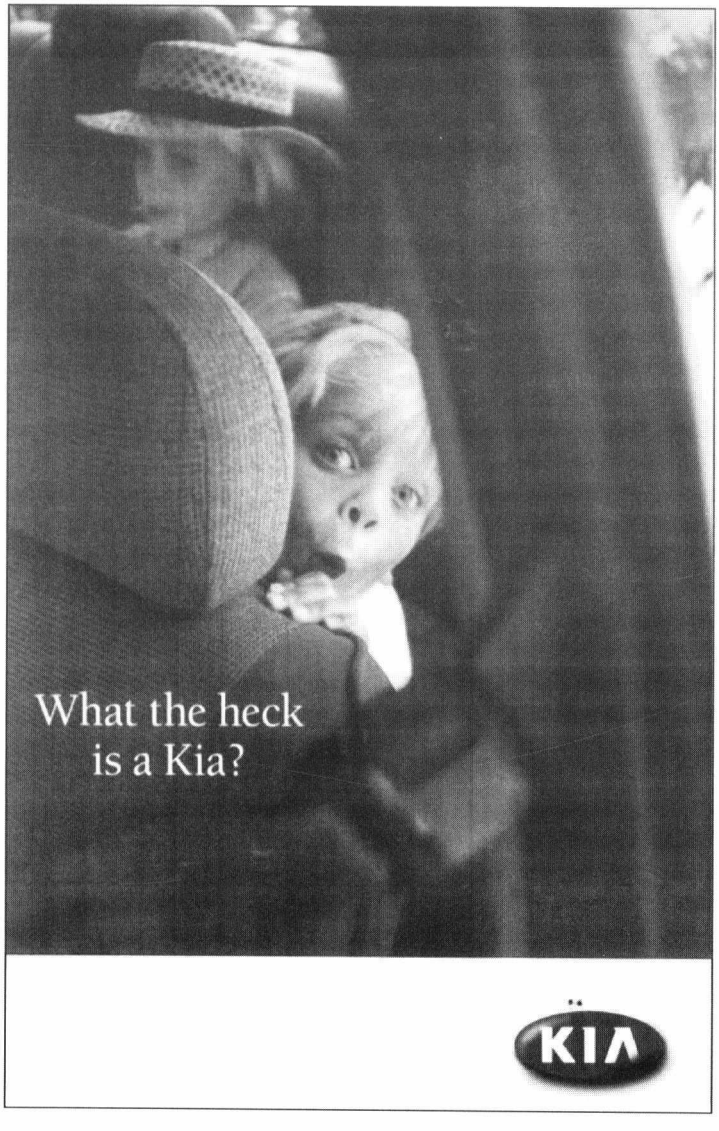


Hyundai Pony, introduced in the U.S. in 1986.



Chevrolet Aveo made in Korea for U.S. market.

Ford Festiva introduced in the U.S. in 1988.



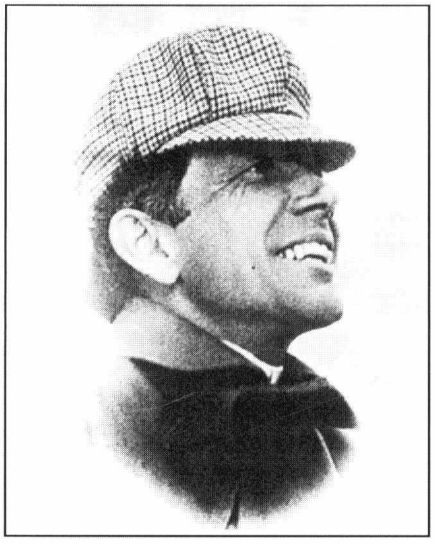
Cover of U.S. Sales Folder introducing the Kia brand in the U.S.

All images are from the editor's collection.

Abstracts

William C. Durant: America's Pre-Eminent Entrepreneur

by Jace Baker and Pat McInturff



William C. (Billy) Durant, founder of General Motors, in a photo that makes you believe Walter P. Chrysler's remark that Durant "could charm the birds out of the trees"
(courtesy of Terry B. Dunham).

The story of William C. Durant is the making of the American entrepreneurial prototype. Very early in his career he was recognized as a keen marketer and quite rapidly excelled as a promoter, turning the Durant-Dort Carriage Company into one of America's largest, while becoming a millionaire by the age of 40. Success followed success. He was introduced to a motor car made by Buick—a firm he purchased in 1904. By 1908, Buick was the number two manufacturer in the United States and the foundation for the formation of General Motors. In the next 12 years, Durant would lose his newly-founded company, regain it through a leveraged buyout, only to lose it one last time.

One characterization of Durant is that he was essentially a financial swashbuckler, adept at manipulating stocks and clearly a genius in the use of leverage. One element of his character that separates him from many contemporary financial wizards is that he was extremely honest, a "flaw" that was possibly responsible for his downfall. The other facet of his personality that is probably painted with far too broad a brush is that he was not a good manager. This paper examines those legends to gain a richer understanding of Durant from the prospective of an entrepreneur.

Pat McInturff *is a professor in the Department of Management, California State University, San Bernardino, California, where until recently* Jace Baker *was also a professor in the Department of Management; he is now a consultant and lecturer headquartered in Sarasota, Florida. They are no strangers to Automotive History Conferences The two authors (together with C. E. Tapie Rohm) presented at the Dayton conference "The Business School Curriculum: A Study of Automotive History," abstracted in No. 42. Their "Alfred P. Sloan: The Prescient Organization Man," was published in full in No. 46.*

Eudora Welty's "Losing Battles": Women, Cars, and Family Values

by Deborah Clarke

That the car permeates American culture needs no justification. But its connection to literature is less well established. Eudora Welty's work poses a particularly interesting case because the majority of the car references focus on the 30s. This era serves as a kind of interim period in the evolution of the auto industry—past the glory days of the 20s and prior to the post-World War II explosion. It saw corporate consolidation as dozens of smaller companies went under during the Depression, leaving General Motors, Ford, Chrysler reigning supreme, trailed by the rag-tag Independents. The UAW, after a ferocious struggle, finally succeeded in unionizing the auto workers. Both management and labor, then, formed increasingly tight-knit organizations as the transformation of the enterprise from a cottage industry to a global corporate structure was completed. And yet, during this period of consolidation and professionalization, the industry continued to market itself in terms of family values, advertising the car as a means of cementing family ties and creating community—at the same time as public sentiment continued to express reservations regarding the impact of the car on precisely those institutions. Amid this tension, the role of gender played a particularly tricky role: to what extent were driving women challenging home, family, and female identity?

My presentation discusses the ways Welty explores these concerns, noting the extent to which the car re-configured family values and began to open up new possibilities for women's place and agency. Her 1970 novel, *Losing Battles*, set in Mississippi in the 30s, reflects the debates, inconsistencies, and directions of the American automobile industry in that same era. Welty astutely captures the concerns regarding women's access to the car, concerns that lingered even after the automobile was well established as a standard of American life. Amid all the competing and conflicting stories in the novel is the larger story of the automobile and its hold on the family and the nation.

The Evolution of Buick Racing and Performance (1908-1941)

by Terry B. Dunham

At the beginning of the automobile industry, the reputation and advertising generated by a successful racing program could easily mean the difference between success and failure for a manufacturer. And because of this, manufacturers fought fiercely with their factory race teams, not just for a winning position on the track, but also for what a win could mean to a company's reputation, free newspaper coverage, and publicity. With so much at stake, it wasn't all fun and games. Sometimes the teams cheated. Sometimes they got caught. And sometimes the drivers and the mechanics riding with them died on the track.

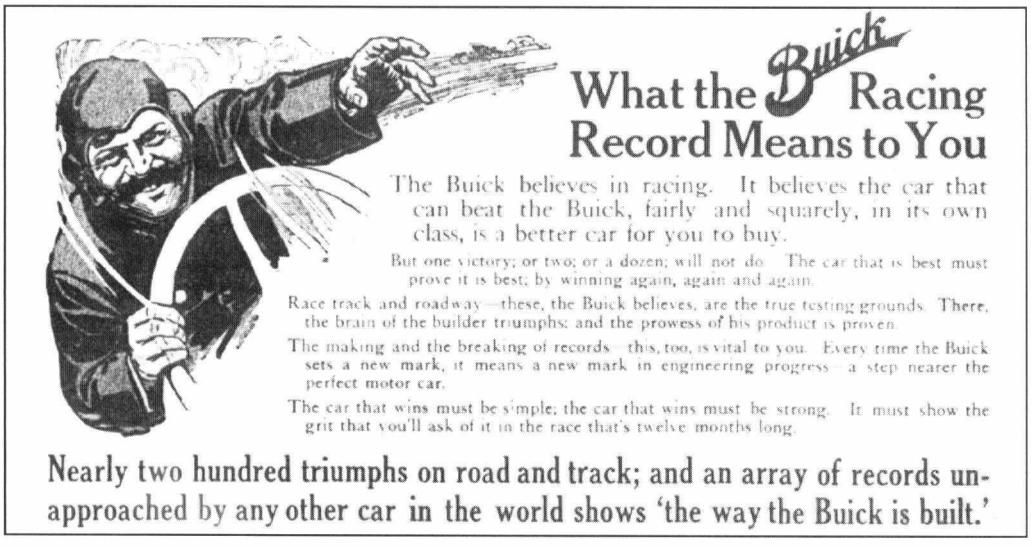


Fig. 1 – Buick relates its racing prowess to consumer satisfaction (advertisement appearing in the Sunday, June 19, 1910 *Chicago Tribune* and other newspapers).

Surely the most colorful and one of the most successful early factory race teams was the one fielded by Buick in the years 1908-1911 (Fig. 1). Buick was then under the control of William C. "Billy" Durant. One of the greatest sales personalities ever, Durant knew the value of the advertising that winning brought, and that racing could help him engineer better Buicks. When he took over Buick in 1904, he had the company's first production car, the Model B, to promote and improve. The car featured an overhead valve engine (OHV), but prospective buyers had no idea what that kind of engine was or if, in fact, a Buick car was any good.

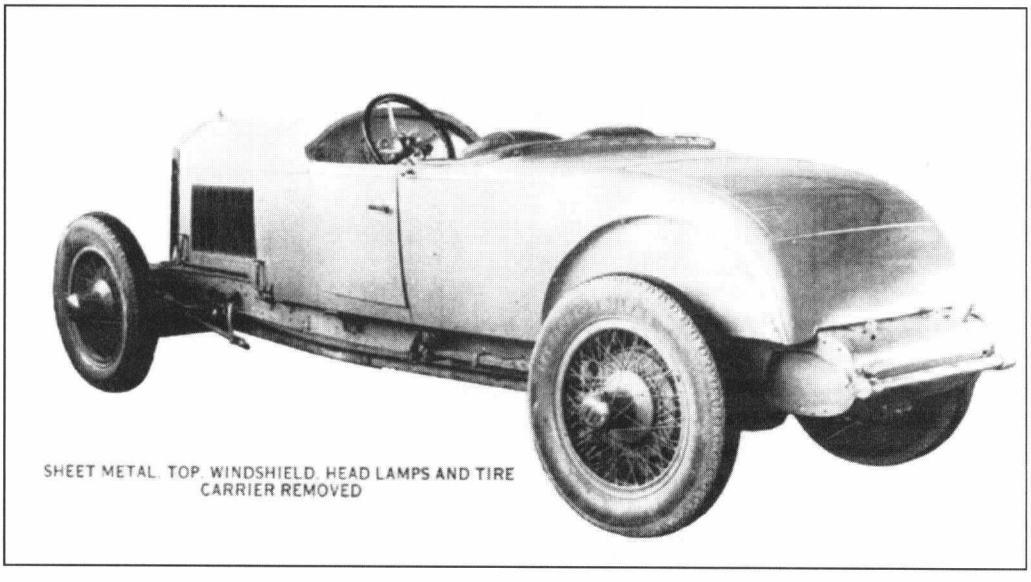


Fig. 2 – 1928 Buick Model 24 four-passenger sports roadster after modifications to increase maximum speed from 60+ to more than 80 miles per hour.

Durant addressed this issue by promoting the OHV engine and what it meant in virtually all company advertising, terming it the "valve-in-head." And then Durant decided to go racing. That was a very good decision. From the very first days of the company, distributors and dealers were encouraged to compete, and Buick never missed an opportunity to let the public know how Buicks could perform at the track. Using sales materials and newspaper advertising, the company constantly talked about Buick's racing success.

And how did Buicks get better from these racing efforts? First, as a direct result of competition experience, Buick's production engines and chassis were engineered to be heavier and stronger. For example, in 1908, the team wrecked two stock chassis racers at Savannah due to broken right rear axles. As soon as chief engineer Walter Marr got back to Flint, work was promptly started on a better axle design. By early 1911, Durant was gone from the company and so was support for the team. The bankers were running General Motors now, and they didn't seem to have much use for the loud and smelly racecars so Buick got out of factory racing. But the company did not forget what it had learned at the track. In the coming years, Buick cars were engineered to be heavier, more durable, and more reliable due in large part to what the company had learned from racing. Its

image of reliability eventually caused Buick to be known at "The Doctor's Car" (MDs still made house calls in those days).

When the company decided to bring out a new series of Straight Eight engines for 1931, the engineering department decided to see what it could get out of a new 1928 Model 24 with 63 H.P. In its stock configuration, it was capable of just over 60 mph. When the engineers were done, they had a hot rod, built largely from factory parts, that was capable of more than 70 mph. With a few more changes, the top speed was increased to more than 80 mph (Fig. 2). Among the changes from production were a milled cylinder head, retarded camshaft timing, replacement of carburetor jets, an exhaust cutout, and high performance wheels and tires.

In 1936, Buick trumped the industry and introduced the Century, America's first mass-produced muscle car—the engine from its large cars in the body of its smaller ones. In 1940 Bill France unexpectedly won the Daytona Beach race driving a 1939 Century. He lapped 23 Ford flathead V-8s while winning the race. The only car he did not lap was a 1939 Century.

For 1941, Buick installed dual carburetors and exhaust headers on the big 320-cubic inch engine. With 165 H.P., Buick was the most powerful production car that year and capable of 110 mph. War came at the end of the year, and Buick turned to defense production.

SAH member Terry B. Dunham *is well-known as the co-author of the Automobile Quarterly book,* The Buick a Complete History *and the six editions thereof. He worked for General Motors from 1963 to 1992 when he retired. At the 2002 conference talked about "1908-1911 Buick Race Cars From Hell," abstracted in* Review *No. 39. In 2004, his topic was "Buick's Engineering Advances (1904-1963)," abstracted in No. 42. At South Bend, in 2006, he talked on "The Great Valve-in-Head Mystery," abstracted in No. 46.*

Centennial Recollections of General Motors: Sights and Sounds of Auto Pioneers

by Lawrence R. Gustin

Lawrence R. Gustin, a former Flint (Mich.) Journal writer/editor who authored the first biographies of General Motors founder William C. Durant (1973) and Buick founder David Dunbar Buick (2006), showed film and audio clips of auto pioneers he collected while assistant director of public relations for Buick. He called his presentation: "GM Centennial Recollections: Sights and Sounds of Auto Pioneers."

Gustin pointed out that 2008 is the centennial year for the foundation of General Motors (the world's largest auto manufacturer for many years), for the introduction of the Model T Ford (the world's most famous automobile); and for the New York to Paris "Great Race" (the world's most famous international car race). He urged historians to follow his example and search out home movies and old recordings of automotive pioneers for preservation. Gustin noted that historians and car collectors do a good job of preserving information on vintage cars, but less so on images of the pioneers who created them.

Footage of auto pioneers is hard to find and Gustin admits that his "finds" are often brief and of poor quality. Nevertheless, his program at the Conference in Nashville was a rare opportunity to see auto pioneers moving and sometimes talking. Among those on film and/or audio were GM founder Billy Durant, Louis Chevrolet, Henry and Edsel Ford, Charles Nash, Walter Chrysler, Ransom Olds, Henry Leland, Walter Marr (who built the first Buick), Sam McLaughlin (founder of GM of Canada), C.S. Mott (a GM director for 60 years), Harlow Curtice (later GM chief executive and *Time* magazine's 1955 Man of the Year), and (sound film) Buick chief engineers Dutch Bower (1920s-'30s) and Charlie Chayne (1930s-'50s). He also showed a film of the dedication of a plaque at David Buick's birthplace in Scotland, footage of a 1904 Buick engine, the 1910 Buick Bug racer in action, and old film of a 1915 Buick on a wild mountain trek.

Lawrence R. Gustin *is one of the few writers active today who interviewed people who were close to Durant at the time he founded GM 100 years ago. One was his widow, Catherine, who married Durant three months before he founded GM, and another was C. S. Mott, who worked closely with Durant starting as early as 1905. Gustin interviewed them both in the early 1970s for his Durant biography while auto editor at* The Flint Journal. *That award-winning and critically acclaimed biography,* Billy Durant, Creator of General Motors, *was reprinted in April 2008 in an updated third edition by the University of Michigan Press. His latest book,* David Buick's Marvelous Motor Car, *is now being distributed by Wayne State University. Gustin, who writes at Durant's personal desk (given to him by Catherine's estate), also co-authored* The Buick a Complete History *with Terry B. Dunham in six editions (1980-2003) and created* The Flint Journal Centennial Picture History of Flint *in three editions (1976). In 1999 he was awarded a Distinguished Service Citation by the Automotive Hall of Fame.*

"Put the Pedal to the Metal": the Impact of the Campbell Cosworth Casting Process on the International Motorcar Racing Scene—1980s and Beyond

by Thomas A. Adamich

The 1980s —" the golden age of Cosworth"

This phrase is significant, primarily due to the contributions of one man and his research. John Campbell is the originator of the Cosworth Casting Process. This was the first core casting assembly process based on a zircon sand mold, subsequently filled by electromagnetic pump and used for the production of cylinder heads and blocks. As a result of Campbell's breakthrough, Cosworth became a world leader in mass-production engine block casting with this novel approach, adapting computer-controlled electromagnetic pumping of liquid aluminum to the cylinder heads and block manufacturing process for mass-production vehicles. Such noted companies as Ford Motor, Jaguar, and Mercedes-Benz have licensed use of the process.

Campbell's Cosworth Casting Process also has made major contributions to motorcar racing, having been part of several successful Cosworth-based and -derived racing engine production programs, most notably its later role in the "off-the-shelf" production of Cosworth's famous 3-litre normally-aspirated Formula I Grand Prix engine—code named DFV (Double Four Valve)—which later was a key element in Michele Alboreto's 1983 Detroit Grand Prix victory and, previously, had a legacy of nearly 155 World Championship victories since the 1950s. The XB and XD versions of the engine subsequently replaced the DFV.

Campbell's own perspectives are, most likely, the best indicator of the Cosworth Casting Process' motorcar racing success:

> Cosworth (and all other engine builders and car builders) were a team of excellent engineers and designers. They did not, so far as I could ascertain, employ one metallurgist or material scientist back in 1978. . . . Cosworth employed me to set up their new foundry because their engines had been increased in power up to the point at which the castings were blowing apart and so not finishing the race.
>
> This reliability was at the cost of at least 50 per cent of all cylinder heads failing on the test bed. When I provided the new castings to Cosworth, no cylinder head ever failed again from thermal fatigue so far as I know.
>
> Interestingly, when some of my employees visited Ferrari during my time at Cosworth, they reported back that Ferrari could not even fill their own moulds. Their cast cylinder blocks had huge holes in the side walls. Later, after one of my first employees, Vian Coombe, a young chap straight from college whom I treated as a trainee, joined Ferrari to assist their foundry, they appeared to be able to cast the castings they wanted, and started winning races.
>
> *(Source: Campbell, John. Correspondence [electronic mail], October 12, 2007)*

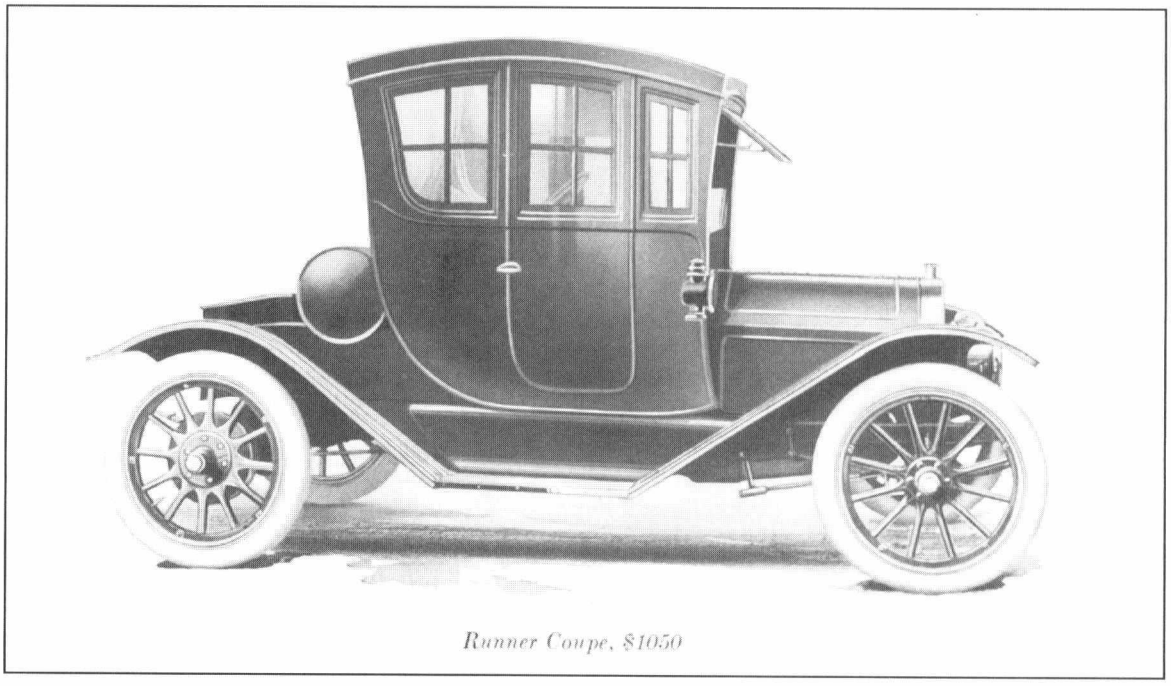
My paper profiles one of the leaders of the metallurgy industry and illustrate how his casting process not only impacted Cosworth racing initiatives, but also profiles the role metallurgy plays in competitive engine development as well as in motorcar racing in general. Furthermore, my discussion features details associated with the Campbell Cosworth Casting Archives—a significant collection of primary and secondary source material currently available at Robert Morris University in Pennsylvania.

1984 Ford (UK) RS 200 fitted with Cosworth-derived engine (from the editor's collection).

A professional librarian, Tom Adamich *is presently cataloging librarian at Robert Morris University in Moon Township, Pa. An Ohio native, he is a member of SAH. His previous contributions at automotive history conferences have included "Woodies, Workhorses, and the Wonder Bread Generation: The Rise and Fall of the Station Wagon and the Rise of the Minivan," "Cars and the Tube and the Silver Screen: Automotive Product Placement in Television and Motion Pictures 1950-2002—Social and Legal Implications," and "Our Town's Crown Jewel: A Vehicle Assembly Plant," abstracted respectively in* Reviews *Nos. 36, 39, and 46.*

Marathon—Nashville's Hometown Car

by William H. Pryor



1913 Marathon Runner Coupe (from the editor's collection)

Until the advent of the Saturn, the South of the United States was little thought of as a home to the manufacture of automobiles. To be sure, there was the Anderson in South Carolina, but that was an assembled car. The Marathon of Nashville, on the other hand, was manufactured completely in the South.

Here, in short, is how it happened. The car originally hailed from Jackson, Tennessee, where about 400 were produced between 1907 and 1910 by the Southern Motor Works, a division of the Southern Engine & Boiler Works. The car was called Marathon. But in 1910 a group of financiers bought out the operation, and moved the Southern Motor Works to their town, and renamed it Marathon Motor Works.

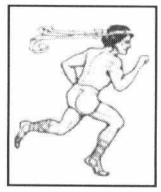
The Glidden Tours of that era could be viewed as an automotive marathon, and Marathon sent a team to compete in the 1911 Tour. The challenge was to leave New York City and get to Jacksonville, Florida, as quickly as the posted train schedule, an allotted 14 days. To save money, the company persuaded private owners to compete under the factory banner. Three cars were entered, and a fourth followed along, carrying spare parts and baggage. None of these were new or even the current model year, one even had 3,500 miles of service. Every Marathon reached Jacksonville, three on time with perfect scores, and one, 30 minutes late.

In 1912, the dealer network had expanded to every major city in America. By September, the factory claimed that the annual capacity of the factory was now 10,000 cars. The 1913 model year saw the use of names tied to the marathon: Runner, Champion, and Winner, the latter priced at $875. In August of that year, the company announced that "to relieve themselves of the heavy expense attached to the maintenance of a large corporation" it had entered an agreement with the Herff-Brooks Corporation of Indianapolis to market Marathon cars.

This was an indication of mismanagement. By May 1914, a suit to force the company into involuntary bankruptcy was brought by three suppliers who claimed not to have been paid. The three claims totaled only $11,245. Two suppliers withdrew after Marathon alleged that payment was withheld because the supplies in question were unacceptable. Although the judge ruled against the claims, records show that the company had been losing money for the most recent several months. By 1915, Marathon's machinery had been purchased by Herff-Brooks in Indianapolis who continued to produce the cars there, unchanged, except for their new name, Herff-Brooks. The Nashville operation continued in business with a greatly reduced labor force, manufacturing parts for their cars until about 1918.

The Marathon was a quality car, lacquered with up to 20 coats of paint. Mechanically, it featured double rear-wheel brakes. Modern for the era, cigarette lighters and dashboard lights were available. It is estimated that between 4,000 and 5,000 Marathons were made between 1907 and 1915.

William H, Pryor *is a Nashville historian whose article "Marathon—It Almost Went the Distance," appeared in* Automobile Quarterly *(Vol. 31, No. 2, Winter 1993).*



Advising Ettore Bugatti: Elisabeth and Čenek Junek

by Patricia L. Yongue

The Juneks

Ettore Bugatti notoriously did not take advice! At least he did not often take it gratefully or graciously, especially from his Molsheim works employees who knew his cars best, including successful race car drivers like Ernest Friderich and Louis Chiron. Instead, he consulted openly with his rivals and peers, in particular Louis Delage. Anecdotal and apocryphal stories "documenting" Bugatti's resistance to unsolicited advice about his automobiles' construction and performance enhance the portrait of the enigmatic Italian who fiercely competed to win races for the marque and for France, but who as fiercely maintained class protocols—and the artist's will over his creation—even if doing so made life on the track uneasy for his drivers. He would not budge, for example, on the matter of replacing a wet sump system with a dry sump system in his race cars, despite "suggestions" from drivers beleaguered by oil backlash as well as by dust, rocks, and, in the case of defective hydraulic front brakes on the T30, muddying water. He balked at, but inevitably and fortuitously conceded to, applying a supercharger to the T35.

Some historians attribute Bugatti's stubbornness about the wet sump and other mechanical parts and systems merely to a characteristic stinginess. Bugatti charged top franc for all of his touring cars and his used race cars. However, because he produced so few cars (about 7,900 in 30 years of production, fewer than a third of which were race cars), because he bought the best tools available, because he gambled unsuccessfully on such ambitions as the production of the ultimate luxury automobile, Bugatti Royale, and because he refused to live less than elegantly, he needed to cut costs when he could. Unlike rival constructors, Bugatti sold his new and used race cars—some say out of economy (or stinginess), while others theorize an ideal of seamlessness—to private clients who would race them or simply enjoy them, detuned. In either case, driver comfort was not normally a priority for Ettore Bugatti. Racing required stamina and sweat. Nonetheless, although Bugatti race cars were piloted extensively by independents (and, argue some historians, for this reason as much as for the excellence of the famed T35B dominated Grand Prix racing in the 1920s), it was no coincidence that Bugatti's thriftiness seemed most evident when the works race car drivers' comfort was involved. Bugatti could always enjoy his champagne *dejeuner* at the track, while his drivers subsisted mainly on adrenaline, oil, and water.

No matter how much money they paid for his cars, clients could not always claim exemption from Bugatti's intolerance for advice, which he always construed as negative criticism, as sometimes it was, and which he countered with angry sarcasm. On occasion, he could be persuaded to make amendments by drivers like Pierre de Vizcaya, whose wealthy investor father, Agustin, had negotiated equipment loans for Bugatti and also assisted him in securing the Molsheim site in 1909. With Elisabeth and Čenek Junek, isolati race car drivers from Prague,

Czechoslovakia, *Le Patron* seemed quite openly benevolent, in part because the wealthy couple openly declared absolute loyalty to de Vizcaya, and promised a financial safety net if required. In the 1920s, Bugatti was investing heavily in his racing program and also in the construction of his dream car, the Royale. Čenek repeatedly wrote (in French) to Bugatti with praise, criticism, and advice and, as far as we know, received prompt, courteous, and informative responses. In several letters to Bugatti, Čenek unshyly denounced the several performance and technical flaws of the T32 aptly named "Tank." Čenek made suggestions about the design of the new Grand Prix T35, which early in 1924 Bugatti revealed to Čenek he was developing. Writing (according to decorum) in behalf of his wife Elisabeth, Čenek reported on her distress at watching the car's debut at Lyon in 1924 destroyed by the easily-shredded tires. Čenek also encouraged Bugatti to supercharge the T35. The Juneks received the first unsupercharged T35 to leave France and likely received the first supercharged T35 (T35B) delivered to and raced by an independent outside of France. For her part, Elisabeth would offer her opinions about the cars in person when she traveled to Molsheim and continued to address Le Patron via her husband's correspondence. Bugatti respected the driving capabilities of Elisabeth and rewarded her with encouragement to race the T35 in the rigorous Targa Florio. Mechanical failure forced her to drop out of the 1927 Targa, but she completed the 1928 race, finishing fifth overall and becoming the first woman to accomplish the feat.

Patricia L. Yongue *is associate professor of English at the University of Houston, Texas. She is a former director of SAH. Her article "Elisabeth Junek: Racing the Bugatti," appeared in* Review *No. 39. Abstracts of her papers "Auto-Phobia in American Literature: the Challenge for Motorsports," "Harriet Quimby: Autos Before Aircraft," and "Renault at Monthléry: Letters of Ellery I. Garfield" appeared respectively in* Reviews *Nos. 36, 42, and 46.*

The Business of Hot Rods: A Southern California Industry

by Dick Dixon

The development of automobiling has provided individuals with a personal freedom that drastically altered the cultural development of 20th Century America. Nowhere has this been more prominent than in southern California where the automobile has transformed the physical as well as the cultural landscape. A unique element of this development has been the emergence and growth of hot rodding and motorsports following World War II. Returning veterans with new found skills and money transformed their daily drivers into personal extensions of beauty and competition. Hot rodding evolved from backyard enterprises and fledgling small shops to a multibillion dollar industry.

This paper chronicles the evolution of hot rodding and motorsports through the phases of hobby, institutionalized competition, the business of hot rodding and motorsports, and hot rodding and motorsports as entertainment. I close by discussing the possible future of motorsports and hot rodding.

Dick Dixon, a former member of SAH, is Director of Motorsports at Marian College, Indianapolis, Indiana. He was formerly with the Department of Management, California State University, San Bernardino, California.

Performance equipment ads Motor Trend, *September 1949* (from the editor's collection).

Ben Gotoff and His Scrapbook: The Charmed Life of an American Outlaw Racer (1908-1920)

by Dale K. Wells

Most automotive historians and collectors have heard of Barney Oldfield, Eddie Rickenbacker, and Tommy Milton. But what about Benjamin Gotoff? Who was Ben Gotoff? Where did he come from? What kind of records did he set? Where did he go after retiring from racing? Unfortunately, the answers to these questions have not yet been found. Several popular automotive racing history books consulted do not have his name in the index. So what do we know about him? Well, he collected photos and clippings about his early years of dirt track racing and put them in a scrapbook.

Ben Gotoff at the wheel of a Sunbeam Special, 1917.

Thanks to interested family, friends, and SAH members, the scrapbook has been preserved, passed along through many hands, and was given to the Classic Car Club of America Museum in Hickory Corners, Michigan, in 1995. The scrapbook of clippings and photos is charred on several pages by fire. The story is that Gotoff and his wife/girl friend had an argument or disagreement of some sort, which resulted in the scrapbook being tossed into an open fire. It was quickly retrieved and preserved through the years.

Although Gotoff was interested in recording his racing accomplishments and travels, he did not have the historian's approach to the material he collected. Thus, there are no dates on the clippings to tell us when his adventures began or in what sequence. One story tells that he was the son of a Baron Gotoff of Germany and came to the U.S. in 1910. Another, that he raced for a Prince Sukinoff. The scrapbook shows him with the famous Blitzen Benz in 1914 and says that he developed his early driving skills piloting these cars in Germany.

It is safe to assume that his career began in the mid-Teens before World War I, and probably ended in the mid-1920s. The clippings do tell a story about a somewhat flamboyant, daring-type of individual who was sometimes called Bennie, Barney, or Dutch, and who garnered such descriptive appellations as "daredevil speed king," "the German driver," and "The Flying Dutchman." At one time, his crew was reported as having the world's fastest time in tire changing. This indicates that they were well trained, well organized, and dedicated in their work with Gotoff.

Of particular interest, the clippings suggest that he changed his name sometime during his racing career and became Benjamin Giroux. Such a story is dated 1917 where the clippings call him "...the Frenchman from Russia." He was reported as having driven in the "famous Moscow to Odessa road race." This was possibly a concoction of his publicity agents, since such a 700-800 mile effort was not very feasible at the time and does not seem to have been documented anywhere. Other stories of the World War I era have reported that there was considerable hostility and anger in the U.S. to Germans living here. Some people with Germanic sounding names preferred to live in very low profile manner and actually changed their names to prevent any implied connection with Germany. This may have been the case with Benjamin who name was frequently in the headlines under constant public scrutiny whenever performing in popular auto races of the time. Because we were allies with France during the War Benjamin or his agents thought perhaps Giroux was a more acceptable name when it appeared in racing reports and newspapers.

By way of background, there were several sanctioning organizations for auto racing in the early days, and the clippings show Gotoff was affiliated with a group called International Motor Contest Association in 1916, referred to as IMCA. However, it would appear that he would race almost anywhere at any time, and such drivers were referred to as outlaw racers.

And that's all we know about Ben Gotoff

Dale K. Wells *is a former president of the Society of Automotive Historians, ands currently serves as vice president of programs, CCCA Museum.* *He wishes to thank SAH members* Thomas Saal, Joe Freeman, *and* Don Radbruch *for their comments and suggestions in the preparation of his paper.*

"A Wonderful Set of Brains": Norval Hawkins and Henry's Model T

by Bob Casey

Introduction

The September 2, 1894 issue of the *New York Times* carried the following short news item from Detroit:

> Norval A. Hawkins, cashier of the Standard Oil Company in this city, and a well-known society man, was arrested this afternoon on the charge of embezzlement. The complaint was made by the Standard Oil Company, which charges that during the last year and a half Hawkins has embezzled $15,000. The discovery was made by the General Manager of the company, who began an investigation of Hawkins' books some days ago. It is not known what Hawkins did with the money. He has been living quietly since his marriage, which occurred about a year ago. Hawkins was arrested this afternoon, pleaded not guilty, and his examination was set down for next Friday.

Hawkins was convicted and sentenced to three years in prison. He served only four months, however, because a group of influential Detroit friends interceded on his behalf. They then proceeded to help him establish himself in a new line of work—as an accountant! That story alone would be enough to make Norval Hawkins a remarkable man, but he went on to become one of the key figures in Ford Motor Company's early success, and to become the automobile industry's first great marketing executive.

Rise, fall—and rise again

Hawkins was a native Michigander, born in Ypsilanti in 1867. After attending Ypsilanti High School and the Cleary Business College, also in Ypsilanti, he headed to Detroit in 1888 to make his fortune. His first business was selling kerosene but he soon moved up the food chain in the oil business to become an assistant cashier in the Detroit office of Standard Oil. The personable and talented Hawkins looked like a young man on the way up until his sudden fall from grace for embezzlement. But as noted above, he had made many influential friends who helped him recover from his misstep. In 1898 he founded the accounting firm of Hawkins-Geis.

The new firm established a good reputation, and in 1904 James Couzens, business manager of Ford Motor Company, hired Hawkins-Geis to audit the fledgling auto company's books. Couzens was himself a very remarkable man, serving as Ford's sales manager, treasurer, public relations manager, shipping and receiving manager—in fact manager of everything except manufacturing and design, which were the province of Henry Ford himself. Impressed by Hawkins' abilities, Couzens made him a contract advisor to Ford to the young motor company. (Fig. 1)

By the fall of 1907, with the business growing rapidly, Couzens was ready to relinquish at least one of his many hats and he hired Hawkins as sales manager. Couzens was no slouch when

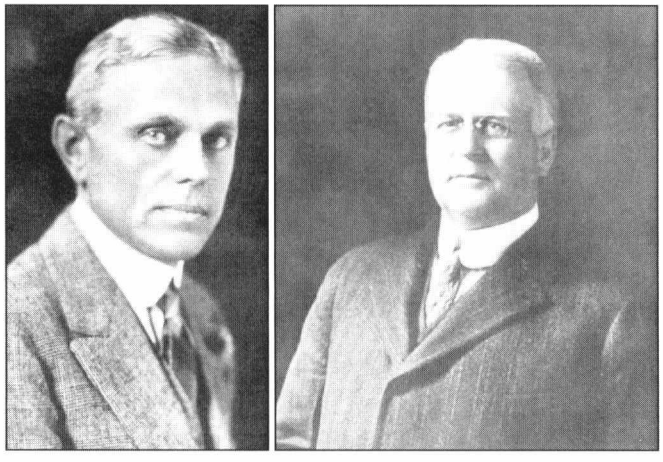


Fig. 1 – Norval Hawkins (left) and James Couzens (right).

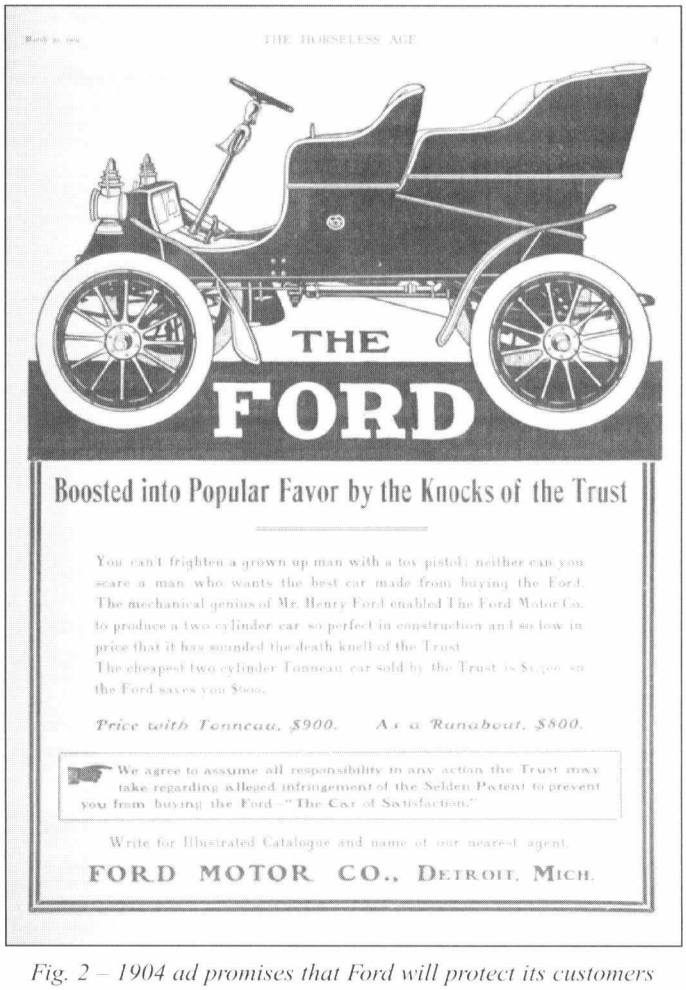
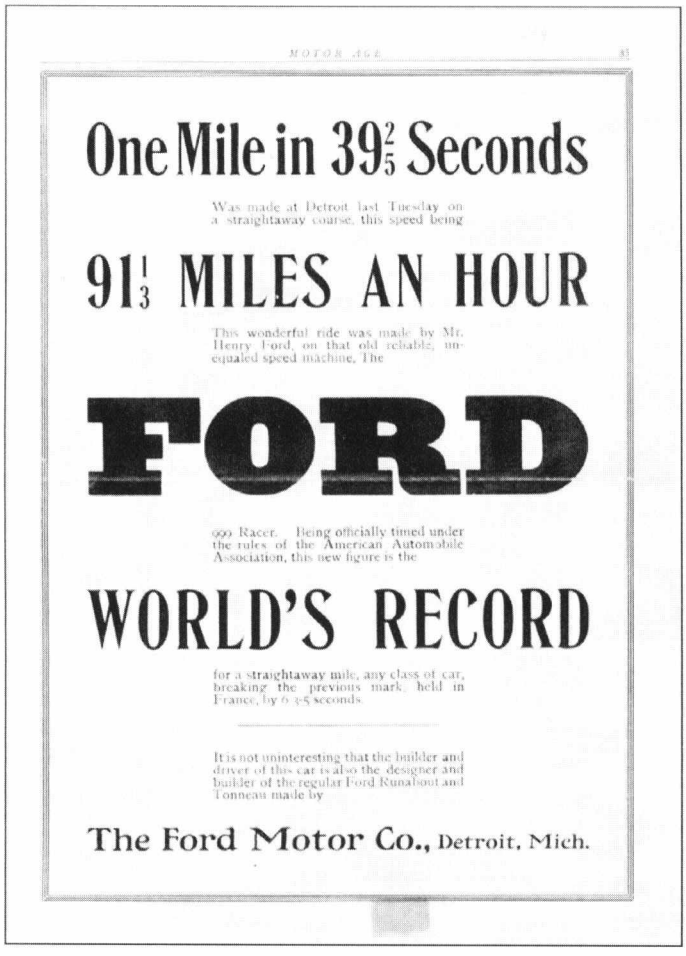


Fig. 2 – 1904 ad promises that Ford will protect its customers from legal action by the Selden Patent "Trust."



MOTOR AGE

One Mile in 39 2/5 Seconds

Was made at Detroit last Tuesday on a straightaway course, this speed being

91 1/3 MILES AN HOUR

This wonderful ride was made by Mr. Henry Ford, on that old reliable, unequaled speed machine, The

FORD

999 Racer. Being officially timed under the rules of the American Automobile Association, this new figure is the

WORLD'S RECORD

for a straightaway mile, any class of car, breaking the previous mark, held in France, by 6 2-5 seconds.

It is not uninteresting that the builder and driver of this car is also the designer and builder of the regular Ford Runabout and Tonneau made by

The Ford Motor Co., Detroit, Mich.

Fig. 3—Ford's 1904 land speed record raised the profile of the man and the company.

it came to marketing, but Ford office employee George Brown credited Hawkins with moving the sales operation to new levels of organization and effectiveness. "Oh, boy, he was a crackerjack!" said Brown. "When Hawkins came in and took over the sales position, it just seemed to revolutionize the handling of the sales end of it. God, that man had a wonderful set of brains! . . . he just turned things topsy-turvy, and everything seemed to thrive."

Couzens had established a firm foundation for Hawkins to build on. He used the company's fight against the Selden Patent to position Ford as the champion of the little guy, David battling Goliath, something most customers could identify with (Fig. 2).

Another theme Couzens established was the importance of Henry Ford himself. Plenty of other car companies were named after their founder, but Couzens sold Ford as a great engineer, who of course designed a great car (Fig. 3).

An ad trumpeting Henry Ford's setting of a new world land speed record notes that "it is not uninteresting that the builder and driver of this car is also the designer and builder of the regular Ford Runabout and Tonneau made by the Ford Motor Company." In another ad Couzens touted the Ford car as being "Modeled by the Master Hand of America's foremost Automobile Designer."

Hawkins' early efforts at Ford.

Hawkins would continue these themes, but he had plenty of ideas of his own. One of them was the company magazine, *Ford Times*. First issued on April 15, 1908 it was filled with information on car design, production methods, testimonials from owners, stories of Ford victories in races and hill climbs, and advice and encouragement for dealers. Lively and well-illustrated, *Ford Times* boosted morale at the agencies and branches. It was also sent to any existing or potential Ford owner who requested it, thus serving as another advertising medium.

On March 18, 1908, a month before the appearance of *Ford Times*, another important publication went in the mail to Ford dealers and branches. It was the *Advance Catalog* for the Model T.

Following Henry Ford's vision, the Model T's creators targeted a market they believed existed. The response to the catalog confirmed their belief. Typical was a comment from a New Castle, Pennsylvania, dealer who wrote, "It is without doubt the greatest creation in automobiles ever placed before a people, and it means that this circular alone will flood your factory with orders." The orders did indeed flood in, by telephone, telegraph, and mail, even though deliveries were not scheduled until October 1, 1908. By May 1909 Ford announced that it would temporarily stop accepting new orders because every car scheduled for production though July was already sold. The first Model Ts sold themselves, but Norval Hawkins wasn't going to sit back and let things happen—he was going to make sure that demand kept growing.

One of Hawkins' first advertising efforts was this clever brochure, die-cut in the shape of the new Ford touring car (Fig. 4).

Many of the early Model T advertisements and brochures were quite typical of the era, filled with text describing the

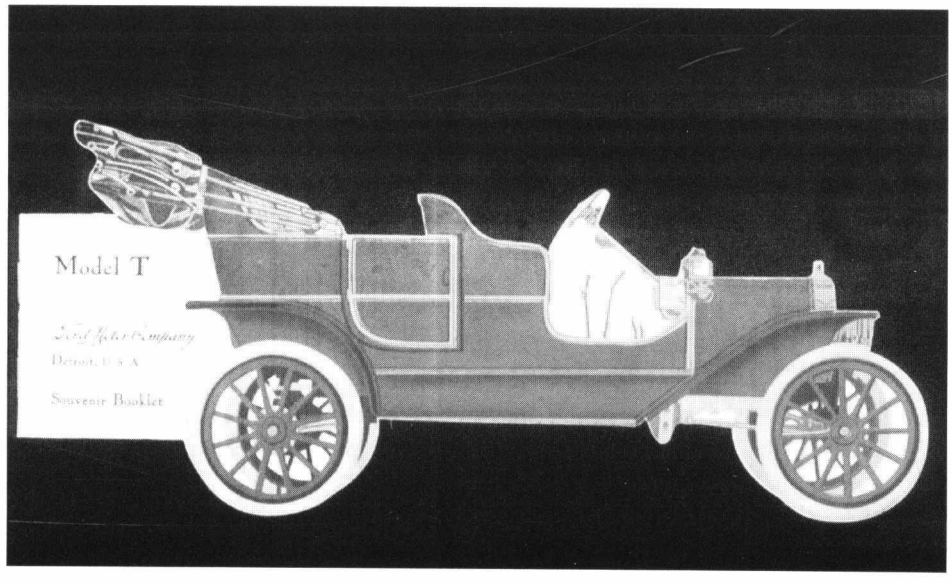


Fig. 4 – Cover of 1910 Ford Model T sales catalogue.

FORD

always be relied upon to present honestly the merits and demerits of any proposition. Where the Ford buyer is absolutely safe is in the fact that he is buying a car designed by the most successful, capable and best known automobile engineer in the world,—Henry Ford. In the further fact that he is dealing with a company which has actually built more cars than any other company and that there are today 16,000 Ford cars proving Ford superiority. In buying a Ford, you buy a car with a reputation for quality second to none, from a company that considers reputation its biggest asset and the maintenance of it of chief importance.

The Model "T" touring car offers the greatest automobile value ever announced by the Ford Motor Company and that means the greatest value ever offered for the Ford has always led the procession. A careful perusal of the following pages will convince even the most skeptical that it is years ahead of any other car in design.

The price is remarkably low—so low that you will wonder how it is accomplished and may even doubt the quality. When Ford announced the price on his now famous runabout, skeptics said "impossible," but the car made good and an enormous number were sold, the very thing we had figured on and the thing that made the price possible. The same quantity production methods that made it profitable to sell the runabout at a figure lower by one-half than a car of similar specifications had ever been sold for, will be utilized to keep down the cost of Model "T." At that there is less profit per car by a considerable margin than is usually figured in the selling price of most cars, but half the ordinary profit, multiplied by four times the number of sales still gives us 100 per cent. more profit than the other fellow.

Model "T" Features

Steering gear and control on left side of car.

Engine, transmission, fly-wheel, magneto and universal joint enclosed in same case.

Top of engine removable so that the valves, cylinders, etc., can be readily cleaned, repaired or adjusted.

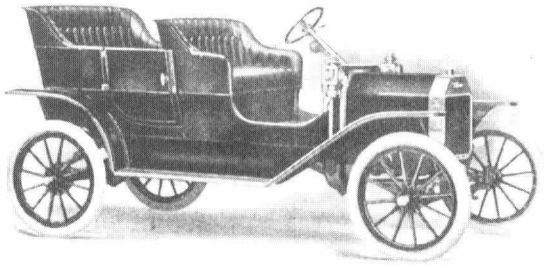
With high speed in, any speed quickly obtainable, from a dead stop to 40 miles an hour by operating foot lever.

Magneto is a part of fly-wheel, is a miniature alternating current generator of Ford's own design.

Splash system of lubrication with the fly-wheel as the distributing agent.

Ford Vanadium steel throughout—this steel

FORD



Right Side—Model T

made by us from our own analyses and guaranteed to possess greater dynamic qualities than any other known steel.

Simplicity of design and construction, fewer parts, more easily adjusted and repaired than any other car manufactured.

Not an ounce of dead weight—plenty of weight to meet every conceivable demand.

Price, $850.00 F. O. B., Detroit, U. S. A.

Motor

The Model "T" Touring Car is equipped with a four-cylinder vertical engine rated at 20 H. P. Size of cylinders, 3¾x4. Cylinders of finest quality gray iron.

Some of the noteworthy features found in the Model "T" engine are:

By removing twelve bolts the entire top can be taken off exposing all four cylinders, all four pistons and all eight valves. If it is desired to clean cylinders, valves, etc., a thorough job can be quickly done, valve surfaces ground if necessary, and top replaced.

The crank case is oil tight and in addition to enclosing the crank shaft, forms the lower half of the housing of the transmission, fly-wheel, magneto and flexible joint, all of which are enclosed and operated in an oil bath. This form of construction makes dripping of oil impossible as all working parts are enclosed. The fly-wheel is back of the engine and is also utilized as a rotor for the magneto.

Crank and cam shafts are drop forged each of a single piece of Ford Vanadium steel heat treated after forging, all bearing surfaces ground to absolute accuracy.

Connecting rods are drop forged from Ford Vanadium steel.

The Commutator is in front, easily accessible

Three Point Suspension

In the Model "T" touring car the Ford plan of 3 point suspension so successful in other Ford models has been utilized. The motor is 3 point; the front axle is 3 point; the rear axle is

Fig. 5—This page of a brochure portrayed the "two pedal, two lever" control system used on only the first 500 Model Ts.

technical features of the car, extolling the virtues of vanadium steel, and emphasizing the vehicle's low price (Fig. 5).

Selling ideas, not goods

The first Ford ads touted the Model T's advantages *over* other cars, and thus aimed primarily at people who had made up their minds to buy a car and were trying to decide which one. But the real key to continuing Ford's sales into the future was reaching people who *hadn't* decided to buy a car. They had to be persuaded that car ownership would provide them with something they wanted but didn't already have. It was with these potential customers that Hawkins' ideas really became important. He realized that buying decisions were often not based on rational considerations. As he put it, "You don't sell goods, but ideas about goods."

The sales appeal, he said, "must be made primarily to the heart instead of the mind. A man's emotions, not his thoughts, control his Desires." A 1910 article in *Ford Times* brought this approach home to dealers. Under the title "Why Doesn't More Auto Copy Talk My Language?" the author says, "I am quite sure now I wish to have nothing to do with a car's mechanism I am a joy rider pure and simple. The time is now come for automobiles to be advertised as a necessity to one's health and comfort, and the pleasure which they give. The automobile is a necessity the world was ready for it and embraced it when it came or else it could never have made such wonderful headway." A survey of Ford sales materials reveals that they targeted many different emotions, often in the same ad. However, certain ideas appear again and again in different guises.

Advertisements repeatedly emphasized the twin themes of comfort and pleasure. Sometimes they spoke of the simple comfort of riding in a warm, dry Ford Coupe versus getting wet and cold waiting for a trolley car. Other times they spoke of the democratization of pleasure made possible by the Model T; a 1913 ad says "If there were no Fords, automobiling would be like yachting the sport of rich men. But by centering his effort upon the production of one good car, Henry Ford has brought the price down within reason and the easy reach of the many" (Fig. 6).

Sometimes Hawkins' appeal to pleasure was far more direct. "Obey that impulse!" commands a Ford ad in a 1914 issue of *Horseless Age*. "The fine joy of automobile ownership may now be yours. Ford prices are down within the easy reach of the untold thousands who have waited for the coming of the right car at the right price."

Another favorite theme was modernity. Ford told potential buyers that their purchase put them in the vanguard of modern life. A 1911 featured a testimonial from Thomas Edison, the era's greatest symbol of technological progress. Edison says Ford is "one of a group of men who has helped to make the United States of America the most progressive nation in the world." A pamphlet from 1910 urges people to "Buy a Ford Car, because when you do, you are in the forefront of automobile advancement. A Ford Car is years ahead of every other car offered at this time."

The modernity theme was given a special twist in a booklet aimed at doctors, for whom house calls were still a routine part of life. The booklet says "When minutes mean life and death as they do in almost every day's work for the doctor the possession of a Ford car becomes to the physician an imperative demand for humanity's sake."

Hawkins also singled out the women's market for special attention and made surprisingly direct appeals to women's growing sense of liberation from 19th century strictures (Fig. 7). A 1915 booklet titled *The Woman and the Ford* says "It's woman's day. No longer a 'shut in,' she reaches for an ever wider sphere of action that she may be more the woman." The car "is a real weapon in the changing order."

Another innovative Hawkins sales technique was the rebate. We think of rebates as a last ditch device to revive sagging sales, but Ford used them to keep sales going and to reinforce the company's image as the friend of the little guy. On July 31, 1914 Ford Motor Company offered to give rebates of between $40 and $60 to each Model T buyer if sales exceeded 300,000 cars during the following year. On August 1, 1915 came the announcement that Ford sales totaled 308,213 during the previous year, and that each buyer would indeed "get a check" for $50. Ford Motor Company's bill came to $15,410,650. One observer called these dollars "the most virile crop of good will seeds ever planted."

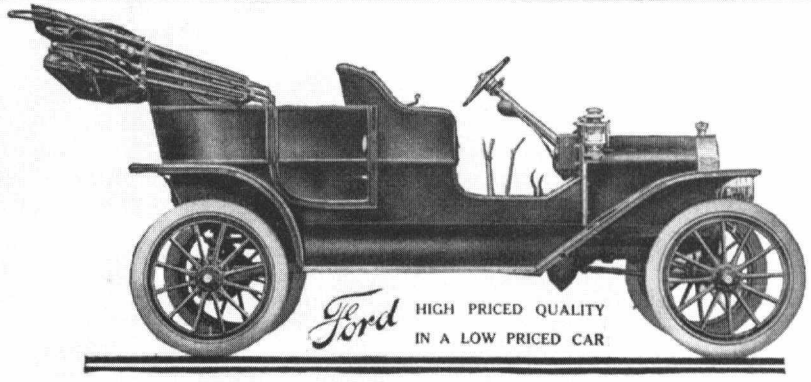
Couzens had also created a good dealer network, but Hawkins set about strengthening it. He revised the practice of granting dealers whole counties or even whole states as their exclusive territory. He believed that much smaller territories would require dealers to work the area more intensively. He pitted dealers against one another, threatening to reduce their territories further if sales numbers were not up to the mark. He kept the dealers on their toes by sending out "road men" to inspect agent's buildings, look at their books, and assess their general reputation in the community. Hawkins was also a hands-on manager. He often went into the field himself to inspect dealerships and demonstrate sales techniques. But not everybody appreciated Hawkins.

Albany, New York, dealer C. F. Weeber felt Hawkins' wrath in 1910. In a letter excoriating Weeber for not selling enough Ford coupes, Hawkins added a hand written note: "Ought to be a dozen T Coupes right in Albany—What's the matter, Weeber?" Some dealers and branch managers complained of unspecified "underhanded" dealings. Gaston Plantiff, who ran the New York City sales branch, was a special target. Hawkins seems to have distrusted Plantiff's free spending on entertainment and tried, without apparent success, to undermine him.

Hawkins was so concerned about the image dealers projected that he discouraged the use of glass partitions between showrooms and shops, so as to prevent potential customers from seeing how many ailments the Model T was heir to. He urged dealers to tow disabled Fords only at night, and discouraged selling of tire chains because they might make customers think of accidents.

The sales manager Hawkins also busied himself with work not directly related to sales. As Ford established branch assembly plants around the country, Hawkins sought the best way to ship the partially assembled Model Ts. He spent six weeks experimenting with ways to load boxcars to discover how to pack the most parts and sub-assemblies into the least space.

Hawkins also set up elaborate inventory systems and cost accounting systems to keep track of material and costs. Records



The Ford Four Cylinder, Twenty Horse Power, Five Passenger Touring Car $850.00 Fob. Detroit

THE one real automobile value among all the "season sensation" announcements is the big, roomy, powerful five-passenger touring car at the hitherto unheard of price of $850.00. A car that possesses at least equal value with any "1909" car announced, and at the same time sells for several hundred dollars less than the lowest of the rest.

Compare the following features of the new Ford car with those of any higher priced car offered and see if you can justify in your own mind the additional expenditure that buying any other car involves.

The model T is a 4 cyl. 20 h. p. five passenger family car. Vanadium steel, the finest and costliest steel manufactured, is used throughout the entire car. Unit power plant with magneto an integral part of same,—4 cylinders in one block, water jacketed cylinder head removable, offering easy access to all working parts of engine. 3 bearing crank shaft, cam shaft with 8 cams integral,—silent planetary transmission of new design, splash system of lubrication,—control on left side, all forward speeds by foot lever,—double system of braking,—shaft drive through only one universal joint to Ford system of final drive, patented in all countries. 100" wheel base, 56" tread, 30" wheels, 3" tires front, 3½" rear, where the wear is greatest. Gasoline capacity, 10 gallons,—225 to 250 miles supply,—long, clean-cut lines throughout, handsomely finished and you have the specifications of the real automobile value of this year and next and a couple more thereafter.

Vanadium steel is used throughout the entire car wherever strength is necessary. The axles, shafts, connecting rods, springs, gears, brackets, etc., are all of Vanadium steel,—each from a separate formula and all especially heat treated in our own plant and from our own analyses. We defy anyone to break a Ford Vanadium steel part with any test or strain less than 50% greater than is required to put any other special automobile steel entirely out of business.

The weight of the car is only 1,200 lbs.—brought about by scientific construction and the use of Vanadium steel. Not an ounce of necessary weight sacrificed, not an ounce of dead weight in the car.

That is one of the reasons the Ford car will run more miles for less money than any other touring car manufactured.

We make no apologies for the price,—any car now selling up to several hundred dollars more could, if built from Ford design, in the Ford factory, by Ford methods, and in Ford quantities, be sold at the Ford Price if the makers were satisfied with the Ford profit per car.

Your guarantee that this car is all we claim—and our claims are broad—is in the reputation of Henry Ford, who never designed or built a failure, and in the reputation of the Ford Motor Company, who have built $20,000,000 worth of successful cars of Ford design in the same factory, with the same organization and system, and bearing the same imprint that the Model T is manufactured under. It's the guarantee of works as well as words.

Delivery began October 1st, orders filled in rotation. Cars can be seen at all branch stores; get a demonstration if you are near by, if not, wire your order either for immediate shipment or definite future delivery.

FURTHER details in catalogue, which is yours for the asking.

Ford Motor Company

263 Piquette Avenue

Detroit

BRANCHES: New York, Boston, Philadelphia, Buffalo, Cleveland, Chicago, St. Louis, Kansas City, Denver, Seattle. Paris, France. London, England. Canadian Trade:—Ford Motor Company of Canada, Ltd. Walkerville, Ont. Branch, Toronto.

Ford

Fig. 6—1908 Model T ad, emphasizing technology and price.

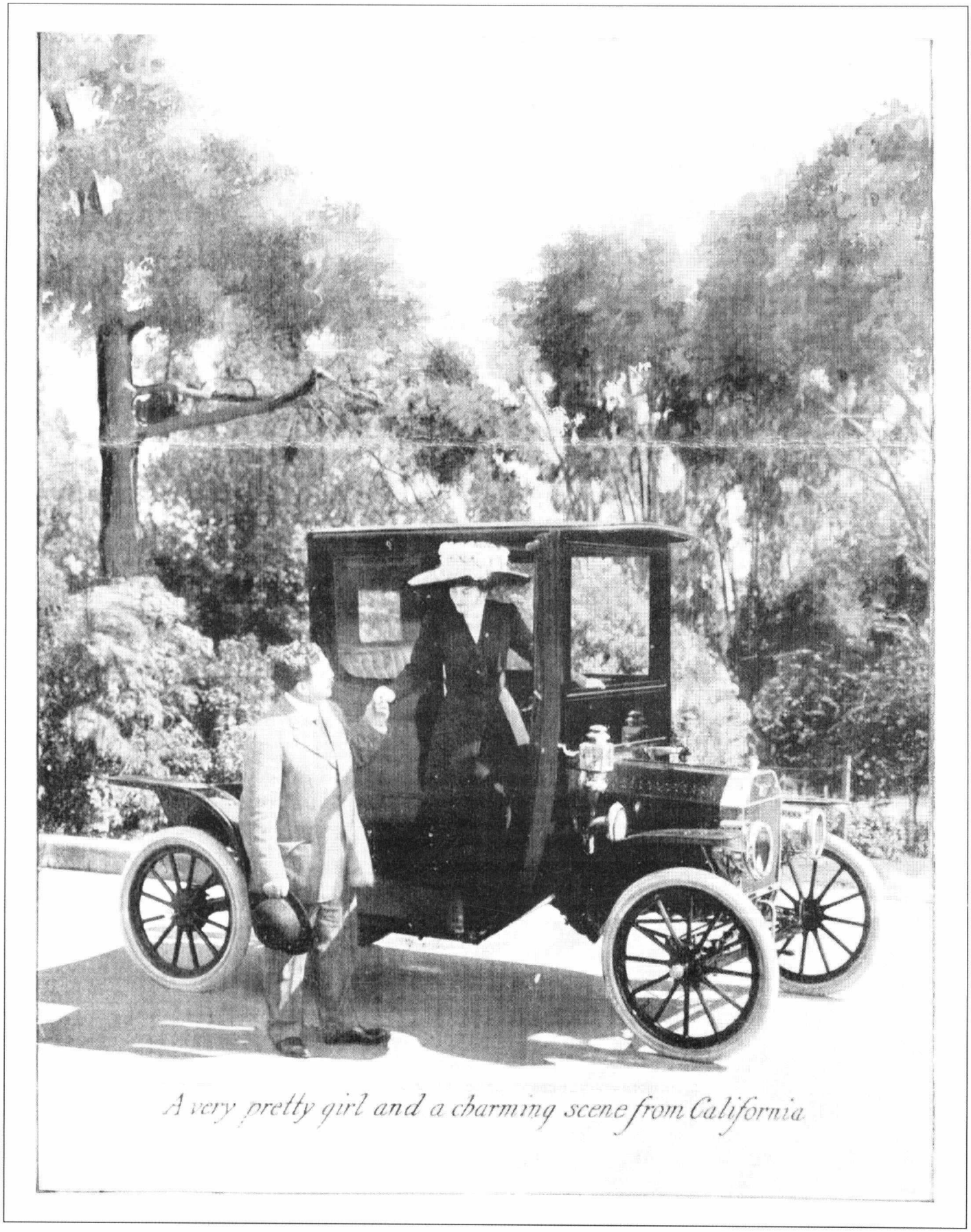


Fig. 7— Hawkins was not above discreet appeals to romantic pleasure.

in the archives show that during his tenure Ford Motor Company knew the production cost of Model T parts down to four decimal places and could easily evaluate the effect of even a small change in manufacturing practice.

But these sorts of procedures were anathema to Henry Ford and began to undermine Ford's confidence in his sales dynamo. When James Couzens resigned in 1915 Hawkins lost his chief advocate. Perhaps, he should have seen the handwriting on the wall when Henry Ford decided to halt national advertising in 1917. Saying that the company could pass the reduced overhead along to the customer, and knowing that individual dealers would have to continue advertising anyway, Ford ceased national ad campaigns for six and a half years. By the time national advertising resumed in 1923 Norval Hawkins was long gone.

From Ford to General Motors and beyond

In 1918 Hawkins asked for a leave of absence to assist the War Department in the production of military vehicles. Henry Ford reluctantly granted the request, but when Hawkins returned to work after the war he found himself shuffled off to be special sales manager for Europe and South America, while someone else occupied his old job. In April 1919 Norval Hawkins resigned, joining a distinguished group of executives who once worked for Henry Ford.

But he was not idle for long. He taught classes in salesmanship and published *Certain Success*, a companion book to his earlier book on salesmanship *The Selling Process*. In 1921 he became a consultant for General Motors. There he helped devise the famous GM "ladder of consumption" that laid out a car for every purse and purpose. He also recommended the hiring of another Ford alumnus, William S. Knudsen, who would go on to make Chevrolet the prime competitor for Ford.

In 1923 Hawkins made the second biggest mistake of his life – the first, of course being his decision to embezzle money from Standard Oil. He left GM to set up the Sturgis Steel Gocart Company. The "gocarts" in question were baby carriages, and at this point Hawkins' golden touch seemed to vanish. He lost nearly $500,000 on the baby carriage business. He stayed active as a member of the State Board of Accountancy, and as the organizer and chief fundraiser of the Boys Club of Detroit.

But just as the Great Depression did in so many auto companies, it also did in the auto industry's first super salesman. When the Detroit banking structure collapsed Hawkins lost his entire fortune. In 1933 he filed for bankruptcy, citing liabilities of $350,377.46 (he was always precise) and assets of only $293.45. He died suddenly of a heart attack August 18, 1933, only in his middle 60s.

Henry Ford is generally regarded as one of the people who most shaped the 20th century. Indeed, 100 years after the introduction of Henry's Model T we still ponder its continuing effects. But Norval Hawkins, with his insights about what motivates people to buy products, played his own role in shaping the century, and Hawkins was arguably more comfortable in that new century than Henry Ford was. Many people have noted that while Henry Ford's new museum, dedicated in 1929, celebrated 20th century technological advances, Greenfield Village, dedicated at the same time, represented the 19th century world that Henry Ford helped destroy.

Ford's ambivalence with the 20th century manifested itself in other ways. In 1921, concerned about the corrosive effects of the burgeoning consumer culture, he publicly contradicted the principles espoused by Norval Hawkins, telling a reporter, "Advertising? Absolutely necessary to introduce good, useful things; bad when it's used to create an unnatural demand for useless things, as it too often is."

This attitude also helps explain why Ford was so reluctant to give up the Model T. In his 1923 book *My Life and Work*, he denounced planned obsolescence and annual model changes based on looks, saying "We cannot conceive how to serve the customer unless we make him something that, as far as we can provide, will last forever." These attitudes lead to the conclusion that Ford saw the tough, utilitarian, slowly evolving Model T as not only all the car people would ever need – it was all the car they *should ever want*. More power, more colors, more style, more comfort were extravagances that simply fed insatiable appetites. A responsible manufacturer didn't encourage such extravagance (Fig. 8).

It was, of course, a fruitless stand to take. Ford and the Model T helped unleash the very attitudes and appetites he now deplored, and they were beyond his control. For his company to survive it must accommodate itself to the new market realities. Henry Ford and Norval Hawkins both helped create the 20th century, but it was Hawkins who fully embraced the new world, while Ford retreated from it.

Bibliography

New York Times, Sept. 2, 1894.

May, George, ed.; *The Encyclopedia of American Business History and Biography: The Automobile Industry 1896-1920* (Bruccoli Clark Layman, 1994), pp. 244-45.

Nevins, Allan; *Ford: The Times, the Man, the Company* (New York, Charles Scribner's Sons, 1954), pp. 342-343.

Accession 19, Ford Motor Company Advertisements, Benson Ford Research Center, The Henry Ford, Dearborn, Michigan.

Nevins, op. cit., p. 343.

Ibid., pp. 387-388 and 396.

Hawkins, Norval; *The Selling Process: A Handbook of Salesmanship Principles* (Detroit: Norval A. Hawkins, 1920), p. 68.

"Why Doesn't More Auto Copy Talk My Language?" *Ford Times*, Nov. 1910, p. 86.

Accession 19, op. cit.

Accession 951, Ford Motor Company Non-Serial Imprints, Benson Ford Research Center, The Henry Ford, Dearborn, Michigan.

Lewis, David; *The Public Image of Henry Ford: An American Folk Hero and His Company* (Detroit: Wayne State University Press, 1976), pp. 113-114.

Nevins, op. cit., p. 344.

I am indebted to Geoff Stein of the New York State Museum for sharing the Weeber letter.

Lewis, op. cit., p. 39.

May, op. cit., pp. 245-246.

Ibid., pp. 246-247.

Watts, Steven; *The People's Tycoon: Henry Ford and the American Century* (New York: Alfred A. Knopf, 2005), p. 352.

Nevins, op. cit., p. 412.

Fig. 8 – Alfred P. Sloan had a more modern vision than Henry Ford as reflected in the more contemporary Chevrolet.

EDITOR'S NOTES *continued from p. 2*
Automobile Industry in the Domestic and United States Markets" by SAH Director *Robert Ebert*, Buckhorn Professor of Economics at Baldwin-Wallace College, Berea, Ohio, and his student, Mariel Montoney. Bob has participated in all seven conferences. In six of them, he has examined the reasons for the decline of well-known vehicle manufacturers: Packards made in South Bend, Indiana (*Reviews* Nos. 46 and 47), Reo trucks and Diamond Reo (Nos. 42 and 43), Stearns-Knight (No. 39), Flxible (No. 36) and Divco (No. 34). His paper on technological change and consolidation of medium-priced automobile manufacturers was abstracted in *Review* No. 32.

As has been widely publicized, 2008 is the centennial of two of the most important events in the early automotive history of the United States, if not the world: the founding of General Motors Corporation and the introduction of the Model T. Ford. While SAH planned no special observance of these anniversaries, two of the History Conference papers addressed GM's anniversary: *Lawrence R. Gustin*'s "GM's Beginning's 100 Years Ago" and "William C. Durant: America's Pre-eminent Entrepreneur" by *Jace Baker* and *Pat McInturff*. These appear among the Abstracts that follow Bob Ebert's article.

I also thought it fitting that the *Review* acknowledge in some way The World of the Model T Conference, a celebration of the 100th anniversary of the Model T Ford, held in Dearborn, Michigan, July 17-19. The Conference was sponsored by The Henry Ford Model T Automotive Heritage Complex (T-Plex), *Technology & Culture*, and SAH. One of the papers presented was *Bob Casey*'s "A Wonderful Set of Brains': Norval Hawkins and Henry's Model T." Until now, Hawkins has been little known but played a large role in marketing the early Model Ts. Bob has combined his love of engineering and of history. He is a graduate mechanical engineer and worked for Bethlehem Steel. He also holds degrees in American history and the history of technology. He has been a historian and curator for the Institute of Electrical and Electronics Engineers, Sloss Furnaces National Historic Landmark, and the Detroit Historical Museum. Since 1991 he has been Curator of Transportation at the Henry Ford Museum. He is a judge at the Meadow Brook concours and Glenmoor Gathering, and his book *The Model T: A Centennial History* was published by Johns Hopkins University Press in July 2008.

The SAH/NAAM History Conferences are a most pleasant way of getting together again with like-minded people we have met at previous such gatherings. But the conference needs more new presenters. This is not a phenomenon peculiar to our Conferences. The SAH in Britain (SAHB) has conducted bi-annual seminars from its earliest days, and as Chairman *Malcolm Jeal* recently commented: "[T]here is a recurring theme that has long haunted organisers' minds: the availability of speakers." When the dates and topic of the 2010 Conference are set, I hope that SAH will give it unusually wide circulation in its call for papers. The Conference will be held in Tupelo, Mississippi.

Malcolm's comments appeared in the summer 2008 issue of *SAHB Times*. This is a quarterly publication of SAHB, edited by *Tony Beadle*. Issue No. 53 is comprised of 20 pages, and is akin to our *SAH Journal* in its content. Very usefully, this issue provides a list of sites where one can search for photos on the internet. Useful also is a list of new SAHB members and their interests, and updates and changes of addresses for old members. Years ago, we used to do the same thing through the *SAH Journal*, and I, for one, have been agitating for its return, given the two years that elapses between publication of our Membership Directory.

SAHB also provides the names of those who have resigned or let lapse their memberships. Such a list might also be helpful to our membership at large.

***

As Issue No. 49 was going to press, *Jim Cox* notified us that his wife, *Beverly Rae Kimes* had died on May 12, felled at last by a succession of ailments that called to mind the sufferings of Job. Many have been the well-deserved praises in the aftermath of her passing, but I'd like to offer a few personal observations from a friendship of over 20 years. Bev was SAH's version of racing's Triple Crown winner: a Friend of Automotive History, winner of the Nicholas-Joseph Cugnot Award (several times), and president of the Society. I once asked her how she came to be interested in automotive history. As I recall, she said she'd been a classmate of Bill Jackson; stumped for advice. He suggested an automotive topic. Whatever she wrote completely captured her imagination, and there was no looking back from there. Bill is one of the founders of SAH (#0002F) and perhaps that's how she learned of the Society.

She was the SAH's chief cheerleader and supporter. Invariably, after each issue of the *Review* appeared, I'd receive a "Heigh-Ho" e-mail of congratulation (especially appreciated when the Editor was not quite satisfied with the product). Bev was a valued member of the Committee determining the non-English Cugnot Award. I, as Chair, found her comments cogent and at times decisive. And always very full of common sense.

My favorite memories are those of her seated in her burgundy-colored gown at the annual dinner registration table in Hershey. From there, she could both help SAH and maximize her opportunity to greet individually old friends and new. Whatever her ailments, she was always full of laughter and good humor. She was friendliness personified; there was absolutely no conceit in this person of such great accomplishments.

And we who loved her must be grateful to Jim for all he did to help ease her life

***

Two months later came news of the death at 61 of Thomas E. Bonsall, a member of the Society from 1976 to 1994, who won two Nicholas-Joseph Cugnot Awards and two Awards of Distinction. For a full obituary, see *SAH Journal* No. 236 (September-October 2008). So sad that we should lose two distinguished automotive writers in a brief moment of time, who, themselves, are now part of history.

***

This issue was not peer-reviewed as the contents were in a state of flux until a comparatively late date.

Mountain Laurel Press and Arena Press helped in their usual constructive fashion of producing and printing to ensure the quality of *Review* No. 50.

Kit Foster and *Pat Chappell* again reduced the number of errors through their careful proofreading.

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. Please DO NOT use the space bar to indent your paragraphs manually! Please type just one (1) space at the end of sentences, not two.***

   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:

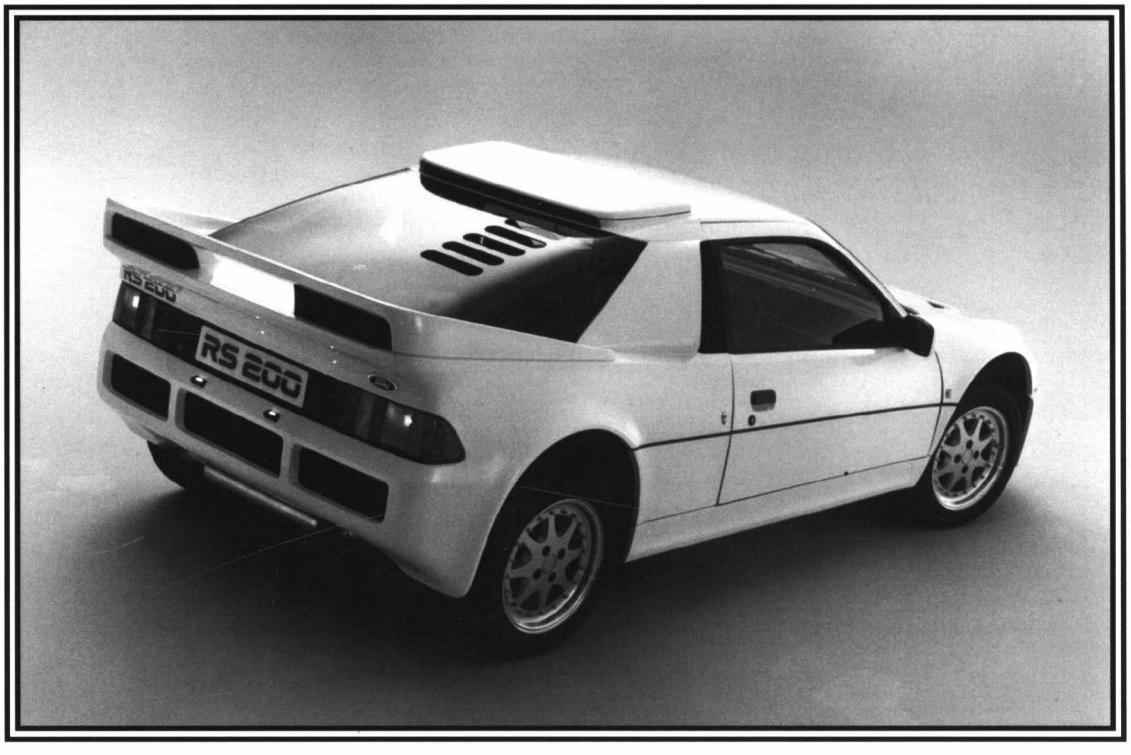
   Hoonsbeen, Gary; "Cadillac's First Year: Manufacturing and Sales," *Horseless Carriage Gazette*, Nov.-Dec. 1998, p. 18.

   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.



The Society of Automotive Historians, Inc.
1314 Trinity Drive
Alexandria, VA 22314-4726 U.S.A.

AUTOMOTIVE HISTORY REVIEW

FALL 2008 ISSUE NUMBER 50