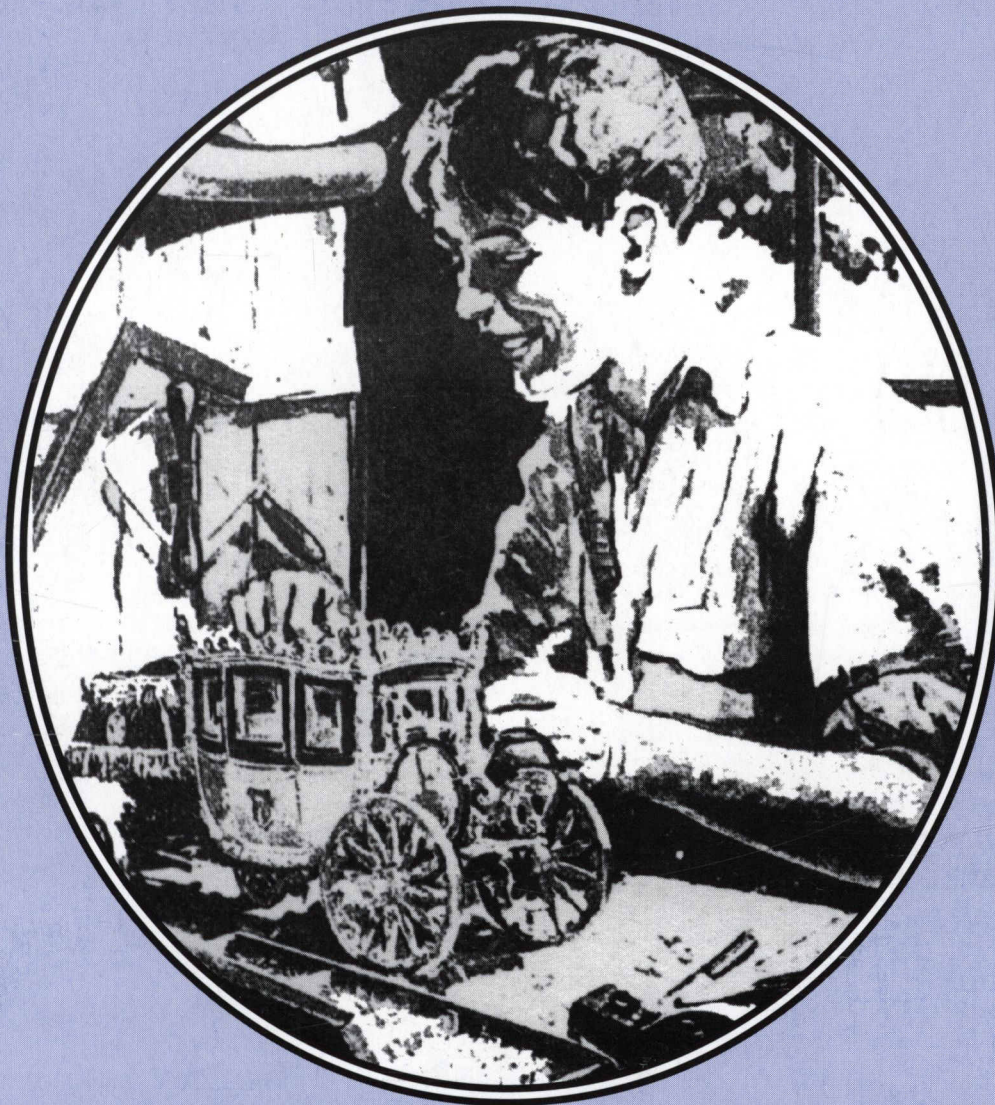


AUTOMOTIVE HISTORY REVIEW

Spring 1999



Issue Number 34



Proceedings of the 1998 Automotive History Conference
Henry Ford Museum, Dearborn, Michigan

A PUBLICATION OF THE SOCIETY OF AUTOMOTIVE HISTORIANS, INC.

EDITOR'S NOTES:

This issue is comprised of the papers and the abstracts of papers presented at the Second Automotive History Conference, "Interpreting the Automobile," held in Dearborn, Michigan, September 9-12, 1998. In a sense, *Review* No. 34 is a reprise of the *Review's* efforts two issues ago (No. 32, Spring 1998) to report these proceedings to the members of the Society of Automotive Historians. SAH and the National Association of Automotive Museums were co-sponsors of the Second Conference, which was facilitated by the Henry Ford Museum & Greenfield Village.

The 1998 Conference was smaller than the 1996 one, attracting 80-some participants compared with 120-some. There were fewer presenters, also, and three who were scheduled to appear did not do so. Hence, the smaller size of this issue in comparison with No. 32 which reported the first Conference. The felicitous result was that a participant could attend all sessions devoted to the automobile and not be confronted with the difficult choices that faced those who attended the first Conference.

The second Conference was enhanced by visits to the Museum/Village, the off-site storage facilities of the Museum, a trip to Ford's River Rouge steel factory, and the Automotive Hall of Fame, newly opened on the perimeter of the Museum parking lot. The two-day annual old-car festival began on Saturday, and when I say old, I mean old; there didn't appear to be any vehicles newer than 1932.

The opening session was a panel presentation titled "How to Get Started in Automotive History." Led by *Sinclair Powell*, the president of the Society of Automotive Historians,

it covered the field of choosing a topic, researching it, and publishing the resulting knowledge. Sinclair tells us how to do the basic research with his comprehensive guide to sources. Even those of you who write professionally may wish to consult it to ensure that you are covering all bases. Having just finished writing the 450-page "The Franklin Automobile Company," published by the SAE, Sinclair knows whereof he speaks. Other panel presenters were *Kit Foster*, *Richard Scharchburg*, and *Tony Yanick*.

The Conference welcomed back 1996 presenter *Robert R. Ebert, Ph.D.*, Buckhorn Professor of Economics, Baldwin-Wallace College, Berea, Ohio. Bob leads off No. 34 with "Milk Consumption, Milk Distribution, and the Rise and Fall of the Divco Truck Company." With John S. Rienzo, Jr., he co-authored *Divco: A History of the Truck and Company* (Antique Press Inc., 1997). Bob spoke at the 1996 Conference on "Medium-Priced Automobile Producers: Technological Change and Consolidation, 1928-1941" (See Abstract, p. 52, *Review* No. 32).

A second presenter who also contributed to the 1996 conference was *John A. Marino* whose "Workplace Culture: The Link Between Production and Quality: The GM Lordstown Assembly Plant 1964-1997" we present. John is a professor at Kent State University, Turnbull Campus, Ohio. His paper on Packard Electric Delphi at the '96 Conference was abstracted on p. 56, *Review* No. 32.

An *Automobile Quarterly* contributor, but one making his first appearance at a Conference was *John Jacobus*. John's early note on the

Fisher Body Craftsman's Guild competition was published in *Review* No. 19 (Fall 1985, p. 14), and led to an article on the competition published in *AQ* Vol. XXV, No. 2 (Spring 1987). He follows through for us with a paper on the earlier Napoleonic Coach Fisher Body competition, and traces the subsequent careers of some of the winners. A Guild prize winner himself, John's article is titled "Boys Just Wanted to Have Fun: Remembering GM's Fisher Body Craftsman's Guild (1930-1968); Nurturer of the Creative Male Soul." His co-author is Skip Gear, founder of the Fisher Body Craft Guild Foundation, which is located in Eagle Point, Oregon.

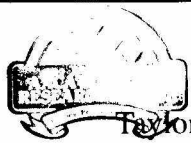
As you all know, the stars of the Henry Ford Museum are the Presidential Lincoln limousines. It was altogether fitting, then, that John Christie, professor of English at Indiana State University, spoke to the Conference about the best known of them, almost literally in its shadow. The one that was in Dallas. Thus we give you his "Parade Car."

No. 34 concludes with Abstracts of the remaining papers delivered at the Conference. The Petersen Museum in Los Angeles has offered to facilitate the Third Automotive History Conference, and it is tentatively scheduled for March 8-11, 2000. For further information, see the inside rear cover.

Our great appreciation to the authors and presenters who made this issue possible. And the same to our patient proofreaders, *Kit Foster* and *Pat Chappell*.

———Taylor Vinson

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**Front Cover: Partial cover art, "The Guildsman," official
magazine of the Fisher Body Craftsman's Guild, Vol. 1
No. 1, April 1934** (courtesy, John Jacobus)

**Rear Cover: The 1961 Lincoln Continental presidential
limousine as it appeared before its post-assassination
modifications** (courtesy, Thomas E. Bonsall)

Acknowledgments: The photographs accompanying the articles were provided by the authors, with courtesy attributions noted where requested.

Back Issues of Automotive History Review

We can offer sets of the 20 issues remaining in stock (numbers 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 23, 24, 26, 27, 28, 29, 30, 31) for \$70.00 postpaid in the USA. Single copies are \$5.00 each plus \$1.00 postage, except for heavier #30 which requires \$2.00 postage in USA, \$5.00 postage internationally. All payments in US funds, please, Mastercard and Visa accepted as well as checks. Orders and inquiries should be sent to Fred Roe, 837 Winter Street, Holliston, MA 01746-1159. Make check or money order payable to Society of Automotive Historians, Inc. Inquire for shipping costs outside the USA. This supersedes all previous lists and prices, which are no longer valid.

GETTING STARTED IN AUTOMOTIVE HISTORY

by Sinclair Powell

INTRODUCTION

You are a person with a broad, long-term interest in the history of the motor car. The time now has come when you wish to focus this interest on a specific subject; an automobile company that no longer exists but which at one time played a respectable role in the motor vehicle industry. Your goal is to produce either a book or a series of high-quality articles on your company in a periodical. How will you get under way with your work? More concretely, what are the initial steps you will take to begin research into this firm?

Many initial actions can be taken in the comfort of your own home or office, or in your home town. You will need to learn, of course, the exact years that the firm was in business, and the location or locations at which it operated, both state and city. Clearly, any general information you can glean about the firm at this initial stage - the names of its president and other key officers; the nature and special features of the vehicles it produced; the extent of its sales - will be of value. Obviously, individuals knowledgeable about your company could well be of assistance to you as you move ahead with your research. You will want to ascertain if a club exists which specializes in the vehicles of your company. If so, a key first step is to contact the officers of this organization, together with the editor of the club magazine or newsletter, if one is published, and the club librarian or archivist (joining the club is optional, but very likely advisable). If the publications of the club frequently contain articles dealing with the history of this motor car company and its product, you will want to secure, if possible, a complete set of such magazines or newsletters. A review of these articles should give you an initial perspective of the history of your company, which will be invaluable as

you move ahead with your work. Noting the names of the authors of quality articles will enable you to contact them in order to determine whether they might have background items which you might borrow for detailed examination. A check into the contents of the club library and archives also could prove rewarding.

As a member of the Society of Automotive Historians you should examine the Society's current Membership Directory to determine if any members also have an interest in your company or its products. Obviously you should contact these members promptly to ascertain what information (including documents) they might be able to give you. If available, rosters of multi-marque car clubs also should be checked to determine if there exist persons who own vehicles produced by the company you plan to research. These individuals might be able to furnish you with further useful information. Multi-marque club publications also may contain articles of interest to you.

As you begin your independent research, you will want to examine the *New York Times* Index during the years your company was in existence. Having obtained necessary citations, you then can read the articles in the *Times*, and either make copies or notes of them. You should also check the *New York Times* Obituary Index for death notices on top officials of the firm (these usually give useful career information). [Who Was Who in America](#) may contain brief biographical sketches of key people in the one-time automotive firm, as could state-level [Who's Who](#) publications covering an earlier era. Both are worth examining, as is the [National Cyclopaedia of American Biography](#).

Several periodicals have covered affairs of the motorcar industry from its early days (*Automotive Industries* is one

example). You should check the indexes of such publications for articles on your company and its products. You should also examine technical publications for similar items - these would include proceedings of the Society of Automotive Engineers and the American Society of Mechanical Engineers. *Scientific American* magazine may contain useful information, as will *The American Machinist*.

You should also utilize the Internet to seek sources of information on the firm and its key personnel. A search may well produce the names of libraries, historical archives and other facilities which have collections of research material dealing with the company and its key officers. You also can check *The National Union Catalog* on line, to determine if anything pertinent to your research in the way of graduate student dissertations or theses has been written in recent years.

ON-SITE RESEARCH

Having taken the steps outlined above, you next will want to schedule a visit to the city or town in which your motor car firm was located. Undoubtedly an important initial contact will be the local newspaper. Here, you should make a strong effort to convince the editor or other responsible person to authorize someone on the news staff to conduct a personal interview with you. A news story based on such an interview (preferably including a picture) will be of great value in letting people of the community know that you are initiating a major research study of the one-time important automobile company based in their city. The newspaper article should state that you would like to hear from persons once connected with the company, and their children or other relatives. The story also should emphasize that you are seeking

documents which in any way relate to the firm - business records and correspondence, diaries, any plant newsletter published by the company, etc. While at the newspaper you also will want to determine if it maintains a "morgue", a large reference file which might contain clippings or other material relating to the auto firm.

Two other organizations also will require early visits from you. You should call on the local public library in order to determine if it has items relating to the company. The local or county historical society must be contacted promptly to determine whether it holds items which in any way pertain to the firm. If any key business records of the one-time auto manufacturing company (such as board of director minutes) still exist, the historical society would be the most likely repository.

Additional local organizations could well be worth a visit. If the local automobile club dates back to an early period, it may have newsletters, records, etc. which deal with the company you are studying. A private organization such as a men's luncheon club may have in its archives interesting information on key persons connected with the auto company (here delicate negotiations often are required to convince the officers of the club that releasing such items for use in a publication serves an important historical purpose!). The local Chamber of Commerce and the area manufacturers association also could be sources of research data related to your auto company, and should be contacted.

On your initial field trip, a visit to the state historical society and the state library may be of definite value. Such institutions often keep in their archives information on companies which once existed in various cities in the state. You should contact the state agency which maintains records of incorporations and corporate dissolutions for information on the

automobile company (practices vary from state-to-state on this; the court house in the county where the firm existed also may have records on incorporations, and even copies of annual reports).

NATIONAL SOURCES

As you move ahead with your research, a visit to Washington D.C. may be highly desirable. In this city at least three institutions would be candidates for visits. The Library of Congress, with its huge holdings, may contain material of value. You should contact the U.S. Patent Office for information on patents taken out by the automobile firm or its employees. The National Archives and Records Administration (NARA) may have copies of correspondence between company personnel and offices of the federal government, and even hold records relating to company production and exports.

Certain university libraries and archives could be valuable sources of information. Once you have determined where key personnel of the one-time auto firm attended institutions of higher learning, you should contact these colleges or universities to ascertain if they maintain files on alumni, and if you might be granted permission to examine them (assuming the persons are deceased, such permission usually is granted to serious researchers). Don't forget yearbooks of college classes; check them to see if they contain information about the long-ago students. Libraries of major schools of business should be consulted to determine if they hold useful materials, such as annual reports on the one-time company.

FINANCIAL AND LEGAL SOURCES

You can obtain financial data on defunct companies for the years of the firm's existence from such sources as Moodys. *The Commercial and Financial Chronicle* also can be

consulted for reports and an occasional story on the firm, as can *The Wall Street Journal*.

If the one-time auto firm went through bankruptcy proceedings, you can obtain relevant records from one of the NARA's regional branches. However, the researcher first must obtain a locator number from the Federal Bankruptcy Court (a division of the Federal District Court) which handled the bankruptcy proceedings. The locator number then is used by personnel at NARA's regional repository to pull the bankruptcy file, which may be examined there or sent back to the bankruptcy court for your examination (they charge a fee for this, and for any copies made of pages of the bankruptcy record. The record cannot be removed from the court, of course).

You may also wish to check for other legal proceedings in which the company was involved, ranging from civil suits to complete company reorganizations. Court indexes in the county in which the firm was located will be your starting point in this search, although if appeals were taken, you may need to consult records of higher courts. You should be warned that copying of all legal records, whether court cases, deeds, articles of incorporation, or other items, normally is done only by personnel in the office handling such matters, and is very costly. You may wish to consider taking notes instead!

CONCLUSION

The research steps outlined above are basic, but additional approaches will suggest themselves as you move ahead with your work. A final comment is in order - document your research findings systematically and carefully as you go along, and at an early stage develop an outline covering the entire proposed project.

Good luck in this challenging effort!

Milk Consumption, Milk Distribution and The Rise and Fall of the Divco Truck Company

by Robert R. Ebert, Ph.D.

Introduction

Divco, originally the Detroit Industrial Vehicle Company, built trucks for home delivery from 1926 to 1986. It was the dominant builder of milk trucks in the United States from the mid 1930s through the 1950s. By the 1950s, over 75 percent of the milk delivered to homes was delivered in Divco trucks. During the history of the company, which went through several changes in ownership (see Appendix A), over 80 percent of Divco trucks were built for the home delivery of milk. The early success of Divco, and its emergence as an icon for the home delivery of milk, reflected the role of the automobile in American society. As motor vehicles became increasingly important in America, the home delivery of milk was motorized as a means of convenience and as a means of reaching customers who were moving further and further from dairies located in urban areas. Divco achieved success due to the motorization of home delivery but ultimately fell victim to the broader changes occurring in America as the automobile re-defined what convenience means for consumers.

The thesis of this article is that Divco achieved success as a motor vehicle manufacturer by capitalizing on the motorization of home delivery services, especially milk, in the 1925-1950 era. The decline of Divco, however, was associated with two factors: (1) changes in the consumption and retail sales patterns for milk which resulted in the home delivery of milk evolving from being a necessity to becoming a luxury service for which few people were willing to pay; and (2) the failure of Divco management to respond adequately to changes in the delivery truck market resulting in an inability or perhaps unwillingness to mobilize marketing and dealer efforts to meet the challenges of the emerging wholesale delivery truck market. The change in ownership of the Divco Truck Company in 1968 and its move to Delaware, Ohio from Detroit

signaled the end of Divco as a major factor in the delivery truck market. For the last 18 years of its existence, Divco became a limited production builder of trucks for the very specialized, niche market associated with the home delivery of dairy products.

Divco: An Historic Profile

The first Divco trucks were an innovation developed by George Bacon. In 1924, while chief engineer of the Detroit Electric Car Company, Bacon developed and patented an electric delivery truck that had four driving positions: front, rear, and both sides. That vehicle never went into production. However, Bacon and a group of associates formed the Detroit Industrial Vehicle Company (DIVCO) in 1926 which built an experimental delivery truck with a Le Roi gasoline engine.

The successful testing of the gasoline-powered truck led to the building of 25 experimental Model A Divcos with 3-point control, at the front and each side, in 1926. Divco trucks were well-enough developed

by 1927 to go into production. The Divco-Detroit Corporation was formed with \$1 million in capitalization that year with C.H.L. Flintermann, a Detroit industrialist, as president. Bacon continued to develop Divco products and was responsible for Divco's first production truck, the Model B with three point control and a Continental 4-cylinder engine (see *Automotive Industries*, May 28, 1927) (Fig. 1).

The Model B Divco continued in production until 1932 but was supplemented by the Model G with 2-point control on either side in 1929. Divco-Detroit Corporation purchased the Step-N-Drive Company of Buffalo, New York in 1930 to acquire patent rights for a low transverse aisle in the truck to make it easier for the driver to enter and exit the vehicle (see *Automotive Topics*, Sept. 20, 1930). Divco already had a low-platform truck with a patented drop-frame under development. With acquisition of the Step-N-Drive patent rights, Divco proceeded to market the drop frame vehicle as the Model H in 1931 (Fig. 2). The Model H was a conventional truck



Fig. 1 - The Model B, introduced in 1927, was the first production Divco. It featured 3-point control.

with a standard left-hand drive location. The multiple control points were eliminated, but the driver could operate

of the home delivery market were convincingly on the side of the truck. For example, *Commercial Car Journal*

undertook a study in 1932 that showed for a 15-mile dairy route, a single horse and wagon cost \$2.25 per day to operate while a truck cost only \$1.78 per day (*Commercial Car Journal*, Apr. 1932). In a June 1935 ad in *The Milk Dealer*, Divco claimed the full costs of operating a Divco Model S were \$1.72 per day compared to \$2.38 per day for a single-horse wagon and \$2.67 per day for other gasoline trucks.

The market rewarded Continental-Divco for its innovative Model S. According to Divco corporate records (used throughout this article), from an output of 203 trucks in 1933, production increased to 1,070 in 1934 and 1,661 in 1935. After several years of losses, Continental-Divco was profitable in 1935, but Continental Motors itself was having financial problems and decided to sell its Divco subsidiary. In a complex financial transaction, the delivery truck business of the Twin Coach Company

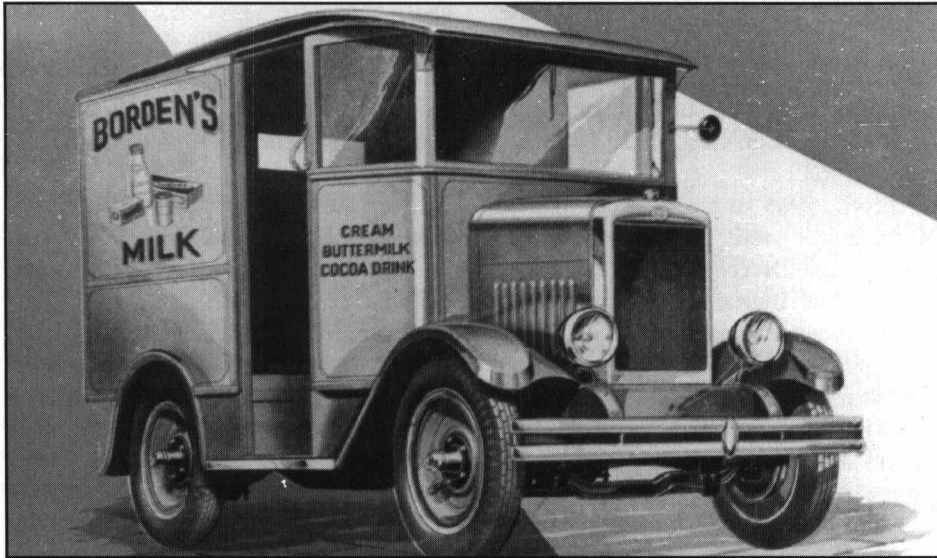


Fig. 2 - The 1931 Model H was the first Divco to use the drop-frame, a feature of all subsequent Divcos. (Courtesy, John D. Montville)

and exit or enter the truck easily from either a standing or sitting position because of the low transverse aisle made possible by the drop-frame.

Depression-era problems confronted Divco-Detroit Corporation and it was acquired by Continental Motors Corporation in 1932. Operational control over Continental-Divco was in the hands of John Nicol who had been president and General Manager of Divco-Detroit corporation since 1930 (see *Automobile Topics*, May 28, 1932). The most significant product development in the Continental-Divco era was the Model S which was a lighter and lower-priced Divco introduced in 1934 (Fig. 3). At \$1,140, it was 12 percent cheaper than the Model H and 20 percent cheaper than its immediate predecessor, the Model R. The Model S, which had operating costs 20 percent lower than its predecessors because its 4-cylinder Continental engine was able to idle seven hours on a gallon of gasoline, became an important step in Divco's emergence as America's most popular milk truck. Even though the Model S was 500 pounds lighter than previous Divcos, it maintained the company's reputation for ruggedness and reliability.

By the mid 1930s, the motorized truck was quickly displacing the horse in home delivery. However, the economics

"We know our Delivery Costs to the Penny - and our DIVCOS are Lowest of all!"

* CHEAPER THAN OUR SINGLE HORSE ROUTES
 CHEAPER THAN OUR TEAM ROUTES
 CHEAPER THAN OUR ELECTRIC ROUTES
 CHEAPER THAN OUR OTHER Gas TRUCK ROUTES

SIGNED
L. E. Sherman
 PRESIDENT
 FRANKLIN CO-OPERATIVE CREAMERY ASSN.
 MINNEAPOLIS, MINN.

HERE are some important facts about low delivery costs, for the executive charged with the big responsibility of selecting the right type of delivery equipment.

These figures are the high spots taken from a comprehensive cost accounting report covering 1934 operating costs as compiled by the Franklin Co-operative Creamery Ass'n.

As a result of this revealing record, this fleet owner has just bought 36 more DIVCOS! making a total of 67 DIVCOS!

The cost of operating horse routes has risen rapidly. The costs of maintaining and servicing worn out and inefficient motorized equipment is becoming too costly. As these costs continue to rise—DIVCO'S proved economy offers careful management the final solution of really low-cost milk delivery.

COMPARE THESE OPERATING COSTS:		— PER DAY —	
(Official Figures)		Jan. 1934	Feb. 1935
FRANKLIN CO-OPERATIVE CREAMERY ASS'N.			
SINGLE HORSE ROUTES		\$1.77	\$2.38
TEAM ROUTES		3.54	4.76
VEHICLE OPERATING COSTS (Jan. 1934 to Feb. 1935)			
COSTS: Per Day, Per Route	(Average Operating Costs)	\$1.77	\$2.67
14 GASOLINE TRUCKS		1.33	2.09
22 ELECTRICS		1.03	1.72
27 DIVCOS			

Continental-Divco Company

Fig. 3 - Low price and reliability made the Divco Model S an instant success. Here it is compared favorably with the horse. (Courtesy, Cleveland Public Library)

was merged with Divco in 1936 to form the Divco-Twin Truck Company. (*New York Times*, April 18, 1936). Frank and William Fageol of Twin Coach became principal investors with Twin Coach owning 17 percent of Divco-Twin shares. Although the Fageols were involved in both Twin Coach and Divco-Twin after 1936, it is important to note that Divco-Twin was a completely independent company and not a subsidiary of Twin Coach. Subsequently, Divco-Twin offered its own stock on organized exchanges. In 1944, the name of the company was changed to The Divco Corporation.

In 1938, Divco-Twin introduced the streamlined Model U snub-nosed delivery truck (Fig. 4). The Model U was the most

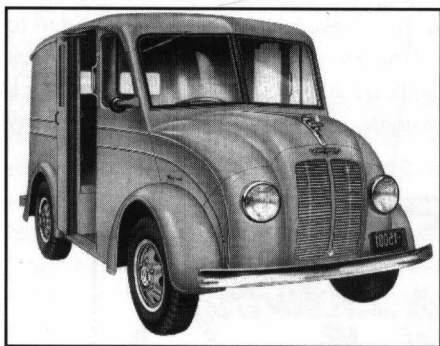


Fig. 4 - The Divco Model U, introduced in 1938, became the design that defined "milk truck" for Americans for nearly 50 years.

important model ever produced by Divco. Although the Model U Divcos went through many evolutionary changes in the 48 years they were produced, the snub-nosed front end design remained largely unchanged and became the truck's and company's most identifying feature until the end of Divco production in 1986.

In the 1938-1986 period, Divcos were powered by a number of engines including Continental 4-cylinder engines, Hercules, Nash and Ford gasoline engines, and Detroit and Perkins Diesel engines. Snub-nosed Divcos were offered in a number of wheelbases through the years including the original 100-inch Model Us, and 127- and 115-inch models.

Divco remained an independent firm until 1956 when it merged with the Wayne Works, a builder of school buses, ambulance, and hearse bodies, to form Divco-Wayne Corporation. Although technically Divco purchased the assets of Wayne, the purchase was for Divco stock

which gave Wayne control of the new Divco-Wayne Corporation. Divco-Wayne became a diversified manufacturer of milk trucks, school buses, ambulances and hearses and mobile homes. As the milk truck business began to decline for reasons discussed below, Divco-Wayne sold the Divco truck unit in 1967 and merged with Boise-Cascade Corporation in early 1968.

From 1968 through early 1986, Divco trucks were built in Delaware, Ohio by the Divco Truck Company, a subsidiary of Transairco, Inc., owned by an entrepreneur named Glenn W. Way, which purchased the rights and tooling to build Divcos in late 1967 (Fig. 5). Glenn Way's interests evolved into a firm named Correct Manufacturing in 1973 which continued Divco production until 1986.

Divco production in Detroit was based on mass production, moving-conveyor assembly line techniques with output in the 2,000 to 6,400 trucks per year range during the 1945 to 1967 period¹. After production was moved to Delaware, Ohio, Divco trucks were virtually hand built on a limited production basis with output ranging between 100 and 300 units per year. Throughout the 60 years of its existence, milk trucks were the primary product of Divco with 88 percent of its sales to the dairy industry.

Milk Consumption and Milk Distribution

The market for dairy products was important to Divco. After World War II, that market began to change dramatically. At the end of World War II, in 1945, about 80 percent of the milk sold in the United States was home delivered. By 1963, the share of retail milk sales made through home delivery declined to 29.7 percent, and in 1985, the last full year of Divco production, only 1.5 percent of milk was home delivered. In the 1990s, home delivery of milk dropped to 1.0 percent of all retail milk sales.²

Until the 1940s, the widespread lack of home refrigeration (except for ice boxes) made daily home delivery of milk a necessity. In the 19th Century, the milkman presided over a horse-drawn wagon laden with small tin cans of milk. Using a quart measure, the milkman poured the amount of milk the customer wanted into a pitcher. Later, the dozen or so small tin cans were replaced with two larger ones equipped with stirrers (to mix

the unhomogenized milk) and faucets. By the 1920s, the motor truck began to emerge as a replacement for the horse-drawn milk wagon. The transition to motor trucks for home milk delivery was virtually completed by the end of the 1940s. However, the last known major dairy to convert from horses to trucks was a Philadelphia firm in 1963.

The transition to motorized home delivery of milk occurred at about the same time that major changes developed in milk consumption and retail distribution. Per capita milk consumption peaked in the U.S. during World War II. In 1945, consumption was 399 pounds of fluid milk and cream per person. By 1966 (the last full year of mass production of Divco trucks in Detroit), milk consumption had declined about 25 percent to 297 pounds per person. In 1985 (the last full year of Divco production), per capita consumption of fluid milk and cream was only 222 pounds. Consumption of all dairy products, which includes milk, cream, cheese, butter, and ice cream (as measured in fluid milk equivalent), peaked in 1942 at 832 pounds per capita and decreased to 604 pounds by 1966.

Both civilian and military milk consumption increased during the war even though, at times, milk supplies were tight. Civilian consumption rose as a result of improved economic and employment conditions and rising purchasing power. The increased consumption of milk also was consistent with the advice of nutritionists who considered milk a prime wartime food because of the high percentage of daily food requirements it supplies (see *The Milk Dealer* July 1943). Concern arose during the war that fresh milk might have to be rationed to meet both civilian and military needs. In the end, however, only cheese, butter and evaporated milk for civilian consumption were rationed.

Even though rationing of milk did not occur, there were significant changes during the war in the delivery of milk. As a result of the need to conserve trucks, fuel, rubber, and labor during World War II, the delivery of milk was converted to an every-other-day (EOD) system. When the refrigeration capabilities of households were limited, every-day delivery was a virtual necessity if families were to have fresh milk. The increased popularity of household mechanical

refrigeration plus the desire of drivers to have a day off each week led, at first, to six days per week delivery with each customer getting milk on alternate days and then later to five days per week delivery. Dairies embraced EOD because of the relatively high cost of home delivery. The cost of retail delivery (including collection of accounts) was between four and five cents per quart in smaller cities and up to six cents per quart in Chicago and New York. Four cents per quart was 28 percent of the 14.2 cents per quart average retail price of milk in 1942. Delivery costs of six cents per quart were 42 percent of the average retail price.

Labor costs also were increasing by the early 1940s. In 1929, the milk truck driver's average weekly earnings were equal to the farm price of 760 quarts of milk; by 1940, it was equal to the value of 1,320 quarts. Increased relative wages combined with a reduction in the number of retail customers per mile caused a serious cost problem for dairies. The reduction in customers per mile and reduced loads was caused by the shift from home delivery to store purchases which, in turn, was influenced by lower consumer income during the Depression and by an increase in the number of women working who found shopping at a grocery store on their way home from work convenient. For example, store sales of milk in New York City rose from 30 percent of the total in 1930 to 50 percent in 1941.

The war provided both an excuse and an opportunity for milk distributors to attempt to reduce delivery costs, and EOD service was a key element in the plan. After Pearl Harbor, EOD was adopted voluntarily by many milk dealers throughout the country. By May 1943, two-thirds of the milk delivered in the U.S. was on an EOD basis. That month, the Office of Defense Transportation issued an order requiring EOD for home delivery. Deliveries were made every day, but only half of the route was served on a given day, and two days' supply of milk was delivered at one time. The net result was a reduction in route mileage and, consequently, a reduction in delivery trucks needed.

Following the war, every-other-day delivery evolved into three-day-a-week delivery. Drivers enjoyed the three-day-a-week plan because it assured them of having Sunday and certain holidays like

Christmas off. Consumers liked the plan because they knew exactly which days each week they would get milk: half of the customers on a route would get milk on Monday, Wednesday, and Friday and the other half on Tuesday, Thursday, and Saturday. The elimination of Sunday deliveries meant 52 less delivery days each year with consequent savings in truck mileage. J.F. Malone, a representative of Borden's, a major national dairy company, reported at a Milk Industry Foundation convention in 1949 that a return to daily delivery from three-day-a-week would increase operating costs 2.5 cents per quart.

World War II, therefore, brought greater efficiency to the home delivery of

milk and other dairy products. The advent of three-day-a-week delivery reduced the mileage accumulated by milk trucks. As a result of trucks driving less mileage and making fewer trips, the load factors improved for milk delivery trucks. For example, in one Eastern market, a study of 1,051 milk routes showed that within one year of adopting EOD, the quarts delivered per route per day increased from 303 to 359 (an 18 percent increase) and customers per route increased from 290 to 311 (a 7 percent increase).

The Demand for Divco Trucks: A Statistical Analysis

The decline in the per capita consumption of milk and adjustments in

RETAIL DELIVERY TRUCKS



SNUB-NOSE

MODELS

306
AND
300



306 Model

- Wheelbase—115"
- Payloads—*6,000 to 8,500 lbs.
- Capacity—325 cu. ft. or 120 to 140 milk cases
- Gross Vehicle Weight—*15,000 lbs.
- Speed†—to 60 MPH
- Turning Radius—23'-0"
- Curb Weight—*5,770 to 5,930 lbs.
- Factory-Installed Insulation and Refrigeration Available



300 Model

- Wheelbase—115"
- Payloads—*5,000 to 6,000
- Capacity—256 cu. ft. or 100 to 120 milk cases
- Gross Vehicle Weight—*11,000 lbs.
- Speed†—60 MPH
- Turning Radius—23'-0"
- Curb Weight—*5,000 to 5,500 lbs.
- Factory-Installed Insulation and Refrigeration Available

*Varies Depending on Chassis Options and Driver Controls
†Depends on Engines, Axle Ratios and Wheel Sizes

Fig. 5 - Divcos built in Delaware, Ohio, carried on the snub-nosed tradition from 1968 to 1986.

home delivery patterns occurred coincidental with the emergence of grocery stores as an important retail outlet for milk. In the early 1900s, groceries and supermarkets carried milk as a convenience item to accommodate people who found they needed an extra quart after the milkman was gone.

The Depression of the 1930s hastened the rise of the retail store as an outlet for milk. The farm price and wholesale price of milk weakened early in the Depression. For example, the U.S. Department of Agriculture reported in the 1936 edition of *Agricultural Statistics* that the milk dealers' average buying price per hundredweight for 3.5 percent butterfat milk dropped from \$2.81 in 1929 to \$1.60 in 1933 before recovering somewhat to \$2.05 in 1935. However, even with the decline in milk prices at the dealer level, dairies were able to hold home-delivered prices firm for a while. Eventually, though, the chain grocery stores saw the increasing gap between retail and wholesale prices as an opportunity to obtain cheap supplies of milk and offer that milk to consumers at a reduced price on a "cash and carry" basis. For example, as early as 1922, Harvey Hood, II, of Boston's Hood Dairy complained at the Milk Dealers' convention that supermarkets were selling milk and cream below cost. Stores often used milk as a loss leader item, and many consumers, because of their economic circumstances, took advantage of the typical one to two cents per quart price differential to help their budgets.

In a 1941 article in the *Harvard Business Review*, Albert Freiberg argues home delivery of milk, far from being a necessity, had become a luxury because it was cheaper to sell fresh milk over the counter than to deliver it in quart bottles to the home³. The changing patterns of home delivery during the Second World War combined with home refrigeration capabilities made home delivery of milk less necessary in the 1940s. As a result, home delivery became a convenience and luxury for which a diminishing proportion of consumers was willing to pay. In addition, milk purchased from a chain store was cheaper than home delivered milk; therefore, the convenience of home-delivered milk became less important as people realized it could be purchased at a lower price along with other items at the store.

Changes in milk consumption by

American consumers and the emergence of grocery stores as major retailers of milk meant dairies were confronted with increased competition for home delivery. There was little doubt as to the objectives of food stores in the competitive battle over milk. At the 48th Annual Convention of the National Association of Retail Grocers (held in San Francisco from June 22 to 26, 1947), L.V. Eberhard, who owned a chain of grocery stores in Grand Rapids, Michigan, made the following statement:

Milk as a daily need is the main item in this [dairy] department and should be the important factor luring Mrs. Consumer to your store more times per week. The more you can get her to depend on you for her daily wants, the sooner she steps into your doorway, the better chance you have of selling her items from the grocery, meat, and produce departments. *We should do all in our power to help move the milk business from home delivery to the retail stores* [italics added for emphasis] (*The Milk Dealer* August 1947, p. 134).

The major competitive advantage the grocery stores had was their pricing. The only years for which comparative data are available on the delivered price and store price of a half-gallon of milk are 1956 through 1965. In 1956, the national average price of a home-delivered half-gallon was 48.4 cents while for a store-purchased half-gallon it was 43.5 cents, for an almost 5 cents or 11 percent differential. By 1965, the home-delivered price had increased to 52.6 cents, and the retail store price averaged 46.2 cents for an absolute difference of 6.4 cents or a nearly 14 percent differential. In terms of both the cents per half-gallon and percentage spread, the price of home-delivered milk was increasing relative to store-bought milk.

The principal market for Divco Trucks was for the home delivery of milk. The changes in milk consumption and pricing and in the composition of the labor force, particularly following World War II, suggest variables that may be associated with the decline in the fortunes of The Divco Truck Company.

Through correlation analysis and the testing of alternative model specifications, it was demonstrated that production of Divcos was most closely related to the real (inflation adjusted)

half-gallon delivered price of milk, the participation rate of women in the labor force, and the decrease in per capita milk consumption. For example, one possibility is that the increased number of grocery stores made shopping for milk more convenient. However, the number of grocery stores in the United States was omitted due to an inadequate data sample. Another variable omitted from the analysis is the length of time trucks would be used. A longer truck life would mean lower demand for new trucks. Unfortunately, accurate time series data on Divco truck life is unavailable. Also excluded as a possible variable is the increase in home refrigeration capabilities, which meant people could store milk longer, which, in turn, reduced the number of times per week milk had to be delivered to the house. As noted earlier, we also examined the pricing and consumption of food items other than milk and dairy products. Although a home-delivered half-gallon of milk increased in price by 50 percent between 1946 and 1965, and all dairy products (on average) increased in price by 38 percent, other consumer prices rose by a larger amount. The Consumer Price Index for all items increased by 59 percent and for all food consumed at home, it increased by 64.4 percent in the same period. Therefore, milk and other dairy products became cheaper relative to other goods in general and other foods in particular.

Overall, in spite of the limitations of statistical analysis, it is concluded that variables suggested by economic theory are associated with three-fourths of the demand for Divco trucks. The rising price of home-delivered milk caused consumers to substitute store bought milk, thereby decreasing the demand for home delivery and Divcos. Changing consumer tastes in food products led to a decrease in per capita consumption of dairy products. Many of the products for which per capita consumption rose increased in price by a larger percentage than dairy products but still enjoyed growth in demand. The decreased per capita consumption of milk accompanied by substitution of other food products also reduced the demand for home delivery of milk and Divcos. Although the statistical results are less robust for the association between an increasing labor force participation rate for women and the decline in demand for Divcos, the results

are intuitively sensible. As more women went to work outside the home, it became more convenient for them to shop at supermarkets for all their grocery needs including milk, thereby contributing to the decline of Divco.

Divco's Response to the Market

The statistical results indicate that Divco was a supplier to a declining industry - at least declining in its relative importance to the American consumer. Rising incomes meant fruits and vegetables, sugars and sweets, and meats commanded an increasing share of the consumers' food dollar. As Americans became more affluent, they consumed less milk and more of other food products. As the home delivery of milk began to decline, Divco adjusted by offering dairies larger trucks with more capacity. The suburbanization of America meant milk trucks had to travel longer distances with larger and heavier loads. In 1940, only 15 percent of Americans lived in suburbs in metropolitan areas. By 1950, suburbanites accounted for almost 25 percent of the population, and in 1960, over 30 percent of the U.S. population lived in the suburbs. The 1970 census reported that almost 40 percent of Americans were suburbanites. By 1980 and 1990, the share of the population living in suburbia was about 45 percent and 47 percent respectively. (Landlines). Therefore, to survive in the competitive environment, Divco had to "suburbanize" its trucks to accommodate longer routes in suburban areas. Adapting its trucks to the suburbanization of America meant increasing the size of the trucks to accommodate longer routes. Beginning in 1939, Divco offered, as an option, trucks that could carry 85 iced wooden cases of milk which was an increase from 50 cases for its basic truck model. By 1948, Divco offered models capable of carrying 96 iced wooden cases and by 1965, capacity was increased to 116 cases. Divco was reliant on the milk-delivery market. Although it had a dominant position in that market, it was in the difficult position of being a supplier to a declining industry. Early in its history, Divco recognized the importance of broadening its appeal beyond the milk-delivery market. In order to attract a wider range of customers, it published a large and impressive brochure in the late 1920s entitled, "Facts About House-to-

House Sales" that attempted to expand the market for Divcos by convincing bakeries they should engage in home delivery.

In 1938, Divco published a brochure introducing its new line of trucks entitled "Divco-Twin Presents a Sensational New Model U," a truck that was designed for low-cost, door-to-door delivery for "Dairies, Bakeries, Laundries, Dry Cleaners, Department Stores, Parcel Delivery." Later in 1938, Divco issued a brochure specifically aimed at "Laundries, Dry Cleaners, Department Stores, Parcel Delivery, Florists, and Wholesale Bakeries". Unique features, including a low through aisle for the convenience of drivers and ability to idle seven hours on one gallon of gas, were enthusiastically described as meeting the needs of all forms of house-to-house delivery.

In spite of these efforts, however, only a very small percentage of Divco trucks was sold to non-dairy customers. In its 1941 *Annual Report*, the Divco-Twin Truck Company listed 60 customers who had purchased 40 or more Divco-Twin trucks as of December 3, 1941; these 60 customers had a total of 10,376 Divcos in use of which only 3.2 percent were for non-dairy purposes .

Following World War II, Divco faced competition from five large principal producers of trucks in the multi-stop market. Dodge, Ford, General Motors (GMC Trucks and Chevrolet), International, and White enjoyed market success in the 1950s as they increased their share of the multi-stop truck market while Divco's market share declined. These companies engaged in aggressive marketing of their multi-stop vehicles to the growing market for wholesale delivery trucks which included not only the dairy industry but also a wide range of retail industries.

The Divco "milk-truck" image was difficult to change. Although it was serviceable, reliable, and adaptable to a variety of uses, the Divco was still regarded as primarily a milk truck. To penetrate into the growing non-dairy multi-stop truck market Divco understood that a totally new truck had to be developed. The Dividend Series, introduced in 1955, was the Divco response to the changing conditions in the multi-stop truck market. The Dividend Series Divcos were quite different from the snub-nosed milk trucks Divco had

built with only minor styling changes for 17 years, since 1938. Dividend Divcos were forward control, large van-type trucks specifically designed for such industries as bakeries, wholesale florists, dry cleaners, and similar wholesale and retail operations. A line of small buses for urban transit and corporate use also was based on the Dividend Series Divcos.

The introduction of the Dividend Series probably prolonged Divco's life as a mass-production truck builder. After peaking at 6,385 units in 1948, Divco production declined to 2,959 in 1954. After the introduction of the Dividend Series, in the 1956 through 1960 period, Divco output was close to or above 3,000 units each year. Those were not record levels, but for a while, the production decline was halted. Although Dividend Series production was a small fraction of total Divco production (in the late 1950s and early 1960s, Dividend output ranged from 10 percent to 18 percent of total Divco output), it may have been the margin that kept the truck division of the Divco-Wayne Corporation in business.⁴ Nevertheless, the attempts to broaden the market for Divco trucks ultimately were not successful and the company continued to be heavily dependent on the milk truck business. In 1966, Divco-Wayne Corporation announced it was exiting the truck business with the following statement in its annual report:

"To strengthen ourselves internally, we initiated negotiations during fiscal 1966 for the sale of our Divco Division.

During the past 30 years, about 75 percent of all milk sold at retail was delivered in Divco trucks. However, the demand for dairy trucks has been static in recent years due to consolidations within the industry and the rise of supermarket sales. As a result, this division has shown the least growth. Pending the outcome of the announced possible sale, management will continue to pursue every avenue to keep Divco's operations profitable in 1967" (*Divco-Wayne Annual Report 1966*, 1, 10).

After the sale of the Divco Truck Division to Correct Manufacturing Company in late 1967 and the moving of production to Delaware, Ohio, the Dividend Series was discontinued and the Divco product line was narrowed to the snub-nosed models that had been in production since 1938. The strategy of a limited product line was consistent with a

“niche-marketing” approach to selling Divco trucks. Although other multi-stop delivery markets (laundries and bakeries, for example) were serviced, the last 18 years of Divco production targeted the traditional milk home-delivery market. While a declining industry, it was sufficient to provide an outlet for limited production Divcos through the end of production in early 1986.

Conclusion

The decline of The Divco Truck Company as a mass-producer of multi-stop delivery trucks was a function of changing conditions in its principal market. The decreased per capita consumption of milk, the increased number of women in the labor force and changes in their shopping patterns, and competition from grocery stores for the retail sales of milk all meant that dairies decreased their home-delivery services and consequently decreased their demand for Divco trucks. The changing food consumption patterns and spread between the retail store and home-delivered price of milk made the latter a luxury that Americans (depending on their personal circumstances) either could not afford or were unwilling to pay for. After a corporate ownership change and the cessation of mass production, Divco became a small, “niche” producer of milk trucks. From 1968 to 1986, Divco supplied milk trucks in limited production quantities to a declining number of dairies that maintained some home delivery. Ironically, Divco was a profitable product for its final corporate owner, Correct Manufacturing Corporation, even when the latter filed for bankruptcy in late 1985. That bankruptcy was caused by product liability judgments against Correct Manufacturing resulting from failure of a part on another of its products, Sky-Worker utility truck equipment.

For about 60 years, Divco was the dominant producer of milk trucks in the U.S. However, statistical analysis confirms that Divco’s decline was associated with fundamental changes in the consumption and distribution of milk, thereby causing its principal market to all but disappear. Although Divco attempted to appeal to other segments of the multi-stop delivery truck market, it was unable to challenge successfully a number of significant competitors in that market. Whether that inability to compete was due

to managerial failure at Divco, non-competitive products, or market dominance by its competitors is a discussion beyond the scope of this article. It is, however, fertile ground for future research.

Footnotes

¹ Mass production is a relative term. In automobile production, very large production volumes are necessary to achieve economies of scale (lowest per-unit cost). In assembly operations, in a single plant, that level of output is in the range of 250,000 units per year (White, 19-39). In specialty commercial vehicle production, however, where trucks are made for very specific conditions, function, and markets for which large mass producers may have difficulty adjusting their work, economies of scale may be achieved at much lower levels of output. By purchasing reasonably priced components from efficient suppliers and utilizing assembly methods which did not require large capital investments, a small specialty truck producer (like Divco) was able to be profitable on a few thousand units per year in the 1950s (Rhys, 79-89).

² Precise historic statistical breakdowns of how milk has been retailed are difficult to obtain. The United States Department of Agriculture did not start collecting data until 1963, and prior to 1977, surveys categorized methods of distribution other than home delivery as “wholesale” even though milk may have been sold through a retail store (U.S.D.A. 5).

³ Freiberg also argued that government resale price maintenance was the true cause of high milk prices, not the distribution system. The milk pricing system was complex. Basically, under the Agricultural Adjustment Act of 1933 and the Agricultural Marketing Agreement Acts of 1935 and 1937, a two-thirds majority of the farmers in an interstate region called a “milkshed” could establish the price paid by all milk dealers in the area. If the government relaxed these pricing regulations, Freiberg believed milk prices would come down (Freiberg 120-123).

⁴ Divco production data and Dividend series production data are taken from Divco Truck Company production order sheets and other company records in the possession of the author.

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Appendix A:

Divco: A Chronological History

<u>Year</u>	<u>Event</u>	<u>Comment</u>
1924	George Bacon applied for patent on 4-point control electric delivery truck.	
1926	Detroit Industrial Vehicle Company (DIVCO) formed by Bacon and associates.	25 experimental Model A Divcos built.
1927	Divco-Detroit Corporation formed.	Divcos go into regular production at Merrick Ave. plant in Detroit.
1930	Divco buys Step-N-Drive of Buffalo, NY.	
1931	Creditors Committee Formed to operate Divco. Model H introduced with drop-frame.	
1932	Divco-Detroit Corporation purchased by Continental Motors. Name changed to Continental-Divco.	Divco production moved to East Jefferson Ave. plant, Detroit
1935	Continental-Divco introduces lower priced Model S.	
1936	Continental sells Divco: Divco-Twin Truck Company formed through merger of Twin Coach delivery truck business with Divco.	
1938	Model U snub-nosed Divco introduced.	
1939	Hoover Road Plant of Divco-Twin built.	Body production for GMC and Mack is begun.
1941	Pre-war production peak of 2,799 trucks.	
1942-43	Truck production ceases during World War II.	Divco becomes aircraft parts sub-contractor.
1944	Company name changes to Divco Corporation.	Limited truck production resumed In December.
1946/47	Hoover Road plant expanded.	
1948	All-time production peak of 6,385 trucks.	
1955	Dividend Series Wholesale Delivery Trucks introduced.	

<u>Year</u>	<u>Event</u>	<u>Comment</u>
1956	Wayne Works and Divco merge to form Divco-Wayne Corporation.	
1958-1967	Divco-Wayne acquires several companies: becomes diversified manufacturer.	Primary acquisitions are in the mobile home industry.
1967	Divco truck operation sold to Highway Products of Kent, Ohio. Highway Products keeps postal van contract but sells Divco rights, tooling, and parts to G. W. Way of Delaware, OH.	Divco truck production ends in September 1967. Total production for 1967 = 926.
1968	Divco production begins in Delaware. Production limited to snub-nosed models.	Production in 1968 = 11 trucks.
1968-1985	Divco production continues in Delaware, Ohio by various interests associated with G. W. Way. Various company names included Transairco and Correct Manufacturing.	Peak production in Delaware was in 1970 when an estimated 282 trucks were built.
1985	Correct Manufacturing files for bankruptcy due to product liability suits associated with its Skyworker utility truck bodies.	Divco production in 1985 was an estimated 60 trucks.
1986	Bankruptcy Trustee orders completion of last three Divcos in February. Company assets sold at auction.	

Source: Ebert, Robert R. and John S. Rienzo, Jr. Divco: A History of The Truck and Company. Yellow Springs, Ohio: Antique Power, Inc. 1997. ISBN 0- 9660751-1-0

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WORKPLACE CULTURE: THE LINK BETWEEN PRODUCTION AND QUALITY, THE GM LORDSTOWN ASSEMBLY PLANT, 1966-1997

by John A. Marino

The Early Years with Chevrolet and Firebird

Six dynamite blasts hurled dirt and rock high into the air at 10:30 a.m. on September 29, 1964. In February 1956, plans had been made public that General Motors would build an assembly plant on a 928-acre site in the Northeastern Ohio Village of Lordstown, Ohio. Finally, after years of delay, ground was broken for the 1.5 million square foot assembly building of the Lordstown assembly plant. Chevrolet General Manager Semon E. Knudsen, Ohio Governor James Rhodes, and 3,500 guests attended (Fig. 1).

U.S. market. By March 1965, 37 employees from an estimated workforce of 5196 had been hired.

On April 28, 1966, Lordstown's first car, a 1966 Chevrolet Impala four-door sedan was produced (Fig. 2). Preferred for Helen Hart Hurlbert, the publisher of the local newspaper, this car is currently owned by GM.

A new product was soon added to provide an upscale competitor to the highly successful Ford Mustang. In January 1967, the first Pontiac Firebird was produced. By the end of May 1967, 50,000 Firebirds had rolled off the assembly line.

production to another plant and Lordstown production reverted exclusively to full-size Chevrolets, until March 13, 1970, when production of this car was halted to make way for the Vega.

The facility grew with the additions of van and fabrication plants. On March 16, 1970, the first van was produced. The van plant was scheduled to produce 33 vehicles per hour.

The years that follow would chart a fascinating history of GM's attempt to capture the small car market and the emerging culture of a new breed of American autoworker.



Fig. 1 - Cover of official program for ground-breaking ceremonies, Lordstown, Ohio, 1964. (Courtesy, GM Lordstown)

GM's initial plan was to build a highly automated, state of the art plant using union workers and paying union scale of \$4.60 per hour in wages and \$2.50 per hour in benefits. This plant was to be the Corporation's answer to the threat posed by Volkswagen, Toyota and other foreign car makers invading the

In October 1968, the XP 887 product was awarded to the Lordstown plant. The vehicle would be a high volume, low-cost, sub-compact import fighter called the Vega. By the end of 1968, combined Chevrolet-Pontiac production was 383,430 automobiles. In March 1969, GM transferred Pontiac Firebird

The Vega Years

In June 1970, the first 1971 Chevrolet Vega was produced at Lordstown (Fig. 3). The initial Vegas were well-manufactured and hugely successful, and by February 24, 1971, 100,000 had been made. In a testament to quality and innovation, the Vega was named the *Motor Trend* magazine's 1971 "Car of the Year." Sadly, the quality of the product would decline. Lordstown was producing 73.5 jobs per hour compared with an industry average of 55. From 1975 to 1977, the Pontiac Astre, a variation of the Vega, was also made. The Vega and Astre were replaced by the Chevrolet Monza and Pontiac Sunbird in 1977. The Buick Skyhawk and Oldsmobile Starfire were additional derivative products manufactured along with Monza and Sunbird at Lordstown. These four cars were re-skinned Vegas designed to overcome the reputation for poor quality and reliability that the Vega had earned due to a variety of engineering, management and worker incompetencies. The 1982 Chevrolet Cavalier replaced the Monza and its clones as the Lordstown product.

The Lordstown Assembly Plant Today

Employment at the Lordstown complex, which includes a car plant, van plant and fabrication plant, peaked at 13,000 autoworkers in 1987. Van production ceased in 1992. The dismantling of the entire plant soon followed; now, 2.65 million square feet of car and fabrication remain. In 1997 the workforce consisted of 456 salaried employees, 3,100 hourly fabrication employees and 3,400 car plant hourly employees. Employment figures announced in November 1998 report a reduction of 800 employees from 1997 due to retirements. The average wage is \$56,000 per year. Approximately 1,400 cars per 16-hour, two-shift day are produced. Output has been reduced from a peak of 104 per hour/1,664 cars per day attained during the Vega years. From January through August 1997, Lordstown produced 302,100 Chevrolet Cavaliers and 80,789 Pontiac Sunfires.

The Workplace Culture of the Lordstown Plant

From the time ground was broken in 1964 through the building of the first Chevrolet in 1966, the mood of the new workforce was euphoric. The goals were simple; build the plant, staff and train the workers, and build one of the most important cars in GM history. The Lordstown plant was the newest and most technologically advanced facility in the U.S. Lordstown, a part of the Mahoning Valley's thriving manufacturing area with a rich steel-making history, had all the makings of a production success story. Over 16,000 applications were received for the 5,196 projected jobs. Common practice, at the time, was to staff an assembly line with more workers than were needed. Once a facility was up to projected output, reductions of the workforce could occur. This practice ensured a sufficient quantity of workers, with the least productive culled out at a later time. Management gave little thought to anything other than plant start-up, quality, and volume production. The excess staffing practice would soon come back to haunt management.

The workers hired to staff the Lordstown plant came from the surrounding communities of Warren and Youngstown, Ohio. Not a few commuted from Cleveland, about an hour's drive to the north. Many of the new workers came



Fig. 2 - The first of many cars to be manufactured at Lordstown, a 1966 Chevrolet Caprice.



Fig. 3 - The 1971 Chevrolet Vega 2300 2-door coupe.
(Courtesy, Taylor Vinson)

from union families who toiled in the local steel mills under an autocratic style of management. In addition, some workers had wives or husbands who worked at the GM Packard Electric facility in nearby Warren and had some idea of how the Corporation managed workers. These younger workers were not made in the mold of their fathers who survived the Depression and were willing to trade their individuality and freedom for a steady paycheck. This was a new generation of workers that GM had not encountered in any great mass before, a product of the youth movement of the 60's and not blindly obedient to or intimidated by the style of management that had evolved at GM, with an "attitude," an average age of 22, and union representation. Trouble was on the horizon for the management of the Lordstown assembly plant.

Beginning of Labor Unrest at Lordstown

At the onset of production, Lordstown had two managers on site. A Chevrolet manager dealt with car assembly and a Fisher Body manager handled the myriad of problems associated with procurement of parts needed to assemble the cars and vans. This was an evolutionary structure that was costly, cumbersome, and soon to disappear.

In October 1971, the General Motors Assembly Division (GMAD) replaced the two-manager structure at Lordstown. GMAD had a reputation within GM as being hard-nosed cost-cutters. Rumors of the GMAD takeover and style of managing had preceded their arrival, and many of the workers could be seen wearing arm bands, and signs were posted saying "Fight GMAD." Rumors of how GMAD managed and that bad times were to come from their policies and practices were spreading rapidly. The old management did little to dispel the rumors which added to the fear and built distrust.

When GMAD took over the plant, it immediately and vigorously enforced discipline policies. A cost-cutting program was instituted and selective layoffs were implemented. The UAW claimed more than 800 workers were laid off within the first year (about 10 percent of the workforce). This figure is

disputed to this day and management says that the actual number was only 370 workers. Whatever the truth, the die had been cast and worker unrest intensified. The need for layoffs was a common business practice employed at the time. The plant was over staffed from its inception. Now the time had come to pare down the excess workers and streamline the operation. All the start-up problems had been resolved. Now efficiency, productivity and profits were the guiding principles of GMAD management.

The workforce did not see the streamlining and layoffs in the same light as management. The worker of that time saw only more work for the same pay. In addition many of their friends, neighbors and relatives had been laid off. To compensate for the layoffs, the workers were told by the UAW leadership to do what they could with the time available and let the work they could not complete go forward. Many cars were shipped with incomplete welds, missing parts, and debris left in them. The number of vehicles failing inspection and ending up in the repair area grew daily. This was totally unacceptable to management especially with a vehicle that was sold in volume and at a slim profit margin. Management countered with increases in discipline and suspensions, which furthered reductions in staffing. The stage was being set for serious confrontation between labor and management.

A curious management response to the labor and quality problems was the public statements made about the alleged sabotage and variance in vehicle quality. The workers felt this was a cheap shot and that management was ignoring the real problems. The workers believed they were victims of production line speed-up and staffing reductions. What management described as "sabotage" was nothing more than work not being done due to an inadequate number of workers trying to do more than they were capable or trained to do.

The relationship between labor and management had deteriorated so much by December 1972 that GMAD sent letters to all workers' homes stating that they could not wish them a Merry Christmas due to their poor work performance.

Management Style, 1964 to the Present

To understand the behavior of any body of workers, we must examine management style. Workers bring with them attitudes and values. These attitudes and values, in most part, are acquired from their upbringing and environment. Once thrust into a fast-paced work environment, most workers will measure their attitude and value system against those who plan, organize, direct and control the workplace environment. From the original staffing in 1964 through 1971, the Lordstown assembly plant was jointly managed by Chevrolet Division and Fisher Body. An autocratic style that leaned toward benevolence prevailed. These managers' role models were throwbacks to the post-World War II period. The style was results-oriented and adherence to directives and orders from those in positions of power. This style recognized mission accomplishment and provided positive reinforcement when goals were attained. An example of this occurred in early in 1971. Management provided everyone in the plant with a set of freshly minted 1971 coins (Fig. 4).

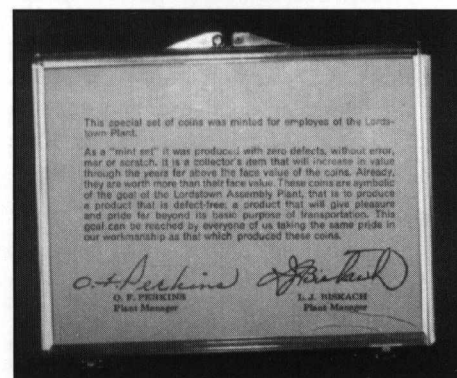


Fig. 4 - A set of the 1971 coins that management provided Lordstown workers to encourage zero defects.

The face value was 91 cents and they had a collectors value of near three dollars. A message accompanied the coins and read:

“As a mint set it was produced with zero defects, without error, mar or scratch. These coins are symbolic of the goal of the Lordstown assembly plant—that is to produce a product will give pleasure and pride far beyond its basic purpose of transportation. This goal can be reached by everyone of us taking the same pride in our workmanship as that which produced these coins.”

This benevolent approach to managing the workers at Lordstown ended when GMAD assumed management of the plant in October 1971. After that, the style used to manage the workforce took a dictatorial approach. The Vega was a good seller and in demand throughout the country. Accordingly, production increases were mandated and production lines were sped up. Further, more jobs per hour with fewer workers were required as management sought to reduce the size of the workforce. Management's theme was “60 minutes pay for 60 minutes work.” It was this style of management that precipitated poor workmanship, charges of sabotage, and a general degradation of all car lines produced at Lordstown. Clearly, this style was not compatible with the new generation of worker. Just as clearly, this adversarial relationship between management and labor was counterproductive. The wake-up call was soon to arrive with the first Arab oil embargo of 1973. The embargo was a catalyst to the recession that followed. A more pragmatic approach was to prevail. If the plant was to remain open, then a change in attitude on both sides was needed. From 1974 to 1975 communication between labor and management drastically improved. Management training programs were instituted and workplace culture slowly changed from adversarial to something better than an armed truce. A clear change was taking place at the Lordstown assembly plant.

From 1976 to the present day, the Lordstown assembly plant has been living down the bad labor reputation earned from 1971 through 1973. The management of the Lordstown plant has been slow to evolve into a culture of empowerment, continuous improvement and workforce

development. Many plant managers have come and gone, with many now in very prestigious positions within GM. Sadly, the reputation of distrust between labor and management still lingers over Lordstown. The management style of threat and intimidation still reappears from time to time.

The Catalyst of Unrest

What was the catalyst leading to this unrest? What befell the Lordstown workforce after the euphoria of the new plant and its successes wore off?

A study called “Work in America” published in the 70's and reviewed in a 1975 article in *Business and Society Review*, by James O'Toole, noted the following points about the management of the workforce of the era:

1. GM utilized an outdated management style not in sync with the value system and needs of the youngest workforce in the company.

2. Managers and foremen were not knowledgeable about the jobs they were supervising.

3. This was the first supervisory position for many of the supervisors and they lacked supervisory training and experience.

4. Management was by crisis not by goals and objectives.

5. Forward planning by GMAD management was poor.

6. GMAD stressed volume production at the expense of quality. Thus the value system of management was eroded in the eyes of the workers.

7. Management stressed authority, conformity, security and a distrust of change and innovation.

8. Workers who challenged the system were reprimanded.

9. Supervisors who were strict disciplinarians were viewed by upper management as promotable.

Given these observations, it is not difficult to understand how a management that evolved from an authoritarian model such as GM Lordstown would be on a collision course with a young workforce. The workers at Lordstown were a product of the counterculture movement of the time and not likely to blindly obey those in positions of power. Fortunately, changing times and economic circumstance would dictate the need to

resolve the conflict. Better communication, supervisor training, and acknowledging that the workers had an intellect as well as a strong back are just a few of the changes that have led to today's highly productive facility.

The Lordstown Worker Today

The workforce at the Lordstown assembly plant has grown and aged with the plant. The average age of a worker is over 40. Many of the workers have more than 30 years seniority but feel they are too young to retire.

Many of the conversations are about pensions, caring for aged parents, and why their children have to leave the Mahoning Valley to obtain jobs paying living wages. Maturity and financial realities coupled with job migration out of the valley and country have tempered the militancy. But given the right combination of events the old fire returns. In 1997, the union president was fired and the workers walked out for one day. The workers returned to work, losing one day's pay and the union president was rehired. Union values and solidarity are still evident at the Lordstown plant.

The pool most often discussed is the one in the backyard not the variety played at the local tavern. The drugs of choice are Viagra and cholesterol reducers, not those of the illegal variety, although like society in general illegal drugs remain a problem. The G.T.O. has given way to a Seville or Blazer. The parking lot has a special area for motorcycles, most often Harley Davidsons, made in the U.S. by union workers.

Unlike G.M.'s other local facility, Delphi Packard Electric, the movement toward a self-directed work force has been slow. Management has been delegating responsibility to the line workers. Real empowerment and participation are slowly gaining momentum and acceptance. Management shares production, quality, profit and cost information with the workforce. Communication is better but still needs to be improved. Many of the younger workers take advantage of the generous GM/UAW tuition benefit and attend college classes on and off site.

The union is more conciliatory and willing to work out problems. It will and does exert its influence when the workforce feels strongly about an issue.

Management still reverts to the old style of threat and intimidation. Recent public statements from management about the future of the plant and the need to reduce costs and increase productivity is proof that the old GM authoritarian style of management still exists.

Lordstown is a better place to work now than it was in 1966. The workers have a better attitude and produce a better product. In 1997, 383,500 vehicles were manufactured. What started as a revolution has really been the evolution of today's Lordstown autoworker.

The Delta Project and Beyond

Most recently GM has announced the Delta Project, a new small car to replace the current Lordstown products in 2003. GM officials have stated that the Delta Project will be built in nine plants worldwide. Industry analysts speculate that four North American plants will produce the new car: the current Saturn plant in Tennessee, the Canadian plant which makes the Tracker, a Mexican plant that now makes Cavaliers, and either Lordstown or Lansing, Michigan. Lordstown management has said time and again that it must "reduce our costs by \$200 per car or the plant will not get Delta." Again, threat and intimidation are the style of management. "Be more productive or we may lose our jobs" is the message.

State and local government and business leaders have been pro-active in an attempt to get more information about the future of the plant and workforce. UAW local 1112 announced that it is working with management to determine what the union must do to win the new product. To date, the only word from GM management is that Lordstown and other locations are undergoing a thorough business analysis to determine

feasibility. The manufacturing processes were reconfigured several years ago to reduce labor and increase quality. It is an arguable point how many more efficiencies the plant, as it is now configured, can achieve. The number of hourly workers, combined in the assembly plant and fabrication plant, has dropped in one year from 6,000 workers to 5,200 workers due to retirement. It is estimated that many more retirements will further reduce both the number of workers and labor costs significantly in the next few years. The rhetoric does set up the community and workforce for a possible closing of the assembly plant in 2003. Due to increases in the variety of parts being produced, the fabrication plant and its workers are not at risk at this time.

It appears that the Lordstown plant is caught in the current corporate welfare game being played in the U.S. and other countries. GM denies that incentives are a factor and the only factor in the Delta project decision is the potential bottom line. With an economic impact of 382 million dollars to the local economy, it would be naive to believe that the Delta Project will not be vigorously pursued by numerous communities. Ohio Governor George Voinovich met with local management and union leaders late in 1998 to discuss the fate of the plant. He publicly stressed management and union members must work harder to resolve problems if GM and Ohio public leaders were to look favorably on the future of the Lordstown assembly plant. The competition between Lansing and Lordstown is intensifying. Lansing recently launched a campaign called "Lansing Works," and Mahoning Valley leaders recently announced their campaign called "Bring It Home" to build awareness and sensitize the local community to the need for economic incentives.

Based on the continuing decline in the compact car market and GM's decline in market share, the future of the Lordstown assembly plant remains clouded. Rumors of Lordstown possibly producing a sport utility vehicle, obtaining the Delta Project, manufacturing some low-volume modular vehicle, or closing, persist in the media and throughout the plant. The official announcement of the Lordstown plant's future is scheduled for sometime in 1999. Until that announcement, labor and management are cooperating to meet stated plant objectives. The culture and climate at Lordstown is significantly better now than at any other time. It would be sad to see such positive changes undone by market forces.

Acknowledgments

The Cleveland Plain Dealer

Youngstown Vindicator

The Warren Tribune Chronicle

Paul Easton, GM Lordstown

Douglas Babyak, UAW Local 1112,

Business and Society Review

Playboy Magazine

General Motors Lordstown Assembly Plant

Automotive News

General Motors Public Affairs

Industry Week Magazine

The Personnel Administrator, October, 1975

The Wall Street Journal

Ward's Auto World

Business Week

Life Magazine.

The Business Journal

Boys Just Wanted to Have Fun: Remembering General Motors' Fisher Body Craftsman's Guild (1930-1968) Nurturer of the Creative Male Soul

by John Jacobus and Skip Gear

Introduction

What was the Fisher Body Craftsman's Guild, and what was its purpose? This question can be asked of anyone born between 1950 and 1970, and very few, if any, would know the answer today. Even the parent company of the Fisher Body Division (which founded the Craftsman's Guild), General Motors, has become extremely vague about the subject in this modern technological age.

Very little has been written documenting the history of the Guild. In this article, the authors have tried to fill that void by describing the Napoleonic and Travel Coach building competition and life histories of some of the winners, as well as the model car building competition and its winners.

Fisher Body's Napoleonic Coach Trademark

By the 1920s, the Fisher Body Company had become one of the biggest and best known suppliers of automobile bodies in the United States. It is believed that around 1921 one of the seven Fisher brothers, probably Frederick the eldest, at one of their daily 12:45 PM business luncheons, suggested a royal coach as the company's trademark or logo.¹ And it was an excellent idea, as not only was this type of coach a symbol of the finest craftsmanship, elegance and luxury (the image the Fisher brothers desired to convey to the public about the automobile bodies they manufactured), but it was a reminder that the Fisher family, back in Norwalk, Ohio, had been carriage builders for many generations as well.

We surmise that some humble artist at the Fisher Body advertising agency penned the original trademark design in 1921 or thereabouts. The artist, in consultation with Walter Leuschner, a German-born Fisher employee whose

family had built coaches for royalty (or perhaps Leuschner himself), decided to combine the intricate details and best design features of two famous European coaches into one complete coach model. The two coaches chosen for the task were Napoleon Bonaparte's ornate, gold leaf and gilded Sacred Coach used for his coronation, and the delicate design-lined La Topaze Coach used for his marriage to Princess Marie-Louise of Austria. The two coaches were probably the two finest examples of their type ever built. The 3-dimensional Guild coach model adopted numerous features of the ornate Sacred Coach such as spoked wheels, folding steps, trim around the bottom edges of the coach body, and cloth strap to raise/lower the window, but the design was cleaner and more simplified, like the La Topaze Coach. The Traveling Coach model, on the other hand, from the Apprentice Craftsman Class introduced in the 1934 Guild competition to attract beginning coach modelers, had a striking resemblance to the La Topaze Coach.

A hybrid coach, called the Napoleonic Coach, was chosen as the official Fisher Body trademark in 1922, the application to register it was filed on August 19th of that year, and the coach became the official company trademark on July 10, 1923. (In the early 1920's Fisher Body was a company, but in 1926 it became a Division of General Motors.) Beginning in 1922, brass plates containing the coach trademark and words "Body by Fisher" appeared on the right-hand side of the windshield cowl down at the fender line.

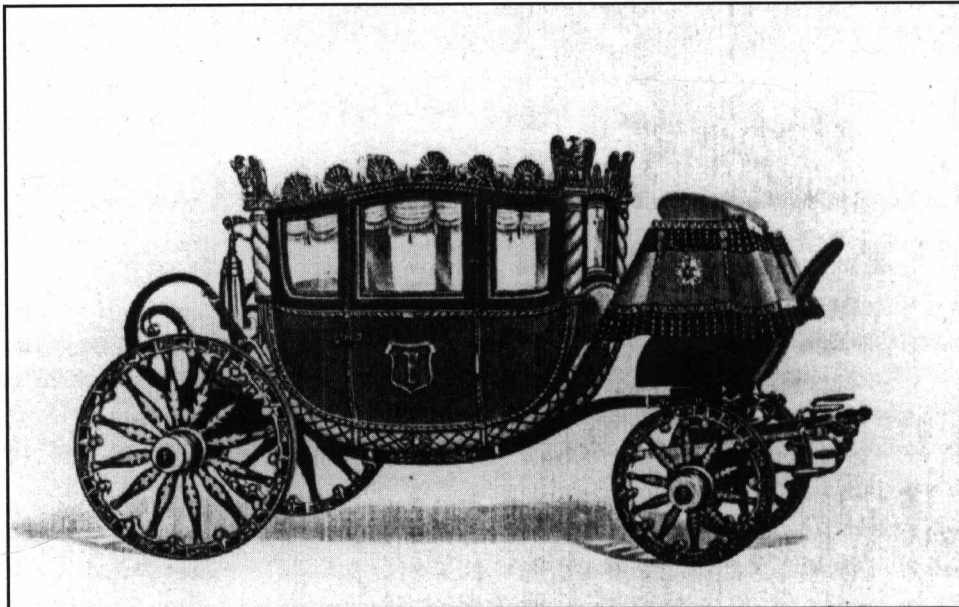
Guild Purpose and Organization

A few years later, either for public relations/advertising purposes, for corporate income tax deduction purposes or for pure philanthropic reasons (after

the Great Depression had begun), we believe that the Fisher brothers at another one of their 12:45 PM business luncheons invented the idea of a unique educational scholarship program for youth to compete and test their natural skills, abilities and ingenuity by building a miniature or model Napoleonic Coach just like the Body by Fisher trademark.

The Guild was organized for the development of craftsmanship and creative ability among boys. Its purpose was "...to supplement important training already provided by the nations schools, offering a means for extending industrial arts education into the home and furnishing an incentive for obtaining an even higher degree of excellence in classroom work. It was created in recognition of industry's responsibility to society, with a view to the fact that craftsmanship - despite all that has been said of the machine age - is of more importance today than ever before, and a knowledge of the definite need which exists for men who can couple manual dexterity with technical training and creative ability." To quote William A. Fisher, General Manager of GM's Fisher Body Division, and President of the Guild, from *The Guildsman Magazine* (1934); "...above all, it is only the fully trained and competent craftsman which can carry this machine civilization to higher levels of efficiency and service to mankind in the future." / "...And so I tell you that the one crowning need of the world today is for craftsmen - men who are trained, men who are masters of every detail of their jobs." / "...The skill of mind and hand together is the way to happiness."

The competition was to become known as the "Craftsman's Guild," and it was launched in 1930 (Fig. 1). It was split into two age categories; the Junior



PORTRAYED above is the miniature model Napoleonic coach which boys in the United States are to build as members of the Fisher Body Craftsman's Guild.

Its design is a composite of the two famous coaches used by Napoleon. One, used at his coronation, is now in the Museum at Versailles, France. The other, in which he rode with his second bride, Marie Louise of Austria, now reposes in a royal museum at Vienna.

To perpetuate the practices and principles of craftsmanship is the purpose of the Fisher Body Craftsman's Guild which is sponsored by the builders of Bodies by Fisher. And to encourage the boys to build this miniature coach, the Fisher Body

Craftsman's Guild offers every boy between 12 and 19 years, inclusive, unusual opportunities—four complete university scholarships of four years each, industrial recognition and numerous other awards.

For it is the sincere desire of the builders of Bodies by Fisher that tomorrow shall see this country peopled by men to whom honor can be given for their ability to design well and to build soundly whatever their generation may require.

Any boy in the United States between the ages of 12 and 19, inclusive, may enroll in the Fisher Body Craftsman's Guild at the showroom of any General Motors car dealer. Membership is free. There are no fees or dues of any kind. If there is a boy in your family or community who is eligible for membership, urge him to enroll today.

CADILLAC , LASALLE , BUICK , VIKING , OAKLAND , OLDSMOBILE , PONTIAC , CHEVROLET
 FISHER BODY CORPORATION • DETROIT, MICHIGAN
 Division of General Motors



Other magazine ads were more detailed regarding the history of the Napoleonic Coach model, and the purpose of the Fisher Body Craftsman's Guild was explained as well. (Gear Collection) .

Fig. 1 - 1930 Fisher Body corporate advertisement showing Napoleonic Coach and discussing the Fisher Body Craftsman's Guild.

Division (ages of 12 through 15) and the Senior Division (ages 16 through 19 and later expanded to those 20 years of age). To reward craftsmanship and creative ability, the top winners received prize money for a scholarship to a college of their choice. For example, in 1931, the prize money consisted of \$5,000 for each of the top four national winners (two Junior winners and two Senior winners), 1,120 gold awards ranging from \$15 to \$100 in gold, and 104 all-expenses-paid trips to Detroit. Now, keep in mind, this was when the Great Depression was at its worst, so the prize money was substantial. In the 1930's, \$5,000 was triple what a man earned in a year, and in the 1940's a 3-bedroom single family dwelling could be yours free and clear for the same amount. In 1940, for example, the median family income in the U.S. was \$1,231²

The Guild was organized with William A. Fisher as Guild President and Daniel Carter Beard, head of the Boy Scouts of America, as Honorary Guild President. There was an Honorary Board of Judges consisting of GM Styling and Research Executives and leaders from top U.S. educational institutions (e.g., MIT, Cal Tech, Georgia Tech, Carnegie Mellon, Tulane, Penn State, Stanford, etc.) and an Advisory Board consisting of public school superintendents from across the country. The Fisher alliance with the Scouts was essential to the Guild's success, as not only did the Scouts promote common skills and philosophies (painting, metal/wood working, crafts, how to make things, and self-reliance), but coach building time and labor would be competing with Merit Badge time and labor. A strong endorsement of educators would also be needed as coach building would be competing with the time needed for school work and extracurricular activities.

Napoleonic Coach Designers/Creators

Prior to getting the Craftsman's Guild off the ground, however, master blueprints were drawn up. The search was on to find a talented individual who could build two master prototype Napoleonic Coach models, and the company found such a man working in its plant in Fleetwood, Pennsylvania. That individual was Walter Leuschner, who was a descendent of a family who had opened its own coach factory in Berlin, Germany, in 1833. Mr. Leuschner

himself was once a Major in the Imperial German Army and also a noted royal coach builder, one of the last. The Leuschner family built flawless coaches for royalty such as the King of Italy, the Empress of China, the Czar of Russia, the King of England, the Kaiser of Germany, and the Emperor of Japan to name a few.

The team was not yet complete, however, until Frank Riess, a former head of the industrial arts department of a Detroit high school, came on board. Leuschner was to supply his expertise in coach building and Riess was hired to lend his expertise in drafting, dimensioning, scaling, cross sectioning, and blue print making needed to describe the parts of the model coach. Riess produced a master set of plans or blue prints, a copy of which still exists, and is in the Fisher Body Craftsman's Guild Foundation (FBCGF) collection in Eagle Point, Oregon. After the two prototype coach models were built, a more simplified set of plans (based on the master set, but not as elaborate or detailed) and an instruction manual were drawn-up. (Myth has it that the two master model coaches are still on display at the GM headquarters in Detroit and New York City.) The scale of the Leuschner model Napoleonic Coach was approximately 1/15 to 1/18 (1" equals 1.25 to 1.60 feet), whereas the Guild model car competition scale was 1/12 (1" equals 1 foot). This set of plans/instructions was distributed to the young contestants to build their models. Combining the instruction manual, and three large blueprint sheets drawn actual size, with a nationwide advertising-promotion program described below, the Fisher Body Craftsman's Guild was officially off and running in early 1930.

Guild Advertising and Promotion

All GM's motor divisions were involved, and young boys could go into their local Chevrolet, Buick, Oldsmobile-Viking, Cadillac-La Salle, and Oakland-Pontiac dealerships, to pick up a detailed set of plans, an official Guild button and a Guild membership card. Direct mail played an important part in the advertising of the Guild as well as advertising in large circulation newspapers and nationally distributed magazines.

Just about every conceivable vehicle to advertise the Guild was pressed into

service, and it paid-off enormously. Even some of the top-of-the-line coach models (and model cars eventually) were purchased by GM over the years to be used in advertising to promote the Guild as well as to advertise Fisher Body automobile bodies. Even after the demise of the Guild in 1968, some later ads for Fisher Body featured a Napoleonic Coach model somewhere in the ad text. Indirectly, the results of the Guild competition continued to play an important role in GM public relations for many years.

Along with the GM dealer network, newspapers, magazines, direct mail, radio and various other aspects of the advertising world were used to spread the "good news" about the Guild. For example, all GM dealers put up window posters to attract a boy's attention and participated in direct mail campaigns. When "Dad" would come in to look at a new or used car, "Junior" was told about the Guild by the salesman, thus a new potential contestant was signed-up. Also, various leading newspapers around the country became official sponsors, and each newspaper formed a chapter of the Guild to further promote the contest.

As part of their efforts, newspapers published a series of weekly lessons, tips, encouraging success stories, etc. (beginning in the October preceding the contest year) to help the young builder sort through the often difficult and critical steps essential to building and completing a winning Napoleonic Coach model (Fig. 2). In short, the lessons were used to help the inexperienced modeler. The young contestant could write to his local sponsoring newspaper with questions and the questions with answers would be printed in the paper the following week. Also, any other news pertaining to the Guild was published in the newspapers weekly to keep boys posted on what was happening within their chapter.

Many major newspapers joined the bandwagon of Guild supporters to help boys win college scholarships during the height of the Depression. Among them were (as they were known in the 1930s): *The Detroit Times*, *The Wisconsin News*, *The News Bee*, *The Houston Press*, *The Seattle Times*, *The Spokane Press*, *The Dallas News*, *The El Paso Post*, *The Oklahoman*, *The Sun Telegraph*, *San Antonio Light*, *Washington Herald* (D.C.), *The Wichita Beacon*, *Globe-*

Model Coach Lesson No. 28

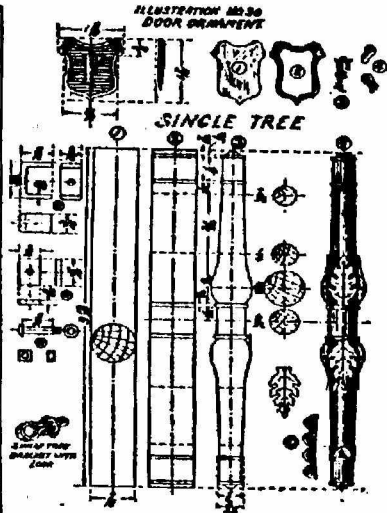
With this issue, The Chicago Herald and Examiner presents to its chapter members in the Fisher Body Craftsman's Guild the final step-by-step instructions for building their miniature Napoleonic coaches. The singletrees and the initial plates comprise the finishing touches, and the shipping case alone remains to be described.

Directions for building the case will appear next week, and since everything depends on the coach reaching the judges in good condition, it will be among the most important lessons in the series. Now for lesson 28:

If one has access to a lathe, either metal or woodworking, the singletrees will present no difficulty. Either metal or wood will be satisfactory. The procedure is indicated in sketches 1, 2, 3 and 4. In step 1 the stock is turned to maximum diameter plus 1-32 inch, or a total diameter of 7-16 inch. Step 2 shows the turned stock marked off for the various design features, while step 3 shows the stock turned to correct diameters and shapes. The completed tree is shown in step 4. The leaf design is easily cut out of thin metal or cardboard and glued or tacked in place. Sketch D shows a method of laying out a pattern for the small decoration which fits on the ends just back of the second ring or bead.

The same general method described above may be used for making the singletrees without the aid of a lathe. First make a round piece as in step 1. Mark off the center divisions. Shape both ends to a round taper, omitting the beads. This can be easily done with a knife, file and sandpaper. The beads may be put on at the desired locations after shaping has been done. Wire will work nicely as bead rings. For the small rounded ends of the trees, an escutcheon pin or common pinhead will be satisfactory.

Sketches A, B and C show the details of the metal clamp used to hold the leather loop strap together at the center. One end of the strap is fastened around the splin-



CAUTION!

Don't place too much faith in glue alone in assembling the various coach parts. Small brads, nails, pins or screws should also be used wherever possible. Remember, that your coach will have to be handled considerably by the judges, and parts not well constructed or assembled are likely to become loose or dislodged.

ter bar tree loop and the other around the center of the tree itself. The perspective sketch will help to give the idea of the method of fastening.

The door initial shield may be made of cardboard or thin metal, cut to the shapes shown. These are then glued or soldered together. The total thickness of the shield should be approximately 5-32 of an inch. The shield should be held in place by means of glue and three small brads or "cut off" ordinary pins, placed as shown in sketches 1 and 2.

Fig. 2 - The Chicago Herald and Examiner instructs its young readers how to build the singletrees and the initial plates of the Napoleonic Coach.

Democrat, Baltimore American, The States, Georgian American, Boston American, Commercial Appeal, San Francisco Chronicle, Evening Journal, Times-Union, Miami Herald, Los Angeles Express, Portland Telegram (Oregon), and The Indianapolis Star. Not only was this good advertising for the Guild, but it gained great publicity for the individual newspapers as well. Maybe a boy in their community would be a national scholarship winner one day!

You name the magazine and a Fisher

Body Craftsman's Guild ad was in it: American Boy, Youth's Companion, Popular Mechanics, National Geographic, Popular Science, Ladies Home Journal, The Saturday Evening Post, The Literary Digest, etc. The Fisher Body Division spent hundreds of thousands of dollars to advertise and promote the Guild program, not to mention the hundreds of thousands of dollars in scholarships awarded. Other forms of communication also promoted the Guild such as; (1) *The Guildsman* or

Guild News, official publications of the Guild, distributed to all potential contestants, (2) display of winning coaches at the 1933-34 Chicago World's Fair, and (3) tour of the United States by the winning coaches and their display in local department stores. At the annual Guild Convention, when the winners were announced, the nationwide radio broadcast would be narrated by famous commentators such as Lowell Thomas. Syndicated columnists like Bob Considine interviewed winners and wrote about them. The Guild program was also marketed in Canada and early copies of *The Guildsman* contained a Maple Leaf section. The Fisher family and GM's generosity and philanthropy would stretch across international boundaries as the Depression had far-reaching effects.

The Coach Competition

In the first year of competition (1930-31), the plans furnished the contestants consisted of three large sheets drawn to actual scale so that wood parts could be overlaid to check the dimensions. In the years following, from 1931 on, the plans were now part of the "Plans and Instructions" manual which consisted of not only the plans in booklet form (and also drawn to scale), but a set of instructions as well. Included with the plans and instructions were two multi-color sheets of the Napoleonic Coach model, one front view and one side view, showing the paint and trim color scheme. This was intended to help the young contestants visualize what the final product would look like. The scale on the plans were changed slightly from year to year so that the submissions would not be identical each year. A coach model that competed in one year could be re-entered the following year, but some updating was needed to conform to any new requirements. And, as happened later in the model car competition, many boys entered year after year, some as many as four or five times.

Despite all these factory and community efforts, not many Napoleonic Coaches were actually built. With a Guild enrollment of 145,000 in 1930-31, only 600-plus Napoleonic Coaches (0.41%) were actually built and entered in the 1931 competition.³ This is an average of about 12 coaches per state. In 1932, for example, indications are that over 2,000 sets of plans were distributed to youths in

the State of Washington, but only 19 coaches from there were actually entered in the competition.

Coach Judging

The coach judges were teachers and instructors from the Detroit Public School System under the technical direction of Walter Leuschner. In 1937 when Virgil Exner Sr. was a Guild judge, Honorary Judges included Harley J. Earl (head of GM's Art and Colour Section), Charles F. Kettering (head of GM Research), and the presidents of numerous educational institutions.

Judging the individual coach models was complex so special judging procedures were devised. First, the entries from each State and the District of Columbia were screened and judged at regional locations, with the first and second place State winners receiving a trip to Detroit and a chance to compete for the four top \$5,000 prizes. In 1931 there were 104 entries that received that much-sought-after trip to Detroit. For the final judging at the national level, and selection of the two Junior and two Senior first place national scholarship awards, a clear-cut and accurate system was devised for judging the craftsmanship of each individual coach. Basically, each judge had a booklet containing eight sheets of information for scoring 200 items for each entry and the total score consisted of six parts which were broken down into the following categories (in their words); Fidelity to Scale, 100 points; homemade or home cast metal parts, 100 points; metalcraft, 75 points; woodcraft, 75 points; upholstery, 75 points; and paintcraft, 75 points for a grand total of 500 points.

Fidelity to Scale

Fidelity to scale meant determining how close to the blue print dimensions the model had been built. The proper scale and fidelity were vastly important, and, in order to judge the coaches objectively, a series of 24 metal templates were used to measure each detail of the models. Some were used to check the proper distance from the floor of the model to the door handle center line, while other templates were used to measure the distance between front and rear axles, axle height and wheel diameter, the "reach" center height at the rear, the top of the rear step plate height, footman's board to ground

height distance, window locations, door width, aluminum trim contours, etc.⁴ If a dimension was found to be perfect or within tolerances, such as the front axle assembly, then five points were awarded to the model, but if the dimension was not in tolerance, points were deducted. A suspension that allowed the body to list or lean to the left or right lost points. The left side of the model had to be symmetrical with the right side of the model. The judging of each model was anonymous and each model was known only by a number.

Woodcraft and Metalcraft

Seven categories formed the basis for scoring woodcraft: wheels, rear axle and footman's board, the body, front axle and front gear, pole, tonneau block, and general woodwork. The sides and top of the coach body were compound surfaces (curved in two planar directions) and these were checked by template. The judges checked all moldings for detail including the correct spacing for the molding spindles and the correct left-hand and right-hand twist. Eleven points were awarded in this category for a perfect score, and 18 separate items were checked just concerning the brackets and clips used. Judging was time-consuming as well, and it was not unusual to take 30 minutes to judge one model. In order to choose the four best coach models, the judges had to re-check many of the better models numerous times.

If the entire coach model, or any of its parts, was built from a kit, points were deducted to make the competition fairer for those boys who worked from scratch and did not use a kit. If a metal kit was used, for example, the maximum allowable points were 50 for metalcraft instead of 75. In this case, the contestant was penalized 25 points for using the metal kit.

Interestingly enough, in the first year of the Guild competition, one of the two prototype coach models mentioned above was slipped into the competition. It was spotted by the judges immediately. However, it is said, not many points separated the national scholarship winning coaches from the Leuschner/Riess prototype.

Some Napoleonic Coach Details

Duco automotive lacquers (DuPont trademarked products) were applied by

brush (spray paint bombs hadn't been invented yet). Aluminum parts had to be cleaned and chased with engraver's tools and some metal parts had to be cast in plaster-of-Paris molds using Woods Metal, a non-ferrous, low melting temperature alloy. All the coach models were actual working models; the wheels turned, the front axle turned on the fifth wheel, the suspension worked, passenger steps slid out and folded down, and the doors opened by miniature door handles. Photographic glass used in the door window would slide up and down. The operating door latch (bolt and detent), door hinges, and the four ratchets used to adjust the leather body suspension straps, were all hand-made. Copper sheet wheel ornamentation had to be stamped from a home-made tool and die set in order for so many pieces to be identical. Rough shaped pieces of mahogany, maple, pine, and balsawood had to be carved into compound surfaces for the coach's body and assembled to exacting dimensions (+/- 1/32-inch accuracy) in hopes of faithfully reproducing the Leuschner and Riess Master Model Coach.

Napoleonic Coach Kits

Each model was to be built by hand. In the early years of the Guild competition, boys could buy a kit from the George D. Wanner Company of Dayton, Ohio. The complete kit contained everything needed to build a coach: blocks of wood cut to size, but not shaped; brass stock and rough aluminum castings; screws, nuts and washers; upholstery trim and even glue. Glue was available in tubes, but, alternatively, the modeler could melt glue in a pot (within a pot of boiling water) on the stove or hot plate. The metal castings were supplied in rough cast form and had to be cleaned, filed, shaped, and chased, and all the wood materials had to be hand-carved. Wood materials included mahogany, maple, pine and balsawood. The total kit cost \$9.75, but individual components could be purchased separately as a metal parts kit, a wood kit, a trim kit and/or a Duco™ paint kit of nitrocellulose lacquer finishes.⁵ In early 1938, the complete kit assembly was available from the Lewis Model Kit Company, Detroit, and the price plummeted to \$2.50 for the entire kit. After the war, however, the coach kits were supplied by H.C. Stubbs Company of Detroit, at a cost of \$20.

The 1934 Competition: Choice of Two Coaches

In 1934, the competition was expanded to create an Apprentice Craftsman Class competition for beginners, who would build the Traveling Coach. This was done for one reason: the Napoleonic Coach was too difficult to build and boys were having trouble completing all the tasks in the allotted time. It was not uncommon for up to 2,000 hours of labor, or one full-time employee working one year, to complete making a competitive coach. Therefore, starting in 1934, the Guild was divided into an Apprentice Craftsman Class that built the Traveling Coach and the Master Craftsman Class that built the Napoleonic Coach. The Traveling Coach and plans were probably designed by the Leuschner/Riess team as well.

Who Were Some of the Coach Builders and What Became of Them

We were able to interview and survey six of the early prize winners, and were struck by the similarity of their backgrounds, the difference in their lives that the Guild meant, and their subsequent employment histories.

These were young men, born into modest surroundings, to fathers who generally had an interest in mechanical things and, sometimes, a workshop in the basement. Fathers, mothers, and sisters were supportive of the endeavor to build a model coach; perhaps families were closer in those days. Had it not been for the prize money, the winners would not have been able to afford an education beyond high school. Most of them attended prestigious colleges and chose engineering as their fields. Many had distinguished careers, some with GM itself. One of them became president and CEO of Westinghouse.

We have included the stories of these six men as an appendix to this article.

1937: Model Cars Design Competition Introduced

In 1937 things changed again for the Guild with the introduction of the model car design competition. In the 1937-40 competitions, contestants could build a Napoleonic Coach, a Traveling Coach or the 4-door sedan of their dreams. If a model car was chosen, the Guild supplied a manual with instructions and ideas on how to scratch build their 1/12 scale (1”

equals 1 foot) model either by casting it from plaster-of-Paris using a clay model or carving it from poplar or mahogany. Initially, contestants had to make their own tires, but by the 1950s, hard rubber tires were supplied to contestants free-of-charge by the Guild. Aluminum trim kits (Kits I, II and III) were available to contestants for a nominal fee from the Meier Brass and Aluminum Company of Hazel Park, Michigan.

The Guild competition was temporarily suspended in 1940. After World War II, in 1946, the coach and model car competitions resumed, but in 1948 the Napoleonic Coach competition was discontinued. The model car competition had taken off and many more boys were joining the Guild than ever before. The making of coach models had been in steady decline due to their difficulty to build, the time consumed, and simply lack of interest. Coaches were “uncool,” post-war America had fallen in love with cars (Fig. 3).

In 1937 the model car competition began with the building of a 4-door sedan, but by 1954 contestants could enter 2- and 4-door sedans, station wagon, convertible and sports car body styles. By the late 50s, two different size diameter scaled hard rubber tires were being distributed by the Guild to support all these design options. These scale tires were smaller than the original 2-7/16” diameter from the early 50s. In 1963 the Open Competition (featuring unusual wheel base configurations) was introduced.

Estimates of the total number of model cars entered, and the average number per state, for a few selected years for which data are available, are shown in the following table:

Estimated Number of Guild Model Car Participants by Year

Model Car Competition Year	Number of Model Car Entries	(Avg./State)
1958	2,000	(40)
1962	916	(18)
1963	583	(11)
1966	399	(8)

Sources: 1958 Guild promotional brochure from GMI Historic Files, GM Design Staff; 1962 *Special Interest Autos*, “The Fisher Body Craftsmen’s Guild: GM’s 34-Year Talent Search,” by Wick

Humble, February 1981, #61; 1963 J.Jacobus List of Guild Participants; and 1966 J. Mellberg List of Guild Participants.

Compared to the Guild’s model car design competition of 1958 with 2,000 models cars entered (40 per state on the average), the 60s were years of decline: 1962 with approximately 916 models entered (an average of 18 per state);⁶and in 1963 and 1966, 583 and 399 models, respectively, were entered or an average of 11 and 8 per state. The states with the largest number of model car entries in the 1963 competition were Michigan (24 models), Ohio (23 models), Indiana (21 models), Wisconsin (20 models) and Texas (18 models). States such as New York and California, where the largest number of entries would have been expected based on population, only had 16 and 17 car models, respectively, entered in the 1963 competition. In 1963 some states had four or less model car entries like Hawaii, Idaho, Nevada, Vermont, Maine, West Virginia, and South Dakota. Alaska had zero entries. Despite all the Fisher Body advertising and public relations efforts as well as Guild promoters visiting high schools all across America, and the promise of university scholarships and cash, the number of models actually built was surprisingly low on a per state basis. Although about 600,000 youths were enrolled annually in the Guild after World War II, reflecting high interest and mass appeal, a very small percentage (less than one-half of one percent) actually built and submitted a model car. Although many imaginations may have been inspired by Guild literature, and many models may have been designed on paper or in clay, very few youths translated an idea into a 3-dimensional reality and finished product.

Who were the contestants? In the 1963 and 1966 model car competitions, one percent of the Guildsmen were in grammar school, 16 percent in junior high school, 65 percent in high school and 18 percent in college. The Guild competition was dominated by high school and college-aged young men, not boys.

The construction of a winning national scholarship model car took less time than a Napoleonic Coach. Scanning published model car labor hours for 1964 and 1967 of 12 national scholarship winners shows a range of 225 to 900

NEEDED, A SOLOMON.

Robert Hartlieb NOT LONG AGO TWO TEENERS STOOD BEFORE THE JUDGES IN A MODEL AUTO DESIGN CONTEST. THE PRIZE WAS A \$4,000 SCHOLARSHIP. FINALLY, THE JUDGES RULED IT A TIE!

Virgil Exner, Jr.

ROBERT HARTLIEB, 16, OF ALLENTOWN, PA., AND VIRGIL EXNER, 13, OF SOUTH BEND, IND., WHOSE IMAGINATION AND ABILITY IN CRAFTSMANSHIP WERE SO CLOSE THAT THE LADS WERE GIVEN DUPLICATE \$4,000 AWARDS!

1-30-47

WINNER!

THIS POOR, 15-YEAR-OLD SASKATCHEWAN FARM BOY BECAME INTERESTED IN THE FISHER BODY CRAFTSMEN'S CONTEST TO BUILD A NAPOLEONIC COACH AND DECIDED TO ENTER.

Joe Olafson

THE BLUEPRINTS WERE JUST A PUZZLE TO HIM AT FIRST, BUT AFTER STUDYING THEM A WEEK THEY BEGAN TO MAKE SENSE. HIS TOOLS WERE CRUDE - HE HAD TO MAKE SOME OF THEM HIMSELF. BUT, SURMOUNTING ALL OBSTACLES, HE MADE A COACH THAT WON HIM A \$5,000 PRIZE!

12/30/46

HM-N-N, LOOKS A BIT LIKE CHINESE!

1-30-47

WINNER!

THE DEADLINE WAS FAST APPROACHING IN THE MODEL CONTEST. ROGER NEEDED ORNAMENTS FOR HIS COACH. SUDDENLY HE SPIED THE BRASS BRADS ON HIS RODEO PANTS! OFF THEY CAME AND THEY WERE JUST WHAT HE NEEDED!

Roger Oetting

DETROIT, MICH.

HE WON A \$5,000 SCHOLARSHIP IN THE FAMOUS FISHER BODY CRAFTSMEN'S CONTEST—AND SOME OF HIS TOOLS WERE BORROWED FROM A TINSMITH WORKING ON HIS HOUSE!

HEY, TEENERS! WANT TO ENTER THIS CONTEST? WRITE "TEEN-AGE TRIUMPHS," FOR INFORMATION.

GEE! THANKS!

1-15-47

1-15-47

A GENIUS OF DESIGN!

HE STARTLED THE EXPERTS! THIS 13-YEAR-OLD LAD IN SOUTH BEND, INDIANA, WON AN AUTO MODEL-MAKING CONTEST WITH THE ABOVE DESIGN.

SEVERAL OF HIS FEATURES WILL BE ON CARS OF THE FUTURE AND HE STARTED ONLY 3 YEARS AGO WHEN HIS DAD GAVE HIM A TOOL SET FOR CHRISTMAS!

Virgil Exner

... HIS MODEL WON HIM A \$4,000 COLLEGE SCHOLARSHIP IN THE FAMOUS FISHER BODY CRAFTSMEN'S GUILD CONTEST.

1-9-47

AIR INTAKE

RADIATOR

POLAROID LIGHTS

1-9-47

Fig. 3 - Four 1946 Fisher Body Craftsman's Guild winners.

hours or an average of 471 hours per model car.⁷ This was about 1/4 to 1/2 the labor hours needed to build a coach.

But, what did it take to become a winner? Model cars were scored on "Craftsmanship" (fidelity to scale, workmanship, and painting/finish) and "Design" (originality of design, artistic merit, and practicality of design) for a total of 450 points. Based on actual score sheets from the model car design competition (J. Jacobus 1962, R.C. Pellman 1958, and A. Russell 1957), a contestant needed about 75 percent of 450 total points to receive a first state award (\$150), about 85 percent of 450 points to receive a Regional award and a trip to Detroit, and over 90 percent of 450 points to be considered for a national scholarship worth thousands of dollars (Figs. 4 and 5). It is believed the judges for the model car competition consisted of GM designers and stylists, as well as industrial designers and industrial arts educators from the Detroit area.

The Guild model car competition was international in scope sponsored by GM's affiliates in England, West Germany, Switzerland, and Australia. If the son of a GM employee won, duplicate prizes were awarded. In our opinion, the high water mark of the Guild model car competition would be in the mid-50s when the model car designs were the most flamboyant and creative, reflecting the cars of the time and America's love affair with the automobile. Indeed, the success of the Guild was rooted in this love affair.

One Guild myth is that the model cars were a source of ideas for GM designers and stylists. After all, GM did purchase many of the award winning models. We are sure they were a source of inspiration, perhaps a kernel of an idea crept into their styling studio here and there, but it has never been documented or acknowledged what, if any, ideas may have been adopted. One myth is that the 1959 Chevrolet horizontal fins and cat's eye taillamp lenses had their genesis in

Gary Graham's 1954 First National Scholarship (Senior Division) winning convertible.

The models GM purchased became its exclusive property, and were used in traveling shows and exhibits which promoted the Guild. Each Guild salesman/promoter in a Mr Science-type show, traveling across the country from high school to high school, had to have a national award winning model to show the students. One of the truths about the Guild is that it identified talented young people who were recruited by GM or Fisher Body to work in the automobile design and manufacturing process. This is discussed further below.

Demise of the Guild

In 1968 the Guild was dissolved, but without any published explanation. There are a lot of reasonable theories: (1) as shown above, compared to 1958, participation had dropped off significantly by a factor of four, (2) the

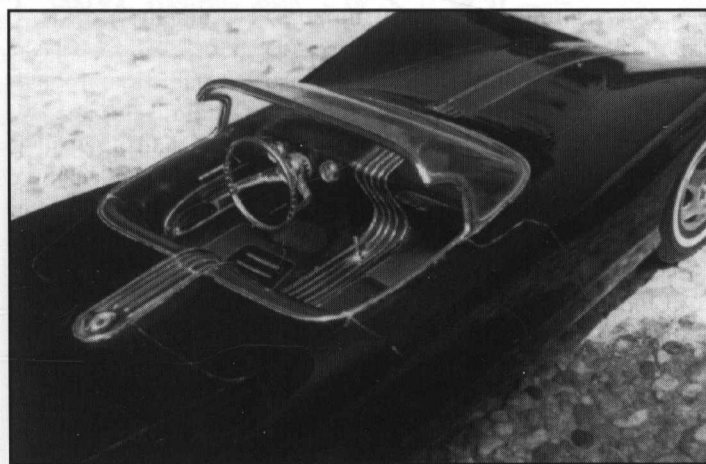


Fig. 4 - The 1957 First National Award, Senior Division (\$5,000), by E. Arthur Russell. This model had a body of poplar wood finished in nitrocellulose lacquer, chrome-plated brass trim, and acrylic plastic windshield and taillamps. It is now part of the Guild collection in the Smithsonian Institution's National Museum of American History, Washington, D.C.

FISHER BODY CRAFTSMAN'S GUILD

1957 COMPETITION

74 or 76

REPORT TO CONTESTANTS

Name Arthur Russell State California Model # 74

<u>CRAFTSMANSHIP:</u>	Possible points.	Your car received.
<p>1. <u>Scale Fidelity.</u> Guild judges measure model cars to see if their dimensions are within the maximum and minimum limitations given on the specification sheet enclosed with the Guild instruction book. An error of 1/16" reduces the score by one point.</p>	50	43
<p>2. <u>Workmanship</u> Each step of the work is carefully examined to see how well it has been done. Is the carving smooth and neat? Are doors, hood and trunk outlined neatly? Are moldings, lights and trim made skillfully and neatly attached? You will improve your score by doing neater, cleaner work.</p>	80	73
<p>3. <u>Painting and Finishing.</u> Are the surfaces sanded smooth, or are they wavy? Are paint separation lines sharp and well defined? Is there sufficient paint on the model, and has it been rubbed down and polished? If grille, moldings and trim are made from wood, how well are they finished? If parts are made from metal, have scratches been removed and the surfaces polished? Examine your last year's model carefully, and you will know which parts of the job need greater care. PAINT DOES NOT COVER IMPERFECTION.</p>	70	70
<u>DESIGN:</u>		
<p>1. <u>Originality of Design.</u> Is the design of the model car projected into the future with some change in design concept, or is it a copy of a present day car with a few original details? Is it out of date? Is it freakish in design?</p>	100	87
<p>2. <u>Artistic Merit.</u> Is the overall design pleasing? Are the details pleasing and do they help the overall design? Does the entire model have the proper balance and proportion? Is the color scheme in good taste? Are the lights, grille, moldings and trim in the proper proportion?</p>	80	80
<p>3. <u>Practicality of Design.</u> Do bumpers or reinforced grilles offer protection for lights and sheetmetal? Is it a practical, usable car, providing enough space for passengers, enough luggage room, entrance room, visibility and the like? FOLLOW THE SPECIFICATIONS.</p>	70	64

Fig. 5 - The score sheet for Arthur Russell's 1957 award winning model, which rated 417 out of a possible 450 points.

Depression was behind us and the initial philanthropic need for the Guild ceased to exist, (3) in an affluent society youths didn't have to craft-their-way to a college scholarship, (4) teenagers had too many other things competing for their time and attention in a post-war affluent society (e.g. TV, sports, Scouts, youth clubs, social activities like dating and drive-in fast food restaurants), (5) kids lacked the "know-how" as there were few reinforcing institutions by the mid-60s, (6) the educational emphasis shifted to higher SAT scores and academic excellence, which had no relation to excellence in craftsmanship, (7) the quality of the models being entered was becoming inferior, and (8) the bottom line: a GM executive one day asked how many cars the Guild sold each year. After 38 years, it was over, thus ending one of the most creative and constructive advertising and public relations programs ever devised.

Who Were Some of the Model Car Builders and What Became of Them?"

One famous Guildsman was Virgil Exner Jr., a national junior winner in the 1946 model car competition, who later worked for Ford Motor Co. on advanced exterior design concepts. In 1937, his father, Virgil Exner Sr., had been a Guild judge in the first year of the model car competition. For those who don't recall, Virgil Exner Sr. was famous for the styling of the 1947 Studebaker and for being the flamboyant design executive at Chrysler in the mid-50s who started the "tail-fin" craze.

Here are others, with their status as of 1986-87:

-Former Vice President of GM Design, now retired, Chuck Jordan won the first national senior award in 1947. Mr. Jordan has donated his model to the Henry Ford Museum and Greenfield Village in Dearborn, Michigan, where it is on display.

-GM Stylist Terry Henline (who now works at the GM Advanced Concept Center in Southern California) won top honors in the Guild in 1958 with a second place senior national scholarship.

-Ron Hill, 1950 first place scholarship winner and formerly a GM designer, is head of the prestigious Transportation Design Center at the Art Center College of Design in Pasadena, California. At GM, Ron worked on the

1965 Chevrolet Corvair and the first Pontiac Fiero.

-Edward F. Taylor who entered the Guild competition from 1946-1951 became a GM Design Executive and worked with Chuck Jordan. He donated his award winning model to the Smithsonian's collection

-Allan Flowers, formerly a stylist/designer at GM and a 1962 4th place national scholarship winner, is the Chief Designer at the Nissan Design Center in San Diego, CA. Tom Semple, 1964 first place national scholarship winner also works at Nissan.

-Art Russell, 1957 first place senior national winner is associated with Craig Breedlove's "Spirit of America" and Mattel's Hot Wheels toy line.

-Stewart Reed, 1968 Fourth Place national senior scholarship winner was involved in the Manx Dune Buggy, and has worked for Chrysler and for Caltly (Toyota) Design Southern California

-Richard Lee Beck, 1964 national award winner along with Tom Semple, works for the Ford Interior Design Studios.

Many GM design staff members, former and present, who participated in the Guild include: Tony Ingolia (1937); Byron Voight (1937); Elia Rusinoff (1949); John Wozena (1948-49); D. Logerquist (1950); Chuck Torner (1950); Bob Cadaret (1950); S. Denek (1954); G. Anderson (1955); Charlie Stewart (1954-55); P. Tatseos (1958); Gordon Brown (1959); Tom Covert (1962); John Adams (1960-64); R. Menking (1968); and J. Folden (1968). Harvey Whitman of Oldsmobile Engineering donated his award-winning model to the Smithsonian (Dates in parentheses are the approximate year of participation in the Guild competition and/or significant national award).

Former Guildsmen have also have worked for Ford, Chrysler, AMC, Raymond Loewy & Associates, and Walter Dorwin Teague Associates (WDTA) in automobile design and styling. Kaizo Oto (1961-62 styling and national awards) worked for Loewy & Associates when they were designing safety cars for the Big Three in the early '70s, Ken Dowd (1957-59) worked at Ford and WDTA, and Charles (Chuck) Pelly (1954 national winner) started his own industrial design firm "Designworks" that has designed interiors for GM. Many other former Guildsmen

make their livings as industrial designers, but not necessarily in the automobile design field.

The Fisher Body Craftsman's Guild Foundation and Museum

The Fisher Body Craftsman's Guild Foundation and Museum is located in Eagle Point, Oregon. The museum houses an original set of blue prints drawn by Frank Riess for the Fisher brothers from which the two original master model Napoleonic Coaches were constructed by Walter Leuschner. From these, scaled-down and less elaborate sets of plans and an instruction books were written for the contestants. The museum has all of these original materials and other print memorabilia, as well as five Napoleonic Coach models (including among others, one Canadian (1932), one 1947 First-Place State of Florida, and one 1933 Second-Place Montana); a complete 1932 coach kit in its original shipping boxes (\$9.75 for Wood, Metal, Trim and Paint Kit combined); a partially completed Napoleonic Coach kit; a partially completed Traveling Coach for the Apprentice Craftsman Class (with all hand-made pieces); a complete coach kit once owned by the Executive Secretary to the President of GM in 1937; and four model cars from the late 1940's and early 1950's model car competition (including, from Florida, a 1948 Third Place winner, and two 1950 and 1951 Second Place winners). Guild shirts and Tams, and almost the complete collections of several contestants and winners are on hand. The focal point of the collection is a full-size Fisher Body Napoleonic Coach (the only one in the world) built by Francis Londo (1934 coach contestant) which is currently on display. And of course, Guild trophies, awards and a file of personal correspondence a foot thick.

The FBCG Foundation is a not-for-profit organization. It does not accept monetary donations, but it does accept Guild memorabilia.

Conclusions

We believe that the coach-building competition was good for both the youth of the times and for GM. Remember that, at the peak of the Depression, over 25% of the breadwinners in the U.S. were unemployed and morale in many households was low. The Guild gave hope to boys that they could achieve

something positive: a university scholarship or otherwise advance their education, or, perhaps, to win some cash. The competition provided a constructive way for a boy to spend his time, and was a uniquely creative process, requiring skill and imagination in making the trim, upholstery, and mechanisms of the coach. To complete the model required perseverance. Finally, for some competitors, the competition fostered an interest that later grew into employment with Fisher Body. Thus, more than one boy with little education but with nascent skills became a productive contributor to auto body design and manufacture.

We doubt that the corporate tax advantages of donating millions in college scholarships, and other possible other Guild write-offs, could possibly have outweighed the costs of operating the Guild. The Guild was an advertising bonanza and public relations gambit. In fact, it was so successful that Ford tried to imitate the Guild, but to no avail. GM and Fisher Body had built a positive image and introduced the idea, long before it became popular, of corporate responsibility to the human community. Although there were many creative design ideas submitted during the model car competition, the boys basically emulated the automobile designs they saw on the road, in popular mass market magazines, at their local dealerships, and at auto shows. We don't know, but maybe, just maybe, a few of those model car ideas reached a GM designer or stylist's mind and stimulated a whole flow of new ideas, illustrations or clay models. We do know that a whole new generation of car designers and stylists, who began with the Guild, became leaders in the field of automotive design and styling, shaping the cars we see and drive everyday. We know that GM purchased many of the winning model cars, not so much to copy and own the design ideas involved, but to promote the Guild via road shows. We do know that because of the Guild program many people received college educations that they might not have otherwise. About \$2,400,000 in university scholarships and cash was awarded by GM during the life of the Guild. Also, because of the Guild, GM had a ready source of future potential customers for their cars as well as a future pool of employee talent as many signed-

up for careers, or parts of careers, with GM or Fisher Body Division when they graduated from college. Another thing we know for sure is the boys had a lot of fun participating! Over 8.7 million youths had enrolled over the life of the Guild and many lives had been touched, some very profoundly.

Post-Script

A professor of gender studies at the University of Amsterdam, in a recent article written about the Guild, overlaid the positive, constructive values and male role modeling of the Guild of the 1930s-60s with 1990s feminist views and opinions.⁹ Somehow, because the Guild was for boys only, she concluded that women are excluded from today's world of automobile design and engineering.

There was nothing about the Guild that was anti-female. The whole family was involved in the Guild experience, particularly mothers. During the years of the Guild, institutions in America like the Boy Scouts/Girl Scouts of America, YMCA/YWCA, many secondary schools, etc., separated the sexes for appropriate role modeling and bonding. The Guild was no exception to this practice. Had the Guild been established 50 years later, the competition would have been open to both sexes. Despite their lack of Guild experience, women today are gaining a larger and larger role in the world of automotive engineering and design.

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Some Guild Prize Winners; Their Backgrounds and Lives

Stanley Knochel (1933) - one of us (Jacobus) interviewed Stanley Knochel on June 16, 1985, in his Baltimore home where he grew up. He won the Maryland First State Award in the coach competition at the age of 14 in 1932 (where he said he "learned the tricks-of-the-trade") and, in 1933, the First Place Junior National Scholarship, worth \$5,000. He sold his award winning coach to GM in 1968 for \$3,000.

Knochel used his \$5,000 scholarship to attend the University of Louisiana. Afterwards, he worked in the Baltimore area at Bendix Corporation, Aircraft Armaments, Inc. (AAI) and Glenn L. Martin Co. These were principally aerospace defense contractors. At Martin's he was a member of the "200 Club", an elite group of inventors with 200 or more patents to their credit. While there, during World War II, he helped build the Martin Marauder (B-26) and perfected a method of testing aircraft carrier cables for the Navy, which cut that tedious process by 10 times.¹⁰ From 1950-55 he ran his own tool and die shop.

It was no accident that Knochel had a complete machine shop in his basement while growing up and that his father taught him how to use it to advantage. Just for fun, Knochel and his father (Chief Draftsman at Baltimore Dry Dock) made a fully operational, dual cylinder, gas model airplane engine. Flying models in those days were scratch built (no pre-cut kits available). A model boat propeller was carved from wood using a cam and template system, and using this as a pattern, was cast in brass. They also constructed miniature lead batteries to operate model boat motors. It can be seen from this that Stanley Knochel was fully qualified to build a Napoleonic Coach.

Knochel made it clear that family support and involvement was essential to successful coach building. According to him, the color of materials contained in the purchased Trim Kit were not true to the colors of the GM supplied coach plans, so his mother worked with the local millinery shop to remedy the situation. His mother and sister did a lot of the sewing and seamstress tasks required for the interior of the coach body (french

knots, embroidery, needle point and the cutting/finishing of materials such as silk and rabbit's fur) and the exterior tassels and tonneau trim.

Later in life, Knochel lost an arm. But this was not an impediment to an inventive person. He designed and built a mechanical drafting board and jig saw system for disabled persons so he could continue to do the projects he enjoyed. This is fundamental Yankee perseverance, self-reliance and know-how. He lived in an era when if you didn't make it yourself, you didn't own one. Knochel died in 1994 at the age of 86.

During the summer of 1997, the Guild Foundation did a survey of winners to learn about their lives and fortunes. The results for five representative individuals are presented below:

Donald C. Burnham (1931), the son of a gasoline station operator in West Lafayette, Indiana, purchased a complete coach kit and spent 1,000 hours building a 1931 1st National Scholarship (Junior Division) winning Napoleonic Coach at age 15.¹¹ He studied Mechanical Engineering at Purdue University using his Guild scholarship. Initially working for AC Spark Plug Division, he worked his way up through the ranks of GM, becoming Manufacturing Manager by age 32 at the Oldsmobile Division.¹² After a 17-year career at GM, he moved to Westinghouse and eventually became its CEO and Chairman. Mr. Burnham donated his award winning coach to the Smithsonian Institution's Guild collection at the National Museum of American History in Washington, D.C.

Charles W. Gadd (1933) built three Napoleonic Coaches winning First Washington State awards three years in a row, and in the third year of the competition, 1933, he won a national scholarship. His coaches were built from scratch, but relied upon purchased trim/upholstery kits. He was 17 years old and an honor student when he won the highest Guild award. Gadd had been studying engineering by correspondence courses to advance his education, but the Guild scholarship allowed him to attend MIT and formally take up the study of Mechanical Engineering. His father made a modest income and could not afford to help with college. During his boyhood, Gadd delivered papers by bicycle to earn spending money. His father had built basic power carpentry

tools for the home workshop, but gave no help to Gadd while building his coaches. But his parents were very encouraging and allowed him to use the kitchen stove to heat his soldering iron and the living room stove to make castings. Gadd converted a sewing machine to a metal cutting jig saw, built a small lathe, and used dental methods such as the lost wax process to form metal castings for body trim moldings. According to him, "I am convinced that I, or anyone, wishing to succeed in Engineering will do best if he (she) has some background of working with his (her) hands and brain to develop a mechanical aptitude and skill in the designing of products. The Fisher Body Craftsman's Guild did this." He was not called to active duty during World War II because of his expertise in the design of aircraft engines (the Allison V12). Gadd worked for GM Research for 39 years, primarily in the field of automotive biomechanics and the study of automobile injury mechanisms and automobile safety improvements including the energy absorbing steering column.¹³ The "Gadd Severity Index," an acceleration based measure of head injury potential in automotive crash research, is world famous. Gadd donated his national scholarship winning Napoleonic Coach to the Henry Ford Museum and Greenfield Village in Dearborn, Michigan.

Raymond S. Doerr (1931) is a retired Mechanical Engineer and expert violin maker who donated his National Scholarship award winning Napoleonic Coach to the University of Michigan, his Alma Mater. Doerr's scrap book containing the many pieces of memorabilia from winning the 1931 Napoleonic Coach competition now resides at the Smithsonian's National Museum of American History. It indicates that he spent 2,000 hours building his award-winning coach. Doerr came from a family of craftsman: his father was employed as a pattern maker and both his grandfathers were woodworkers.

Albert W. Fischer (1931) grew up in Waukegan, Illinois, and at age 18 won State, Regional and National Scholarship awards with his first attempt at building a Napoleonic Coach. The project consumed 2,000 hours of time building a purchased coach kit. His father bought him a table saw, 4-inch joiner, jig saw and lathe when he was 16. In addition, he

had to make a tool and die set to punch-out copper pieces for the trim of the coach wheels/spokes. According to Fischer, his parents and their eight children were just getting by, there was no welfare assistance in those days, and the family had to raise their own vegetables in a garden. There was no money for college and the Guild was his only chance. Fischer stated that "I graduated with \$1,500 to spare and gave \$1,000 to a younger brother to get a degree in Chemistry. We were the only ones to go to college." He worked at GM Research and received a draft deferral for the work he was doing for the war effort and eventually became a development engineer in electro-mechanical instrumentation. In 1939 he had purchased a violin-making kit, got hooked on making violins as a hobby. Fischer has made many award winning musical instruments.

Emmett E. Day (1931,1932) was a state winner from Commerce, Texas, at ages 15 and 16 and used coach kits. State awards were in the \$25-\$75 range, not enough for college. According to Day, he "loved to make things with his hands and the coach competition was a great challenge." He was pretty much on his own as there was no school shop or Scouts where he grew up. Day's sisters were art teachers and they were helpful on aesthetic aspects of the coach design. Everything was hand-crafted as he had no shop equipment other than a hand scroll saw, a small vise, a few files, a soldering iron, a pair of tin snips, hammer, sand paper and pliers. Day believes that the Guild led to his graduating in Mechanical Engineering from MIT and his teaching engineering for 38 years at the University of Washington.

Fisher Body Craftsman's Guild Milestones

1920-22* Fisher advertising agency designs new trademark/logo/emblem.

1922 First emblem with Napoleonic Coach and words "Body by Fisher" bas relief/raised lettering attached to right-hand side of cowl of Fisher bodies.

1926 Fisher Body Company became Fisher Body Division of GM.

1928-29* Craftsman's Guild conceived by Fisher's advertising agency and W.

Leuschner and F. Riess design supporting master coach models and master plans.

1930 Craftsman's Guild educational program begins.

1930-31 First year of Napoleonic Coach competition; Albert Fischer, Raymond Doerr, Donald Burnham, and Howard Jennings win top awards \$5,000 each.

1934 Traveling Coach and Apprentice Craftsman Class idea was introduced. Probably designed by the Leuschner/Riess team. Master Craftsman Class idea was introduced for those building Napoleonic Coaches.

1937 Model Car competition (4-door sedan) introduced concurrently with Coach competitions.

1940-1945 Competition discontinued temporarily before and during World War II. Fisher Body Division builds war materiel.

1946-1948 Model Car (4-door sedan) and Coach competitions continue. Last year for Coach competitions was 1948.

1954 Model Car competition expanded to include; 2-door and 4-door sedan, convertible, and station wagon body styles.

1963 Open Competition added to Model Car competition to explore new wheelbase and body configurations.

1968 Fisher Body Craftsman's Guild discontinued.

1984 "Body by Fisher" emblems, with Napoleonic Coach, on front door kick panels discontinued. General Motors Assembly Division (GMAD) designated to build car bodies for each GM division. Fisher Body and Guide Lamp become Fisher Guide Division.

* denotes approximate dates.

Footnotes

¹ The Fisher brothers included Alfred, Lawrence, Charles, Frederick, William, Howard and Edward. All except Howard were involved in the automobile body building business. Howard was interested in real estate, namely the Fisher Building.

² *The Washington Post*, October 19,1997, The Wheels of Time section, "The Fin-de-Siecle Ford, 1940 Deluxe Convertible Coupe."

³ "Model Making," by Herbert Lozier, 1967, from Chapter 13, A Golden Opportunity for Model Makers, quotes Fisher Body news releases, Chilton Book Company, Radnor, PA.

⁴ The reach was a structural member that connected the rear axle with stabilizers to the fifth wheel or front axle. The front axle pivoted on the fifth wheel.

⁵ Duco is a trademark of E.I. duPont du Nemours & Co. Inc.

⁶ 1958 FBCG promotional brochure from Historic Files, GM Design Staff, General Motors Institute (GMI) Alumni Foundation, Collection of Industrial History, Flint, MI and *Special Interest Autos* (SIA #61), February 1981.

⁷ Winners Named in Giant Contest, Model Car and Science Magazine, October 1967 and Dream Car Modelers Complete Competition, by Stephen D. Urette, *Model Car and Science Magazine*, October 1964.

⁸ Some of this information is dated from 1985 and combined with 1994 information from "Young Model Makers Took a Trip," A Collector's Guide to Automobilia, Researched by John L. Jacobus, and Edited by John A. Gunnell, Krause Publications, copyright 1994.

⁹ "Boys and their Toys: The Fisher Body Craftsman's Guild, 1930-1968, and the Making of a Male Technical Domain," Ruth Oldenzel, *Technology and Culture Magazine*, January 1997.

¹⁰ See Bob Considine's column "On the Line," probably from *Detroit Free Press*, International News Service, August 21, 1947.

¹¹ J.Jacobus phone conversation with D. Burnham, March 25, 1992. He had promised his coach to his eldest son.

¹² Your Son's Future, Awards for the 1954 FBCG Model Car Competition, Historic Files, GM Design, GMI Alumni Foundation Collection of Industry History, Flint, MI.

¹³ "Charles Gadd Retires, Thanks to his Research Your Car is Safer Today", *GM Today*, Vol.2, No. 5, June 1976.

PARADE CAR

by John Christie

Even after November 22, 1963, William Clay Ford regaled his Grosse Pointe, Michigan guests with the tale of how he once enabled President John F. Kennedy to bring the house down. It happened at a White House dinner. The President said that he liked Lincoln Continentals but thought the rear seat was too small. Walking right into it, Ford said, "For what?" Kennedy shot him a silent level glance. All the tables rollicked. So did the contingent of Secret Service agents working that duty. Yet back in December of 1959 the Secret Service talks with the Ford Motor Company about White House Lincolns were low on levity.

As the Eisenhower era wound down, the Secret Service and Ford faced a problem. The White House fleet of nine 1950 Lincoln Cosmopolitan limousines and one custom-built open parade car was nearly a decade old and with dated dolphin-like styling (Fig. 1). Worse, the parade car was a whale to handle; agents continually complained about navigating its three tons without power steering. Ford wanted to continue supplying formal cars to the White House, a tradition that dated to Coolidge. It also needed a high-profile staging for its upcoming line of 1961 Lincoln Continental sedans and sedan-convertibles.

No matter who swore the oath in January 1961 the public view of the President had to change. The time of old

men waving fedoras from the 1950 Cosmopolitan for Fox Movietone News was over. Network television now linked America and Europe with half-hour nightly news telecasts, and color was moving in fast. The Imperial Presidency loomed.

The Secret Service ended up assured of a new parade car and that Ford would foot the two hundred thousand dollar bill for certain alterations to it. In return Ford would pocket five hundred dollars a year from the United States Department of the Treasury in what today might be termed a closed-end lease. Still, Ford felt good; the 1961 Lincoln Continental in its White House role would generate unbuyable publicity as the most recognized formal automobile in the world.

The genesis of that 1961 Lincoln Continental parade car owes to Edsel Bryant Ford, Henry Ford's only child. Dead since 1943, Edsel yet scans our world with that resigned, disappointed stare typical of him over his short life. That glance emanates from the Diego Rivera panels in the Detroit Institute of the Arts which Edsel commissioned in 1932 to celebrate the American automobile industry. In the Renaissance convention of including the donor in the commission, Rivera depicts Edsel standing to the lower right of a monolithic fender stamping machine. Rivera caught something in Edsel's look, as the vastness and inhumanity of the automobile industry and of his father over-taxed this good man.

Born sickly and not partial to climbing trees, Edsel liked to draw; the manifestation was early and definite. Henry Ford vetoed college: the family firm was enough education for any Ford. As always, Edsel capitulated: the family firm was duty and destiny. A ratty Parisian garret was not. He was president of Ford by age 25.

In 1922 Edsel persuaded Henry to buy the Lincoln Motor Car Company, an ailing upscale operation of stodgy cars whose radiator badges depicted the White House south portico. Henry considered the venture Edsel's hobby while the family firm kept to its mystical mission of spawning tough, cheap cars for America's Everyman.

Frequent European trips imprinted in Edsel the Byronic looks of roadsters built there by Bugatti, Mercedes-Benz, and Rolls-Royce. Popularly termed "cads' cars," they sported long hoods, short passenger roofs, and crouched low on their frames with spare tires piled atop their trunks like black doughnuts.

The 1938 sales year was a high time for Edsel. Designer Robert Gregorie's new Lincoln Zephyr series was a critical and sales success. The sleek, all-metal cars renounced 1930s styling conventions like clamshell fenders, acorn-shaped headlamps, upright radiator shells. Edsel had the further satisfaction of seeing the White House accept a modified "K" series Lincoln as its open parade car, a car FDR called The Sunshine Special.

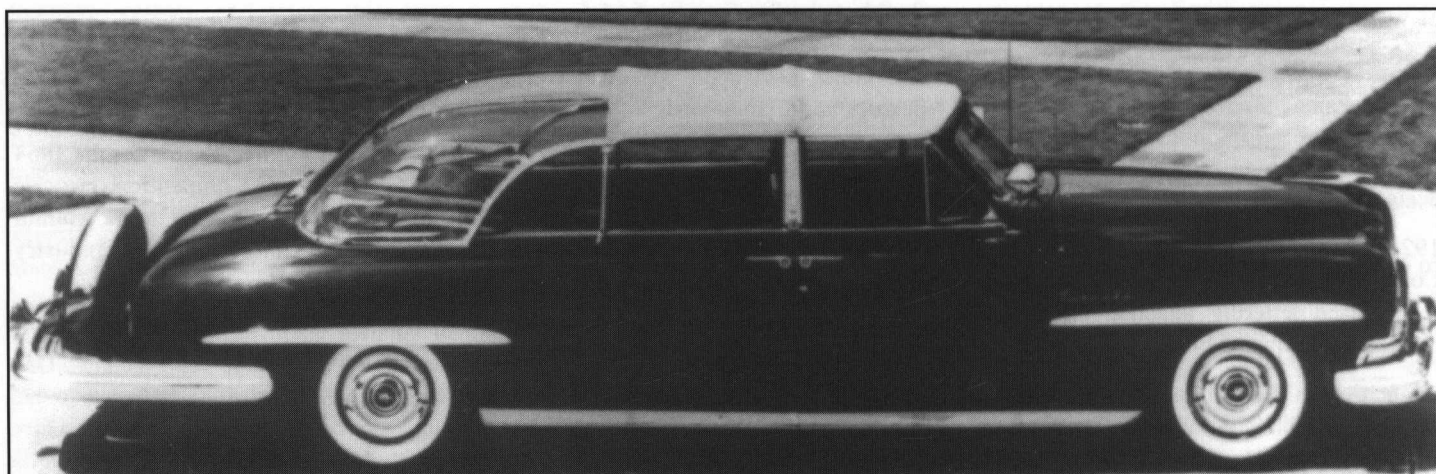


Fig. 1 - The original White House "Bubbletop" parade car, a modified 1950 Lincoln Cosmopolitan for President Truman.
(courtesy, Thomas E. Bonsall)

That December Edsel fancied driving a custom-built car next spring at his Hobe Sound, Florida home. He had already sketched it in a drawing that echoed the proportions of the European cad's car in modern aerodynamic sheet metal. Its crowning design signature was a sensually modeled trunk cradling an anachronistic outside-mounted spare tire. Edsel enlisted stylist Gregorie to adapt the sporting 1939 Zephyr convertible to the sketches. And from within the sheet metal of an attractive car a surpassingly beautiful one emerged.

In mid-March of 1939, H-74750, a striking Eagle Gray convertible with a gray leather interior, reached Hobe Sound. It turned blasé heads, eliciting buyer interest. Edsel ordered it into limited production as a 1940 Lincoln Continental coupe and convertible. It rapidly established itself among notables like Jack Benny, Jackie Cooper, Greer Garson, Babe Ruth, and John Wayne, even brainy roués like Ernest Hemingway, John Steinbeck, and Frank Lloyd Wright.

Edsel's 1940s Continentals remain hailed as the most beautiful American passenger cars ever. They evoked paradoxical auras of authority and freedom, old money and youth. And that anachronistic styling signature, the outside mounted spare tire, especially as the car pulled ahead of its admirers, suggested a human symbol of perfection.

On May 26, 1943 Edsel died at age 49 from stomach cancer; family and company insiders said that Henry Ford had hounded him into an early grave. In 1948, Edsel's oldest son Henry Ford II paced the Indianapolis 500 Mile Race in the last Lincoln Continental. In 1951 the Museum of Modern Art exhibited the 1940 Continental as a surpassing example of distinguished industrial art.

In 1956 Ford revived the Continental as the Mark II. Edsel's youngest son William Clay Ford viewed the venture mystically as a call to revere his father's now remote memory. The car reverently emulated styling cues from the 1940 car with the outside spare tire a metaphorical trunklid stamping. The Mark II failed, at ten thousand dollars, too costly for a competitive market. Worse, its solemn lines didn't evoke the 1940 car's aura of entitled youth. The cancellation devastated William Clay, but worse loomed. The Mark II's Oakwood Boulevard plant now

tooled for a car that would make his father's name synonymous with fiasco, a car called Edsel.

In the late 1950s Robert Strange McNamara, then General Manager at Ford, seemed a gadfly to senior management who styled themselves car guys with gasoline in their veins, unashamedly given to romantic responses to cars. McNamara never occluded his viewpoint that way; cars he equated with appliances. Upward sales statistics impressed him more than any well-turned fender. Sales indeed vindicated McNamara, but the Ford old guard, Edsel's ghost yet troubling their memories, couldn't abide this hairshirt's way of being right.

Detroit always works three to five years ahead of what customers drive, and in 1958 Ford readied the cars those customers, it guessed, would buy in 1961. One August afternoon of that year McNamara walked into an Advanced Concepts studio where a team headed by Elwood P. Engle finished up a three-dimensional proposal for a 1961 Ford Thunderbird. McNamara scrutinized the Engle proposal clinically, as he might a White Paper on sales projections.

Like the 1938 Zephyr, #S-2316-24 was a stark departure from the 1950s design mindset of bulk, fins, chrome splashes, two, even three-toned paint schemes. Engle's crisp, chiseled vision engaged the so far aesthetically blank McNamara. Its assured proportions and balance echoed the 1940 Continental and its of-a-piece unity suggested the best of the Mark II. The core styling element was flat-sided, bladed fenders which swept uninterrupted front to rear slightly above the levels of the flat hood and trunklid.

In a parallel to the 1938 scene between Edsel and Gregorie, McNamara encouraged Engle to adapt the sporty Thunderbird package into a formal 1961 Lincoln Continental sedan and sedan convertible. An inspired executive and marketing touch, historically it proved another matter. McNamara actuated the basis of the death car for the president in whose cabinet he'd serve within three years.

As in 1938, the recasting proceeded as if the emerging car configured itself with draftsmen, modelers, and trimmers mere oblivious instruments. As an allusion to the Mark II Engle drew in a slight fender kick-up aft of the rear doors, also used its

gunsight-like hood ornament, a four-pointed star set within a rectangle. He did not revive the outside spare tire of 1940 or its 1956 metaphorical trunklid stamping. He did, though, go for a 1930s luxury convention, doors which opened cupboard-style at the center pillars. Studio elation mounted as the car neared its pre-production sign-off. Stylist John Najjar rhapsodized over the revived simplicity and understatement: "The new Continental should be like an elegant lady in a simple black dress with her jewelry nothing more than an uncomplicated diamond necklace." From his vault at Detroit's Woodlawn Cemetery Edsel could have chanted a belated *Nunc Dimittis*.

For two institutions and three men late fall of 1960 proceeded promisingly. On November 1, the new Lincoln Continental sedan and sedan convertible went on sale. On November 8, John Fitzgerald Kennedy at age 43 defeated Richard Milhous Nixon by one-tenth of one per cent of the popular vote. On November 9, McNamara at age 44 became the first president of the Ford Motor Company not to be a Ford family member. On December 13, he accepted Robert Kennedy's invitation to join the new administration as Secretary of Defense.

January of 1961 followed suit. On January 3, McNamara occupied 3E880, his temporary office at the Pentagon. After Kennedy's January 20 inauguration, a black 1961 Lincoln Continental convertible, officially VIN1Y86405850, trucked its way on Interstate 75 from Wixom, Michigan into northern Ohio. It unloaded at the Cincinnati suburb of West Chester, the headquarters of custom coachbuilders Hess & Eisenhardt with an additional enumeration, X-100 of the White House fleet.

Hess & Eisenhardt first started crafting "professional cars," horse-drawn funeral carriages, for clients in 1876. Incorporating in the 1940s it turned to converting American luxury cars into hearses, flower cars, ambulances, limousines, and convertibles. Today as O'Gara Hess & Eisenhardt Armoring Company it fortifies Chevrolet Suburbans against everything from a tossed brick to sentex bombs and nerve gas.

Even today veteran company officials dislike hearing its most noted contract called a limousine. Tactfully they reiterate the proper designation, parade car, an open, formal vehicle whose

use centers on the theatrical, on ceremony. Its origins date to Tudor river barges, Victorian open carriages, even Czarist sleds. A limousine, from the French for "cloak," is a formal, closed car whose use centers, mundanely, on transport for important people. Dramatically speaking, the parade car sweeps the celebrated to their destinations in crowd-elating restagings of the entry into Jerusalem. A limousine merely arrives. As an extension of the theatrical setting the White House affords Executive power, the parade car brings its personification into the streets, stares, touches, even the striking distances of the governed. Producing X-100 from the contract drawings supplied by Ford's Advanced Concepts Studio posed no challenges to Hess & Eisenhardt's technical finesse.

And the firm's accomplishment remains the most charismatic public automobile ever crafted. From the outset the car was meant as an open vehicle, in the tradition of FDR's Sunshine Special and the Truman-Eisenhower Cosmopolitan. Spectators or television viewers must never infer that the President headed a garrison state. It measured 21 feet long and weighed over four tons. Unlike most cars modified for White House service, notably the black 1993 Cadillac Fleetwood Brougham now used by President Clinton, the 1961 Continental parade car didn't look oddly stretched like some Oscar night "limo," Elwood P. Engle's basic design for a four-door convertible lending itself fluently to the three and a half feet extensions between its doors and rear fenders (Fig. 2).

Besides its exterior elegance, X-100 could rouse its mass to 70 mph in 15 seconds yet still dance an 180-degree "bootleg" turn with all of its 8-ply Firestone tires shot out. A bulletproof mesh enclosed its radiator; to avert overheating, special radiator fans could cough accumulated confetti out of the grille. Only agents with special knowledge could open its doors. If needed, six could ride on four extendable platforms beneath the doors and two on the rear bumper. Theoretically the six male columns shielded the President from any conceivable line of gunfire. The car was not armored or bullet-proofed.

President Kennedy's favorite feature was its powered rear seat which raised him 10 inches to give the public a better view of him or his guests. The seat was trimmed in 15 hides of Scottish Bridge of Weir leather dyed light and dark blue, and his feet rested on dark blue Mouton carpeting. Two door compartments held English broadcloth lap robes with the Presidential seal embroidered in gold thread.

The parade car came equipped with a collapsible greenhouse-like roof with black vinyl coverings for additional privacy. The roof's five sections took up all of the trunk space, so a charming design expedient followed, a 1940-style outside mounted spare tire. The touch evoked Edsel's 1940 Continental, yet the 1961 car remained symbolically aligned with the New Frontier's social and emotional cachet.

By mid-May of 1961 Hess & Eisenhardt had nearly completed its commission except for painting the car, at President Kennedy's request, medium midnight blue and affixing its District of

Columbia GG-300 license plates. On June 14 it reached the north portico of the White House for formal photographs already with editorial adjectives like sleek and *magnificent* attached to it.

Yet that rear seat provoked clinical concerns, technical exasperation, low comedy, too. Weeks after the Secret Service accepted the parade car Willard G. Hess received a call from the White Medical Office: the President complained of discomfort in the car, its upholstery too firm for his unpublicized bad back. Hess flew to Washington with seven alternative materials, all rejected by the physicians. Finally all agreed on clusolite which had excellent support and shock-absorbing properties. Hess had the material dyed and outfitted into the car. Days later the White House called again about Presidential discontent; the doctors also disclosed a delicate physiological point; namely that his left buttock, because of his back brace, sat 3/8 of an inch higher than the right, suggesting that their earlier complaints about the seat covering had been wrongly based. Hess's log for the alteration reflects his bemusement and irritation: its subject line reads "Differential Ass Deflector for the President." He re-padded the offending side of the seat, and the topic lapsed—at least until that White House dinner with William Clay Ford.

The parade car's production counterpart meanwhile made its engaging way into American country clubs, valet parking lots, CEO gatherings, and luxury resorts. Though a hefty seven thousand dollars a unit, the new Continental never seemed a rich old man's toy or provoked Marxist tics among envious observers.

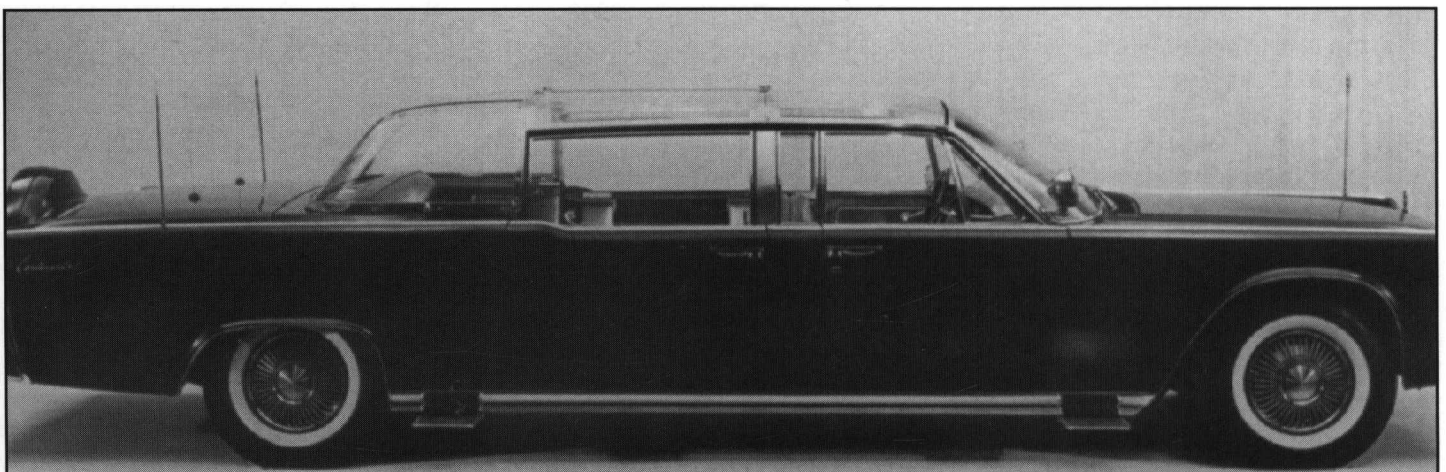


Fig. 2 - The 1961 Lincoln Continental White House parade car, as delivered for the use of President Kennedy. (courtesy, Automobile Quarterly)

Like Edsel's 1940 car, it was just plain beautiful. It turned heads, beguiled with its minimalist simplicity and élan. That year the American Industrial Design Institute awarded it a bronze medal.

The Ford Motor Company overlooked little to link the new Continental with the increasingly popular administration. Extra black sedans and convertibles were provided to the White House as "follow-up" and "off-the-record" cars. A light gray convertible with a half plexiglass roof was built for Mrs. Kennedy, though no record exists of her using it. Wherever the parade car appeared in America local dealers produced extra black convertibles for local VIPs. When the Kennedys vacationed at Hyannis Port or Palm Beach, extra white convertibles proliferated.

Security constraints overruled President Kennedy's earlier choice of medium midnight blue. An inspired option followed, 13 coats of Presidential Blue Metallic, a much deeper midnight blue that enhanced daytime reflections but at night rendered the car blacker than black. The tint afforded the White House an additional histrionic property: the car photographed better. In the spring of 1963 it received a 1962 grille and trunklid grab handles for the Secret Service, also a set of southwestern "sombbrero"-style wheelcovers from the 1957 Lincoln Premiere.

Otherwise from 1961 to 1963 the parade car's leasing client enjoyed a mechanically flawless, emotionally heady service life. Its aura of confidence and competence, wily youth, an unresented social entitlement, and lurking sexuality, was the right automotive brew for the New Frontier. On generic American streets like Main, Oak, Elm, it and the President looked epical, in triumph advanced. In Europe where it recorded more mileage than in North America, the Continental was, like the Kennedys, the classic young American at ease anywhere.

On Thursday, November 21, 1963, the Continental parade car and one follow-up car, a 1956 Cadillac sedan convertible named Queen Mary II, arrived at Dallas' Love Field on board a Lockheed C-130 USAF transport. Staff guarded them overnight in a garage beneath the main terminal. At 11:00 A.M. on Friday both were washed and driven to pre-assigned tarmac spots for the arrival of the Presidential party from Fort Worth.

One needs to turn to the prosaic

documenting of photographers and their equipment of Friday, November 22, 1963, for an emotionally manageable narration of the parade car's poignant, closing moments in American Presidential history.

Amateur photographer Robert Earl Croft used an Argus C-3 single lens reflex camera. It freezes the Continental at the mid-point of Agent William Greer's right-angle turn from Main onto Houston Street. On Mrs. Kennedy's side the window is raised half-way. The Presidential and national flags on the front bumper reful in a new wind pattern from the south.

Amateur photographer Mary Ann Mooreman that day took along her Polaroid Land Highlander, which she would never use again. She frames the Continental's left rear quarter as it exits onto Houston Street. Its flat buffed trunklid gleams like a Steinway concert grand, mirroring the southeast facade of the Texas Schoolbook Depository building.

The AP's James T. Atgens' Nikkorex F35 records the car proceeding at 11 mph down the middle lane of Elm Street. The left fenders mirror funhouse-style spectators grouped on the Dealey Plaza grass. A troubling detail is motorcycle policemen to the car's rear, as well as agents standing in the follow-up car who look fixedly right, as if hearing their names yelled from the crowd.

Abraham Zapruder was trying out his new Bell & Howell Zoomatic. The most indelible legacy of his 28 seconds of color footage resides in the popular imagination, that unease most of us still experience when we see any couple waving from the rear seat of a convertible.

Frame #164 shows a grand three-quarter front view of the car gaining speed after the turn onto Elm Street. In this its final moments it's resplendent and noble, of gleaming grille, of flags, blue-black fenders proclaiming the legitimacy and dignity of the American republic—until frames #255 and beyond when gunfire deranges political theater.

James W. Atgens' Nikkorex records the sole instance when the parade car is ungainly. Agent Greer floors its accelerator, and rushes 400 lbs. of engine torque to its rear axle. The weight transfer squats the rear bumper and lifts the hood ornament like something recoiling. Greer swerves hard right to the Stemmons Expressway triple underpass, and the car heels left fifteen degrees, the lean

aggravated by the flailing weight on the rear bumper platform of Agent Clint Hill who claws the trunklid grab handle. Mrs. Kennedy crawls from her seat and extends her arms towards the spare tire covering.

Another photographer with a Polaroid camera, James Troy Hankins, waited beyond the triple overpass oblivious to what had gone on earlier. The Continental looms at an unseemly speed. Agent Hill sits atop the rear seatback like a varsity captain at a homecoming parade. Nearing Hankins at over 75 mph the Continental's front fender blades jut purposefully, like prows. The two flags wave all open in the slipstream.

Outside Parkland Hospital Cecil W. Stoughton of the White House Photographic Department used an Alpha Reflex 35. His first frame shows the vacated Continental ringed by Dallas police beneath the Emergency Room marquee. His second records concerted doings. The trunklid is up. Men in business suits screw on the front section of the plexiglass roof. A third shows the left-side passenger door held ajar by a stained laundry bucket. Grommets now bind the black vinyl coverings to the passenger section of the roof. The institution of the open parade car stands unparadised, cloaked, forever halted in American presidential life.

At 11:30 that night the parade car returned to Andrews Air Force Base, Maryland on board the C-130 and was driven to the White House Garage where a five-man team from the FBI Laboratory discovered a crack, presumably from a ricocheted bullet fragment, on the inside of the driver's side of the windshield. Five days later the Arlington Glass Company of Arlington, Virginia replaced it. The official cars at President Kennedy's state funeral were Cadillac Fleetwoods and Chrysler Imperials.

President Lyndon B. Johnson, among his other concerns, needed a secure limousine, but there wasn't enough time—at least eighteen months—to design and build a new one. The 1950 Cosmopolitan was available, but the Secret Service viewed it warily since it had broken down the previous June in Ireland. Also, it was an open car.

A committee representing the Army Materials Center, the Department of Defense, Ford, Hess & Eisenhardt, and the Secret Service recommended rebuilding the Continental to foil individual assassins, and thwart terrorist

attacks. Secretary of Defense McNamara held himself aloof from the meetings and their decisions. On December 12, 1963, X-100 reached Ohio under a disinformation smokescreen that reported the car stored in Dearborn, Michigan. On December 20, the Warren Commission officially released the car, and Hess & Eisenhardt reviewed the charge given it by the Washington committee.

It was to enclose permanently the passenger area in a rolling bunker of steel, titanium, and bulletproof glass, strengthen the powertrain to handle the added weight, and retrim the passenger compartment to efface any damage from the assassination. Engineer Robert Ketner of the original parade car technical team had first unsupervised access to the Continental and examined the passenger compartment carefully. The lap robes were gone. Otherwise no physical remnants of Friday, November 22, were discernible. The rebuild, called Operation Quick Fix, proceeded. Its bill would total nearly five hundred thousand dollars.

Quick Fix again vindicated Hess & Eisenhardt's renown for meticulous craftsmanship. Admirers of the original parade car, though, were aesthetic losers because of its permanent roof and chunky stainless steel pillars that framed \$150,000 worth of inch-thick Pittsburgh Plate glass. Above its crisp bladed fenders the Continental now had an agricultural, Soviet look.

The Quick Fix car was now secure against everything but the nuclear winter. Bullet-proof mesh encased its brake lines; its fuel tank could withstand a direct hit by a small missile. A hand-built 460 cubic-inch engine had power up 20 per cent. Specially cast front wheel spindles cost six thousand dollars each and could support two tons. The President's isolation from the governed street world was now so complete that he only knew what went on out there from trunklid microphones. The Lincoln's post-Dallas look signaled a critical shift in the public presentation of the Chief Executive. The original parade car was a calculated extension of a Kennedy White House sophisticated in public ritual and theater. The rebuilt car was something else. In the 1960s social and political climate, the White House became a redoubt. The Quick Fix car complemented that reality.

It reappeared at the White House in June of 1964, but a superstitious President

Johnson stalled on riding in it until October when conventional black replaced Presidential Blue Metallic. During an overwrought campaign moment in Newark, New Jersey, Johnson leaped up and down on its trunklid, and collapsed it. Reinforcements made it up to handling the full leaping weight of any 240-lb. male. In Sydney, Australia, at the height of the Vietnam turmoil, a protestor showered it with green and red paint; the car was repainted overnight. Richard Nixon rode in it to the Washington National Cathedral funeral of Dwight D. Eisenhower. Nixon complained that the car made him feel claustrophobic; Hess & Eisenhardt cut out a mini-roof opening. The Quick Fix car went on to serve Presidents Ford and Carter and accumulated over fifty-five thousand miles.

Amazingly, few observers linked the Quick Fix car to the Dallas parade car. For its remaining 13 years in White House service, though anyone might have thought the analogy plausible, it never took on the notoriety of, for instance, Bonnie and Clyde's 1934 Ford sedan. That unjust stigma besets the 1961-1965 production Continentals. There's no citing a specific date for the onset, but at least a decade after Dallas those Continentals, especially the convertibles, came to be labeled "Kennedy Car," "Dallas Continental," "Assassination Lincoln," "Camelot Continental." A beautiful timeless design came to be imaginatively confined within one horrific instant.

And Hollywood got in on the act, exploiting the Kennedy Lincoln as a symbol of a desecrated, obsolete 1960s liberalism or clumsy gothic portent. Take "Animal House" in 1978 in which a drunken undergraduate played by John Belushi trashes a black 1963 sedan into an instrument of adolescent vengeance against an academic establishment. Or consider the 1991 "Kalifornia" in which free-lance writer Brian Ketner played by a young David Duchovny is much given to high-octane liberal views on rehabilitating mass killers. For a field trip of American multiple murder sites he buys a black 1962 convertible. For help with the gas he invites along, unwittingly, an actual killer, Early Grayce, played by the young Brad Pitt. As a prelude to the inevitable mayhem, at the first fill-up the pump register halts at number 22. Or ponder Kevin Costner's 1993 production of "Water World" which depicts the

aftermath of an ecological apocalypse. The last eco-thugs inhabit the world's last super tanker and careen Hells Angel-style within its hold in a stripped 1961 convertible. Yet the nadir of the Kennedy Lincoln as gothic *leitmotif* has to be the 1996 production of "Crash."

The film derives from J. G. Ballard's 1973 novel about doomed urban souls who crave sexual highs via auto accident injuries and who crowd underground symposia about celebrity death cars like James Dean's Porsche 550 Spyder or Jayne Mansfield's 1966 Buick Electra. The film's high point has James, a young initiate, riding along in a dented and stained black 1963 convertible with Vaughan, his satanic mentor. James asks Vaughan if the Lincoln obsesses him because the Kennedy assassination might be the ultimate crash car. Vaughan agrees. In the novel Vaughan's goal is to slay Aristotle and Jacqueline Kennedy Onassis in a restaging of Dealey Plaza.

The Curator's file at the Henry Ford Museum at Dearborn, Michigan contains a Ford management memo to related staff that on March 7, 1977 the retired 1961 Lincoln Continental limousine was returning to Dearborn. Secret Service Agent Glen Bosman would be driving on the non-stop trip with a White House Mercury and two relief drivers following. The memo orders the car removed on arrival to the Advanced Concepts Studio and stored beneath a tarpaulin. A later memo forbids exhibiting the car until after Caroline Kennedy and John F. Kennedy Jr. pass their twenty-first birthdays. The Continental went on display in 1983.

In Vienna's Armory Museum sits the 1910 Graef & Stift phaeton in which the Archduke Ferdinand of Austro-Hungary and his morganatic wife Sophie Chotek von Chotkowa were gunned down on June 28, 1914 at Sarajevo. The huge, pompous car looks seedy and abandoned, bullet holes visible in its right flank. Eight feet away stands a headless mannequin attired in the Archduke's bloodied uniform. The phaeton's Secret Sharer at the Henry Ford Museum is more sanitized, scrupulously prepped for exhibit, right down to its immaculate 10-ply Firestone whitewalls that don't look as if they ever touched asphalt. Other open conveyances come to mind that were vehicles of assassination: the Delage in which King Alexander of Yugoslavia

was slain in 1934, the Packard in which President-elect Roosevelt was riding in Miami the year before when the Mayor of Chicago was fatally wounded, the carriage in which President Carnot of France was stabbed in 1894 (now on display at the Musée de Henri Malartre outside of Lyons), and, in a similar conveyance, in 1610, a similar death for King Henri IV.

Many approach the car on display at the Ford Museum, not realizing it's indeed the car of the 1963 calamity. To its right a framed paragraph enlightens them:

Yes, this is the car in which John F. Kennedy was assassinated on November 22, 1963. It is part of a powerful image burned into the memory of many Americans. Even if you are too young to remember when Kennedy was shot, you probably have seen images of this car when it was a blue convertible in the bright Dallas sun. That event totally reversed the trend towards visibility that had guided presidential car designers since World War II."

Some press knuckles to chins, lift their heads to better view the right-side passenger seat whose inch and a half-thick window is half-way up. Others seem scandalized at tiny rust bubbles over the rear wheel arches of what is, like it or not, an automobile close to completing its fourth decade. Others spot the sirens nestled behind the front bumpers and the small lights alongside the hood that lit up the flags by night. Several bring an inevitable, wearying erudition to the display, go on about mafia snipers from Marseilles, France, the grassy knoll, how going straight down Main Street instead of turning onto Houston and Elm would have changed everything.

The knowing visitors—call them Camelot orphans—exude that reverential deliberation typical of pilgrims to the shrine of Saint Thomas à Becket. Their eyes roam the bladed fenders, the flags, the trunklid grab handles, the spare tire mount. Significantly, they don't appear to take in the Quick Fix permanent roof. Their eyes seem to airbrush it out of their field of vision like an aesthetic affront, restoring the Lincoln to its open configuration. The Curator's Assistant at the Henry Ford Museum, Cathleen

LaTendresse, is used to these scenes: "You wouldn't believe the reactions we get about this car." She adds that the museum doesn't know who places a single red rose alongside the right-side passenger door every November 22.

To its honor, the New Frontier never franchised any Graceland, yet this iconographic automobile comes as close as any relic to reconnecting bereft disciples with its thousand days as America's last open car of state, halcyon months when barricades and Secret Service agents kept them at manageable distances. Today a waist-high wrought iron fence does, supplemented by a sign embedded in the floor alongside the right front wheel. Its message starts, "WHY WE ASK YOU NOT TO TOUCH." Mostly they don't.

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ABSTRACTS OF OTHER PAPERS PRESENTED

The Automobile as Artifact: Automobiles in an Archaeological Context

R. Scott Baxter

Historical archaeology has become an increasingly important realm of anthropology in the last three decades. Researchers working under this title have become ever more aware that much can be learned about our recent past through the study of the material remains we have left behind. Despite this, these archaeologists have neglected certain aspects of material culture, not from some mal-intent but due to simple unfamiliarity. One such neglected material item is the automobile.

Automobiles and parts are encountered on a regular basis at historical archaeology sites, but are frequently chalked up as simply car parts, tractor parts, or unidentified machinery.

Analysis of these materials is pursued infrequently and generally with inconclusive results.

This paper suggests some possible avenues for analyses of these materials that the typical archaeologist, armed with some basic knowledge, could pursue. Much information concerning the role of the automobile could be gleaned from the archaeological record if appropriate questions are asked of the materials recovered. This information can in turn be used for further interpretation of the role of the automobile in 20th Century society.

Scott Baxter is with the University of Nevada, Reno

The Car as a Museum Artifact

by Jerzy Chlopicki

The Reynolds Alberta Museum (Canada) is a new facility housing 1400 major artifacts interpreting the technological change in agriculture and transportation in Alberta from 1895 to 1955. These artifacts include cars and trucks and associated trade literature.

The presentation deals with the car as a museum artifact, document of technological change - entirely or partially original and as a consistent "crowd pleaser" on top of it all. More and more museum audiences are captivated by rare cars that survived intact. Examples of technical effort undertaken to preserve the originals are illustrated by slides. The presentation tries to give some insights into several factors affecting implementation of this preservation philosophy. Until recently, "beautifully restored to its original condition" was the main trend in many technical collections. Conservation treatments which are presently undertaken must take these past restorations into account. While restoration has the simple goal of creating

a replica using original material, conservation treatments must be designed to deal with the uneven aging of modern material replacements in order to stabilize and compensate for loss of the original fabric of the artifact.

In a collection of mass-produced 20th Century artifacts, several new factors come into play, which are sometimes contradictory. The establishment of a clear story line demands that the object be intact to deliver a meaningful educational experience. Also interpretive and interactive use subjects the artifact to a technical museum's paradox to preserve and to demonstrate. Finally, the artifact must complement the museum's marketing effort and image. These facts affect the everyday work of conservators and curators. The success in finding the balance between preservation philosophy and the requirements of the moment varies from artifact to artifact.

Jerzy Chlopicki is MAC Conservator, Reynolds Alberta Museum

Driving into the Past: Women Writers and the Paradox of Automobility

by Deborah Clarke

Despite our cultural myth that only men care about cars, women, as the automobile industry has long known, also invest a great deal in their vehicles. This is reflected not just in the advertisements and inducements to women buyers, but also in the literature women wrote where the car appears as an emblem of identity, a means of escape, a status symbol, and a sexual space. In this paper, I examine the works of two prominent women writers, one, Edith Wharton, from the early part of the century and the other, Barbara Kingsolver, a contemporary author. Both writers give the lie to any assumption that women fail to be moved (both literally and figuratively) by this new technology and both reveal a surprising similarity in terms of identifying the car as both a return to an earlier period and a move into the future. Women writers, I'd like to suggest, may see the car in a somewhat more complex and ambivalent light than men writers.

In *A Motor Flight Through France* (1908), Wharton claimed that the motor car had brought romance back to travel. Driving a car, freed from railway lines and schedules, one could explore the villages of "our posting grandparents" and "surprise" in them "some intimate aspect of past time." The automobile, then, simultaneously evokes nostalgia, excitement, and daring, moving one into the future but also taking one back to the past. These contradictory movements also abound in Wharton's fiction, particularly in a novel like *The Custom of the Country* where the spirit of automobility, embodied in her anti-heroine, Undine Spragg, reflects the excitement of technology along with a concern over the still unknown technological future of American culture.

By the time of Kingsolver's *The Bean Trees* (1988), the automobile is no longer a mystery. Yet Kingsolver reflects a similar ambiguity regarding the nature of the car to both recover the past and move towards the future. The protagonist, Taylor, takes off in a dilapidated VW Bug without a starter, window, and most of the rest of the technology developed by the automobile industry over the course of the century. Thus from the start, her trip reflects an earlier era of automobility. Again, we see a move to recuperate a past, a use for the automobile as significantly different from commuting or even the aimless travelling done and written about by the Beats a generation earlier.

My discussion links this paradoxical merging of past and future to their cultural contexts. I am not thinking so much of the kinds of cars being designed and the ad campaigns (though this may be something to investigate) but more of the political and social contexts and how the representation of the automobile reflects them. Thus, I envision this paper doing several different things. First, it examines the way that two women writers represent the automobile and its impact on women, paying particular attention to the conflicts between past and future which it reflects. Second, I set these texts within a broader cultural and political context, and explore the ways that the car might provide women with a particularly appropriate symbol for their respective periods. Finally, I link this with what was going on in the automobile industry itself in terms and marketing and designing cars for women during these periods.

Deborah Clarke is a Professor of English at Penn State University.



(Courtesy, Minnesota Historical Society)

A Decade of Tension (1966-1977): Politics; Environment: United States Car Industry

by Joop Schopman

After the second World War, the American car industry was very successful. The number of new vehicles sold each year increased steadily. The industry with its main center in the Detroit area was one of America's most important employers. However, the growth in the number of cars also brought an ever increasing level of pollution of the air, ground, and water. Its consequences, in particular the smog formation in such areas as Los Angeles, started to worry people. It was not so much the reduced visibility or the unpleasant smell in the air that upset people as it was the potential risks for their health.

The automotive industry did not react with concern. So, to tackle this inter-state problem to find ways to reduce the pollution by exhaust gases, the Federal government had to take the initiative. As a consequence, the U.S. Congress agreed in 1955 on a public law which authorized, amongst other things, financial support for car manufacturers to study, develop, and produce less-polluting vehicles. However, when increasingly stronger legal pressure from Washington did not lead to more serious efforts by the automotive industry, people turned to their local government for action. Not surprisingly, California was the first state to act. It first required all new 1966 cars to meet

emission standards. The Federal government was now forced to follow, also because the U.S. Congress had become irritated by the non-responsive behavior of the industry. In 1970, the Clean Air Amendment (Pub. L. 91-604) was enacted which set strict emission standards for 1975 and following years.

This political landmark dominated the relation between the Federal government and the car industry for many years to come. The car industry did not only try to find technological solutions for the 1975 emission standards, it also followed several strategies to delay their introduction. In this latter it got unexpected help from the outside: the first energy crisis of 1973-74, and by unforeseen problems with the catalyst which was considered to be the answer to the emission standards. As a result, Congress postponed in 1977 the introduction of the 1970 standards which did not take full effect till 1986. This surprising political move will be discussed because it had no "fundamentum in re;" it was not justified by any new facts.

Joop Schopman (University of Innsbruck), is Visiting Professor at Boston College and lives in Innsbruck, Austria

Moving Relationships: Comparing the Corporate and Personal Practice of Naming Automobiles

by Jameson M. Wetmore

Ever since the early models of automobiles were produced, people have given them names. In the first few decades, different car types were typically distinguished through links with the name(s) of their creator(s): Oldsmobile and Duryea, for example. Although the names of the original business founders are still directly associated with many automobiles, the specific designations given to cars have become much more varied. Modern manufacturers commonly give automobiles names that refer to technical components, animals, objects that intrinsically have nothing to do with automobiles, and meaningless combinations of letters and numbers. Often this is done to create a certain mystique or personality in the hope that it will capture the imagination and the pocket books of potential buyers. This paper traces some of the changes in automobile names in America over the last century in an effort to see how they have been used by manufacturers to help market cars.

The automobile industry, however, has not had sole control over what cars have been called. For instance, informal names like "Tin Lizzie" and "Bimmer" have become popular over the years, and have subsequently been used in marketing. But there has also been a history of people who designate their cars with names that are more personal. It has been a common practice to

give a car a human name like "Victor" or "Violet" and refer to it as nearly a friend or a member of the family endowed with its own personality.

I discuss a wide variety of examples of this form of personalization, drawn from history and recent interviews. Practices that tend to accompany personal car naming including talking to cars and physically caressing cars, are mentioned as well. Comparison is made with other technologies that people tend to anthropomorphize (e.g. computers, bicycles, and military bombers) in an effort to better understand the motivations behind car naming. The practice of car naming will be used to get a better understanding of the ways people interact with automobiles in their everyday lives.

Examining the phenomenon of car naming offers a window into how automakers wish to construct the relationship people have with cars as well as the relationships people actually have with their vehicles. The mutual interactions between these two groups in relation to car naming and personality designating is explored as well.

Jameson M. Wetmore is a graduate student in the Department of Science and Technology Studies, Cornell University, Ithaca, NY

British Car Culture

by Thomas G. Velek

At the 1996 Automobile History Conference, I spoke on the effects of U.S. auto manufacturers in Britain. My recent investigation has focused on the cultural impact of the automobile coupled, again, with the overtones of the decline of domestically-controlled manufacturing. Recent developments with regards to Rolls-Royce have provided a contemporary illustration of my thesis that despite a different type of car “culture” than that developed in the U.S., the car in Britain has played a significant cultural role. I have drawn this into my previous study of the decline of domestic manufacturing by examining public/cultural reaction to different phases of the decline of the British auto industry. At each stage, including the present sale of Rolls-Royce, the reaction has been that a truly unique piece of “Britishness” has been lost. This was particularly true in public reaction to the end of MG and the Ford buyout of Jaguar, equally so, the negative reaction to the government bailout of Chrysler was evidence of a strong sentiment that as a foreign corporation it was not worthy of direct government assistance — assistance that had not been extended to, for example, Rootes and Standard.

Finally, an examination of the use of the auto in British cultural product demonstrates that for the British, emotional

attachment to the car as a cultural icon has diminished as domestic nameplates have disappeared. An exception may be the Ford Cortina which has been immortalized in song and prose as an icon of a generation of Brits.

All this leads to an extremely interesting issue. The automobile, the machine that in many ways has come to characterize technology in the 20th Century, has done what few other technologies have — it has played a unique cultural role. While this cultural role has been different for different generations, it has also been different for different countries. In Britain, the embrace of the auto has a cultural symbol has had significant nationalist dimensions. The decline of domestic manufacturing has extended through the society, and for many has come to represent the prime example of the “British disease” of the 20th Century. As this has occurred, there have been two results: 1) the auto has diminished as a cultural icon, and 2) each successive loss of “Britishness” has created a wider feeling of cultural failure throughout British society.

Thomas G. Velek is a professor at the Mississippi University for Women, Columbus, MS

Two interesting Figures accompanied Professor Velek’s talk, which are reprinted below.

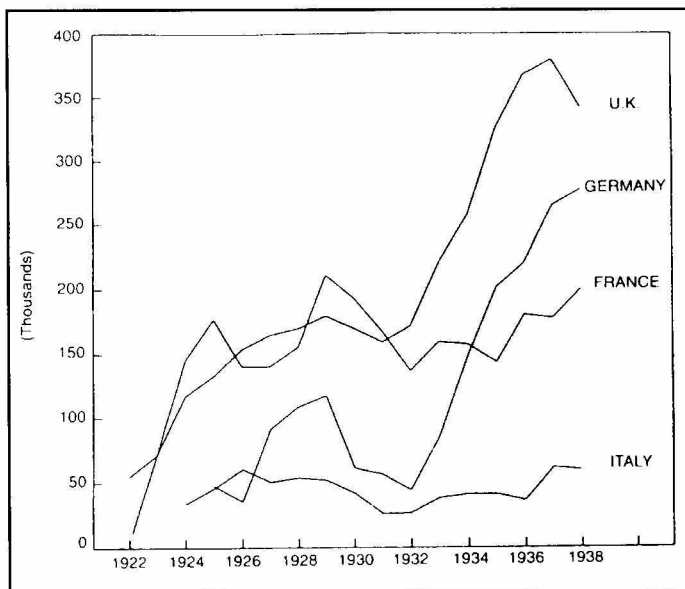


Fig. 1 - Car production in Europe, 1922-38
Source: SMMT

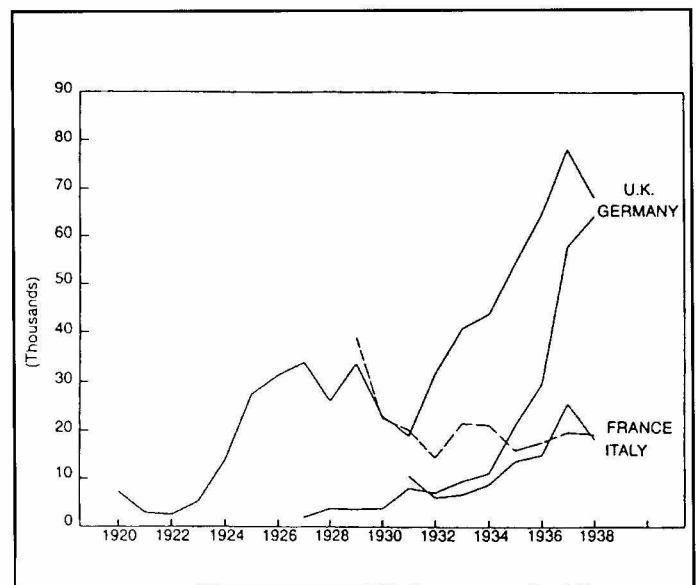


Fig. 2 - Car exports from the principal European countries, 1920-38
Source: SMMT

Carlore: Mid-Course Correction and Further Directions

by L. Michael Bell and Tim Lundgren

"The lore and legend that governed the Ford were boundless"
— E.B. White (1956) reminiscing on the Model T Fords of his young manhood.

A modern academic folklorist would consider the late E.B. White a kindred soul. White's choice of words was prophetic: 33 years would pass before the British scholar Stuart Sanderson would publish his seminal article insisting that "the Folklore of the Motor-Car" was prime, but unjustly neglected, material for folklore study.

Our paper proposes that Sanderson's leads have not been followed up with anything approaching adequacy; there is a vast body of "Carlore" which is (a) culturally important because of (1) its traditional near-universality among American males, and (2) the vehemence of disagreement between conflicting beliefs; (b) socially important because of its effects on driver behavior (road safety not least); and (c) economically important because it can represent a significant headache to carmakers and mechanics.

Sanderson mainly collected Superstitions (e.g., good-luck charms and practices) and Legends (e.g., "The Death Car", "The Rolls-Royce Guarantee"), including one legend-type which Brunvand calls "The Economical Car" and we have dubbed "The Suppressed Invention"; in Sanderson's words, "tales of how a manufacturing company [has] bought up the patent for some [greatly improved] design and then suppressed it." One of us delivered in 1997 what seems to be one of the first papers on "Suppressed Inventions" ever presented to the scholarly community. But surprisingly, it appears that, since Sanderson, the only Carlore that folklorists have published is Contemporary (a.k.a. Urban) Legend of the above type: "The Philanderer's Porsche," "The Smashed VW Bug," "The Runaway Grandmother," "The Solid-Cement Cadillac," "Mint-Condition Vintage Vehicles," and many others.

It is important to note that modern folklorists accept as folklore most information that circulates orally, anonymously, unofficially, and in variant versions — be it rumors about celebrities, beliefs about fast food, children's rituals like "Shotgun" or "Jinx," or in-group slang. They have discarded earlier criteria requiring obsolescence, irrationality, lack of sophistication, or erroneousness as diagnostic features. In our

paper, "Folklore" is nearly equivalent to the auto-industry term "Word of Mouth," as used in areas like product planning and marketing. In a context of historical studies, this point is important to establish right away, because we will focus on an area of "Carlore," namely Folk Belief, which is more synchronic than diachronic. (Also, it may be important to note that this lore is often colloquially described as "myth," which usage we will call in question.)

Our paper very briefly surveys the full range of Carlore — Legend, Slang, Rituals, and Material Culture (e.g., Lowriders), but then concentrates on Folk Belief, which we have found to be the most neglected category. The following examples of Belief are limited to those easily expressed in a phrase: You should always (or never) let your car warm up, rotate your tires, use Pennzoil, park a stick-shift car in neutral on a slope, downshift on a long, steep downhill, brake while driving through a banked curve, allow your gas tank to go down below one-quarter full; "the police around here will allow you X m.p.h. over the speed limit;" a penny held in the mouth will get a DUI driver through a breathalyzer test; and many more.

People argue these "folk beliefs" so passionately that they constantly appeal to internet chat groups and advice columns like "Car Talk" for authoritative answers — in revealing language like constantly arguing, criticize, debate, yelling at me, settle this dispute, etc. Second, as with many rumors, carmakers and mechanics find them a plague to deal with. One of the Magliozzi brothers even vowed recently to start up a service, "The Underground Misinformation Highway," to counteract all the rampant nonsense. And, interestingly enough, the "Car Talk" column itself sometimes ends with a blurb expressing Folk Beliefs in classic phrasing: "Is warming up your car actually bad for it? Should you 'save the brakes' by shifting into a lower gear?"

We closed with some suggestions for further research, including the joining of folkloristic and sociological studies of car-human relationships.

L. Michael Bell is a Professor in the English Department, University of Colorado

Tim Lundgren is a Professor at Ohio State University

Folding Money: a History of Folding Camp Furniture and Auto Tourism in America

by Bruce N. Wright

My remarks are limited to a short time in the late teens and early nineteen-twenties when this country saw a rapid growth of automobile touring — or auto tourism — and an equally rapid growth and enthusiasm for tent camping and the rugged exploration of the country. The research I have conducted into this phenomenon indicates a link between the ease with which people took up this challenging activity and the growth of the folding camp furniture manufacturing industries of that time, as well as, of course, the growth of automobile ownership.

In 1924, President Calvin Coolidge announced the formation of a committee charged with creating a national policy on outdoor life. Coolidge echoed a national predilection for outdoor recreation that began in the late 19th Century over concern for improving health, and culminated in the flourishing of auto tourism in the early 1920's. Part of Americans' attraction to auto tourism was the chance to experience the country's vast and varied natural landscape up close, and that attraction was reinforced by the ease of mobility that autos

provided. Many people chose to camp their way across the States because it was cheaper than staying in hotels (and observing inconvenient check-out times), and because it allowed them greater freedom to take side trips. Canvas manufacturers played an important role in helping spur the tourism industry by providing tents, hammocks, folding furniture, and all manner of fabric covers — not to mention the tops of many automobiles.

Coolidge's national outdoor life movement is significant because for the first time it attempted to make what had been the privilege of the wealthy — recreational mobility — the provenance of the masses. What Coolidge called for had already found expression in the growing number of camps and tourist attractions that sprang up across the country after the advent of the automobile. Moreover, the phenomenal rise of autocamping in the late teens and early twenties was tied directly with the growth of automobile ownership. In 1913, the ratio of registered automobiles to the total population of the



(Courtesy Minnesota Historical Society)

country was 1 to 77; by 1927, the ration had narrowed to 1 to 5.3 people. It is estimated that in 1921, with well over eight million passenger cars registered, there were already 20,000 people driving cars across the country, despite a lack of good roads, compared with only 12 cross-country drivers in 1912.

With increased numbers of campers came an increased awareness of the pleasures and pitfalls of “roughing it” on the road. At first, people tended to bring along as many of their household conveniences as they could cram into their flimsy cars, often to the discomfort of the passengers and the wear and tear of the machine.

It became the challenge of every touring equipment manufacturer to reduce the weight and bulk of their products in order to convince customers to pack the equipment along with the family vitals of food and clothing. Typical camping outfits from the 1920’s included an “autotent,” a fabric lean-to bolted to the side of the car, or more elaborate affairs with screened windows, hanging bunks and kitchen kits modeled after the chuckwagon of the wild west. Bolted to the running board, an auto tent unfolded almost automatically into a full-scale shelter complete with cot, springs, and headrest — the running board itself.

Autocamping and the use of folding camp furniture got a big boost in 1921 when President Warren G. Harding joined Henry Ford, Thomas Edison, and Harvey Firestone on a widely-reported autocamping trip across the country. A newspaper photo showed the entourage in casual clothes sitting in folding canvas sling chairs around a large circular dining table under a canvas tent.

Auto campgrounds around the country were very likely to see a broad economic spectrum of clientele. However, campers were expected to follow proper “camp etiquette,” which dictated helping camp neighbors when needed, moderating noise levels and cleaning up after breaking camp, and complete disregard of social status and economic ranking. In other words, camping created a common ground, so to speak, where American democratic ideals could be practiced.

But the ideal did not always match the reality. More strictly controlled campgrounds and a new breed of motor hotels

(“motels”) sprang up, not only to meet the desire for comfortable accommodations, but to address the increasing concern of communities over the proliferation of “hobo” jungles and the influx of undesirables at municipal campgrounds.

The free-spirited days of rubbing shoulders with rich people quickly passed. By the late ‘20s and early ‘30s, new state health regulations and camp-permitting processes eliminated many of the problems. The Great Depression undoubtedly played a role in this shift. Fewer cars meant fewer people traveling, which in turn meant fewer camp grounds. The camping goods manufacturing industry took a hit as well.

While the camping craze lasted, there were numerous canvas and awning manufacturers who saw a chance to cash in on the fad by designing and marketing collapsible furniture and camping equipment. Collapsible furniture as a technological idea goes back to ancient Egypt with the “x” chair — either in folding or fixed form — which was often used for royal furniture. Design historian Siegfried Giedion believes that camping equipment reflects the vernacular patent furniture tradition of the 19th Century which emphasized multifunctional designs free of useless ornamentation. According to Giedion, the folding camp stool became one of the common mass market articles of the 19th Century.

During and after the Depression, camping equipment manufacture diminished to the handful of companies that continue today. The number of new canvas camping equipment inventions also declined or was reserved primarily for refinements of existing patents. Also evident is a shift in popular taste towards trailers and house-trailer camping; one suspects that these higher-priced vehicles provided an extension of the conveniences Americans were demanding in their houses. Today, the folding camp furniture business is dominated by one or two national companies.

Bruce N. Wright, who lives in Roseville, Minnesota, is editor of Fabrics & Architecture Magazine.

FROM THE SAH CONFERENCE PROGRAM CHAIR

The success of our first conference, "The American Automobile Industry - Past, Present, Future," held at the Ford Museum in 1996, argued strongly for making conferences a regular part of the Society's calendar. "Interpreting the Automobile," whose transactions are reported in this issue, was a collaboration with the National Association of Automobile Museums, and was fashioned as a tool for facilitating collaboration between historians and museums in presenting the automobile to the public. It took place from September 9th to 11th, 1998, at the Henry Ford Museum & Greenfield Village in Dearborn, Michigan.

Although the theme of this conference was more focused than that of our first, the papers presented by researchers covered as eclectic a range of topics as one could hope for, while remaining true to the interpretive motif. From "artifact" to "folklore," milk delivery to workplace culture, the automobile has become an inseparable part of people's lives and is eminently worthy of study.

A third conference is planned for March 8-11, 2000, at a new venue. Titled "Exploring Automotive Culture - Heritage, Society, Design," the conference will take place in the heart of car culture, Southern California. We

are grateful to the staff of the Petersen Automotive Museum of Los Angeles for hosting the conference, and to the members of the SAH Southern California Chapter for assisting with the details of organization. We again look forward to collaboration with our co-sponsors, the National Association of Automobile Museums, for what is certain to be an enlightening and rewarding event.

The Call for Papers is presented below; we hope that some of you will present the fruits of your research at the conference and that many of you will be nourished by them.

—Kit Foster

EXPLORING AUTOMOTIVE CULTURE - HERITAGE, SOCIETY, DESIGN

Third Biennial Automotive History Conference, Los Angeles, California, March 8-11, 2000

The Society of Automotive Historians and the National Association of Automobile Museums are seeking proposals for papers to be presented at their third biennial automotive history conference to be held in March 2000 in conjunction with the Petersen Automotive Museum. Entitled "Exploring Automotive Culture - Heritage, Society, Design," the conference will be a symposium exploring the impact and meaning of the automobile in America. Of interest to a wide range of people, from academic researchers to lay historians to museum professionals, it will be held March 8, 9, 10, and 11, 2000, at the Petersen Museum in Los Angeles, California, USA.

Proposals are invited on topics pertaining to the integration of the automobile into society, the design and manufacture of automobiles, and the

ways in which people relate to their automobiles. Potential topics of interest might be automobile manufacturing, the cultural impact of the automobile, the roadside economy, the growth of cities, or interpretive issues in presenting the history of automotive culture to the public.

The Society of Automotive Historians is a worldwide organization of people with a common regard for the history of the automobile and its industry. Founded in 1969, the Society's purposes are to encourage research, preservation, recording, compilation, and publication of materials concerning the history of self-propelled vehicles from antiquity to today.

The National Association of Automobile Museums is an organization for the institutions and people dedicated to the automobile and its history. The Association's mission is to link auto

museums, enabling them to foster education, share exhibits, and exchange vital data about collections.

The Petersen Automotive Museum is dedicated to the interpretive study of the automobile and its influence on culture and people's lives. Its exhibits showcase the evolution of the automobile and its impact on Southern California.

Proposals should include the title of the submission, names and affiliations of presenters, chairs, participants, etc., together with addresses, phone/fax numbers, e-mail addresses of contact personnel, proposed format (paper, panel, workshop, etc.) and a one-page abstract describing the content of the presentation. The deadline for proposals is August 15, 1999; notification of preliminary acceptance will be made by September 15, 1999.

Proposals should be submitted to:
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