AUTOMOTIVE HISTORY REVIEW

SUMMER 2010 ISSUE NUMBER 52

THE SOCIETY OF AUTOMOTIVE HISTORIANS, INC.
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From the Editor

The more things change, the more they stay the same. That's a succinct indictment of human nature. Conversely, the more we attempt to stay the same, the more things change. That's the nature of things. This was brought home to me while preparing this, our 52nd issue of *Automotive History Review.*

When *Taylor Vinson* announced his retirement last year, after nearly 15 years at the helm of this publication, I put my name in nomination to become his successor. I knew the business, I reasoned, and I had enjoyed my time as editor of the *Review* and *SAH Journal* from 1989 to 1995. I resigned from those positions only to take up other responsibilities for the Society.

What I had not appreciated, though, was how much SAH and the *Review* had changed over the last 15 years. *AHR* is now a refereed journal. Each article is independently reviewed, and usually revised by the author, before being committed to print. This complicates both the article development process and the editing itself. Taylor's extensive contacts outside the United States contributed to making this truly a worldwide journal, a feat seldom achieved in earlier issues.

On the other hand, *AHR* had stayed much the same graphically. The round-corner boxes that dominated the covers and title page were developed by the late *John Peckham* for Number 11, back in 1979. Indeed, it was time for a modest makeover, and you see it in this issue. It's not as breathtaking as today's commercial glossies, but it's clean and fresh and I hope you enjoy it.

Taylor had developed his own formula for the *Review,* occasional theme issues, a rear view of a car on the back cover and a move away from the "dead white males" that he felt unfairly dominated earlier front covers. It is, then, by way of irreverent tribute to Taylor that I present our first-ever "dead white female" cover, an attractive young Catherine Durant. I showed Taylor a dummy of this cover shortly before his passing last autumn, and, as I had hoped, he was quietly amused.

Opposite you will notice revised submission guidelines for articles. Some of these relax earlier strictures. Modern technology obviates the need for rigid typeface, margin or spacing requirements. If you don't have a computer, fear not. I can scan well-typed manuscripts. Handwritten articles, though, are strongly discouraged. However, we are moving away from footnotes and endnotes to APA-style citations and references. This is partly to aid in layout, for footnotes do not import easily to our template, and partly because I simply detest endnotes, which I find unduly distracting.

Finally, I am taking this opportunity to launch myself into the Twenty-first Century by doing the pre-press layout myself. This has slowed the production of this issue, as I found the learning curve steeper than anticipated, but things should proceed at a more rapid pace from this time forward. The money saved on outsourced pre-press work can go toward more pages of automotive history, more often. It is my goal to make that happen.

- Kit Foster

SUBMISSION GUIDELINES FOR AUTOMOTIVE HISTORY REVIEW

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

1. Manuscripts should preferably be in Microsoft Word. Spacing and type face are irrelevant, as they will be changed during the editing process. Inquire about the acceptability of other word processing programs. Text may be submitted by email or on compact disk media. Clean, typescript copy can be scanned if need be.

2. Illustrations may be submitted digitally or in hardcopy or photo print form. Digital images should be 300 dpi or better, in a size no smaller than the intended reproduction. TIFF format is preferred, but JPEGs can be used as long as the resolution is sufficient. Generally, photos downloaded from the internet do not have sufficient resolution. In any case, authors submitting photos should obtain the necessary authorizations for publication from the person or entity holding the copyright or ownership of the image. Illustrations are an important part of automotive history. Very rarely do we consider an article without illustration.

3. Articles should begin with a paragraph headed **Introduction**, or some other introductory heading. As the theme of the article is developed, there should be additional breaks in the text identified by similar headings, e.g. **The early years**.

4. Punctuation and spelling follow United States conventions. These will be brought into conformity during the editing process, but authors are encouraged to take these measures on their own.

5. *Automotive History Review* is a refereed journal. For the aid of reviewers and subsequent research by readers, source citations must be supplied. The preferred format is in-text parenthetical references, followed by a complete bibliographical appendix, as promulgated by the American Psychological Association. If an author must annotate the text with superscripts, please do not use footnotes. Instead, supply the references as endnotes, so they can be translated to APA format. Do not use footnotes or endnotes to amplify a point made in the text. If the point is important, include the entire discussion in text. If it is not, consider leaving it out entirely. In some cases, a sidebar may be the best way of including interesting but indirectly-related material.

In cases of doubt, please contact the editor:
review@autohistory.org

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Sights and Sounds of Automotive History

By Lawrence R. Gustin

Treasures in the mail

Of all the packages that came to me as a student of Buick and General Motors history, two were particularly intriguing. One was a shoe box full of old home movies that was supposed to include a film of the builder of the first Buick automobile. The other was a five-inch aluminum record said to have captured the voice of GM's founder.

They would be great finds in a quest not many auto history enthusiasts seem to be pursuing -- tracking down and rescuing motion pictures and/or voice recordings of those pioneers who created the U.S. auto industry more than 100 years ago.

Automotive history is quite compartmentalized. If you want help in restoring your 1909 Cadillac or 1955 Chevy, there are clubs to join, catalogs to buy and experts to consult. You'll find lots of people eager to preserve, discuss and debate every detail. Considerably less emphasis is placed on preserving the images of the people who created, produced and financed those vintage cars and trucks – the backyard machinists, tinkerers and inventors, the engineers and manufacturers and promoters who brought the auto era to life. If you want to know about these folks, there can be blank stares. Buick? There was a guy named Buick? Chevrolet – that was a man? Durant? Never heard of him....

A work in progress

At the 2008 Society of Automotive Historians conference in Nashville, I brought along a work-in-progress, a presentation of such images that generated much interest. The record and shoe box mentioned above had produced as promised, and so the program included the voice of General Motors founder William C. Durant and a movie segment featuring Walter Marr, who built the first Buick car. Among others on film or audio were Henry and Edsel Ford, Louis Chevrolet, Charles Nash, Walter Chrysler, Ransom Olds, Henry Leland, Alfred P. Sloan Jr., Charles "Boss" Kettering, Sam McLaughlin (the founder of GM of Canada) and C.S. Mott (a GM director for 60 years). Moving into more recent times, there was a sound film of a 1948 speech by Harlow Curtice, who revived Buick in the 1930s, became GM chief executive in the 1950s and was named *Time* magazine's Man of the Year for 1955.

Additionally, because I was Buick's assistant public relations director, the content was heavily Buick: sound film of chief engineers Dutch Bower (1920s-30s) and Charlie Chayne (1930s-50s) and general managers Ivan Wiles (1950s), Ed Rollert, George Elges, Dave Collier, Lloyd Reuss, Don Hackworth, Ed Mertz and Bob Coletta. While the emphasis was on people, there were also early advertising jingles and sound film of two famous engines, the first being one of Buick's first "valve-in-head" powerplants of 1904, running in an '04 replica, and the other the powerful racing motor in Wild Bob Burman's surviving 1910 Buick Bug racer.

Trying to be objective, the list of vintage faces and voices looked impressive to me but the content was less so. Some of the film segments were very short and they were of varying degrees of quality, often poor.

Finding vintage films and recordings

What I had learned in tracking them down was that vintage films and tapes are not just waiting for your listening and viewing enjoyment. They're not likely to be retrievable in some convenient library or museum. Outside of images of Henry Ford, you're pretty much on your own.

While my search concentrated on early GM, I did expect most existing film of U.S. auto pioneers would be Ford-related. After all, the same family had been in charge of the company since the beginning, and even though Henry once said, famously, "history is more or less bunk," he was very much tied to the creation of the Henry Ford Museum & Greenfield Village (though they're now independently operated). He was very interested in preserving history, including his own.

It's no surprise, then, to learn Henry Ford *is* the auto pioneer best captured on film and audio. Some is in the National Archives and Library of Congress, but at The Henry Ford museum in Dearborn, Michigan, "relatively little" sound film of him is available, said curator Bob Casey. "I think we've got Henry's voice captured on film about three times – once in a campaign speech for President Hoover in 1932, once with Thomas Edison and Harvey Firestone and then in a brief interview of Henry and son Edsel. That's about it." But compared with everyone else, that's not bad.

You have to work to find other auto pioneers walking or talking. The Walter P. Chrysler Museum in Auburn Hills, Michigan, does have a 1930s sound film of Walter Chrysler talking to K.T. Keller, who would become his successor as Chrysler Corporation chief. When Keller, sitting in Chrysler's office, talks at length about quality in one of Chrysler's plants, Walter interrupts: "Not bragging, are you, K.T.?" Keller almost sheepishly responds: "I've worked for you too long to do that."

General Motors has an extensive film library, carefully cataloged, but it contains no footage – silent or sound -- of the corporation's earliest leaders beyond some fragments donated by this writer. The National Automotive History

Collection at the Detroit Public Library has films, but no projector, and many of the films are unlabeled. Nobody knows what's in them, though a committee is being considered to take on the problem. But unlabeled film is prevalent in many automotive history collections.

Old films and photos and even an occasional audio tape may be found in odd places. While some are in museums and libraries, the best sources may be the closets and attics of a pioneer's descendants. For example, when I was looking for film of Ransom Olds, the libraries and museums in his home base of Lansing, Michigan had nothing – though Michigan State University in East Lansing had a usable voice recording. The creator of the Oldsmobile had lived until 1950, and even appeared in local parades, yet no one seemed to have any film. Finally, I went to one of his grandsons, Olds Anderson, who advised me he had lots of home movies of his famous grandfather. This was communicated to one of the Olds libraries and soon all the film was preserved and available.

The result is that it's now possible to assemble a scene that reveals Ransom Olds as happy and humorous, hugging his wife, laughing and tipping his hat, and, on the MSU tape, telling a funny story about mounting the replica of a horse's head on an early car so that horses wouldn't be spooked. None of this was evident in the stiff portraits usually printed of Ransom Olds, but now his warm personality survives for future generations.

Sights and sounds of Billy Durant

One of my first film searches was for Billy Durant, the charismatic founder of GM. When doing research for the first biography of Durant in 1973, I spent weeks interviewing his widow and his last personal secretary. They said nobody had ever filmed Durant as far as they knew. As the secretary, Aristo Scrobogna (Scrob-OWN-ya), told me: "We had a movie camera, and we took pictures of our kids. All I would have had to do was point the camera." He shook his head. My videotape interview of Scrobogna about his memories of Durant was worthwhile – but hardly as precious as a movie of the little wizard would have been.

Although pioneer cinematographers were capturing images of such early events as the Corbett-Fitzimmons fight in 1897, the Spanish-American War in 1898 and the funeral of Queen Victoria in 1901, they apparently didn't have much interest in turning the newsreel cameras on business executives in the pre-World War II era.

So I looked for events Durant attended that might have been significant enough to attract a film crew. One was a meeting of manufacturers on military preparedness around 1940, as World War II loomed for America. The main camera focused on the speaker, William S. Knudsen, about the time he took leave from GM to join the National Defense Advisory Commission. Durant was seated directly behind Knudsen. But even though Durant is on film for maybe a minute, he might as well be a cardboard cutout. The GM founder, age 79 or 80, sits transfixed, unblinking, his hand cupping his ear, not moving a muscle. From another more distant view, he can be seen reaching for a glass and beginning to take a drink. And that appears to be it for Billy Durant in the movies.

However, there is that short audio recording. In 1931 Durant had bought into a small firm called the U & I Broadcasting Co., which made recordings for home use. Durant was always looking for "self-sellers" – from road carts to Buicks and Chevys to Frigidaires – and this new product no doubt captivated him.

Durant made a recording – on a small 78-rpm disc – for his wife's great aunt, Ella Day, as a 1932 New Year's greeting. Ella's grandson, William Durant Radebaugh, found it with a letter from Durant in her belongings and made it public in 1996. And suddenly the late *Richard Scharchburg*, then curator of the archives at General Motors Institute (now Kettering University), was on the phone with the news. I advised him not to play the record until we could get a GM audio expert to make a copy.

And so today we have this sound bite from Billy Durant: "Hello, Ella? This is Willie, Mr. Willie Doo-rant in New York...." Durant delightedly goes on at some length, explaining how the recording is played ("If you don't have a phonograph, you're out of luck."). The message is of course ridiculous, because Ella would have had to be playing the recording to hear the directions on how to play it.

Billy Durant (white cap, front seat) in a Model F Buick during the 1906 Glidden Tour. He is hard to find on movie film, but his voice survives on a 1931 aluminum record.

Nevertheless, Durant buffs find the recording fascinating. He is speaking with a Boston accent (he lived there the first 10 years of his life, but nobody had ever mentioned that accent), his quick and clipped speech pattern emphasizes his fast-paced energy and he pronounces his name "Doorant" instead of "du-RANT." One of my uncles, who knew Durant a little, pronounced it that way, but I always thought he had it wrong. Maybe not (though Durant's widow and last secretary pronounced it conventionally). More interesting, Durant's recorded message to Ella is mostly tongue-in-cheek, displaying the man's buoyant humor — even while he is reeling from tremendous financial losses that would plunge him into bankruptcy four years later.

We found good uses for the audio clip. *The Flint Journal* made it available to its readers, who could call a telephone number and hear the playback (Durant is such an icon in Flint that many readers actually placed the call). When Durant was elected to *Fortune* magazine's Business Hall of Fame in 1996, Buick General Manager Ed Mertz and I flew to San Antonio, Texas, for the induction ceremony and played the audio before a crowd of 1,100, including three of Durant's great-grandsons. A lot of folks at least acted impressed. Today the original recording is at Kettering University's Scharchburg Archives in Flint, with copies at the Sloan Museum and University of Michigan, among other places.

Not Buick but Marr

There was no reasonable hope of finding film of David Dunbar Buick, who gave his name to the Buick automobile, and who died in 1929. Buick had become an obscure character long before his death and there were barely a dozen photographs in existence of him. But I knew some of the grandchildren of Walter Marr, Buick's first chief engineer, and so I went to them looking for home movies of Marr.

Sure enough, one grandson said he had some film of Walter. But it was in an old shoe box in an attic, mixed with a lot of later home movies, and someday he would get around to looking. I figured that would never happen, so I persuaded him to send me the whole shoe box. I would go through it all and send it back.

Apparently 16-millimeter movie cameras were available to well-off families in the 1920s and so I had to find a projector to handle what was in the Marr shoe box. Within a few days I had tracked down a balky old 16-mm. machine – it habitually emitted smoke and sparks – and started running the footage. The Marrs were apparently lovers of fishing, swimming, boating and water skiing, and of course the younger family members filmed those activities.

It was not until the last reel that I hit auto history gold. In one scene, Walter Marr appears. He's outdoors, sleeves rolled up and laying the cornerstone of a church. He's walking, looking around, carrying the cornerstone, setting it in place, all in close-ups. In another scene, Marr, wearing a suit, is talking with his wife Abbie in front of their retirement home at Signal Mountain, Tennessee. The silent film had nothing to do with automobiles, but here was the man who had built the first Buick in 1899 or 1900, moving in living black and white some 30 years later. And now it's all on DVD. (Incidentally, while we never did find any film of David Buick, one of my associates, GM engineer and history buff Kevin Kirbitz, went through stacks of 19th Century plumbing magazines and found three photos of David not seen in more than 100 years. David Buick had been a plumbing inventor and executive before turning to cars, so there's another example of researching unusual sources.)

Walter Marr and his wife Abbie ride in the first Buick automobile around 1901. Marr, who is said to have built the car for David Buick, lived until 1941. His image is preserved in home movies taken circa 1930.

Surprising caches

Elusive footage can come from surprising places. Who, for example, would expect to find rare movies of auto pioneers at the University of South Carolina? Yet that's where a sound film exists of pioneer Henry Leland, at age 88, walking up to a 1906 Cadillac and cranking it, then riding in it, and talking all the time, in a 1931 movie. Why is that film there? It turns out 20th Century Fox donated 11 million feet of newsreels, from 1919 to 1944, to the university, according to Greg Wilsbacher, director of the USC newsfilm library and curator of its Fox Movietone Collection. Among all those feet of film is the image of a walking, talking Henry Leland.

As mentioned, some of the film I have found is less than ideal. There are only a few seconds of young Louis Chevrolet, smiling and waving from a race car. Charles Nash is in a group at

the White House, just nodding his head. That scene, by the way, includes other pioneers such as Roy Chapin, Sr.

But some is better than expected. Charles Stewart Mott, the Flint philanthropist who worked with Durant years before Durant founded GM in 1908, lived to age 97. Sound color film (converted to videotape and now DVD) exists of the one-time manufacturer of axles for carriages and Buicks being interviewed by a Flint television commentator from WJRT around 1969. Then there's my own sound tape interviews with Mott in 1969-73. He celebrated his 60th anniversary as a GM board member by attending the annual meeting in 1972 and died early in 1973.

Despite his longevity, Mott always had an older friend and fellow auto pioneer, GM of Canada's R. Samuel McLaughlin, who made it to age 100. Said Mott of McLaughlin in 1969: "Muscularly, he's stronger now than I ever was. I was in New York about five years ago...and he hit me on the back and I almost went to my knees. Sam's 98 but he never says that. I asked him, 'How old are you?' and he says, 'I'm in my 99th year.'" We have sound film of Sam McLaughlin, and while the black and white movie is fuzzy, his voice is loud and clear as he describes how his father started making axe handles and then carriages in the north woods. But there is no doubt better footage somewhere of the long-time chairman of GM of Canada.

Charles Stewart Mott is interviewed on audio tape by Larry Gustin for a Flint Journal article on the occasion of Mott's 95th birthday in 1970. Mott, an axle maker who in 1905 was persuaded by Billy Durant to move his company from Utica, New York, to Flint, Michigan, to serve Buick, was a close associate of Durant at the time Durant founded General Motors in 1908.

The Mott TV interview is an example of what can be found in the Flint WJRT archives, and others, that are now housed at Flint's Sloan Museum and its Buick Gallery and Research Center. Unlike many museums, Sloan has an aggressive plan to preserve and index its considerable holdings of radio programs and it has proper projection equipment for its films and videos.

Jane McIntosh, Sloan associate curator of collections, said the museum once combined a contribution from a museum volunteer's estate and a student's search for a project. Tapes from local radio personality Bill Lamb's "Factory Whistle" show, which was created in the home Buick factory from the 1960s to the 1980s, have been cataloged. It's a unique window – now on DVD – into the lives of factory workers who were interviewed daily in the biggest plant of what was then the world's largest car company. Another student indexed the WJRT video tapes. Up next: Indexing a huge collection of audio tapes from the Flint schools' WFBE radio station that began in the 1950s.

The power of the interview

While researching Durant, I spent many hours interviewing Durant's widow, Catherine, over several weeks, but she would never let me film her. Indeed, I was lucky to take one black and white photo of her – from a distance. There would be no closeups. Mrs. Durant had been a beautiful young woman. She did not want to be remembered as she looked in her mid 80s, even though she was very pleasant, almost regal, in appearance. She did, however, allow me to record our interviews on audio tape, some of which survives.

Sometimes it's good to be aggressive. Once, I realized we had no film of 1970s Buick general managers George Elges and Dave Collier. With no time to deal with this myself, I sent video cameramen to find them late in the 20th century. They were instructed to start shooting and ask them two questions: What was the most memorable thing

Catherine Durant, in her mid 80s in 1972, was reluctant to be photographed but finally consented to this photo in her apartment. She stands behind the Charles Clifton Automotive Award , a trophy presented to her husband in 1946 during the National Automotive Golden Jubilee. One of ten presented to inductees to the Automotive Hall of Fame, it is now in the Buick Gallery and Research Center of the Sloan Museum in Flint, Michigan.

that happened while they headed Buick and what was their biggest accomplishment? In both cases we got very nice responses on videotape shortly before their deaths.

Today, all of the turn-of-the-last-century auto pioneers are of course long gone, though there are certainly a few individuals left from pre-World War II days, and later, whose memories are worth preserving on videotape. One example is Cliff Studaker, the retired Buick engineer who helped create the first U.S. mass-produced V-6 auto engine in the early 1960s. He has been interviewed on videotape about that project. Several times I've shown a progression to an audience – talking over black and white and then color photos of the man, and then showing Studaker on video, and finally calling him from the audience to stand up and talk live. And suddenly he's telling anecdotes and answering questions – and this too is being recorded on video.

Don't procrastinate

The key to recording historical automotive figures is not to procrastinate. Find them and film them, or find their children and ask them to point their video cameras and ask questions. Also look for the grandchildren and great-grandchildren of the pioneers, who may still be storing precious footage. Don't forget your colleagues and yourself – videotape of an auto historian discussing his knowledge and opinions would be a valuable resource to a documentary editor. And the next step cannot be over-emphasized. Just as important as capturing or finding the images is getting them to a library or museum that will preserve and catalog them.

One problem, perhaps the biggest, in dealing with historical film is trying to use it. Some film has legal strings attached; it's difficult to clear the rights. Beyond that, the fees can be pricey. When I wanted a bit of advertising music for a historical film segment, I had to write a check for $2,000 for permission for limited and short-term use. Permission to use some documentary footage is sold by the second or minute and for a specific period.

The complex issue of copyrights and prices for old news film is a good subject for a separate study. My original goal was to find historical film to illustrate a script I had written covering the entire Buick story, titled "Legend of Buick." We soon found the job also needed still pictures and documents, and modern photos and film of old cars and sites – plus modifications in the script to match the available illustrations. Eventually, the cost and complication of clearing audio/video rights was so daunting we shelved any plan to create a saleable DVD. That, of course, puts a real damper on enthusiasm for finding old footage. Nevertheless, the need to preserve and protect these images of the founding era remains – and some old home movies can be relatively clear of legal entanglements.

The search for documentary footage can be elusive. I've been told a son-in-law of Walter Chrysler filmed Billy Durant – but haven't been able to track it. It is rumored that sound film interviews of Charlie Nash may have been lost when a fire destroyed millions of feet of film in the National Archives some years ago. Does anyone have a copy?

One worry about early nitrate film is that it's unstable – it can disintegrate or even explode. Capturing images from such vintage stock is urgent, but most home movies are on safety film. They may be faded a little but if they weren't subjected to severe temperatures may still be in good condition.

The big problem is less about deterioration and more about decisions by later generations to clean house. Moving images of those legendary figures who created the auto industry could be at risk. The clock ticks....

Catherine Durant (back to camera), widow of William C. Durant, and Aristo Scrobogna, Durant's last secretary, being interviewed on audio tape early in 1972 by Larry Gustin (left), in the New York City apartment where Durant died in 1947.

Lawrence R. Gustin, *a reporter and editor for 23 years at* The Flint (Michigan) Journal *and later assistant public relations director at Buick, authored the award-winning first biographies of two auto pioneers,* Billy Durant: Creator of General Motors, *1973 (updated third edition, 2008) and* David Buick's Marvelous Motor Car: The men and the automobile that launched General Motors, *2006. He also co-authored* The Buick: A Complete History *with Terry B. Dunham in six editions (1980-2003). In the 1970s he launched a newspaper campaign to save from the wrecker a building that is virtually the birthplace of GM. Once headquarters of Billy Durant's Durant-Dort Carriage Co., the Flint structure is now a National Historic Landmark. In 1998 Larry helped create Sloan Museum's Buick Gallery and Research Center in Flint. In 1999, he received a Distinguished Service Citation from the Automotive Hall of Fame. In 2003, his creation of Buick's centennial events, including a national heritage tour, book, brochure and poster, was overall winner in the annual International Automotive Media Competition. All photographs are from the author's collection.*

Commander
Stillborn Scion of the Ogren

By Keith Marvin

What's in a name?

When Shakespeare coined this poser it is more than likely that he was unable to visualize its popularity through the ages. The question is at once thought-provoking and ever presents a challenge for some sort of answer.

When directing the phrase into automotive channels, we can become selective as to the thousands of names which have graced motor cars over the last three-quarters of a century and ponder the relative value of a name in selling the product. Take Maxwell. The car sold well enough under its original name. It sold even better after it became the Chrysler Four and better still after its rebirth as the Plymouth. Kenosha, Wisconsin's bid for a slice of the market seemed to fare nicely regardless of whether its product was marketed as a Rambler, Jeffery, Nash or the innocuous "American Motors" label. Essex weathered the storm after becoming the Terraplane and there are many others. It is doubtful whether Rolls-Royce would have sold as well under a different name, although, to the contrary, Klink, Koppel, Kolowrat and Neskov-Mumperow all seem to have had their coterie of satisfied owners.

Hugo W. Ogren, designer and engineer.

If then we follow the hypothesis that euphony is an important factor in the sales of motor cars, judging from such names as Rolls-Royce and Hispano-Suiza, what about such cars as Rickenbacker or Studebaker? The names seem awkward. Yet, they did well enough in their own time.

The logical parent

The Commander is a case in point. Some five years before the Studebaker boys in South Bend adopted the name as a model designation, the Commander was announced in Chicago as a make of its own, quite devoid of any Studebaker connections. It was announced quietly with a minimum of fanfare but this is understandable as its logical parent, the Ogren, was broke, badly bent and nearly out of the automobile picture after a checkered and highly uneven career of manufacturing a beautifully-designed and high-priced assembled luxury car. That the Commander was probably the most lavishly equipped and probably the best bargain on the automobile market at the time mattered little. It was simply a case of too little too late.

To understand why the chemistry of successful nomenclature metamorphosis — the Ogren to the Commander in this instance — failed, we must study the history of the Ogren automobile itself and the man who spawned it.

Hugo W. Ogren was a born designer and engineer, who combined his love of racing with precision, quality and a flair for aesthetic design. Unlike Ford or Olds, he felt that there was ample room in the contemporary automobile roster for a car which would be the best, regardless of price, and for sale to those who recognized such worth and bought accordingly.

For a time Ogren was right. A former maker of racing bicycles and a bike racer himself, he began building cars by hand. These included not only "high class family cars of individual character," according to a factory prospectus of the time, "but also powerful speed cars."

"These cars were built as individual, high character jobs, for men who could afford a high class car of individuality," ran the copy. It didn't say anything about women!

In 1911, Ogren became affiliated with the Colby Motor Company of Mason City, Iowa, and designed the car bearing that name. A year later he assumed the post as manager of the Chicago branch (*Motor World*, Nov. 1912). At the same time he began building a series of one-off racing cars which carried his initials as their name. The Colby failed in 1913, but at the same time Ogren was actively engaged in setting up his own business completely divorced from the exclusive building of "H.W.O." racers and in the summer of 1914 set up the Ogren Manufacturing Co. at Chicago (*Automobile Trade Journal,* Sept. 1914).

For more than four years the operation must have been carried out as a hit or miss business. Apparently racing cars constituted almost the entire production, although an Ogren touring car was illustrated in the automotive press in 1915 and both a touring car and a roadster were discussed with illustrations in similar coverage two years later (*The Horseless Age*, Feb. 1915 and Jan. 1917).

In January 1916, the company was reorganized as the Ogren Motor Works and its base of operations was moved to Waukegan, Illinois. At this time it was announced that production would be increased (*Automobile Trade Journal*, Feb. 1916 and *Automotive Topics*, Jan. 29, 1917). The writer has been unable to ascertain that such was the case.

Came January 1917 and a small announcement by the company stated that Ogren had been building about 50 cars per year since 1912 (*Motor Age*, Jan. 1917). Since the

company hadn't been organized until the Fall of 1914, this seems doubtful, but it is also true that in those days most automobile magazines printed whatever material was sent to them.

By 1919, it was reported that the All-American truck was being built in the Ogren factory (*Motor World*, Jun. 1919). The All-American was probably not the only other motor vehicle being built there, although I'm hard put to name any other cars or trucks which might have been using Ogren's facilities. It appears that Ogren was already having a hard time making ends meet and that other lines of motor vehicles were using the factory on a sub-leasing basis. If this is true, it may explain how Ogren lasted as long as it did, at least on paper.

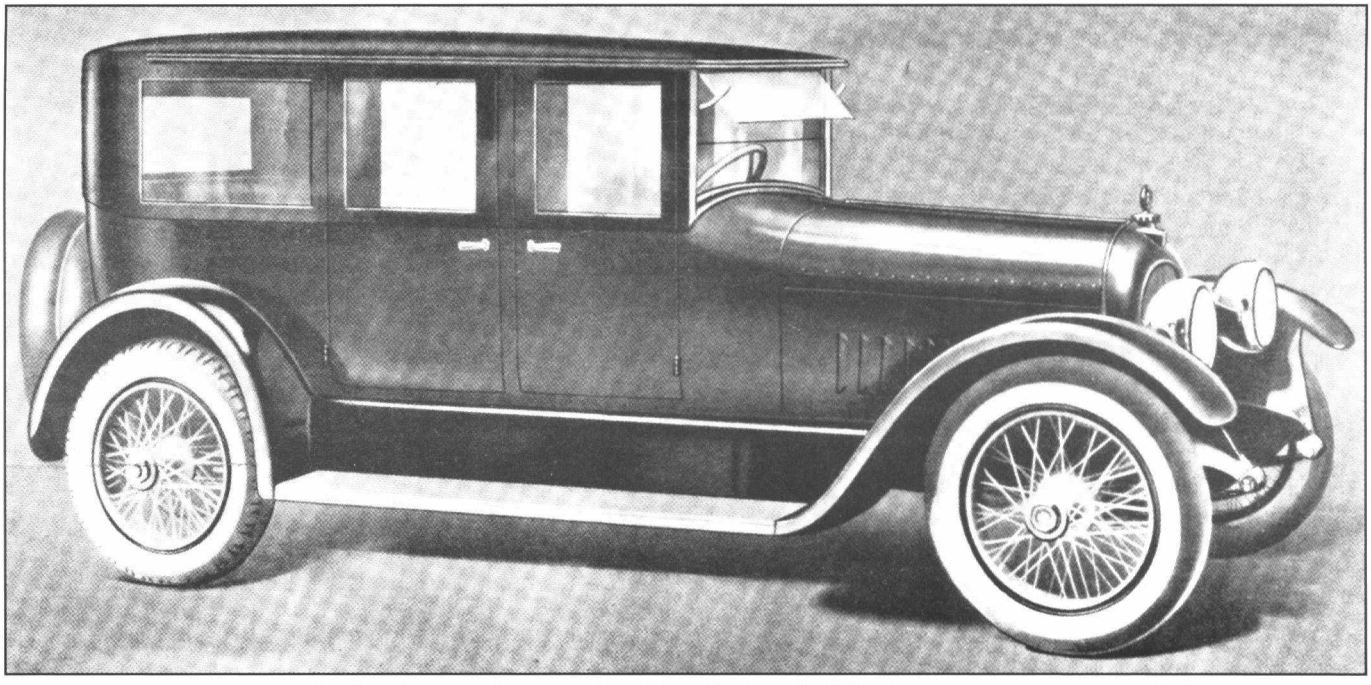
How long All-American assembled trucks in the Ogren factory is a moot point but for that matter so is All-American. According to Georgano (1965), the company was in existence between 1918 and 1927. *The American Car Since 1775* (Automobile Quarterly, 1971) lists the dates as 1918 to 1923 and the *Branham Automobile Reference Book* for 1924 listed the make as failing in 1921. Be that as it may, although the truck listed its Chicago address as 6501 West Grand Avenue, there seems to be little doubt that the actual assembly was being carried out in Waukegan. Not long afterward, All-American's operations shifted to the Fremont Motors Corp., of Fremont, Ohio, which built, or was supposed to have built, the Fremont automobile for export (*Upper Hudson Valley Automobilist*, Oct. 1959 and Summer 1997).

In August, an announcement with a Milwaukee dateline appeared, heralding the gladsome news that Ogren had been incorporated in that city as the Ogren Motor Car Company with $500,000 capital and would build a factory to "manufacture the Ogren passenger car" (*Automotive Industries*, Aug. 4, 1919), the implication here being that any previous pleasure cars bearing the Ogren emblem were few and far between. "Details are not ready to be divulged," the squib concluded.

One month later, it was stated that regular production was expected by October 1st (*Automotive Industries*, Sept. 4, 1919) and in December the company announced that the entire output for 1920 was contracted for and that full capacity production would be 400 cars (*Automotive Industries*, Dec. 4, 1919). At least one source believes that some 50 units were put together before the end of 1919 and that this marked Ogren's largest production in a given year (Appelquist, 1978).

But if these cars were built in 1919, for some unexplained reason it must have been felt at the Ogren headquarters that such didn't constitute "production," as in July 1920 the company was reorganized with H.W. Ogren, president; Elmer Freolk, vice-president; and Fred G. Smith, secretary and treasurer. The "first 'made in Milwaukee' car will become a fact when production is started," said the announcement (*Automobile Trade Journal*, July 1920). This, apparently, applied to the "new" Ogren car as no reference was made to either Chicago or Waukegan operations.

Despite all this, there was production at Ogren in 1920 and cars were being sold. Specifications included a 132-inch wheelbase, Beaver six-cylinder engine with a 3-1/2 x 5-1/4-inch bore and stroke and a displacement of 303 cubic inches. The L-head engine developed 65 brake horsepower. Carburetor and ignition were by Rayfield and Bosch respectively. There was a choice of wheels, with wooden artilleries



Ogren 5-7 passenger standard sedan, as shown in both the 1921 and 1922 Ogren catalogs. Basic differences from the final models (which also masqueraded as Commanders) include hood louvers and slanted windshield, plus the style of headlights. This sedan could also be ordered with disc wheels, sidemount spares, individual door steps in place of running board, and bumpers at extra cost. In 1921 and 1922 Ogren also featured a phaeton, roadster and coupe.

generally gracing the closed models and wire or disc the open ones. Tires were 33 x 5.00 and the four-passenger touring car sold for $3,500; other models included a roadster, coupe and sedan.

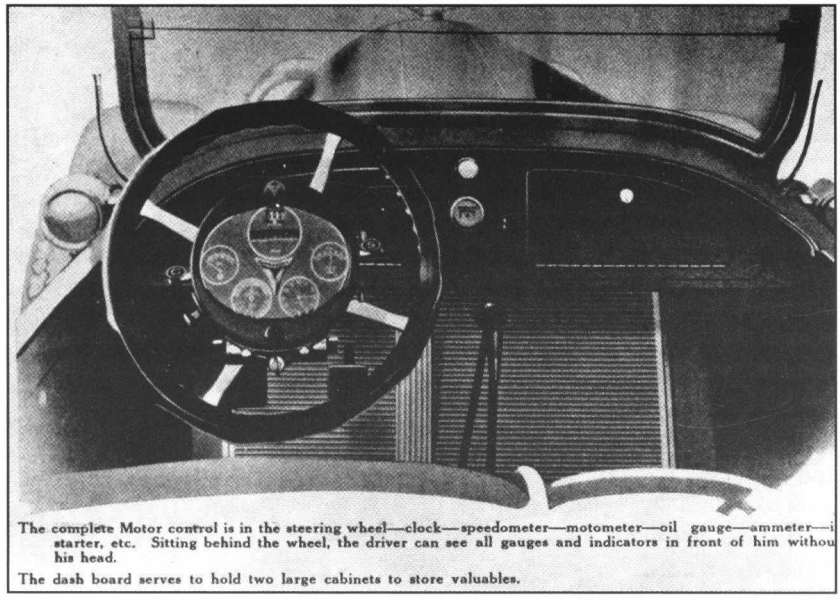
The line was unchanged for 1921 excepting a two-inch increase on the wheelbase and a jump in price, due to the recession, which placed the seven-passenger touring car at $3,900. In May, readers of automobile publications were regaled by an illustration of the current model (Motor Age, May 1921) and about the same time a handsome catalog was published.

The clouds were gathering though, whether because of insufficient production and sales, the result of the recession or just plain lack of demand, possibly a combination of all three. In August the creditors met and shortly thereafter the company was in their hands (*Automotive Industries*, Aug. 18, 1921). One might deduce from all this that the handwriting was on the wall and probably it was, although the officials at Ogren were ignoring it as much as possible.

In 1922, the company published another lavish and complete catalog, actually a sort of revamped 1921 issue. A number of specification changes were also announced, including the substitution of a Continental 6-T engine which upped the brake horsepower to 70 at 2,400 revolutions per minute. This substitution of engines was not so much the abandonment of one and adoption of the other as it was the phasing out of the early Beaver in favor of the Continental as, indeed, the Continental had been listed as early as the 1921 catalog. It is the opinion of the writer that the Continentals were ordered after the supply of Beavers on hand became exhausted. An interesting sidelight to the replacement of the power plant was that the engines were contracted by Ogren with the agreement that the engine could not be used in any automobile selling for less than $4,000 (Schroeder, 1972). This is particularly interesting as the lowest priced touring models sold for less than that figure.

In June, what was probably the last bit of Ogren promotion appeared showing a truly handsome disc-wheeled touring-car (*Motor Age*, June 1, 1922). It was all Ogren — of that there could be no doubt. What made the car unusual was the presence of the "Whyte Motorcontrol," a unique gadget which placed the instrument cluster in a container within the steering column. The advantage of this, crowed the promotion, was that it enabled the driver to gaze at and have access to the spark and throttle levers, horn button, clock, speedometer, motometer, oil gauge, ammeter, ignition switch and starter without turning his head.

If this seems daringly innovative for Ogren, I suppose it was, in a way, but the Whyte Motorcontrol wasn't exclusive with the make at all. Actually, it was being sold at the time as an accessory and, if the truth be told, it simply never caught on to the public fancy. We may give Ogren full credit, I think, for marketing its car with the Motorcontrol as standard equipment.

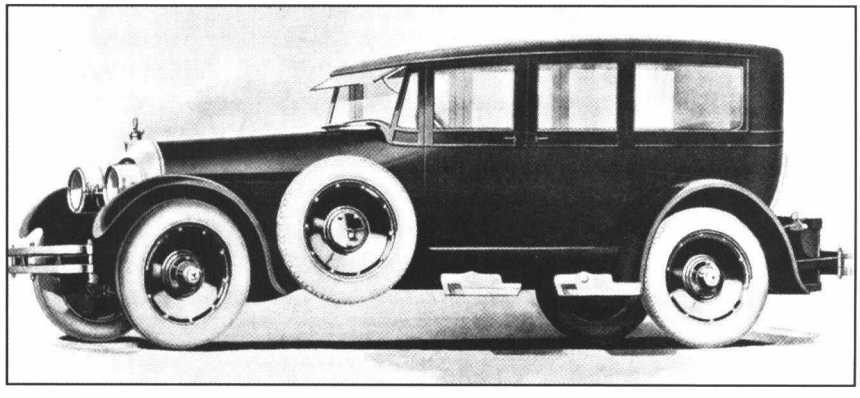


The Whyte Motorcontrol clustered all instruments in the hub of the steering wheel. A product of the Whyte-Duffield Manufacturing Company of Chicago, it was aimed at American automakers. "Watch for the manufacturers' announcements of the Whyte Motorcontrol as standard equipment," the company advertised in the April 1922 issue of Motor Life.

I say "its car" literally because I think it highly probable that this device was attached to only one car and equally probable that this one Phaeton may have been the only complete car the Ogren promoters had on hand at the time.

An Ogren by another name

At this stage of the tale it is time to leave Ogren and turn to Commander and things happened fast. It became apparent that the time had come to phase Ogren, or the Ogren name at least, out of the picture and strike out for a new image. Consequently, the decision was made to once again reorganize the company — or what was left of it — and attempt to start anew under a new name. Commander Motors was therefore formed to take over the Ogren and build the



Projected Commander sedan was identical in every way, save for the radiator emblem and hubcap insignia, to the contemporary Ogren. This drawing appeared in Commander's 1922 (and only) catalog.

Commander car. Contemporary promotion played up the fact that the Commander was also designed by H. W. Ogren. It needn't have used the word "also" for the Commander was nothing more than the Ogren car with another name.

Officers of the new Commander Motors, set up with headquarters in New York City and hopefully a new manufacturing site in Chicago (Commander prospectus, 1922), included Charles H. Wilcox, Chicago businessman and a director of the Chicago Street Transportation Co., president; Nicholas Schmidt, active in the bonds and mortgages business of that city, and Hugo W. Ogren, vice-presidents, and Sidney R. Flett, Chicago realtor and Mr. Wilcox's son-in-law, secretary and treasurer. Directors were the four officers and Fridolph Ogren of Chicago. Business address of the firm was 49 Wall Street, New York City, and capital for the new enterprise was set at $2,000,000 (Commander prospectus, 1922).

An elaborate brochure was issued showing illustrations of the phaeton and sedan, both obviously Ogrens, a "driver's eye view" of the controls emphasizing the Whyte Motorcontrol and Mr. Ogren himself. Also included were complete specifications, the usual sales pitch and testimonial letters from various Chicago bankers attesting to the worth of those who would have the readers invest in the new enterprise.

The brochure was distributed here and there simultaneously with automobile magazine announcements of the new Commander. These announcements appeared devoid of illustrations because the till at Ogren-Commander had long since been empty. What is of special interest is, that in addition to the pictures of the open and closed Commanders in the brochure, an actual photograph is shown of the touring-car which proves without a doubt that one car bearing the Commander emblem did exist.

But this wasn't any new car at all. It was simply the car which had appeared as an Ogren in the promotional article three months previously, with the triangular Commander emblem located where the Ogren shield had been before. Even in the picture of the Whyte Motorcontrol panel, the Commander insigne had been cleverly sketched into the instrument cluster whereas in June it had been missing. Another oddity in illustrating the Commander was that although the motometer was, in theory, placed within the Motorcontrol cluster and is shown with this arrangement in the accompanying sketch with the insigne atop the radiator, the conventional motometer perched atop the radiator is shown in both photographs.

"The Automobile Without an Equal" caroled the cover of the prospectus. "The Most Completely Equipped car on the Market," it added, and of that we have no little doubt. For the Commander was truly loaded with luxuries and accessories which were to be standard equipment. Price of the phaeton was $5,000 (Commander prospectus, 1922), so perhaps the purchaser was paying for them after all.

In addition to the bare necessities or even the usual extras one expected in a new car, the Commander included the Whyte Motorcontrol, two spotlights, two tonneau lights, trouble light with a 17-foot extension cord, light under the hood lighting each side of the motor, sun visor, special spare wheel padlocks, front and rear bumpers built into the frame of the car, trunk with patent leather finish and two leatherette fitted suitcases, nickel body bars to keep the trunk from scratching the rear of the car, a full set of tools, cushion foot rest, tire pump, Houdaille shock absorbers and special "wind shield cleaner" which I take to mean windshield wiper.

In addition, the car featured removable top brackets. "When the top is up," remarked the copy, "these unsightly brackets are removed and replaced with a button, giving a smooth unbroken effect to the side of the car."

A grade too steep

All in all, the Commander promised much and had the fates been kinder might even have been an entity of its own for a little while rather than a re-emblemed and re-hubbed Ogren. "The Commander automobile will climb a steeper hill than any other automobile in the world" claimed the catalog. Maybe it would. The text didn't explain how or why. The grade the Commander faced in order to survive was just too steep for navigation. It died without a whimper. Ogren then seemed to rise like a phoenix from its ashes, but briefly. The last notice in which it was mentioned as being among the living was in November 1922, when Fred G. Smith, erstwhile secretary and treasurer of Ogren and one of its stockholders, was named president and general manager of the corporation, which was going through a reorganization program (*The Automobile/Automotive Industries*, Nov. 16, 1922).

And that was all. Whatever remained on hand as complete automobiles were quietly sold off — and as Ogrens. Presumably if sufficient parts were still on hand, others were completed, also as Ogrens. There may not have even been any Commander emblems lying around anymore. There might never have been any others except that one which adorned the radiator of the one and only car to bear the name. The scattered few cars remaining were sold for what they would bring as 1923 models although in fact they had been built in 1922 or even as early as 1921 (Marvin and Homan, 1957). In November, 1923 a receivership petition was filed (*Automotive Industries*, Nov. 29, 1923), and with this brief note the Ogren drifted into that limbo of American automobiles that also ran.

In January 1924, a small notice in the trade papers stated that the Ogren company had been "inoperative for the past six months" (*Automotive Industries*, Jan. 3, 1924). It would liquidate, it said, adding that most of the tools and equipment had been sold to the Huffman interests of Elkhart, Indiana, builders of the Huffman car which itself would throw in the towel shortly after introducing its 1925 models.

A cryptic and sour note in July 1924 announced that "neither stockholders or creditors get anything as the result of the sale of available assets. Tax claims take the entire amount received" (*Automotive Industries*, July 17, 1924).

As for overall production of the Ogren, no one can be sure. Harlan Appelquist (1978), a specialist on production statistics of American automobiles, hazards a guess that 1919 might have been Ogren's top with some 50 cars produced and thinks that perhaps the figures 1920 through 1922 might have run around 30 units a year. If this is so and adding a speculative number of pre-1919 Ogren cars, that might approach 175 to 200, hardly a respectable run for so fine a motor car over such an extended period.

But life is like that and sometimes one wonders why there have been so many truly poor automobiles made over an even longer period. We'll probably never know the answer to the riddle but we can always be glad that there were cars like the Ogren and the Commander — the latter but an Ogren with window dressing — to brighten up the otherwise humdrum existence of automotive flotsam and jetsam.

The author would like to express his appreciation to Mary Cattie, Louis Helverson of the Free Library of Philadelphia, and Tad Burness of San Jose, California, for their assistance with this article and to the Free Library of Philadelphia for all pictures used therein.

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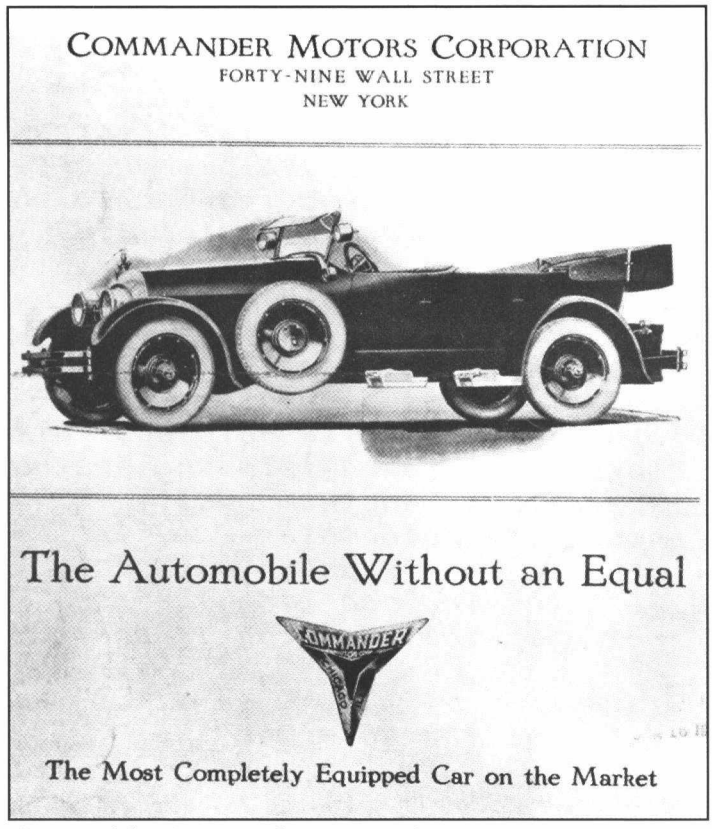
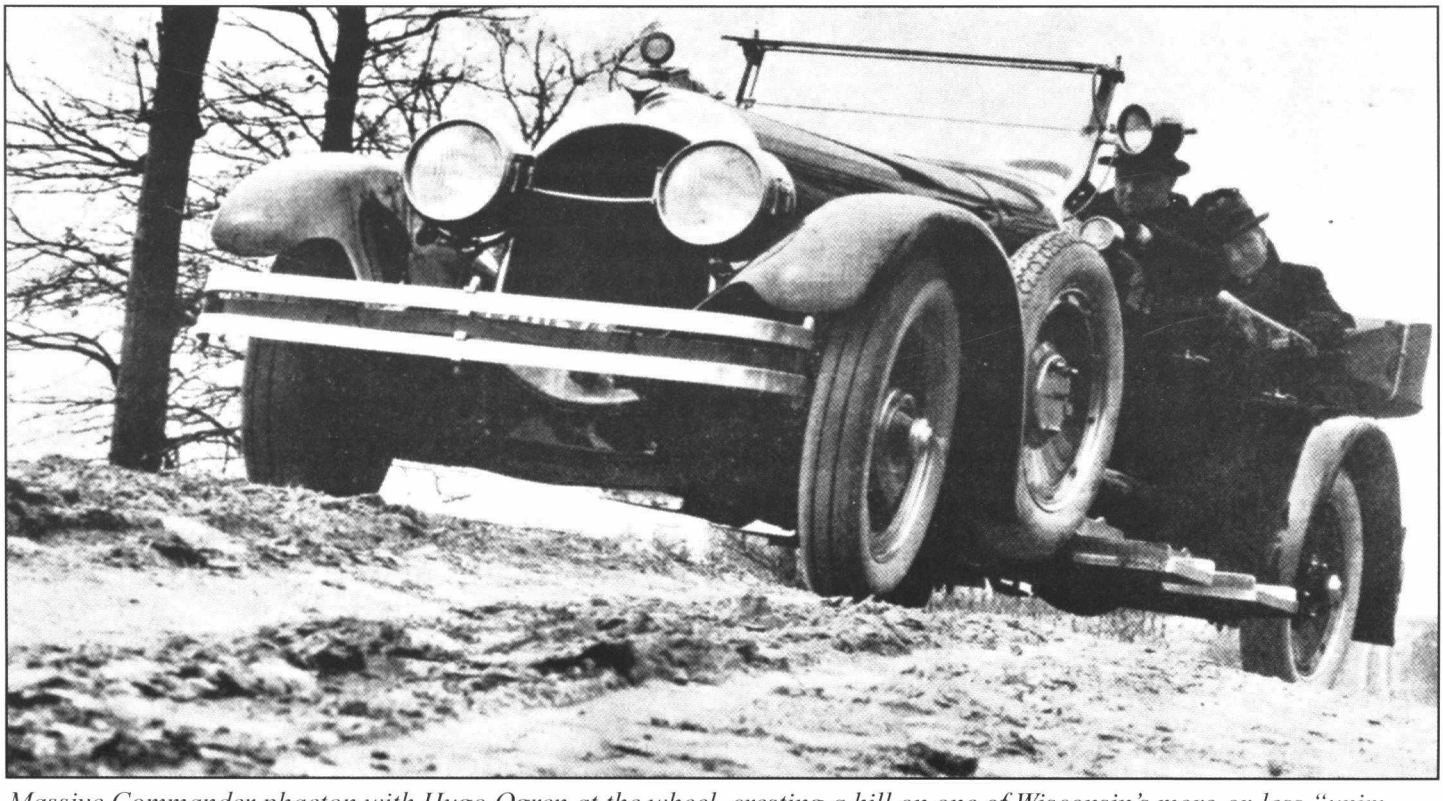
Keith Marvin *(1924-2009), a founding member and former president of SAH, received the Friend of Automotive History Award in 1988. This article is reprinted from the Autumn 1978 issue of* The Upper Hudson Valley Automobilist, *an independent club magazine he edited for 40 years.*



Cover of the Commander Motors Corporation prospectus.



Massive Commander phaeton with Hugo Ogren at the wheel, cresting a hill on one of Wisconsin's more-or-less "unimproved" roads. Note the MotoMeter on the radiator, which was supposed to be included in the steering wheel cluster, as noted in the illustration of the Whyte Motorcontrol. As seen there, the MotoMeter was replaced by the triangular Commander insignia. This car, which also appeared on the cover of the Commander prospectus, was identical to the Ogren shown in Motor Age *for June 1, 1922.*

Detour at the Home Front: Canada's Wartime Industries Transit Plan

by Jason A. Chiu

Introduction

Of World War II, John Kennedy wrote: "The war was a more nearly total war than any previously known. As it progressed, the line between war and civilian needs became more and more difficult to draw. There were few materials and products which were not to some extent directly required for military use" (Kennedy 1950, Vol. 2, p. 39). This John Kennedy was not the famous American politician but the somewhat lesser-known scholar commissioned by C.D. Howe, Canada's wartime Minister of Munitions and Supplies, to write his Department's official history. The Department of Munitions and Supplies had the responsibility of organizing the supply of motor vehicles and motor vehicle replacement parts (L.A.C. RG-28A vol. 244 file no. 196-9-13).

Howe wanted Kennedy to immortalize the "magnitude of [the department's] achievement," the management of Canada's wartime production and use of scarce materials like rubber, steel, butter, and gasoline (Forbes 1986, p. 3). Though Kennedy was correct in identifying the totality of the conflict, his multi-volume narrative had little to say about a crucial aspect of the war effort: the transportation of workers to war industries. However, Kennedy does provide some important insights, which bear following up:

> In pre-war years, the privately owned motor car provided fully half of the essential urban transportation in Canada. Pooling the use of a car did not originate with the war but shortages of gasoline and rubber made it a popular and patriotic necessity. But ordinary car pooling did not accomplish much. To achieve the greatest results in conservation of gasoline, rubber and equipment, pooling had to be carefully organized and many difficulties, such as the legal liability of the owner, had to be overcome (Kennedy 1950, p. 275).

Getting war workers to work

In the six decades since the publication of Kennedy's official history, historians of Canada's home front have made little effort to add to his brief discussion of the transportation of war workers during World War II. For example, Ernest R. Forbes, indulging a typically maritime interest in "regional disparity," focused on the failure of C. D. Howe, the Federal government's boss over wartime production, to nurture war industries in the Atlantic Provinces. Forbes suggested that Howe's business ties to Central Canada often influenced his decision making, to the detriment of the Maritimes whenever the region competed for contracts (Forbes 1986, pp. 3-27). Although Forbes looked at specific industries and plants, he made no attempt to assess the role of transportation in the Dominion (Federal) government's preference for one production site over another. Given the wartime shortages of tires, autos, gasoline and public transit vehicles, by 1942-43 moving workers to the factory had become as complex a logistical problem as moving ore to a steel mill. Yet Forbes ignored transportation.

So does Serge Durflinger in his study of World War II in Verdun, an industrial suburb of Montreal. His book is peerless in Canada, easily the most detailed study of the home front in a single community. Although Durflinger does examine C.D. Howe's involvement in the planning of a munitions factory in Verdun, his book has nothing to say on the commuting problems of Verdunites (Durflinger 2006, pp. 107-136). Joy Parr's *Domestic Goods* (a study of the "home" in home front) similarly ignores transportation issues, but makes a useful distinction between the approaches of the U.S. Office of Price Administration and its Canadian counterpart, the Wartime Prices and Trade Board (WPTB). The Canadian board, she found, was more keen to reduce and regulate the output of non-necessities than to seek methods, as in the United States, to maintain production levels, despite reduced resources, through retooling and redesign (Parr 1999, pp. 21-27).

The only Canadian study to focus on wartime transit, by Donald F. Davis and Barbara Lorenzkowski, basically ignores the automobile. Moreover, their work is heavily weighted towards gender issues, and avoids inquiry of wartime industry. They do make it clear, however, that workers, especially women workers, found the crowded streetcars of the 1940s a nightmare and in definite need of government control (Davis and Lorezkowski 1998, pp. 431-465).

Traffic, Front Street West, Witt Car No. 2506.
Toronto has long had streetcar lines, but the network was inadequate to carry wartime commuting traffic. This street scene was photographed on October 5, 1932. City of Toronto Archives/TTC Fonds 16, Series 71, Item 9464.

By 2004, there was sufficient work done on the home front to make possible the first synthesis of the Canadian experience in World War II (for further reading on this topic, see Hennessey 2002 and Stevenson 2001). In *Saints, Sinners and Soldiers*, Jeff Keshen concluded that the so-called "good war" was in fact a "not-so-good war." His book shed light on the black markets, war profiteering and the threads of questionable morality that constituted the fabric of Canadian society in the 1940s. While Keshen discusses government restrictions on materials such as tires and gasoline, and the subsequent overcrowding of public transit (2004, pp. 94-101), even he merely alludes to the Wartime Industries Control Board and its struggles with the transportation crisis. The WICB, in the words of *The Financial Post*, "[was] charged with directing planning and controlling all matters affecting war supply" (August 20, 1941, p. 1). Thus, even after the appearance of the first synthesis, there remain multiple avenues of investigation to be pursued and roads as yet untraveled in the area of the Canadian domestic front. This article looks at an important wartime program hitherto ignored by Canadian historians: The Wartime Industries Transit Plan. Here it will be argued that this program has fallen into an historiographic pothole because it produced a hybrid, an automobile that operated like a transit bus. Historians, although aware of the private motorist's desperate efforts to keep his car running on threadbare tires and a teaspoon of gasoline, and of transit's record patronage (and complaints), did not think to look for a unique wartime blend of private and public transportation produced by Federal regulation.

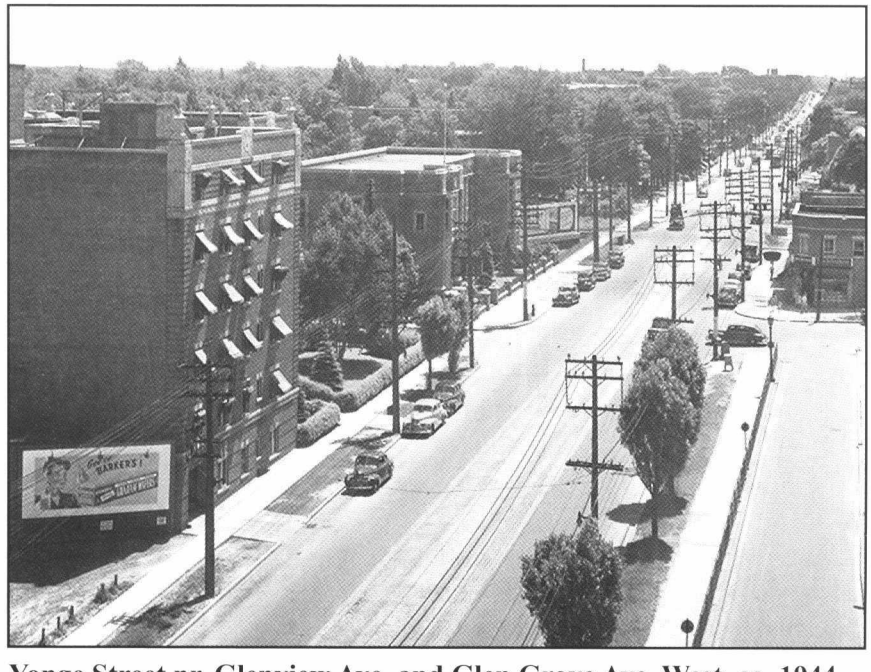
The Wartime Industries Transit Plan

The Wartime Industries Transit Plan (WITP) made car pools one solution to the transit crisis. (For an outline of the problems of transit see Davis Lorenzkowski 1998 and Keshen 2004). The Wartime Industries Control Board, a branch of the Wartime Munitions and Supply Board, supervised the WITP through the Transit Controller's office. The Oil and Rubber Controllers (like Transit Control, subordinates of WICB) were also involved in the WITP through their management of gas coupons and permits for tires. The WITP came into effect on November 7, 1942, by Transit Control Order No. 4. The plan to institute car pooling had its ultimate origins in a June 1941 report to the Department of Munitions and Supply on urban transit (L.A.C. RG28 vol. 69). It stated that more than 175,000 war-industry workers were commuting each day on urban public transit in Canada. Full employment and the construction of war-related manufacturing plants in suburban neighborhoods further added to the passenger volume. Toronto and Montreal experienced a 14 and 15 percent increase, respectively, in transit use since 1941. Half of the fares in Montreal and Toronto were transfer-related, indicating a significant volume of passengers commuting to and from the suburbs, whose fate became questionable when bus routes were re-routed and or eliminated. The report attributed the growth of transfer passengers to the development of communities not serviced by the downtown transit system.

The report called for "drastic traffic controls" that ranged from staggered working hours for stores and factories (to spread out rush hour) to restrictions on the purchase of non-essential motor vehicles and their parts. Staggered work hours were proposed following the success of the American campaign in reducing both power consumption and traffic congestion. New transit vehicles were simply unavailable. Orders were placed in both Canada and the United States in 1941 for buses to service additional inter- and intra-urban routes. However, in the United States 75 percent of the orders went unfilled whereas in Canada 60 percent of the orders were delivered upon. Despite the increase of buses the Motor Vehicle Controller (MVC) office tightly regulated their use. Also, under MVC Order No. 23 all buses had to be painted a uniform khaki green No. 3 and all "bright work" was eliminated from the manufacturing process. The move indicates the government's potential willingness to repossess the buses at anytime for wartime use (L.A.C. RG28 vol. 243 file no. 196-9-2-23; L.A.C. RG28-A vol. 242, file no. 196-9-2-6).

Indeed, to find buses to serve outlying war industry, streetcar abandonment on many lines would have to be temporarily reversed and express bus service eliminated (L.A.C. RG28 vol. 69). Fewer streetcars and buses would be required, and less fuel consumed, if their routes were cleared of private automobiles. This report started the countdown towards removing private automobiles from the commuting stream, so far as feasible.

Even when they were not interfering with rush hour, private automobiles were rolling towards strict regulation because Japanese imperialism was menacing the British colony of Malaya, threatening the global supply of rubber. Well ahead of an actual Japanese invasion, tire production



Yonge Street nr. Glenview Ave. and Glen Grove Ave. West, ca. 1944.
Wartime traffic was exceedingly sparse. City of Toronto Archives, Series 1057, Item 59.

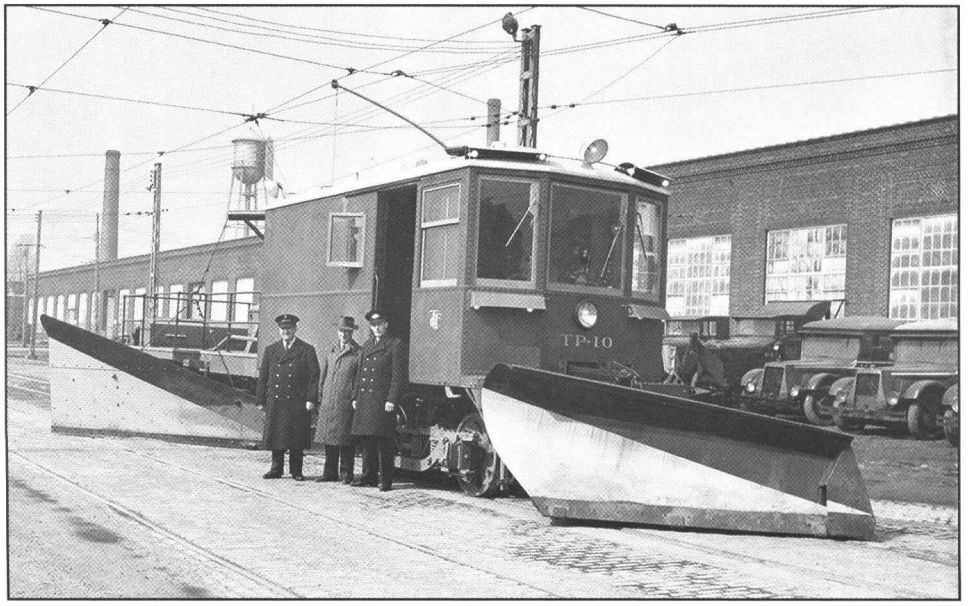
came under strict regulation: Thus, in July 1941 the manufacture of all whitewall tires was prohibited in Canada unless licensed by the MVC and his office. At a later date the Coordinator of Control, Henry Borden and Walter T. Patterson, transferred the jurisdiction of order no. 5, the manufacture of white wall tires, to the Rubber Controller in order to better manage the use of zinc oxide, an integral metal needed in rubber production (L.A.C. RG28-A vol. 242, file no. 196-9-2-4). In December, with the Japanese invading Malaya, the Dutch East Indies and bombing Pearl Harbor, 97 percent of the world's supply of rubber was lost to the Axis powers. Between December 13, 1941, and January 5, 1942, the Department of Munitions and Supply enacted several regulations outlawing the use of crude rubber for passenger tires. Meanwhile, Rubber Control Order CS4-F established a "list of essential users of tires and tubes" who alone could purchase "new tires and tubes ... on completion of an Essentiality Certificate" (L.A.C. RG28-A vol. 255, file no. 196-12-13). Examples of vehicles deemed "essential" included ambulances, police cruisers and those part of emergency services (*Motor in Canada* 1976). Without this certificate, drivers had little recourse but to use their existing tires until they were bald. Drivers who were fortunate enough to purchase new vehicles did so without spare tires, after Rubber Control Order No. 10 banned their installation in new motor vehicles. Thus the life of a car was literally the lifespan of its tires (L.A.C. RG28-A vol. 242, file no. 196-9-2-10).

Meanwhile, new cars were becoming impossible to get. J.H. Berry, the Motor Vehicle Controller, banned motor vehicle and truck production on March 14, 1942, except for orders placed by the Department of National Defence [A month later than in the United States - Editor]. Companies could use up their parts supply, but the completed vehicles would go to a government "reserve" for subsequent sale to organizations vital to the war effort. Berry's order also dictated that any person who sought to construct motor vehicles in Canada required a permit from his office (L.A.C. RG28-A vol.242, file no. 196-9-16). In other words, one had to prove an essential use to buy a new automobile or tire. By the summer of 1942 the manufacture and distribution of spare parts for motor vehicles had also been prohibited without an emergency certificate from the Motor Vehicle Controller's office approving such acquisitions (L.A.C. RG28-A vol. 242, file no. 196-9-2-21).

The motor vehicle controls drastically curtailed automotive production. In the 1937-1940 period, Canadian truck production had averaged 27,259 trucks a year. By 1944, Berry's Control No. 8 made only 9,000 new trucks available for domestic use. In the same year 2,324 cars were released from the government's limited reserve of new cars. However, most of them were allocated to national defense, medical services, municipal utilities and emergency services. None of the cars released in 1944 were made available for commercial purchase (L.A.C. RG28-A vol. 242, file no. 196-9-2-17). Indeed, demand from essential services for the government's pool of unsold vehicles outstripped the limited supply. For example, the Agent General for the Province of Quebec had to intervene before a Montreal pharmacy could secure five permits to purchase new motor vehicles; rationing had reduced its prewar fleet of 37 vehicles (L.A.C. RG28 vol. 245, file no. 196-9-2-19). All special requests and exemptions were made through correspondence with representatives of the Motor Vehicle Controller's office. Request for permits to purchase replacement vehicles through the Motor Vehicle Controller's officer were normally made by members of the medical profession or their representatives, and often contained a fair amount of hyperbole. (See L.A.C. RG28 vol. 245, file no. 196-9-18 for more examples of correspondence.)

Wartime restrictions

To control motoring by those who already owned an automobile and who could not be deterred by the risks from bald tires, Federal regulators also curbed the use of gasoline and oil, starting on August 8, 1940, with a ban on the construction of new gasoline outlets, a definite blow to suburbia (L.A.C. RG28 vol. 248 file no. 196-10-3-1). Beginning in July 1941, drivers were asked to conserve gasoline and to avoid unnecessary travel. Compliance became involuntary on April 1, 1942, when a coupon rationing program was introduced to reduce consumption below its norm of 350 gallons per car per year. At first, "pleasure motorists" (those who did not use their automobile for work, unlike traveling salespeople and physicians) received coupons allowing them to purchase 300 gallons per year, but by February 1943 the coupons were worth only 120 gallons per year (*Motor in Canada* 1976, p. 10). Even the right to purchase gasoline was supervised by the Oil Controller. In 1943 those seeking to buy or sell gasoline required a license from the WICB. Licenses were



Trolley plow for snow removal. *Torontans were well-equipped for snow removal on trolley lines. City of Toronto Archives, Series 1057, Item 8929.*

valid only for a specific motor vehicle and were non-transferable (L.A.C. vol. 248 file no. 196-10-2-12 vol. 1). As intended, it became increasingly difficult to take a car out of its garage. At a ration of 120 gallons per year (when autos averaged 18 miles to the gallon), the automobile commuter became a threatened species (Derber 1943, p. 139).

In an ideal world, the decline of automotive commuting was the ideal policy outcome. But Canadian cities had far from ideal transit systems in the 1940s, for automotive competition in the 1920s and the calamitous decline in ridership during the Great Depression had caused public transit either to contract (especially its suburban and interurban services) or to refuse to provide service to outlying plants. Once the war began, transit companies were reluctant to extend their lines without, in the case of the publicly-owned Toronto Transportation Commission (TTC), a 100 percent subsidy for a stub line to the Small Arms Ltd. plant. In August 1942, C.D. Howe expressed his displeasure with the TTC's reluctance to extend a stub line to the Small Arms plant, and made it abundantly clear that he would "make an issue of this matter and see that due publicity [was] arranged...to convince the public that the [TTC] [was] profiteering from the war.." (L.A.C. RG28 vol. 70, File 1-1-145). It would take continued insistence from the Vice Chairman of the WICB and pressure from George Gray until the extension of tracks by the TTC to the Small Arms Ltd plant was achieved. (L.A.C. RG28 vol. 70, File 1-1-145 and vol. 270, File 196-17-3).

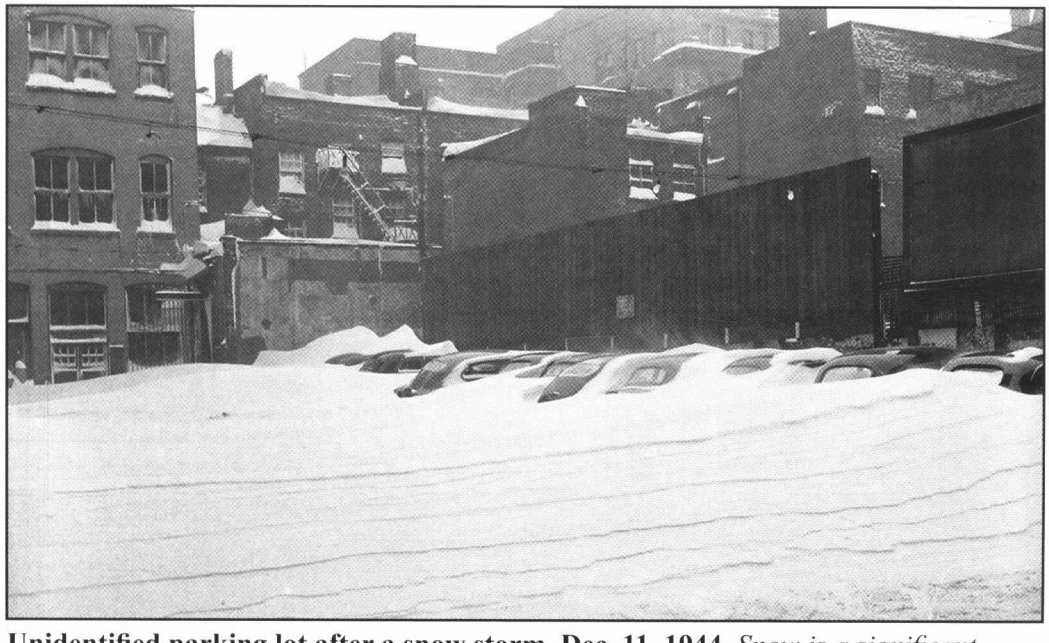
Like everyone else in the public transit business, the TTC anticipated a precipitous decline in ridership after the war that would render most of its routes economically unviable, and their lack of enthusiasm for accommodating war industries in the case of the Small Arms plant was apparent. Hence, the transit industry was not willing to absorb all of the automobile commuters, even if it had been able to find the steel, rubber, engines, wire, and vehicles needed for expansion. In short, the war effort depended on some Canadians (a lot fewer than in 1939, but some Canadians nonetheless), commuting to work by auto. Ottawa transit companies were unwilling to expand tram lines for fear of devaluing property and accelerating blight, as was the case observed in American cities. (Davis 1999, pp. 360-1) Though Ottawa and Toronto were unwilling or reluctant to expand their tram lines, other Canadian transit companies "brought back into service junked streetcars and over-age buses" to help contain the 124 percent increase in passenger traffic in the early 1940s (Davis and Lorzenkowski 1998, p. 437). The disinclination to extend lines, and or build new ones, tied with the use of discarded motor vehicles to sustain volume, exhibits an aversion to investing in post-war transportation expansion, and an attraction to doing as little as possible.

However, to minimize traffic and the depletion of scarce resources, it was important that those automobile commuters not drive alone. The *Toronto Daily Star* noted in March 1943 that "[the Federal government] ... repeatedly urged the pooling of privately-owned transportation for trips to and from work, thus saving gasoline and tires." It anticipated that the Wartimes Industrial Transit Plan soon to be announced would consider solo commuting to "be one of the most important problems to be solved" (*Toronto Daily Star*, March 20, 1943).

Buses and taxis

The WITP turned out to be more complex than merely car pooling and ride sharing. The plan had expectations and parameters beyond auto commuting. To free up buses for service to new war plants, Transit Control modified, even eliminated, bus routes as it decreed that the prewar standard of adequate service – no more than a quarter-mile walk to a transit stop – would now be a half-mile (*Motor in Canada* 1976. Vol. 28 no. 6, June 6, 1942, p38 and Vol. 29 no. 11 June 1942, p. 7).

Lest Canadians try to avoid this hike by hailing a cab, Transit Control further reduced their numbers. Entry into the trade had ended in 1941, and in 1942 taxis had their fuel rationed to 2,000 miles a month. To reduce dead-heading (miles driven without a passenger on board), taxis were also ordered in 1942 to operate as a pool, each company having an exclusive zone, and each of them answering to a single call center (L.A.C. RG28 vol. 270, file no. 196-17-4). That was the theory, but cabbies, ever anxious to avoid the emergence of monopoly in their city, often proved uncooperative. Only in Vancouver, Saint John (New Brunswick), Moncton and Halifax did full pooling of cabs occur, and partial pooling was limited to a handful of small Ontario cities.



Unidentified parking lot after a snow storm, Dec. 11, 1944. *Snow is a significant concern in Canadian transport, particularly so for wartime commuting. City of Toronto Archives, Series 1057, Item. 85.*

The taxi scene in Toronto, Montreal, Winnipeg and Ottawa remained more competitive, hence less efficient, but even in these cities cabs became less available because of fuel rationing (some of it coercively retroactive), by shortages of tires and parts, and by the enlistment or conscription of their drivers, who were as a class deemed non-essential to the war effort (L.A.C. RG28 vol. 270 file no. 196-17-3).

As the supply of taxis, tires, autos, and gasoline shriveled, getting to work became a puzzler for those whose home or workplace was more than half an hour from a transit route or who worked an overnight shift. The war was proving that Canadian cities could not subsist on public transit alone. No matter how much the Federal government sought to suppress the use of automobiles, even as taxis, they remained an irreducible, essential part of public transportation. Transit Controller George Gray thus admitted in 1942 that "Public transit systems could not begin to carry the load if private cars were suddenly withdrawn. War industries and other concentrations of workers and the armed forces are expanding rapidly and their requirements must come first" (*The Globe and Mail*, April 16, 1942).

Automobiles for public service

Accordingly, the Wartime Industrial Transit Plan had as its chassis the conscription of private automobiles for public service. The owners of motor cars were informed that they could obtain additional gasoline coupons, enough to permit them to commute to work on a daily basis if they agreed to enter a government-administered car pooling scheme. Under WITP, a driver received a license to provide rides for people either going to the same place of employment or to its immediate vicinity (L.A.C. RG28 vol.274 file no. 196-17-17). The car-pooling effort would be supervised by Regional Transit Officers (RTOs) appointed by the Transit controller. Each RTO would then name a Plant Transit Officer (PTO) to organize the WITP car pools at each plant. The PTO determined the driver-passenger pairings as well as the schedule for each automobile's run to and from work. The PTO had a mandate to keep the cars as full as possible. To ensure compliance, the PTO administered the extra gas-rationing permits. Those workers who could commute to work by bus or by walking in less than fifty minutes were excluded from the plan. Neither could they ride or drive (L.A.C. RG28-A vol. 274 file no. 196-17-17). The genius of the car pools was simple: they provided a means to circumvent the legal obstacles and shortages that had been built up since 1941 to impede unnecessary travel. By the time that WITP was initiated in 1942, the Federal government realized that its war on movement was hurting the mobilization of labor for the war effort. Hence, it conceived WITP as a detour by which cooperative motorists could re-enter the commuting stream.

The WITP enlisted the automobile for the war effort. By October 1943, 56,672 cars were operating under it; they were transporting a total of 228,471 people. They accounted for 22.5 percent of all employees in the 2,200 plants that they served. Cars traveled an average of twenty miles round trip and carried an average of four passengers (including the driver) (Kennedy 1950, p. 276). In September 1945, in a retrospective, the *Hamilton Spectator* estimated that the WITP car pools had operated at 2,800 plants, with nearly 250,000 workers dependent on the plan for travel to and from work (September 7, 1945). In the absence of the war and the plan, there would have been between 1.4 and 1.6 people per car taking their regular route to work. But the government's regulations and enticements (extra gasoline as well as priority for tires and auto parts) had piled an extra two and a half people on each car taking the WITP detour (RG28-A, vol. 274, file no. 196-17-17). Pleasure driving – the Sunday drive – became the prerogative of the socially responsible driver who operated, in effect, a shared-ride taxi. The WITP provided the same services as mass transit but was less costly, more efficient and organized. The use of RTOs and PTOs as a partnership with the local plants illustrated the trilateral relationship between the government, industry and the worker. The collaboration was mutually beneficial and came at no significant cost to either party. Industry was able to produce and transport its workers to plants, government resolved the shortages of labor by re-assigning meaning to the private vehicle and the public served the war effort at home, at work and the journey between. The organization of WITP was matched only by its efficiency; PTO ensured cars traveled in both directions full, whereas buses

Female bus driver trainee. *Women trained for many traditionally male jobs during the war, including bus driving. Even with women drivers, however, there was insufficient bus capacity to serve the commuting population. City of Toronto Archives, Series 1057, Item 8914.*

achieved inconsistent passenger numbers and loyalty. The WITP was easily the more advanced spawn of government than its older, bigger, and inefficient sibling.

Speed bumps and potholes

However, that is not to say that the WITP did not encounter its own speed bumps and potholes. As Kennedy noted, "To achieve the greatest results" pooling had to "overcome" such difficulties as "the legal liability of the owner" (Kennedy 1950, p. 275). Complications involving insurance were an immediate concern. The owners of WITP cars received remuneration from passengers and thus operated as de facto taxis rather than as private motor vehicles for personal use. Consequently, it was thought that people would be reluctant to participate in the program if their operation as a common carrier put at risk the validity of their insurance coverage. An internal memo from Transit Control in September 1942 therefore proposed a special insurance plan to protect the WITP owner-driver. As the memo explained, any passenger who paid a driver for his ride (even by an informal sharing of costs) might cease to be a "guest" under the law. Having become, legally, a client or customer, the passenger would have the right to sue the owner-driver for any injuries or loss, as one could sue a trolley or taxicab company. Therefore, "drivers may be 'opposed to carrying fellow employees without being assured a protection against their claims'" (L.A.C. RG28 vol. 270 file no. 196-17-2-4). Any solution would involve the insurance companies. The WICB, through the Transit Controller, asked automobile insurers to waive all conditions in their policies relating to property damage and personal liability. Accepting payment would no longer void an insurance policy. Not only did the insurance companies patriotically comply, but they also kept their premiums on WITP cars low, just 50 cents to one dollar per month, or less than they charged for autos left out of the war effort, despite the companies' increased exposure to risk (L.A.C. RG28-A, vol. 274, file no. 196-17-17). Moreover, brokerage fees for WITP insurance were limited to ten percent rather than the 20-30 percent demanded of regular customers (L.A.C. RG28-A, vol. 274, file no. 196-17-17). Car pools flourished in a benign regulatory climate.

Trolley on Spadina Avenue, 2005. *Streetcars survive in Toronto. This one was photographed by the editor on a recent visit.*

Limits to the plan

There were, however, definite limits to WITP's scope. The focus of the rapid sprawl of WITP was in the province of Ontario, where eight of the nine cities, cited in a report to C.D. Howe, recorded passenger increases as high as 450 percent and as low as 115 percent (L.A.C. RG28 vol. 20 file no. 3). The latter value was still greater than all the cities west of Calgary and east of Ottawa (minus Halifax, which had experienced a 214.7 percent increase, but was consumed by taxi zoning issues pertaining to transit controls). (See Edward Sutton "Halifax Cabdrivers, 1939-1945" *Nova Scotia Historical Review*, Vol. 12, no. 2 (1992) pp. 66-73, and Kimberly Berry, "The Last Cowboy: the Community and Culture of Halifax Taxi Drivers" undergraduate honors essay submitted in partial fulfillment of a Bachelors of Arts, History, Dalhousie University, Halifax NS 1995.) Similarly, offices for RTOs were struck in five major cities from Halifax to Vancouver inclusive, with only Halifax experiencing resistance from cab drivers to zoning. Though WITP was a nationwide plan, it failed to make as significant an impact as cities in Ontario, where in 1944 Toronto had more than 217,915 passengers being carried every day (L.A.C. RG28 vol. 270. file no. 196-17-3). Moreover, as Norman D. Wilson, the Deputy Transit Controller, pointed out in a letter to J.G Godsoe in December 1943 about the acute shortage of mass transit equipment, "[a]n alternative would be to expand W.I.T. but the ownership of motor cars by women workers is not extensive, and this alternative presents difficulties" (L.A.C. RG28 vol. 274 file no. 196-17-16-1). Women would be forced, as Davis and Lorenzkowski have demonstrated, to endure the indignities of wartime transit, of vehicles so crowded that it was difficult to find a seat (and bitterly resented if they were suspected of being "shoppers"), to avoid cigarette smoke in their faces, and to lower their arms in self-defense. (See Davis and Lorenzkowski 1998, pp. 431-435 and Davis 1999, pp. 349-382) Although there were no statistics compiled to show a gender breakdown for the beneficiaries of the WITP car pools, it is likely that the detour the Federal government created around its own barriers to free movement was – unsurprisingly for those who have read the historians of Canadian women in World War II, most notably Ruth Pierson (1983, p. 26), one more easily taken by males than females. Indeed, Davis and Lorenzkowski have suggested that women's sour experience of wartime transit made them, rather than their male counterparts, the most avid devotees of the private automobile after the war. However, this contention cannot be fully substantiated without a better idea of the extent to which women participated in the WITP car pools. After all, a young woman did not need to own an automobile to ride in one. In theory, the sociability of the car pool may have won women over to the "right sort" of public transit, not the anonymous, giant vehicles actually deployed after the war but rather the small bus favored by van pools, tourist "trams," and airport shuttles.

The WITP came apart as quickly as it appeared as a solution. On May 8, 1945, with V-E Day, restrictions on bus routes were lifted and screening of motor vehicles and their replacement parts was relaxed. The Federal regulation of taxis ended on August 15, as did gasoline rationing. As for the WITP, it officially ended on September 15, 1945, although its insurance protection for car poolers continued until the end of the month. The RTOs and PTOs closed their offices five days earlier. In its short lifetime, the Wartime Industrial Transit Plan had carried 140 million passengers a year, which worked out to be twice the traffic handled by inter-urban buses. The Federal government calculated that the plan saved more than 10 million gallons of gasoline a year (Kennedy 1950, p. 276).

The golden age of car pooling

The war witnessed the golden age of Canadian car pooling. Patriotism and resolve were so widespread that the urge to share the ride did not always require WITP incentives. In the small industrial city of Brantford, Ontario, the Brantford Board of Trade formed a zoning committee to facilitate ride sharing under its "five-per car plan" for workers, many of them from the surrounding countryside, who commuted to its war industries. As the Brantford plan did not have WITP sanction, its participants never received special treatment for rubber or gasoline credits (*Globe and Mail*, December 10, 1942). They car pooled nonetheless and likely did not appear in the national statistics.

The shared detour ended in the fall of 1945, when the transit plan was dismembered alongside the controls it was created to avoid. Canadian society was left largely to its own devices, its transportation choices limited to the private automobile and gridlock or to public transit that had not satisfied its patrons for decades, if ever (Armstrong and Nelles 1986, pp. 34-55; and 1977). While the WITP had been impressively innovative in providing transit services to wartime industry, it failed to maintain any ongoing development of these services in peacetime. Like Federally-subsidized daycare and housing, like female riveters and flyers "[only] for the sake of the war was the state willing to accommodate the domestic responsibilities..." (Pierson 1983, p. 26). Car-pooling for war industries was not an exception. The WITP was regarded as a temporary wartime detour from the customary methods of Canadian society. Such detours led, in the final analysis, to cul-de-sacs, from which Canadians have been attempting to escape for decades. At least daycare, public housing and women's rights have made some strides, but little has been done to find a way back to the era of WITP, when automobiles carried four, not 1.4, people. High-Occupancy-Vehicle lanes open to any vehicle with two or more people reveal how fantastic the WITP era was.

And yet, close study of the origins and operation of WITP suggest that there is a third way, an alternative to both the private automobile and the public bus and subway car. The WITP demonstrates that 60 percent of commuters (versus the current two percent using urban public transit in the United States and the 10-15 percent in Western Europe and Canada respectively) could be induced to occupy virtually every seat in a fleet of automobiles. It is difficult to fathom a more energy-efficient or environmentally-friendly form of transit than a fully-packed automobile, especially if it can be transformed into a hybrid or electric vehicle, given present technology (L.A.C. vol. 20 file no. 3; Transportation Research Board National Research Council 2001, p. 28). But how can people be compelled to car pool? WITP reveals the way. First, there has to be strict rationing through regulation, by edict, prices or taxes, of tires, fuel, and motor vehicles in response to a national emergency. In the absence of a world war, a global crisis of climate or energy supply can be the pretext for government action. Second, the mobility of vital workers has to be compromised by a faltering public transit system. This step has already arrived.

A low-cost alternative to mass transit

What might government do to find a low-cost alternative to failed public and private transit? The history of WITP as a model suggests a way: that government fashion a detour about the various controls and restrictions in order to encourage car owners to enroll their private vehicles into the public's service, drawing on the same appeal to duty and service to one's country. There would have to be, as in 1943, significant changes to the regulatory and insurance regimes for millions of Canadian car owners to offer shared rides, but these are not impossible nor are they inconceivable. True, the Federal government of Canada has, as its resources have grown, moved away from its wartime frugality and into free-market consumerism. In the 1940s, its instinct was to reduce and to regulate rather than to redesign and retool. WITP was a sensible first-aid solution to the transit woes of World War II. It reinvented the use of existing motor vehicles within the con-

St. Paul's Anglican Church, corner of Bloor Street East and Jarvis Street, Toronto, circa 1944. *Charity message evoked Commonwealth ties as well as Canadians' patriotism. City of Toronto Archives, Series 1251, Item 94.*

fines of far-reaching wartime restrictions. It thus resolved the transit crisis of its era.

In recent years, government in Canada, as in the United States, has attempted multi-billion dollar rapid transit "fixes" to the transit crisis of our era. The usual outcome is a minor diversion of commuters, often from inexpensive public transit (buses) to more expensive alternatives (heavy and light rail). Most are attracted to the romantic and luxury appeal of rail travel and fail to see the astronomical costs of their undertaking. Other cities have focused not in creating new methods of costly transportation, but have turned to placing the cost of travel upon those who pursue it. In London and potentially in the near future Manhattan, tolls help fund public transit projects while also deterring drivers from unnecessary travel. Yet, this system, effective in reducing traffic congestion and funding transit, draws the driver and their passengers away from the downtown core—creating new problems of blight, economic drought and suburbanization. Tolls, in the case of London's £8, or any charge, violates the freedom of the road and the right to move freely within the confines of one's borders. With tolls, the right and freedoms quickly become a luxuries—ones that only the wealthy might afford. So, while present solutions ranging from rail to tolls seem logical in reducing volume and increasing funding for urban transit—they benefit only a select class of society and ostracize the other. Complete egalitarianism in public transit and funding might prove difficult, if not near impossible to achieve. (For comments on the Central London Congestion Charge run by the Transport for London consult: UK Commission on Integrated Transport [http://www.cfit.gov.uk/docs/2006/wrrp/wrrp2/case/index.htm#01] June 2007. For the most recent comments on the proposal for the introduction of a toll structure in Manhattan see: Congestion Pricing Proposals Race Ahead—New York Times [http://www.nytimes.com/2007/06/07/nyregion/07cnd-congestion.html?hp] June 2007.)

Canadian wartime industry workers employed their own private motor vehicles for the benefit of the public, the nation and the war effort. The WITP's more organic and fluid approach asked citizens to do for their country and not wait for their country to do for them. This JFK-esque approach was more adaptable and quickly installed. Barriers, geographic and monetary, were overcome by the plan's flexibility. The WITP experience suggests that automobiles may be the better solution, provided that they can be induced by government regulation to take an extended detour away from their past, self-indulgent solipsism.

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Motorisierung
The German Motorization Program 1933-1939

By Anders Ditlev Clausager

Introduction

The program of *Motorisierung* was a policy developed and partly implemented by the Nazi regime of the German Third Reich between 1933 and 1939. This article discusses the reasons for adopting this program, the individual elements of the program, and its effect on the German nation then and later. The Motorization program deserves closer study, combining political with social and technical history, not least as an example of interaction between a government and the auto industry, but also as an illustration of the politicization and coercive *Gleichschaltung* of all activities of the Third Reich. Many aspects have been considered individually by historians, notably the Autobahnen, motor racing, and the development of the Volkswagen, but there have been fewer attempts at putting the disparate elements together in a common framework.[1] And yet there may be a case for arguing that the policy of *Motorisierung* was an important part of the Nazi philosophy and creed. The program also had a significant long-term effect on Germany in the post-1945 period.

Hitler and the automobile

Historians still debate whether Hitler had a master plan or whether he was a cynical opportunist. To quote his biographer Ian Kershaw, "He did have a limited but inflexible framework of ideas that gave consistent direction to his leadership. Much was adapted to rapidly changing circumstances – but within the parameters embodied by Hitler's ideological 'vision'."[2] This applies equally to the plan for *Motorisierung* which in my view was almost entirely Hitler's inspiration.[3] Kershaw was incidentally the first Hitler biographer to devote serious discussion to the Motorization program and associated issues, although most others have in passing discussed Hitler's use of (and enthusiasm for) automobiles.[4]

Why did Hitler adopt this policy? A number of reasons can be suggested. Hitler was an admirer of Henry Ford,[5] yet he saw the much stronger American economy as a threat to Germany; Motorization would be one way for Germany to catch up. Motorization was not only intended to alleviate economic depression, like Roosevelt's "New Deal" in the USA, but was also undoubtedly a part of the re-armament program, as it involved modernizing the German army. The idea of Motorization fitted the image of the Nazi party as modern, youthful and dynamic. If the ownership of motor vehicles could be made more widespread, it would be popular. It would enhance German prestige compared with other nations that were already further ahead in their Motorization, and so would success in motor sport.

A political program of Motorization could probably only have been undertaken in a totalitarian state. It is almost without parallel in history, although some of Brezhnev's policies in the USSR in the 1970s and early 21st century efforts in China have similarities. By contrast, the present-day Indian "people's car," the Tata Nano, is purely a product of private capitalist enterprise.

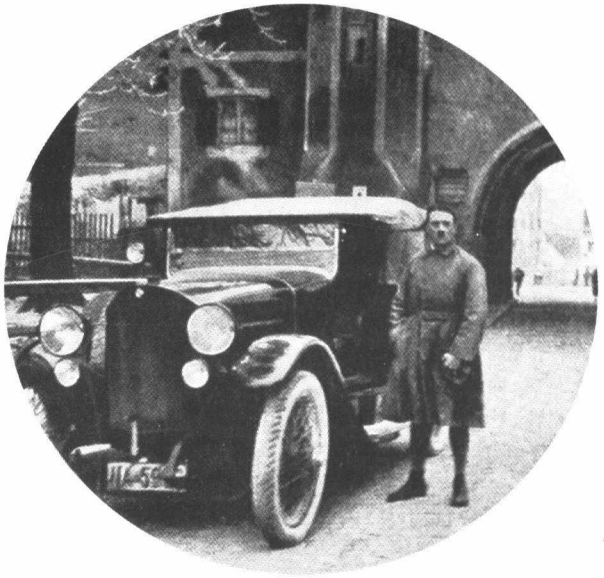
From the literature we know that almost from the start in 1919, the new National Socialist party made use of motor vehicles, and that Hitler personally was extremely interested in motor cars, even describing himself as a "car nut": "*Ich war ein Autonarr*."[6] It remains a subject for debate whether he could drive, but it is certain that he chose not to drive, being conscious of the status conferred on him by having a large and powerful chauffeur-driven car.[7] He courted unpopularity in the early days by squandering party funds on an apparently somewhat disreputable second-hand car – soon replaced.[8]

Hitler had one or two cars at the time of the Munich *Putsch* in November 1923, when the party also used motor trucks to transport troops.[9] Serving his prison sentence following the Putsch, when he was not dictating *Mein Kampf* he spent some time reading car magazines, and allegedly Henry Ford's autobiography, recently published in German as *Mein Leben und Werk*.[10] Among his fellow inmates were the bodyguards cum chauffeurs Johann Haug, Emil Maurice who was sacked in 1931, and the most devoted, Julius Schreck who died in 1936. Not for nothing was Hitler's most intimate circle nicknamed the *Chauffeureska* – the coterie of chauffeurs.[11]

Julius Schreck (1898-1936), Hitler's chauffeur.
-- Deutsche Kraftfahrt

On Hitler's release in December 1924 he was driven back to Munich in a Benz. At the time, this was Hitler's preferred make of car, regardless of the fact that the Benz company was controlled by the speculator Jakob Schapiro, a Russian Jewish émigré, who kept his seat on the Daimler-Benz board until 1929.[12] Hitler's cars were supplied by the Munich dealer Jakob Werlin, a fellow Austrian who became Hitler's confidant and adviser in matters related to motoring, and whose assiduous cultivation of *Führer* and party was rewarded with a seat on the Daimler-Benz board in 1933.[13]

When Benz merged with Daimler in 1926, Hitler transferred his allegiance to the new Mercedes-Benz brand. With the Nazi party growing in popularity and membership, there was more money available for cars, while Hitler enjoyed a good personal income from the royalties on his book. By 1931, he was being driven in the most expensive Mercedes-Benz model. Hitler even boasted later about his contribution to Mercedes-Benz design: "I can say that, as to what gives the Mercedes-Benz its beauty nowadays, I can claim the fatherhood. During all these years I've made innumerable sketches with a view to improving the line."[14] Some (rather poor) sketches allegedly done by Hitler in 1934 survive and show a car with a resemblance to the then-new rear-engined Mercedes-Benz 130 H. They have been promoted as evidence that he was personally involved in designing the Volkswagen, which is doubtful.[15]



Hitler with Benz touring car on release from from Landsberg, 1924.
Hoffman photo from Deutsche Kraftfahrt

During the 1920s and early 1930s, Hitler regularly toured Germany by car, fulfilling speaking engagements and undertaking election propaganda. An abiding folk memory of the Third Reich concerns the motorcade of sleek black Mercedes-Benz touring cars, with SS chauffeurs and body guards in matching black uniforms surrounding the *Führer* and other VIPs.[16] It is of interest that Hitler also made use of airplanes, which fitted equally well with the party's image of being a youthful mold-breaker and pioneer of modern technology. Hitler began routinely to use airplanes in the second round of the presidential election in April 1932, but he had flown before.[17]

It is likely that it was during these years that Hitler formulated an outline of what eventually became his, and thus the party's, program for motorizing the German nation. In this as in so many other fields, Hitler drew for inspiration on a variety of sources, but the synthesis was undoubtedly his, and most likely his alone. Although many (for instance, Göring, Himmler and Speer) were keen drivers, we have no evidence that any other senior Nazi was similarly devoted to the idea of Motorization. Joseph Goebbels, at least, was attuned to the useful propaganda aspects.

The role of the NSKK and Adolph Hühnlein

Adolf Hühnlein was the exception. Born in 1881, he was a career officer who had joined the *Freikorps Epp* in 1918 and soon after the SA and the party. He took part in the 1923 *Putsch*, giving him status as an *Alter Kämpfer*. He set up a motorized branch of the SA which later became the *National-Sozialistische Kraftfahr-Korps* or NSKK. Originally the intention was simply to provide transport for party members as required, but after the Nazi party came to power in 1933 the NSKK developed into the biggest German motoring organization, in effect taking over the existing motoring clubs. Hühnlein also became head of the national German body which organized motor sport.[18]

As such he came to international prominence, and was usually present at the major Grand Prix races. He had a reputation as an honest and efficient, if humorless, bureaucrat and administrator but otherwise cut a rather bumbling figure; he was a poor public speaker and was lampooned for wearing full uniform, including spurs, at Grand Prix races, yet his status as *Korpsführer* obviously demanded that he wore uniform on public occasions. In theory he was the equivalent of Himmler, the head of the SS, or Lütze, the head of the SA; in practice the status of the NSKK was somewhat lower down the Nazi hierarchy. It has been suggested that Hühnlein was only spared in the SA purge of June 1934 because he was not important enough, but he also had the good fortune to be abroad at the French Grand Prix at the time, and he was presumably deemed to be loyal to the Führer.

The NSKK took on a number of roles. Members of the corps wearing their distinctive crash helmets and uniforms marshaled at races and rallies, and paraded in strength at the opening of the annual Berlin Motor Show. The NSKK ran a number of motor sport schools and took responsibility for driver education. It campaigned for road safety, highly necessary when the annual death toll on German roads was around 8,000.[19] It assisted the police on traffic duties and even offered some roadside assistance. In addition, members of the NSKK were conscious and proud of their political role. The NSKK song, or Adolf Hühnlein march, includes the following verse (loosely translated): "We once went round from place to place/To sow the German seed/ And then we swept the Reds away/To help rebuild the state/ We're proud to fight with loyalty/This oath stays ever fresh," and the chorus "We are the pioneers of Germany's defense!/ Both day and night we stand on guard/For German honor, German might!"[20] This did not stop them being ridiculed by the tougher street fighters of the SA who mockingly interpreted the acronym NSKK as "*Nur Säufer, Keine Kämpfer*" ("just boozers, no brawlers").

NSKK-Korpsführer *Adolf Hühnlein (1881-1942).*
Deutsche Kraftfahrt

Many of their activities involved motorcycles, which were far more common in Germany at the time than cars and were undoubtedly aimed at creating a body of young men who could handle motor vehicles in conditions of war. Significantly, as the old *Reichswehr* was transformed into the new *Wehrmacht*, particular stress was put on the development of highly mobile armored *Panzer* formations, with supporting fleets of trucks and motor cycles.

The program is announced

Hitler's first major speech after coming to power was held at the opening of the Berlin Motor Show on February 11, 1933. It was here and in the speeches he gave at Motor Show openings in the following years that he outlined his plan for Motorization which came to include the following:

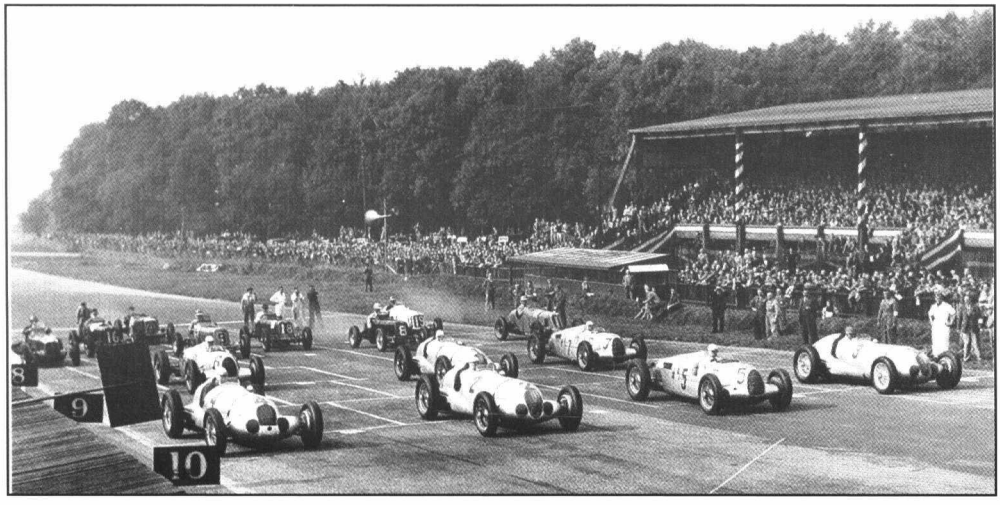
- The abolition of motor car taxation
- Building a national network of highways for motor traffic, the Autobahnen
- A program of encouraging German car manufacturers to take part in motor sport, nationally and internationally, with national events organized by the NSKK
- A widespread program of driving education, to be achieved partly through the NSKK but also through the motor division of the Hitler Jugend, and in some cases assisted by the inclusion of programs in the school curriculum
- Reform of the German highway code, with abolition of many speed limits
- Finally, the idea of building a Volkswagen, either through the existing auto industry, or if necessary, by government intervention and sponsorship.[21]

By 1933, the German government had abolished the annual vehicle tax on new cars, which gave the auto industry a much-needed boost; annual output and sales had fallen dramatically during the years of the depression. However, the gasoline duty remained. Not unnaturally, the smaller, cheaper and more economical models continued to be the most popular. These typically cost between 1,500 and 3,000 Marks; Opel and DKW were the price leaders, and the best-sellers in the expanding home market, where car ownership came within reach of an increasing sector of the middle class. At the same time, under the policy of *Autarkie* (self-sufficiency) Germany made considerable effort to develop its own resources, distilling gasoline from coal, making synthetic rubber, and opening new steel works to exploit the low-grade ore found in German soil.[22]

State sponsorship for Grand Prix racing

Then came the offer of a subsidy to German car manufacturers to build competitive Grand Prix racing cars, initially to Mercedes-Benz but the program was quickly extended to the Auto Union group, thanks to an intervention by Ferdinand Porsche whom Hitler knew and respected. The state subsidy over the years 1933 to 1941 amounted to around 20 percent of the total racing budgets of the two companies, perhaps four million out of 20 million Marks to Mercedes-Benz, three million out of 15 million to Auto Union.[23]

Very quickly the two German cars came to dominate Grand Prix racing, and the results they achieved were obviously put to good use in propaganda terms. The glamorous young drivers – notably Carraciola and Rosemeyer – became popular heroic cult figures, used for propaganda purposes and celebrated in life and death.[24] Almost as important were the annual long distance cross-country trials organized by the NSKK, since these events served as useful proving grounds for vehicles that just might have a military application.



German Grand Prix racing cars at Donington, 1937.
Carraciola Titan am Volant

Building the motorways

The idea of building motorways had originated partly in Italy, partly in the USA, although there was also an early example in Germany in the shape of the AVUS track on the outskirts of Berlin. In 1926 a private consortium suggested the building of a German north-south motorway from Hamburg via Frankfurt to Basel, hence called the HAFRABA scheme, with an extension to Genoa. A motorway from Cologne to Bonn was opened in 1932 by the mayor of Cologne, none other than Konrad Adenauer.[25] Hitler's regime enthusiastically embraced the idea, and the *Führer* himself dug the first sod (*erste Spatenstich*) at the ceremonial start of work on the first *Autobahn* from Frankfurt to Darmstadt in September 1933; this road was opened in May 1935. The construction program was headed by the engineer Fritz Todt, a typical example of a technocrat who saw and seized his opportunity. He was a convinced and loyal National Socialist, who later built the *Westwall* fortification, also known as the Siegfried Line, and became wartime Minister for Armaments.

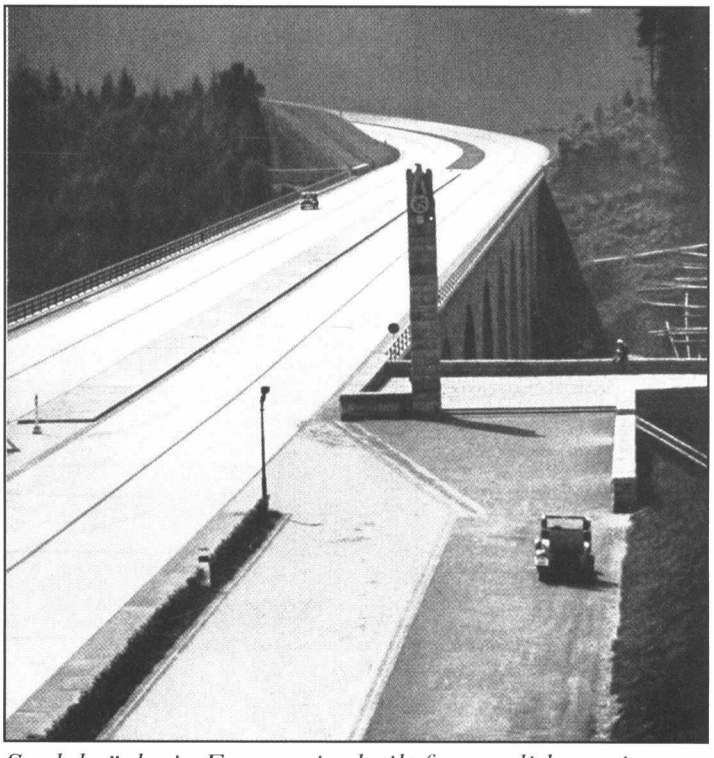
Hitler and the "erste Spatenstich," *Frankfurt-Darmstadt Autobahn, September 1933.*
Reichsautobahn - Pyramiden des Dritten Reiches

In part, the *Autobahn* program was about work creation, yet at its height it employed only around 112,000 workers, compared to the six million unemployed at the depth of the depression.[26] These motorways were built largely by hand, often in atrocious conditions for the workers, initially with only limited mechanical assistance, yet included some amazing feats of engineering, notably the bridges.

It has been claimed that they were intended to facilitate the movement of troops in times of war but this would have been a woefully inadequate method (and has been exposed as a fallacy: the suggestion found little favor with the *Wehrmacht*). Looking at the network as it developed until 1940, it seems that a primary purpose was to improve communications between the capital and distant provinces, symbolizing and carrying into practice the principle of the highly-centralized Nazi state. A main route was from Berlin via Bayreuth and Nuremberg to Munich, all important places for National Socialism, extending to Berchtesgaden, the Austrian border near Salzburg and later beyond.

With the territorial annexations of 1938-39 plans were laid to extend the network into the former Austria and Czechoslovakia, though pointedly ignoring Prague. The difficulty of linking through Polish territory to Danzig and Königsberg may almost have been a contributory *casus belli* in September 1939. When the building program was largely abandoned in 1940, nearly 2500 miles (4000km) of *Autobahn* had been completed, at a cost of three billion Marks. An unforeseen side effect and handicap in the divided postwar Germany was the lack of a north-south route in the western part of the country, not completed until the 1960s.

Remarkably a great deal of effort went into the aesthetics of the *Autobahnen*, adapting them to the landscapes and providing vistas for travelers, and by the intention of dotting them with works of art, notably the heroic sculptures by Thorak.[27] By linking capital with countryside, the *Autobahnen* became a symbol of a happy resolution of the dichotomy otherwise inherent in the Nazi creed, their sponsorship of modern technology but their underpinning belief in traditional rural values, espoused in the *Blut und Boden* ("Blood and Soil") philosophy.



Saalebrücke in Franconia, built from solid granite, with Nazi totem, 300 meters ling, 32 meters high.
Reichsautobahn Mensch und Werk

Effects on the auto industry

The German auto industry was an immediate beneficiary of the Nazi policies. For much of the 1920s German car makers had suffered from foreign competition, especially from American manufacturers who established assembly plants in Germany, although this was partly rectified through changes to the system of import duties. After 1933 the only foreign manufacturers operating in Germany were Fiat, from friendly and fellow-fascist Italy, while the US-owned companies, Ford and Opel, were tolerated since much of their output was of commercial vehicles, useful for the Army.

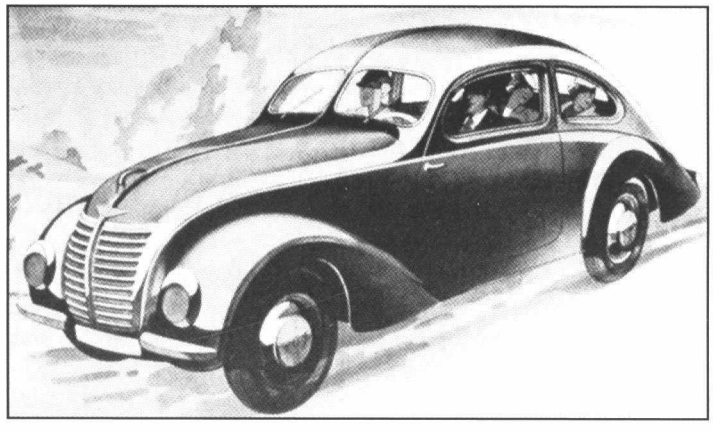
From 1928 to 1932 overall output had fallen from 102,000 to 42,000 cars and several of the weaker companies disappeared. The German auto industry was effectively rationalized due to the depression. Brennabor gave up in 1933, NAG in 1934, while four Saxon car manufacturers amalgamated to form the Auto Union in 1932. Yet already in 1933 output was back up to 90,000 and continued to rise, until 1938 when 277,000 cars were made. The motorcycle industry increased production from 41,000 in 1934 to 328,000 in 1938. The boom in the industry and the motor trade helped to reduce unemployment, the manufacturers on average increased their payroll by a factor of three between 1933 and 1938. It also strengthened manufacturers who made war materiel, notably trucks. The historian Richard Overy has famously (if controversially) suggested that it was the auto industry rather than re-armament which provided the kick-start to the German economy in 1933.[28]

The leading auto manufacturer in Germany remained the Opel company, much to the Nazis' irritation, as since 1927 they had been part of the American General Motors group. They were also an important producer of commercial vehicles, opening the highly modern mass-production factory for this purpose at Brandenburg in 1936, managed by Heinz Nordhoff. In 1938 they reached a total production of more than 140,000 cars and commercial vehicles, making them the largest European auto manufacturer at the time. Second-largest in Germany was the new Auto Union group, whose most important member was DKW, a mass-producer of small cars and the largest maker of motorcycles in the world, whose founder the Dane Rasmussen was unceremoniously sidelined.

Third was Adler of Frankfurt with their small- and medium-sized front-wheel drive cars and number four was Hitler's favorite, Mercedes-Benz, which was equally important as a maker of commercial vehicles as well as engines for airplanes, tanks and naval vessels. Other manufacturers included the German Ford company, BMW, Borgward-Hansa, Hanomag and a few others, as well as several commercial vehicle makers. Some of the smaller companies were important for the re-armament, BMW with motorcycles and aero engines, Ford and Borgward with trucks. Carl Borgward was an enthusiastic party member and built a huge new truck factory outside Bremen with an eye to army contracts.[29]

Opel advertisement, 1935

Deutsche Kraftfahrt



Hanomag 1.3-Liter, 1939.

The Development of Automobile Design

German car manufacturers collectively developed some outstandingly advanced designs between 1933 and 1939. To some extent these developments were paralleled in other Continental countries, and the seeds had indeed been sown in the preceding decade, but German cars nevertheless became design leaders during the 1930s. Independent suspension on all four wheels was commonplace. Front-wheel drive was used by Adler, Audi and DKW, even experimentally by Mercedes-Benz; they also produced some rear-engined cars and there were other similar experiments (DKW, Hanomag, NSU, Zündapp) before the Volkswagen. Opel was a pioneer

in adopting unitary construction and efficient short-stroke overhead-valve engines. Hanomag and Mercedes-Benz adopted Diesel engines for private cars. Gearboxes were often fitted with an overdrive ratio, the *Autobahn-Schnellgang*, for motorway driving.

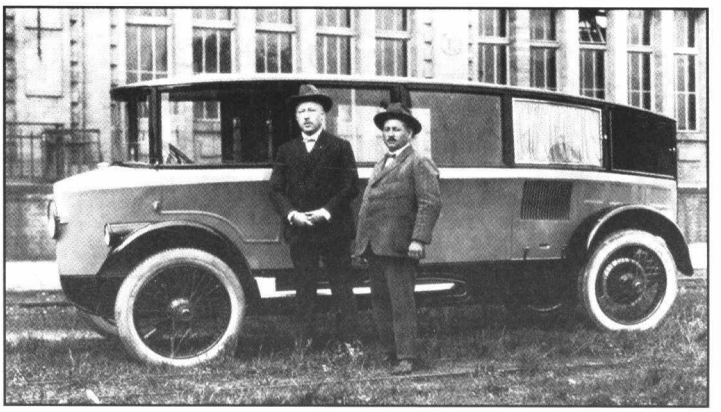
Above all, German makers excelled in streamlined bodywork, with notable examples from Adler and Hanomag, apart from the Volkswagen, and several prototypes and racing cars. The science of aerodynamics as applied to motor cars was virtually exclusively a German province, having been started by redundant aircraft designers including Jaray and Rumpler in the early 1920s. Kamm, Eberling and König-Fachsenfeld followed in their footsteps. Aerodynamic bodies and many other design features were adopted to make cars suitable for sustained high-speed motorway travel. The Berlin Motor Show became a hothouse of avant-garde designs.

Among the engineers responsible for these new cars were Karl Jentschke of the Austrian Steyr company, who later moved to Adler; Fritz Fiedler of Stoewer, then Horch, and finally BMW; Hans Nibel of Mercedes-Benz who died in 1934 and was replaced by Hans-Georg Röhr who had run his own company and worked for Adler before joining Mercedes-Benz, only to die from pneumonia in 1937; William Werner of Auto Union; and Porsche who ran his own design bureau in Stuttgart working for, among others, Wanderer, NSU, Zündapp and Auto Union before famously being commissioned to design the Volkswagen.

The new German cars were also eminently suitable for export. In the 1930s Germany came to challenge Britain as the largest European exporter of small cars, and made inroads in "Empire Markets" such as India, South Africa and the Irish Free State, as well as many smaller European countries. There was much concern in Britain at the low prices at which some German cars could be sold, despite the fact that an import duty of one-third of value had to be paid in the UK. By 1939, a small Opel or a DKW could be bought for as little as £135-150 (then $598 to $665), which made them competitive with popular British cars. It was widely believed that German exports were subsidized to obtain foreign currency, and when the Volkswagen was announced the popular British press seized on the idea that it would be sold for £50 in Britain. On the other hand it has been stated that exporting a car from Germany was a bureaucratic nightmare.

Anti-Semitism in the Auto Industry

One small company deserves a mention: this was Simson-Supra of Suhl whose fate was sealed because it was Jewish-owned. It was nationalized in 1935 and then concentrated on small arms.[30] Otherwise, the effects of the anti-Semitic policy on the auto industry were limited. Baron von Oertzen, a director of Auto Union whose wife was Jewish, became his company's overseas representative, whereas the managing director of Daimler-Benz, Wilhelm Haspel who also had a Jewish spouse, was left in place.[31] Josef Ganz, the Jewish editor of *Motor-Kritik* who had been a campaigner and catalyst for many advanced design features, emigrated at first to Switzerland, and died in Australia in 1965.[32] Adolf Rosenberger, the Jewish partner in Porsche's design bureau, went



Edmund Rumpler (1872-1940), left, with his most famous product, the Tropfenwagen.

Automobile aus Berlin

to the USA. The outstanding designer Edmund Rumpler, also Jewish, was side-lined but allegedly continued to enjoy the personal protection of Hermann Göring as a thank-you for Rumpler's work on aircraft during World War I.[33]

The Schell Plan

In 1939 the government asked Oberst von Schell to come up with a rationalization plan for the auto industry.[34] The intention was mainly to make some sense out of the multitude of different vehicles supplied to the armed forces and the most drastic measures concerned trucks, motorcycles and components; in some areas it was not dissimilar to the postwar British efforts of the government and the Society of Motor Manufacturers and Traders, while in France the Pons plan of 1945 was arguably more drastic. But Schell's plans also affected the makers of private cars. Car makers were told to reduce their programs, although most of the models scheduled for extinction were older types made only in small numbers. The total number of types made by German manufacturers (now including Steyr and Tatra) was to be reduced from around 48 to 30; hardest hit was Borgward whose program of four was reduced to just one. At the same time, makers of previously popular small cars were already showing signs of voluntarily moving new models upmarket to avoid direct confrontation with the Volkswagen, notably DKW and Ford.

Adler:	Diplomat 2,916cc	1
Auto Union:	DKW Sonderklasse 1,054cc	1
BMW:	321 1,971cc, 335 3,485cc	2
Borgward-Hansa:	1100 1,088cc, 1700 1,634cc, Privat 3,485cc	3
Ford:	Eifel 1,172cc, V8-48 90PS 3,620cc	2
Hanomag:	Rekord Diesel 1,910cc, Sturm 2,252cc	2
Maybach:	Zeppelin 7,978cc	1
Mercedes-Benz:	170 H 1,697cc, Nürburg 500 4,918cc	2
Opel:	none	0
Steyr:	200 1,498cc	1
Stoewer:	Arkona 3,610cc	1
Tatra:	57 1,256cc, 97 1,760cc	2
Total		18

(reconstructed after von Seherr-Thoss *Die Deutsche Automobilindustrie)*

The Schell plan: Casualties

The Volkswagen idea

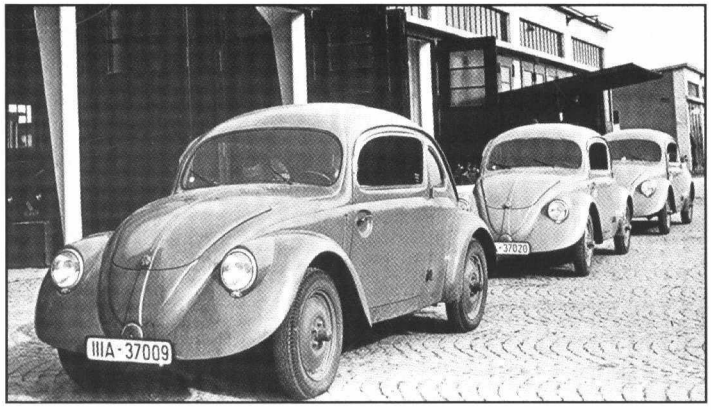
This leaves us to consider the Volkswagen program, which in many ways was the cornerstone policy of Hitler's entire program. In his speech at the opening of the Berlin Motor Show in 1934, Hitler stated that "The class-emphasizing and therefore socially divisive character that has been attached to the automobile must be removed; the car must not remain an object of luxury but must become an object of use!"[35] A year later he was able to announce that "The skill of a brilliant designer and the co-operation of his staff have already produced the preliminary plans for a people's car. It must be possible to provide the German people with a motorcar to cost no more than a medium-weight motorcycle,"[36] which reminds one of Sir Herbert Austin's pronouncement that the original Austin Seven was designed "to knock the motor cycle and sidecar into a cocked hat."

The eminent designer Ferdinand Porsche, who by then was running his own consultancy in Stuttgart, had drawn up a memorandum outlining his ideas for the design of a "Volkswagen," which he provisionally estimated would cost 1,550 Marks. He submitted this to the Ministry of Transport in January 1934.[37] As a result, in the spring of 1934 Hitler met with Porsche and entrusted him with the design of a "Volkswagen." Hitler, however, insisted that the price be kept below 1,000 Marks, which in practice would have been unrealistic. The meeting where this conversation took place is believed to have been held in Berlin in May 1934.[38] Porsche proceeded to develop a design which was to some extent based on his earlier proposals for small rear-engine cars for Zündapp and NSU but which was now considerably refined and updated, most importantly with a view to mass production in the numbers that would be required to keep the price down. Still, in November 1938 manufacturing costs, for materials, direct wages, and some overheads, were calculated as 929 Marks.[39]

Five prototypes were built in 1935 and 1936. They were followed by a run of 30 cars, made by Daimler-Benz in 1936-37, which were subjected to long-term testing. These cars fully met the criteria laid down by the German society of motor manufacturers, the *Reichsverband der Automobilindustrie*. However, the German industry refused to undertake the manufacture of the car, and it was decided to turn the project over to the *Deutsche Arbeits-Front* which was

	To 1.25 liters	1.25-2 liters	2-3 liters	3-3.75 liters	Over 3.75 liters	Total
Adler	Trumpf Junior 995cc	2-Liter 1,910cc	2.5-Liter 2,494cc			3
Auto Union	DKW Reichsklasse 589cc; Meisterklasse 692cc	Wanderer W24 1,767cc	Wanderer W23/W26 2,651cc	Audi 920 3,281cc	Horch 930/830 3,823cc; 855/951 4,944cc	7
BMW		326/327 1,971cc				1
Borgward			2300 2,247cc			1
Ford	Taunus 1,172cc		V8-92A 2,225cc			2
Hanomag		1300 1,298cc				1
Maybach					SW 42 4,197cc	1
Mercedes-Benz		170 V 1,697cc	230 2,289cc; 260 D 2,545cc	320/340 3,405cc	580 5,800cc; 770 7,655cc	6
Opel	Kadett 1,074cc	Olympia 1,488cc	Kapitän 2,473cc	Admiral 3,626cc		4
Steyr	55 1,158cc		220/630 2,260cc			2
Stoewer			Sedina 2,460cc			1
Tatra			87 2,965cc			1
Total	6	6	10	3	5	30

The Schell plan, 1939: Survivors



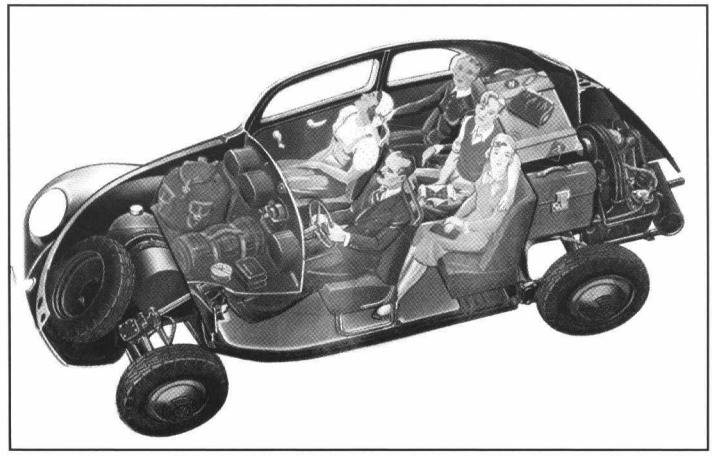
VW 30 prototypes built by Daimler-Benz, 1936-37.
Wiersch Die Käfer-Chronik

the Nazi party's idea of a trade union, headed by the corrupt alcoholic Dr. Robert Ley. The Volkswagen became the adopted child of the DAF subsidiary KdF, the *Kraft durch Freude* ("Strength Through Joy") organization which looked after the leisure needs of the German workers. Thus came the name "*KdF-Wagen*" for the final version. Hitler's old friend Jakob Werlin of Daimler-Benz chaired the company for preparation of the Volkswagen, together with Porsche and Dr. Bodo Lafferentz of the KdF.[40]

It was the KdF that planned and paid for the enormous factory at Fallersleben (later Wolfsburg) on the Mittellandkanal north of Braunschweig, and the final Volkswagen was unveiled at the ceremony on May 26, 1938 when Hitler laid the foundation stone. It was also the KdF which came up with the ingenious idea of the *Sparkarten*, the savings stamp scheme which ensured that every Volkswagen was fully paid for by its purchaser before delivery. This also helped to take money out of an overheating consumer economy: thanks to rising incomes, many consumers had more money to spend than there were goods to spend it on. The KdF undertook the promotion and distribution, which cut out the traditional motor trade and reduced costs.

Volkswagen Design

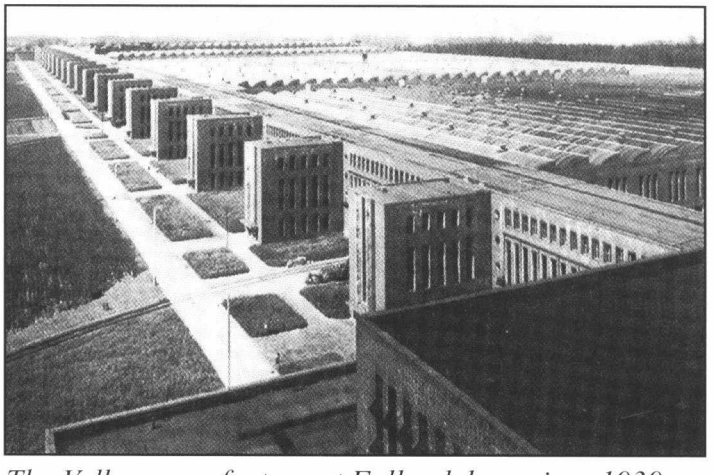
The actual design of the Volkswagen held no surprises for anyone who had followed the trends of German or central



KdF-Wagen design. Note five-passenger comfort.
Original Volkswagen brochure

European automotive design. The car was one of the most modern of the era, disappointing only for its use of mechanical brakes (a cost-saving feature) and conventional as opposed to rack-and-pinion steering. Porsche was later accused of "stealing" the design from others, notably the Tatra by Czech designer Hans Ledwinka,[41] but the simple fact is that he and others were working towards similar goals and came up with similar solutions. In any case the Volkswagen had some unique Porsche features, such as the torsion bar suspension. It was also designed for mass-production in numbers hitherto undreamt of outside the USA, which was the real difference from many others. Some 500,000 cars per year were foreseen from the start.

Before production could commence, however, World War II had broken out. The enormous factory at Fallersleben was only half-heartedly turned over to war production. Belatedly, Porsche came up with a military version of the Volkswagen, the *Kübelwagen* which went some way towards replacing the expensive and heavy BMW and Zündapp motorcycle combinations when these proved unsatisfactory for front-line conditions in Russia. The Kübelwagen and its amphibious derivative the *Schwimmwagen* were however never made in numbers comparable to the American Jeep, in part because production was dogged by constant shortages of raw material such as steel, and disrupted by Allied bombing. Total Volkswagen war-time production was only around 66,000.



The Volkswagen factory at Fallersleben, circa 1939.
Wiersch Die Käfer-Chronik

Only small numbers of civilian-type Volkswagens were made in 1939-41 and none of those went to the 340,000 savers. The outbreak of war largely brought the Motorization program to an end. The last victories for the "Silver Arrows" were in the summer of 1939, and the racing cars were then dispersed and mothballed. The *Autobahn* construction program was halted. Production of private cars was scaled back drastically, but was only stopped completely in 1942 by Albert Speer when he took over as armaments minister. The industry increased its output of trucks, some motorcycles, aero engines, and other forms of war materiel, including parts for the V1 and V2 "wonder weapons." In common with other industrial sites, their factories increasingly attracted the attention of the Allied bombing raids. To overcome labor shortages, unfortunately several motor manufacturers became involved with the inhumane slave labor schemes.[42]

During the war, the only beneficiary of the Nazi *Motorisierung* program was the army, which enrolled millions of youngsters, many of whom were capable of handling motor vehicles thanks to their training in the Hitler *Jugend* and the NSKK. The armed forces were, however, constantly short of motor transport, despite impressing civilian vehicles, and sequestrating much of the national vehicle parks in conquered countries. More German soldiers went to the front by train, in horse-drawn vehicles, and on foot, than rode in trucks. The dream of a fully-motorized army, which had been partially realized in the *Blitzkrieg* in Poland and the West in 1939-40, gradually ground to a halt in Russian mud and snow and the sands of North Africa.

Wehrmacht *in trouble: Stuck in Russian mud, 1941.*
Evans The Third Reich at War

The post-war legacy of motorization

In 1945 as the Third Reich collapsed and Hitler committed suicide in his Berlin bunker, most German car factories lay in ruins. Yet there were early signs of revival. The Ford factory at Cologne, after a break of only a few weeks in the spring of 1945, again turned out trucks, but now for the Allies rather than the Nazis. The *Volkswagenwerke* was back in small-scale production in 1945 under British army management.[43] With the partition of Germany, some important factories were isolated in the Eastern, Soviet-occupied zone, notably the Auto Union plants, the BMW car factory at Eisenach and the Opel truck factory at Brandenburg. The latter was plundered by the Soviets as war reparation, and they were even allocated the entire Opel Kadett production equipment which they used to make the original Moskvitch. Also lost in the East was the Berlin factory of Ambi-Budd, the German licensee for Budd all-steel bodywork, with impact on the resumption of car production by Adler, BMW and Hanomag. The *Autobahn* network was truncated by the Iron Curtain, and numerous bridges and tunnels had been destroyed in bombing attacks.

Of the people involved, most of the senior Nazis committed suicide or were executed after the Nuremberg trials. Ley of the DAF committed suicide in prison. The *Autobahn* builder Todt who had become armaments minister was killed in an air crash in 1942. Hühnlein of the NSKK had died of cancer in Munich in 1942, and was replaced by Erwin Kraus, a competent, if colorless, technician. The NSKK was condemned at the Nuremberg trials but was officially exonerated from any culpabil-

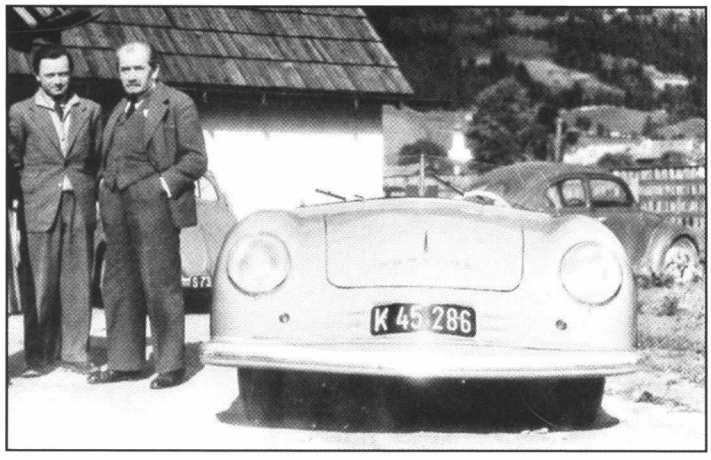
ity in war crimes, being considered "by nature predominantly (a) sports organization," which was a whitewash.[44]

Jakob Werlin was removed from the Daimler-Benz board, interned by the Americans until 1949 and "de-Nazified." He became a Mercedes-Benz dealer and died in 1965. Ferdinand Porsche was in Austria at the end of the war; he was briefly imprisoned by the French and died in 1951, just as his son was establishing the company in Stuttgart. Borgward, as a Nazi and *Wehrwirtschaftsführer* (war economy leader), served a prison sentence but then returned to run his company in Bremen until its collapse in 1961. The Opel manager Nordhoff, another *Wehrwirtschaftsführer*, was briefly ostracized until head-hunted by the British to take charge of the Volkswagen factory. Money paid into the Volkswagen savings account was held on deposit, untouched, in a Berlin bank, until confiscated by the Russians in 1945. After a protracted court case, the savers eventually received a settlement in the form of a discount on a new car.

The German pre-war cars had been so advanced that they were still fully competitive in the post-war world. The most famous was the Volkswagen but the Opel Olympia and Kapitän, the Mercedes-Benz 170, the Ford Taunus and, a little later, the DKW were all pre-war designs. BMW and DKW were late coming back as they had to re-start production in the West. The other Auto Union makes did not reappear. Other war casualties included Stoewer, whose Stettin factory was now in Poland, and Adler, which abdicated into motor cycles and typewriters. Hanomag concentrated on commercial vehicles and Maybach on rail and marine engines. Some of the factories in East Germany did make cars again, thus there were East German versions of the pre-war DKW and BMW under the names of IFA and EMW.

It was however the Federal Republic, the *Bundesrepublik* in the West, which was to enjoy an unprecedented economic upturn under the premiership of Konrad Adenauer and the financial direction of Ludwig Erhard. The currency reform of 1948 was the start of what became known as the *Wirtschaftswunder*, the Economic Miracle. The auto indus-

Post-war Volkswagen production: 10,000th car, October 14, 1946. *Richter* Ivan Hirst



Ferry, Ferdinand and the first Porsche, Gmünd, Austria, circa 1948. *Conradt* Porsche 356

try both contributed to this and benefited from it. The first postwar decade was a boom time for motorcycles, but their popularity faded as the public turned to bubble cars and other small cars. A number of newcomers attempted to join the established industry, mostly with small cars, but the only lasting success was Porsche, the sports car maker headed by Ferdinand's son Ferry.

By 1951 annual production in West Germany equaled the best prewar figure of the Reich. By 1958 West Germany overtook Britain as the largest European producer and the largest exporter of motor vehicles; the Volkswagen had gone on sale in neighboring European countries in 1948, and by the mid-1950s had established itself in the USA. Meanwhile at home, the proud owners of new Volkswagens could enjoy their cars to the fullest, thanks to the *Autobahn* network as it gradually spread across West Germany. The auto industry and motoring were an integral part of the resurgence of the West German postwar economy, and this in turn owed everything to the foundations which had been laid with the *Motorisierung* program before 1939.

In German propaganda and the media of the 1930s, Hitler was inevitably given full credit for the Motorization – the *Autobahnen* were invariably described as "the Führer's roads" and with the Volkswagen "the will of the Führer had become deed."[45] Indeed, this was Hitler's legacy.

Author's note: Many published works have appeared in both German and English, and in different editions in the UK and the USA. I have mostly listed those editions which I have directly consulted. With thanks to John Warburton and Jonathan Wood, as well as to friends and colleagues in the museums and archives of Audi, Auto Union, BMW, Daimler, Porsche and Volkswagen.

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Endnotes

1. Of previous studies, the best overviews are in Sachs, Wolfgang *For Love of the Automobile* (Berkeley and Los Angeles, 1992), chapter "The Motorized *Volksgemeinschaft* (1933-1945)", pp.47-62, and Sedgwick, Michael *Cars of the 1930s* (London, 1970), chapter "The Hitler Plan" pp.163-73. For the "politically correct" view of 1930s Germany, see Bade, Wilfried *Das Auto erobert die Welt* (Berlin, 1938), esp. chapters eight and nine. Overy, Richard J *The Nazi Economic Recovery 1932-1938* (second edition, Cambridge, 1996), pp.46-47, has a discussion on the implications for the motor industry and the wider economy but omits any discussion of the social implications. Grunberger, Richard *A Social History of the Third Reich* (Penguin edition, London, 1991), pp.48-49 and pp.276-77, briefly discusses the Volkswagen and the *Autobahnen* in the wider context of consumption and consumer orientation in the technocratic Nazi state.

2.Kershaw, Ian. "The Twisted Road to War" in *The Guardian* (London) Aug. 23 2008.

3.Toland, John. *Adolf Hitler* (Wordsworth edition, Ware, Hertfordshire, 1997), p.187, contains a passage suggesting that Hitler conceived the plan for motorization already while in prison in 1924, presumably citing Frank, Hans *Im Angesicht des Galgens* (Munich, 1953); also Fest, Joachim C *Hitler* (Penguin edition, London, n.d.) p.200.

4. Kershaw, Ian. *Hitler – 1889-1936: Hubris* (London, 1998), pp.450-52, and notes 82-97, citing various other works. Kershaw however says the original 1933 measures (see below) "did not represent a pre-conceived Nazi motorization program."

5. Hanfstaengl, Ernst. *The Unknown Hitler* (London, 2005), pp.44-45; the inveterate name-dropper Hanfstaengl claimed that he himself had a passing acquaintance with Ford, ibid. p.30. On Ford's 75th birthday in 1938, he was awarded the Grand Cross of the German Eagle by Hitler; Nevins, Allan and Hill, Frank Ernest *Ford: Decline and Rebirth 1933-1962* (New York, 1963), p.169. By this time the German Ford company was an important supplier of trucks to the *Wehrmacht*.

6. Jochmann, Werner (editor). *Adolf Hitler: Monologe im Führerhauptquartier 1941-1944*. Die Aufzeichnungen Heinrich Heims (Hamburg, 1980), p.259 (Feb. 3-4 1942): "Selbst gefahren bin ich nie, aber ich war ein Autonarr." In *Hitler's Table Talk 1941-1944* (third edition, London, 2000), p.284, the relevant passage appears as "Although I've never driven myself, I've always been passionately keen on cars" – which somehow does not capture the full flavor of the German original.

7. Bullock, Alan. *Hitler – A Study in Tyranny* (Penguin edition, London, 1990), pp.134-35, and numerous other sources.

8. Taylor, Blaine. *Mercedes-Benz Parade and Staff Cars of the Third Reich* (Barnsley, Yorkshire, 1999), p.97, citing Schwarzwäller, Wulf *The Unknown Hitler: His Private Life and Fortune* (Bethesda, MD, 1989). It is however unlikely that this occurred as early as 1920, the date claimed by the authors.

9. See for instance Kershaw *Hubris*, op.cit., fig.19.

10. Toland, op.cit., p.194, citing Kallenbach, Hans *Mit Adolf Hitler auf Festung Landsberg* (Munich, 1943) or Heinz, Heinz A Germany's Hitler (London, 1934) which includes reminiscences by the warder Hemmrich. For the claim that Hitler read the Ford book, see Sedgwick, op.cit., p.163. Borgeson, Griffith "In the Name of the People: Origins of the VW Beetle", in Shuler, Terry (editor) *The Origin and Evolution of the VW Beetle* (Princeton, NJ, 1985), p.14, claims that it was Werlin who gave Hitler the Ford book. Borgeson's article originally appeared in *Automobile Quarterly* Vol.XVIII, No.4 (Kutztown, PA, 1980), pp.340-61.

11. Hanfstaengl, op.cit., p.233 et passim; Kershaw, op.cit., p.485, attributing the description to Hanfstaengl.

12. Kruk, Max and Lingnau. Gerold *100 Jahre Daimler-Benz – Das Unternehmen* (Mainz, 1986), pp.87-88, 108, 128-29.

13. Pohl, Hans; Habeth, Stephanie, and Brüninghaus, Beate. *Die Daimler-Benz AG in den Jahren 1933 bis 1945* (Stuttgart, 1986), pp.35-36, citing various sources, including Werlin's manuscript autobiography *Ein Leben für das Auto* (Daimler Archive, Stuttgart).

14. *Hitler's Table Talk*, op.cit., p.284; the passage appears in Taylor, op.cit., picture caption p.30 as "I can claim credit for the things that make the Mercedes car so beautiful today! In drawings and designs, I tried hard – year after year – to perfect that shape to the utmost." The present author does not have the German original to hand.

15. Borgeson, op.cit., pp.18-23, 27, using material from the collection of L Scott Bailey.

16. Taylor, op.cit., pp.112-17 et passim, citing Kempowski, Walter. *Did You Ever See Hitler?* (New York, 1975).

17. Kershaw, op.cit., p.363.

18. For this and references to the NSKK in the following, see Hochstetter, Dorothee *Motorisierung und "Volksgemeinschaft" Das Nationalsozialistische Kraftfahrkorps (NSKK) 1931-1945* (Munich 2005), pp.122-31 for Hühnlein biography; also the NSKK magazine Deutsche Kraftfahrt 1933-38.

19. Grunberger, op.cit., p.287.

20. For the German original *NSKK Marsch "Wir ruhen nicht, wir rasten nicht"* see www.ingeb.org, section WWII Songs.

21. Summarized for instance by Borgeson, op.cit., p.18.

22. On the *Autarkie* efforts see for instance Jeffreys, Diarmuid *Hell's Cartel IG Farben and the Making of Hitler's War Machine* (London, 2008-09) for synthetic fuel and rubber; Meyer, August *Hitlers Holding Die Reichswerke "Hermann Göring"* (Munich and Vienna, 1999) for steel production.

23. Reuss, Eberhard. Hitlers *Rennschlachten Die Silberpfeile unterm Hakenkreuz* (Berlin, 2006) p.72, p.348 (and note 69) et passim.

24. Day, Uwe. *Silberpfeil und Hakenkreuz* (Berlin, 2005) is particularly good for its study of the impact of motor racing in popular culture.

25. Kaftan, Kurt. *Der Kampf um die Autobahnen* (Berlin, 1955), pp.24-33 for AVUS, pp.62-74 for the Cologne-Bonn road, and pp.74-88 for HAFRABA.

26. Schütz, Erhard and Gruber, Eckhard. *Mythos Reichsautobahn* (Berlin, 1996) pp.56-58.

27. Stommer, Rainer (editor.) *Reichsautobahn - Pyramiden des Dritten Reiches* (Marburg, 1982, 1995) has a number of interesting essays discussing both engineering and artistic aspects. See also Lendvai-Dircksen, Erna *Reichsautobahn – Mensch und Werk* (Bayreuth, 1937), a contemporary photographic tribute.

28. Overy, Richard J. "Cars, Roads, and Economic Recovery in Germany, 1932-38", *Economic History Review* (Glasgow), second series 28 (1975), pp.466-83.

29. Apart from the many volumes devoted to single makes (see additional references), useful books on German auto industry in general include von Seherr-Thoss, H C Graf *Die Deutsche Automobilindustrie* (Stuttgart, 1974) which is a chronology; and the two "standard catalogs" (Typengeschichten) of German cars between the wars, von Fersen, Hans-Heinrich *Autos in Deutschland 1920-1939* (fourth edition, Stuttgart, 1975) and Oswald, Werner *Deutsche Autos 1920-1945* (Stuttgart, 1977, and later editions).

30. Dähn, Ewald. *Simson Autos aus Suhl* (Berlin, 1988), pp.90-92

31. Feldenkirchen, Wilfried. *"Vom Guten das Beste" – Vom Daimler und Benz zur DaimlerChrysler AG – Band 1: Die ersten 100 Jahre 1883-1983* (Munich, 2003), p.156.

32. Borgeson, op.cit., pp.19, 31.

33. von Metternich, Michael Graf Wolff. *Edmund Rumpler* (Munich, ca. 1986), pp.183-87.

34. von Seherr-Thoss, op.cit., pp.336-37.

35. Sachs, op.cit., pp.55-56.

36. Quoted in *The Motor* (London), Feb. 19, 1935.

37. Original in Porsche Archive, Stuttgart; reproduced in full in English by Etzold, Hans-Rüdiger in *The Beetle The Chronicles of the People's Car Vol.2* (Sparkford, Somerset, 1990), pp.32-38.

38. Borgeson, op.cit., p.21.

39. Wiersch, Dr Bernd. *Die Käfer-Chronik* (Bielefeld, 2005), p.53.

40. Of many studies of early Volkswagen history, the most rigorous is Mommsen, Hans with Grieger, Manfred *Das Volkswagenwerk und seine Arbeiter im Dritten Reich* (Düsseldorf, 1996).

41. Margolius, Ivan and Henry, John G. *Tatra The Legacy of Hans Ledwinka* (Harrow, Middlesex, 1990), pp.92-93; Borgeson, op.cit., p.31.

42. See for instance Mommsen with Grieger, op.cit., for Volkswagen; Werner, Constanze *Kriegswirtschaft und Zwangsarbeit bei BMW* (Munich, 2006) for BMW.

43. See for instance Lupa, Markus *Das Werk der Briten 1945-1949* (Wolfsburg, 1999) and Richter, Ralf Ivan Hirst (Wolfsburg, 2003).

44. Dr Martin Löffler, counsel appearing for the defense of the SA, quoting prosecuting counsel in speech on Mar. 1 1946, *Nuremberg Proceedings* Volume 8, p.419, here quoted from The Avalon Project of Yale Law School, website avalon.law.yale.edu; for a more considered view, Hochstetter, op.cit., chapter XI, pp.421-77.

45. 1939 sales brochures for the *KdF-Wagen: "Der Wille des Führers ... ist Tat geworden"*; also *"Der KdF-Wagen – vollzogenener Wille des Führers"*.

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Golden West Motors Company

Pioneers in Four-Wheel Drive and Four-Wheel Steering

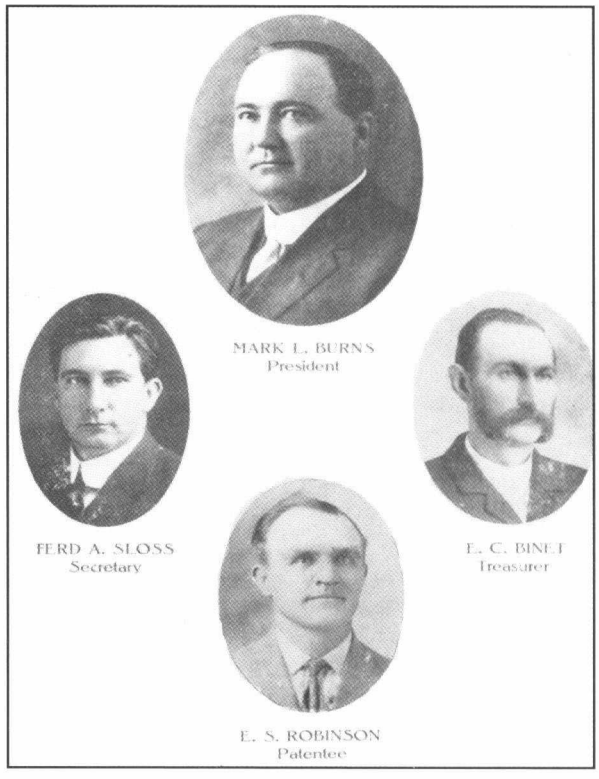
By Albert Mroz

Introduction

In the second decade of the Twentieth Century, Golden West Motors Company, now virtually unknown, built trucks that were innovative in design and which held a lot of promise for a small start-up company on the West Coast. They were nearly contemporaneous with the much more famous Jeffery Quad, which had been developed only a few months earlier by Thomas Jeffery in Wisconsin. The difference was that the two-ton capacity Golden West truck had four-wheel steering, and it was built in Sacramento, California, far away from the industrial centers and automotive factories of Indiana, Michigan, Ohio, New York or Wisconsin.

Edward S. Robinson, design engineer of the Golden West, held four patents that made his truck more than just an assembled vehicle, fabricated from parts purchased from independent component manufacturers, as many cars and trucks were constructed in the early years of motor vehicle manufacturing.

Robinson, who hailed from Oroville, California, founded the company in 1913 with Mark L. Burns as president; Ferd A. Sloss as secretary; and E.C. Binet as treasurer. Photos of the four men, along with very rare early factory and news photos from 1914-1916, give an accurate glimpse of this short-lived and obscure, yet significant marque, one of only two motor vehicle builders ever located in Sacramento. The other was the Blue and Gold Company (1910-1913).



Golden West was not the only American four-wheel drive vehicle manufacturer in 1914. By this time Couple-Gear, C.T. Electric, Duplex, FWD, Morton, Nevada, Walter and Ware were also building 4x4s. The only real contenders from this list were Duplex, FWD and Walter. Several others had already come and gone: the Four-Wheel-Drive Wagon Company (1904-1907), the American Motor Truck Company (1906-1912), the Cunningham Engineering Company (1900-1901), Aultman & Company (1901-1902), the Four Traction Automobile Company/Kato (1908-1913), and the Cleveland Motor Truck Manufacturing Company (1913-1914).

Getting down to business

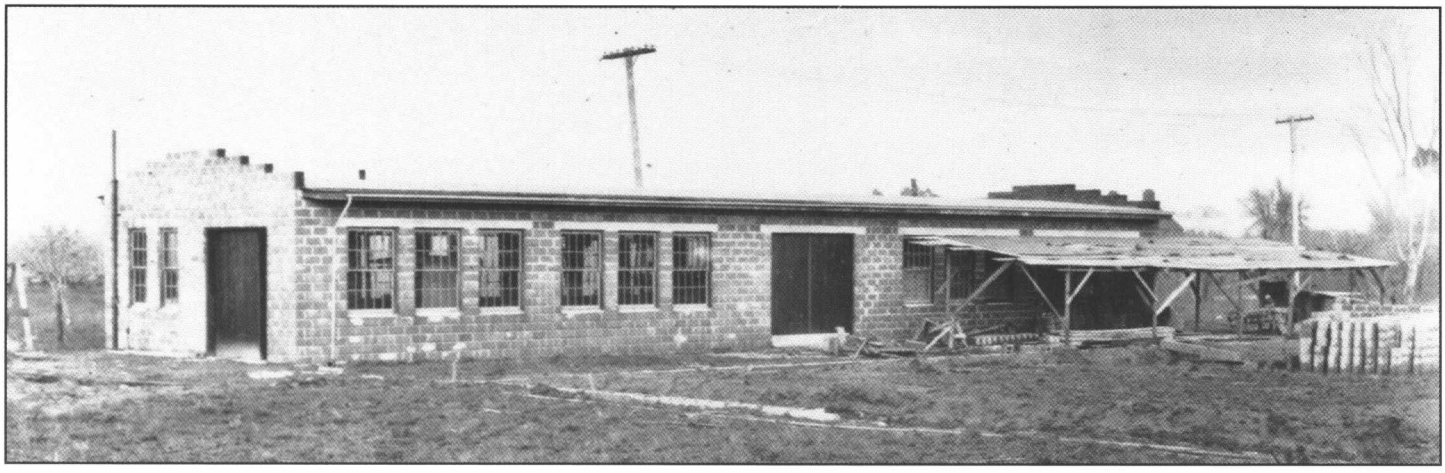
When Golden West Motors established itself in the Ochsner Building on K Street at 7th Street near the Capitol, the press announced that the company had acquired six acres at Park Villa on Riverside Road in south Sacramento. *The Accessory and Garage Journal* of November 1913 announced: "The Golden West Motors Company... is to erect a large building in which modern machinery will be installed." In fact, a fairly crude cinder block shop, measuring 30 x 100 feet, was quickly thrown up by the end of 1913. One photo shows the factory in progress, another shows a finished factory and a truck chassis being assembled on wooden sawhorses over a clay floor. The building of another factory, this one 100 x 200 feet, was announced in the December 25, 1913 issue of *The Automobile*, but it's quite certain that no such building was erected by Golden West.

The first two Golden West trucks, finished early in 1914, were fairly advanced for the era. The Sheldon worm-drive axles were state-of-the-art at a time when chain drive was more common. Edward Robinson obtained the following U.S. patents: Steering and Driving Mechanism for Motor Vehicles (Patent Number 1,092,744); Steering-Gear for Automobiles (Patent Number 1,092,745); Brake (Patent Number 1,092,746); and Transmission Gearing (Patent Number 1,092,747). As can be observed from the consecutive numbers, all four were issued simultaneously, awarded and published on April 7, 1914.

Very few patents had been awarded for any four-wheel drive designs up to that time. There were three, awarded first to Gustave Hoffman in England (1901), then William B. Bard in the U.S. (1904) and Otto Zachow of FWD (1908), the latter being the most significant.

The initial design of the Golden West truck incorporated a four-cylinder Continental engine mounted on a sub-frame. Springs supported the sub-frame over the main chassis frame. The wheelbase was 132 inches. The transfer case included a Whitney Silent Chain, another innovation.

In June of 1914 *The Sacramento Bee* announced that the new company would be officially christened in July. A parade was organized, and a Miss Phennette Miller was selected to do the christening by having gathered a "huge number of votes" according to *The Sacramento Bee* at a time when the entire Sacramento County had a population of 60,000. (As of this writing it is 1.2 million.)



Fun and games

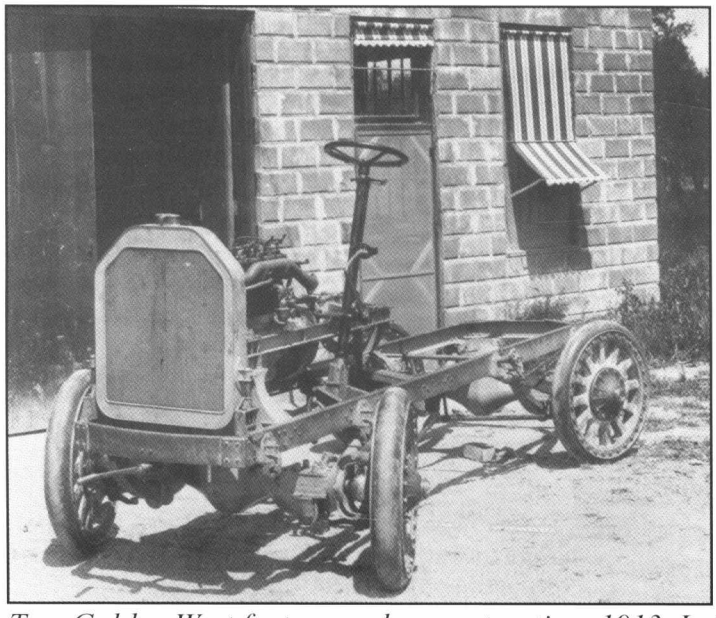
On January 1, 1915, Golden West staged a game of truck polo in a downtown sand lot near K and 9th Streets. In its February 15, 1915, issue, *The Commercial Vehicle* heralded the polo match between two Golden West trucks, stating "Motor polo with Fords has become nationally familiar, but the idea of playing the game in a bog of sand with 5,000-pound trucks is novel both from a sporting viewpoint and as a demonstration of the tractive ability of the four-wheel-drive truck." The article further stated: "The Robinson four-wheel-drive-and-four-wheel-steered-worm-driven tractor" had been taken through a 7,500-mile test.

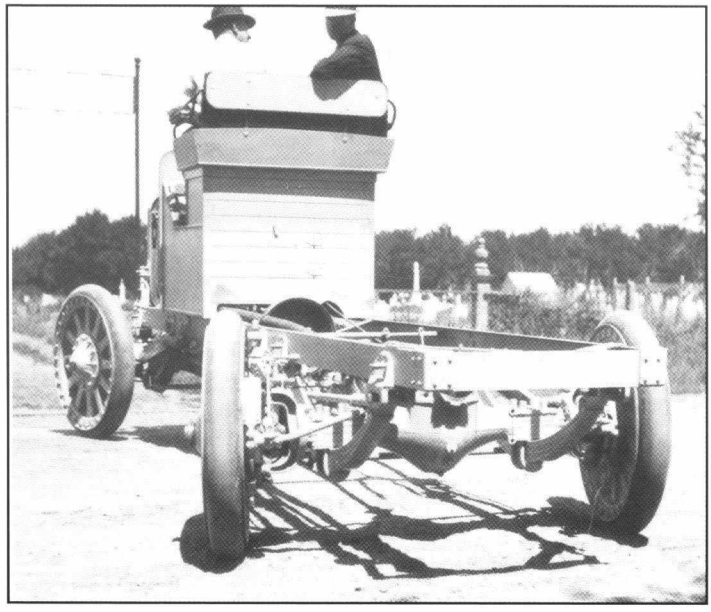
By the end of 1915 Golden West had built a small number of two-ton trucks. Photos on the company's stationery showed several Golden West trucks that year including flatbeds and stake bodies. One was sold to the Natomas Consolidated Company, which used it to carry dredger buckets weighing 6,800 pounds.

The Sacramento region was growing rapidly. The Southern Pacific Railroad had established a large maintenance and repair facility at the confluence of the Sacramento and American Rivers. There was also the Globe Iron Works, Mather Field and Holt Caterpillar tractors were being built in nearby Stockton. As World War I exploded across Europe, new business opportunities in the military-industrial complex began developing across the country. So, too, did the discord of the stockholders at Golden West.

Reorganizing again

In January of 1916, San Francisco had its first truck show, which took place at the Palace Hotel. Golden West had an exhibit, along with Dart, Denby, Doane, GMC, Hewitt-Ludlow, Kelly, Metz, Reo and a few others. Whether or not the show was a success is not known, but what is certain is that by August, Golden West was completely reorganized. In February, *The Automobile Trade Journal* announced Golden West's new company officers were now C.W. Hornick, president; S.T. Breyer, vice-president; C.C. Anrim, second vice-president and Stephen A. Byrne, secretary. At that time the press also stated that the company was now called Robinson, but there was no mention of Edward Robinson himself nor what role he was playing in the company named after him. By the middle of 1917, the faces at Golden West changed again, with Neil R. McAllister as president, J.E. White as vice-president and Melvin E. Day as secretary and treasurer. Manufacturing was interrupted for a year.

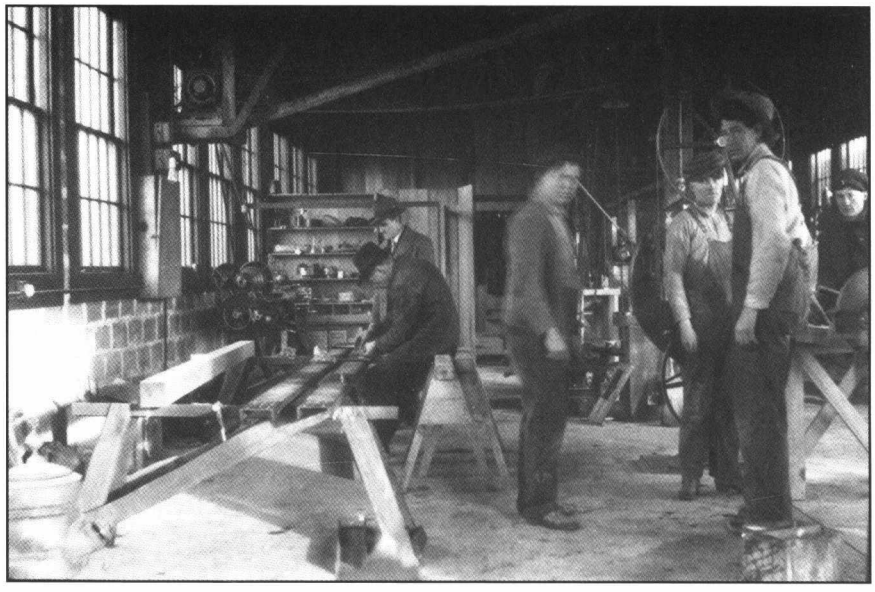




Top, Golden West factory under construction, 1913. Left above, the first Golden West running chassis. Right above, four-wheel steering is prominent in this rear view. *Hays Antique Truck Museum*

In the July 12, 1917, issue of *The Sacramento Bee* it was reported that Lee Gebhart, attorney for Golden West, announced that watered-down stock was removed and 10 cents per share was levied on $455,000 of outstanding shares. The letter from the office of H.L. Carnahan, Commissioner of Corporations, announced that 175,000 shares owned by Mark L. Burns were canceled. The company's tangible assets were $30,000 as of July 12, 1917, while it owed $18,000. The Commissioner also stated that a quarter million dollars would be needed to engage in general truck manufacturing. He was quoted in *The Sacramento Bee*: "It is clear that it is impossible for the company, in its present condition, to raise any such amount."

Lee Gebhart, the company's attorney, left for Washington in June of 1918 to try to obtain a government contract, a little belatedly. Publicity regarding the company's financial and legal woes would be an additional hindrance to finding new investors.



Workers lay out chassis rails, Golden West factory, Sacramento, California, 1914. Hays Antique Truck Museum

The beginning of the end

On April 7, 1919, matters deteriorated, and *The Sacramento Bee* explained the situation in the following terms: "Another chapter today is being added to the already lengthy and somewhat thrilling history of the Golden West Motors Company at the meeting of stockholders at the company's plant on Riverside Road where a battle of proxies is being waged..." On April 14, *The Sacramento Bee* followed up with "The meeting of the Golden West Company held several days ago, when five directors were removed and others named to take their places, and in which Abe Ruef gained control of the company, has been found to be illegal because the company had not paid its corporation tax." Clearly, major financial troubles at the company were exacerbated by infighting among directors and stockholders.

At some point during this wrangling it was decided to switch to Buda engines and to redesign the trucks. They were simplified by abandoning the complex four-wheel steering feature. As impressive as four-wheel steering may have been, making the turning radius much smaller, its complexity considerably raised the cost of manufacturing. Also, four-wheel steering made it impossible to drive away from a curb, wall or fence. While the front wheels turned away, the rear wheels turned in toward the parallel line. In the open field this was not an issue, but in any close situation it would be nearly impossible to drive away from any such obstacle. The linkage for four-wheel-steering under the chassis was also vulnerable to damage, especially off-road, for which the trucks were designed.

The Automobile Reference Manual listed Golden West as late as 1921. The Model H and HT of 1920 and Model K of 1921 were all listed with a $5,000 price tag. *Motor Age* of November 9, 1922 listed the company only as Robinson; however, other publications referred to the company as Big Four. This name was used after yet another reorganization, and there was some proof that a few trucks under this name were actually built, including the discovery in 1992 of one Big Four truck at Stockton, California, with chassis number of 1002 on its escutcheon. By 1922, Big Four became a dealership only, and despite the notable patented innovations and industrious efforts, the feuding parties of Golden West, Robinson and Big Four faded into the golden California sunset.

A machine designer in Silicon Valley for more than 20 years, Albert Mroz *is the author of* American Military Vehicles of W.W. I *and* American Cars, Trucks and Motorcycles of WW I, *both from McFarland Publishers, and* The Illustrated Encyclopedia of American Trucks and Commercial Vehicles *from Krause Publications. He has also published articles in more than twenty periodicals, including* Automotive History Review, *mostly about transportation history.*

Truck polo in Sacramento on New Year's Day, 1915, demonstrated the versatility of four-wheel steering. Hays Antique Truck Museum

Letters

Adler's Industry Exit

I completely agree with Peter Engelhard's argument (*AHR* 51) that it was the presence of the Volkswagen in the small car sector which to a great extent decided Hagemeier in favor of abandoning post-war Adler car production. I would argue that already in 1939, some German car makers were showing signs of voluntarily moving their products upmarket to avoid confrontation with the KDF-Wagen - certainly DKW and Ford. Opel would probably have stayed in this sector with the Kadett. Postwar, the Kadett tooling was taken by the Russians, DKW only came back in West Germany in 1950 and then with a model which was a price class above the Volkswagen, and Ford also stayed above the Volkswagen level with the Taunus, which was more of a competitor for the Opel Olympia.

But one factor which I think that Engelhard overlooks is that pre-war Adler (like BMW and Hanomag) had relied mainly on Ambi-Budd in Berlin for the supply of standard steel saloon bodywork. After the war, the Ambi-Budd factory was in East Berlin, and had in any case been heavily bombed. So Adler had no ready source for bodies. The two post-war Trumpf Junior prototypes of 1948 were bodied by Karmann of Osnabruck and Wendler of Reutlingen. Although their factories were at least on the right side of the Iron Curtain, with respect neither company would have been able to manufacture bodywork in the quantity that conceivably would be required by Adler - and their bodies would probably have been too expensive anyway. The prototypes were also somewhat old-fashioned in looks. Oswald (*Deutsche Autos 1920-1945,* p. 26) says that "body supply had been secured" ("die Beschaffung ... der Karosserien war gesicher") which may have been the case but only as far as it went.

It is of interest that the loss of Ambi-Budd as a supplier may also have had an adverse influence on the post-war plans of Hanomag and BMW. Hanomag never made it back into car production except for the few Partner prototypes of 1951. BMW's reappearance in West Germany followed around the same time, and they had a lot of problems sourcing bodywork. Some pre-war BMW body dies had actually survived, and were used for the EMW in East Germany.

Another factor is that the Trumpf Junior in 1948 was a 14-year-old design, in some respects modern enough but with a low-power side-valve engine, no synchromesh and mechanical brakes. On the post-war prototypes I understand that the gearbox was at least moved in front of the front axle line, so the engine was moved forward as well, thus freeing up extra space between the axles, but the packaging was still tight as it often was on early front-drive cars. What Adler really needed in 1948 was an all-new car like Borgward's Hansa 1500.

The question not addressed by Peter Engelhard is whether Adler could have established their own body production on a sufficiently large scale. If they were to do so, a considerable investment would have been required, and one secondary source - Montagu, *Lost Causes of Motoring Europe Vol. 1* - says that "Marshall Aid had ignored Adler" (p.34). This might require closer examination, but the Marshall Aid factor is what rescued Alfa Romeo and fatally weakened Lancia. Nor did Adler have any expertise in body building. Even if Adler had overcome these hurdles, with a new body designed to fit the Trumpf Junior chassis, they might only have locked themselves into that kind of dilemma from which neither Hudson in the USA nor Singer in Britain could escape: being saddled with a rapidly dating body style and no money to replace it.

Montagu goes on to say that even in 1951, "all [Adler] spares *save body parts* [emphasis mine] were still available." Further on, he mentions that Volkswagen took over many of the Adler dealerships in Germany, and the loss of a viable dealer network in their home market could have been another factor mitigating against Adler resuming car production. I suspect that many of their pre-war export markets were in Eastern Europe and therefore closed to them, even if Scandinavia would still have been open to them.

In conclusion I feel that the probably unresolved question of body supply must have been an important factor behind Hagemeier's decision to abandon car manufacture.

Anders Ditlev Clausager
Birmingham, UK

Peter Engelhard replies:

Material obstacles like short supply of bodywork or insufficient funding were very common in postwar Germany's economy. Those problems were in principle resolvable by entrepreneurial acumen. There is plenty of historical evidence for that and, most evidently, Hagemeier was a highly able entrepreneur. But there was one single point that was potentially lethal to Adler and that was completely beyond his own control: looming over-capacity because of Volkswagen's advent. I consider this to be a most crucial point.

The Forgotten Hydra-Matic

There is one small error in my Holden Manaro article in Issue No. 51 that is sure to elicit a response from your Australian readers: the Hydra-Matic automatic transmission fitted to Holdens in 1961 was a three-speed, not a four-speed. This was replaced by the two-speed Powerglide transmission fitted to the HD, HR, HK, HT and HG Holdens (1965-1971). This, in turn, was superseded by the Trimatic gearbox.

Paul Murrell
Macclesfield, South Australia

The editor replies:

Mea culpa. While proofreading that issue for my predecessor, *Taylor Vinson*, I suggested that "three-speed Hydra-Matic" seemed out of place for 1961. It was my recollection that three speeds came in with the Turbo Hydra-Matic in 1964. I see I was mistaken. I believe the transmission you refer to is what in the USA was called the "Roto Hydra-Matic," sometimes referred to as "Slim Jim," used on some Oldsmobiles and Pontiacs from 1961 to 1964.

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