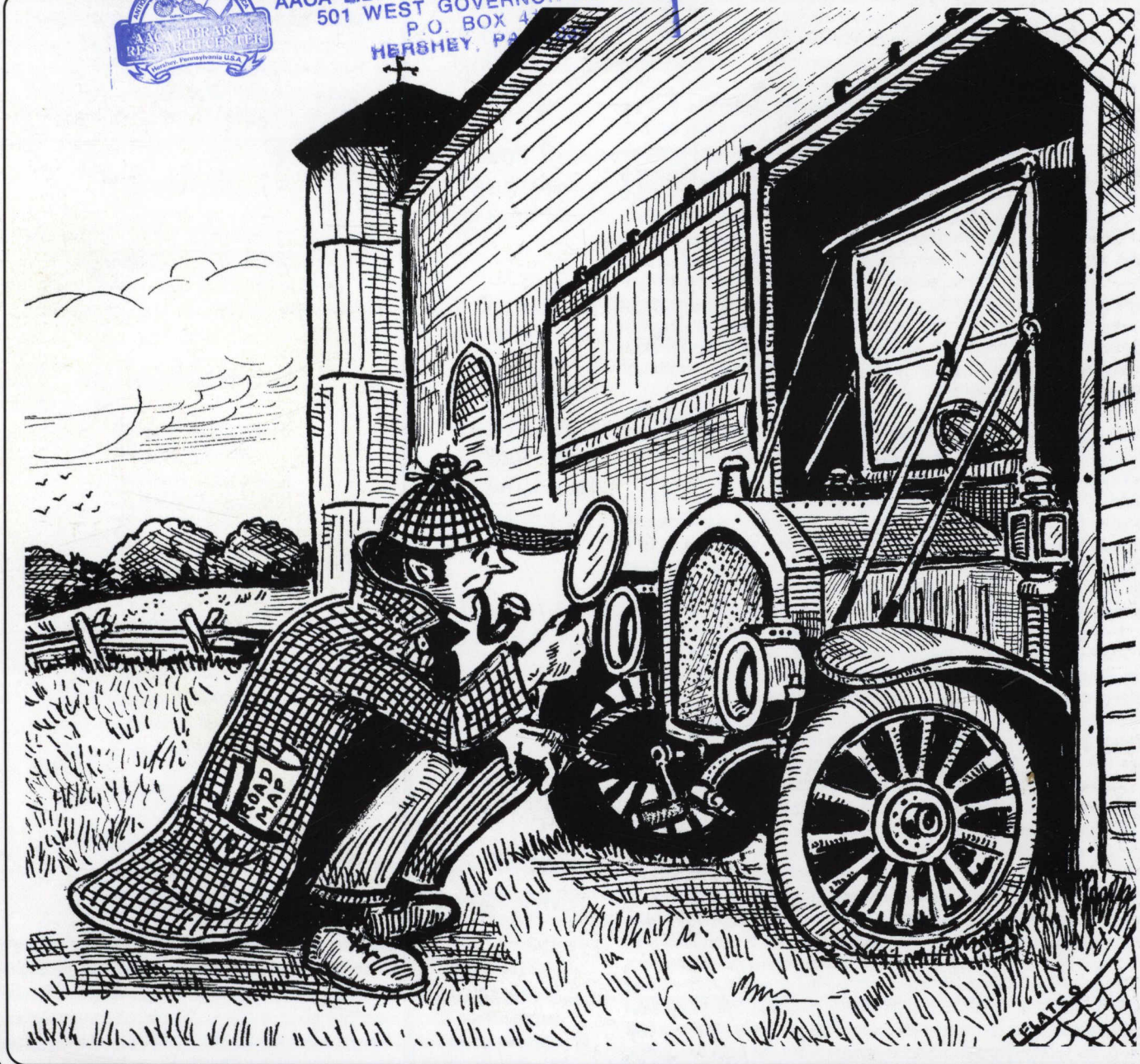
AUTOMOTIVE HISTORY REVIEW

FALL 1995 ISSUE NUMBER 29



A PUBLICATION OF THE SOCIETY OF AUTOMOTIVE HISTORIANS, INC.

Editorial Comment

A couple of years ago, as SAH approached its twenty-fifth anniversary, the Board of Directors commissioned founders Richard and Grace Brigham to compile a history of the Society. While we were blessed to have sixteen of the founding members on our rolls, no one would better be able to commit to paper the record of the early days of our organization than the man whose inspiration it was and the woman who meticulously kept records of all the correspondence which gave birth to SAH. As Dick's health failed his role became that of consultant, and Grace commenced writing the record of the first few years. She completed the first two chapters shortly before his death at age 88 this past July, and we are honored to present them here as the initial installments of "Those Elusive Vehicles," beginning on page 3. The further chapters will appear in subsequent issues.

John M. Peckham, whose name figures prominently in Grace Brigham's chronicle of our early days, is a founder whose byline has been missing from our publications lately. Herein he and we redress the omission with his account from the very early days of the automobile, long before the proliferation of internal combustion engines and any hint of an "industry." The saga of Joseph Renshaw Brown makes high drama; if his exploits had been more successful, could his fame have eclipsed that of Henry Ford?

W. Dorwin Teague writes that "it is important to avoid the old cliché that the output of any design office was the work of one man." Here he makes two important contributions to the recording of history: his own role in product and automotive design while an employee in the design office of his father, Walter Dorwin Teague, and a little-known, stillborn reprise to the Lincoln Continental: a "Ford Continental" if you will. The surviving evidence is presented starting on page 18.

Ferdinand Hediger is new to the rolls of SAH, and his byline to these pages, but his work should be familiar to members. He co-authored a Cugnot-winning book a few years ago, and ohters of his works have been published extensively, mostly in Europe. His article "The Forgotten Land Speed Record of 1905: A Short History of the Dufaux Racing Cars of Switzerland," which begins on page 24, is the first result of Taylor Vinson's initiative to give wider visibility to works originally published in languages other than English. This article, translated by the author himself, first appeared in *Automobil Chronik*.

Few are the issues of *Automotive History Review* which do not contain an article by founding member Keith Marvin. In this issue, Keith helps us observe the centenary of the comic strip by explaining what we believe is the first appearance of an automobile in the comics (page 28). In characteristic Marvinesque fashion, he teases us with his revelations, then asks if perhaps we know the name of the newspaper in which it appeared.

Automotive History Review has been my pride and joy over the last six issues, despite the fact that a paucity of time and priority for prompt appearance of *SAH Journal* have often relegated it to stepchild status. I am grateful for the help of many persons during the six years it has taken to produce those six issues; chief among them are our many contributors, without whom there would have been no seeds from which to sow our *Review*. In addition to the writers, I'm indebted to Beverly Rae Kimes, Pat Chappell, and the staff at Sir Speedy Printing for continued publications support, and in particular to Taylor Vinson, whose focus on the *Review* was crucial to this issue. This is, in many ways, his issue, and you'll find him recognized on the masthead under the mantle of Associate Editor. As I attend to other Society matters for the next two years, I'm very comfortable leaving the *Review* in Taylor's hands. His activism in seeking new and undersung contributions was vital to this number, and his enthusiasm and energy will bring you more of the same - and more often - in the days ahead.

-Kit Foster

Back Issues of Automotive History Review

Through 1995 there have been 29 issues of *Automotive History Review*. Numbers 2, 17, 19, 20, and 21 are out of print (some of these, either as originals or copies are included in sets). Single copies of other numbers are $3.50 each postpaid in USA. We have a very limited number of sets of 27 issues, not including No. 29 (which include four numbers as copier reproductions) for $85.00 postpaid USA.

Make checks payable to Society of Automotive Historians, Inc., and order from Fred Roe, 837 Winter Street, Holliston, MA 01746 USA.

Inquire for shipping outside USA.

A PUBLICATION OF

The Society of Automotive Historians

AUTOMOTIVE HISTORY REVIEW

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Front Cover: *"Old Car Sleuths," an original drawing by Alexander Telatco, 1962; courtesy of Grace R. Brigham.*

Back Cover: *The Dufaux 1905 straight eight 100 horsepower racing car, fully restored to roadworthy condition by Hahn Brothers of Kriens for the Verkehrshaus der Schweiz in Lucerne. Paul Weber photo from the Ferdinand Hediger Collection.*

Further information about the Society of Automotive Historians, Inc., may be obtained by writing to the Secretary, Society of Automotive Historians, Inc., 6760 E. County Road 800 N., Brownsburg, IN 46112-9059 USA.

THE START OF A SPECIAL SOCIETY: "Founders Day," October 11th, 1969 at Hershey Pennsylvania. Left to right: William S. Jackson, Henry Austin Clark, Jr., John M. Peckham, Bruce Baldwin Mohs (builder of the Mohs Safarikar, et al, but never a member of SAH), Herman Smith, G. Marshall Naul, Charles W. Bishop, Guy Seeley, Grace R. Brigham, Richard B. Brigham, and Glenn Baechler. Courtesy of Grace R. Brigham.

Those Elusive Vehicles
A History of the Society of Automotive Historians

By Grace R. Brigham

THE START OF A SPECIAL SOCIETY

Can any one person set the record straight? Many people have tried. The automotive story's What, Where, Who, When, and even How and Why have been talked about and argued about and written about endlessly, yet the questions continue.

G. Marshall Naul and Dick Brigham had been corresponding with numerous friends and acquaintances for years, trying to find answers to some of the questions on cars and their builders. What about a special organization for all those historians who were constantly digging up puzzling facts concerning motoring's past and present? A simple newsletter could let these people share their finds with others both near and far away.

When Naul suggested the idea to Brigham he struck a responsive chord. During the early part of 1969 the two men wrote letters, discussed the matter over the phone, then came up with the idea of a questionnaire to test the depth of interest, a single sheet printed by Brigham and mailed by Naul sent out to over seventy people. These, whom they knew or had read about in various automotive publications, were asked to fill in the questions, tell of their fields of interest, and state whether they would like to join a society devoted specifically to the history of self-propelled vehicles.

The response was enthusiastic. Some of the numerous suggestions were quoted in the first newsletter put out by "The Society of Automotive Historians," as the organization was named:[1]

"I hope that the Society will cover every period of automotive history, right up to the present day."[2]

"I believe your idea of this new organization is wonderful. My personal suggestion is that a racing chapter should be incorporated."[3]

"I should think that gradually we might begin to amass a cross-indexed file of available material on various makes, which would be of great use to historians embarking on a specific project."[4]

"...also suggest a liberal sprinkling of info on vintage motor trucks."

"I think this is an idea long overdue. If we do not glean this history within, at most, the next ten years, it will in some part be lost forever."[5]

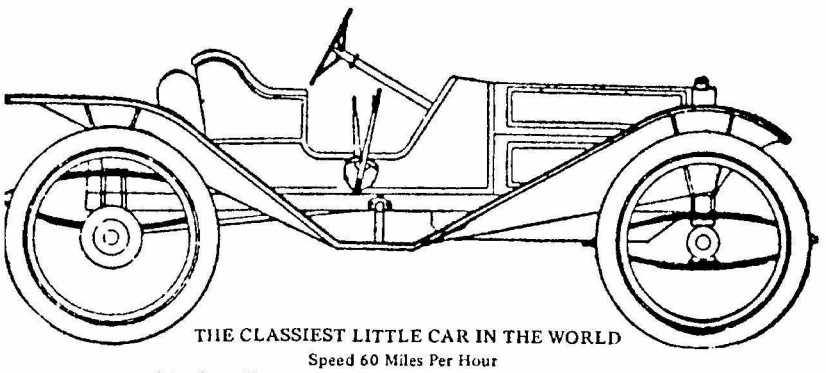
"I am extremely interested in the proposed Society. There is an area where some mutual interests would be available to both the Canadian and the American historian."[6]

"Most interested in an association of this type. Many times I've been stumped in where to go or who to ask. This organization would offer a clearing house, for then we could reach someone who did know. Hope enough more feel as I do."[7] The preceding brief quotations taken from that September 1969 newsletter were originally printed with initials only of the writers, not names. Since the club had not yet been officially organized, permission to identify them had not been requested. However, many of those initials were easily recognized as belonging to some of the leading historians in the automotive field, thus demonstrating that even professionals would appreciate help, as one wrote, in "separating fact from lore and local color."[8]

Numerous offers of help for fellow members were added to the questionnaire or put into a separate letter —"willing to contribute my services as artist or art director,"[9] - "can arrange to get lapel pins made up at cost"[10] and "hope this jells for you and all of us. If there is anything in this region that I can do, don't hesitate to call on me."[11] —thus setting a trend that The Society of Automotive Historians has followed through the years.

In fact, that first, though unofficial, newsletter was already providing information. On Page Two a brief list named early house organs giving titles, car companies and years of publication. Although only a limited number of those early periodicals are available anywhere, this is a sample of the rare reference material known to some of the researchers like Marshall Naul. In sharing his knowledge he was giving prospective members a glimpse of the wealth of printed matter available in collections owned by fellow historians and by special libraries which had not neglected the automotive history field. Another idea demonstrating the usefulness of the new society was put forward in that first newsletter: an information exchange. This had been suggested by Harry Pulfer, another long-time hunter of old car facts and figures. For the price of a stamp and a piece of paper members could learn of the surprising amount of knowledge dug up by others during countless hours of research and often as a result of hundreds of miles of travel in their pursuit of the true story on vehicle development. Under the heading "Questions and (Hopefully) Answers," Brigham printed several examples of the kind of information he had been seeking for years. An answer came shortly after that newsletter Number One went out. Frank Snyder, a well-known researcher and author, wrote giving Dick added material for his file on the Billy Four car of 1910. This speedy reply appeared in the Number Two *Newsletter*, dated October 1969.

The issue was mailed early to announce that an organizational meeting was planned for October 11th at Hershey, Pennsylvania. Since that was the weekend when the An-



The Billy Four of 1910, one of the Society's first puzzles. Dick Brigham sought information in SAH's first newsletter; Frank Snyder promptly answered. Illustration courtesy of Ralph Dunwoodie.

tique Automobile Club of America held its important annual meet, it was considered to be the ideal time and place for launching the Society of Automotive Historians.

Fortunately a meeting place was available. William S. Jackson, then editor of *Antique Automobile*, had generously offered the use of his office in the Hershey Museum building for that Saturday morning get-together.

So very fortunate was that offer. Early October had become a gathering time in Hershey for thousands of old car enthusiasts from around the world. They came to participate in club activities, admire the fine vehicles brought there, wander around the vast and fascinating flea market, and renew their acquaintance with others who had similar interests.

Some who corresponded with Naul and Brigham that year had mentioned that they regularly attended the annual events and approved of the choice for the Society's first meeting. Knowing how far ahead they usually had to reserve rooms for that weekend, they were particularly impressed by the offer from Mr. Jackson. What were these charter members hoping to accomplish? It was agreed that the only requirements for membership would be a genuine interest in the history of automotive vehicles and a willingness to share information with other members for the benefit of all. Those requirements had been stated in the first newsletters, along with the purpose of the organization: preservation of automotive history; rectifying as far as possible the errors in existing compilations and articles; and exploring and recording the history of all types of automotive vehicles. Suggestions on the scope of the society had been tossed around during the previous few months. When a small group of the most devoted of these historians was able to tear itself away from the lures of Hershey's old car flea market that Saturday morning and assemble for an organizational meeting, the basic ideas were worked over more thoroughly.

G. Marshall Naul, as he wrote later, "by default, was selected to chair this very informal get-together." The agenda followed that printed in the October *Newsletter*. A nominating committee was formed consisting of Naul, William S. Jackson, and Henry Austin Clark, Jr. Their nominee for the office of Secretary/Treasurer, Guy P. Seeley, Jr., offered to formulate a set of by-laws to be voted on later by members.

Mr. Clark volunteered to send out publicity on the meeting to various automotive magazines. That was done so fast and so effectively that it brought in queries within the next few months.

These historians were anxious to get started on their various projects of "correcting the roster," finding out "Who was the first?" and sorting out the records of all those different companies which had been making autos, trucks, tractors, bicycles, even trains, occasionally planes, and switching back and forth through the years, then stopping, then starting again. Many manufacturers did not have the resources to restart, and when they ceased to exist their records would be thrown out and vehicles disposed of, leaving, if anything, only a jumble of information for researchers.

Realizing the magnitude of their task, those assembled at Jackson's office in Hershey discussed how far their searches should go: throughout the world, they hoped. But, could a group as small as this venture far beyond its country of origin? This point was already being decided for them. Among those attending was an auto enthusiast from Canada, a man who soon became a member. Letters received over the past few months had come in from many countries, from different continents. Before the year was out there would be members from Argentina, Belgium, Canada and Great Britain. In a few months, many more countries would be represented.

The British G.N. was the first car to have its history written up in their newsletters. In the Number Two issue, author Irv Silverman told of "the little cockroach that flew." With his brief account of this sporty cyclecar, the Society early on took aim at an international goal in research.

Numbers of those car and truck companies which the historians were studying had links worldwide. Plants might be located in various countries. Some vehicles were made strictly for the export trade. Information on the motorcars, horseless carriages, automobiles, roadhogs (whatever they were called) had crossed all boundaries from the first invention. Considering these facts, the international aspect of the searches was agreed upon at the October 11th meeting.

The range of the searches was understood to be limited only by the interests of individual members. Most often each person had a favorite field of automotive history. However, those present felt that "correcting the roster" should be of primary concern in the beginning. They had come across so many errors in published material. Particularly troublesome were those lists which supplied no verification of the cars and trucks named. The Society decided that a Roster Committee was needed. To help it, and all their historians, a Bibliography Committee was also suggested. This special association was well on its way to improving the chances of getting better answers to the What, Where, Who, When of the automotive field.

After appointing some temporary officers, then choosing a nominating committee, the Society of Automotive Historians adjourned its successful first meeting. Mr. and Mrs. Jackson provided coffee and doughnuts for those attending; then the charter members had their picture taken.

As they left, they were in agreement with one of the founders who wrote, when this organization was planned, "If you can make it work, you've got something."[12]

LISTS AND LISTERS

What vehicles would members include in their rosters? There was no shortage of names. Early in their searching these historians had discovered lists, long lists, columns of lists, pages of lists, books of lists, lists running from A to Z that contained names of cars starting at A.A.A. of Germany and continued through to Zust trucks of Italy.

But were all those the marques of real cars and trucks or did they at times represent pipe dreams of would-be inventors, advertising displays of optimistic promoters or simply the label from an engine or body supplied by some obscure manufacturer? The earliest lists had been found in publications describing entries at industrial exhibits and participants in various races. Even these facts could be confusing as there were often "No Shows" at the shows and "No Goes" at the race tracks.

Then, as the number of vehicles increased, publicity also increased about how many were made in a county, state, province, or country. So few important details were given in early lists, unfortunately, that their entries were difficult to check for accuracy.

But this checking was a task that members of the Society of Automotive Historians decided to undertake. They felt that if they pooled their information more reliable lists could be made and some of the myths might be debunked.

As a starter, the November 1969 issue of their *Newsletter* (No. 3) printed "The Also-Rans." This consisted of a page with names of cars on which only a slight amount of information had been published. Its sub-title was "A residue from a number of lists of U. S. makes of automobiles."

Their first references mentioned on that page were: Charles W. Bishop's "The Automobiles of New England," which had been published in various issues of *Antique Automobile* magazines during 1950 and 1951; "MoToR's Historical Table of the Motor Car Industry," March 1909. National's "AUTObiography" by National Market Reports of 1964. G.R. Doyle's and G.N. Georgano's *World's Automobiles*, 1963. The four entries credited to Mr. Bishop gave

only the company and its address, followed by the notation (?-1900-?). Although many names came from National's "AUTObiography," just four gave the city and two the company name.

On the other hand, the *MoToR* Table provided companies and cities but not the names of the vehicles manufactured. This most reliable reference for the earliest years was first gathered by Charles E. Duryea.

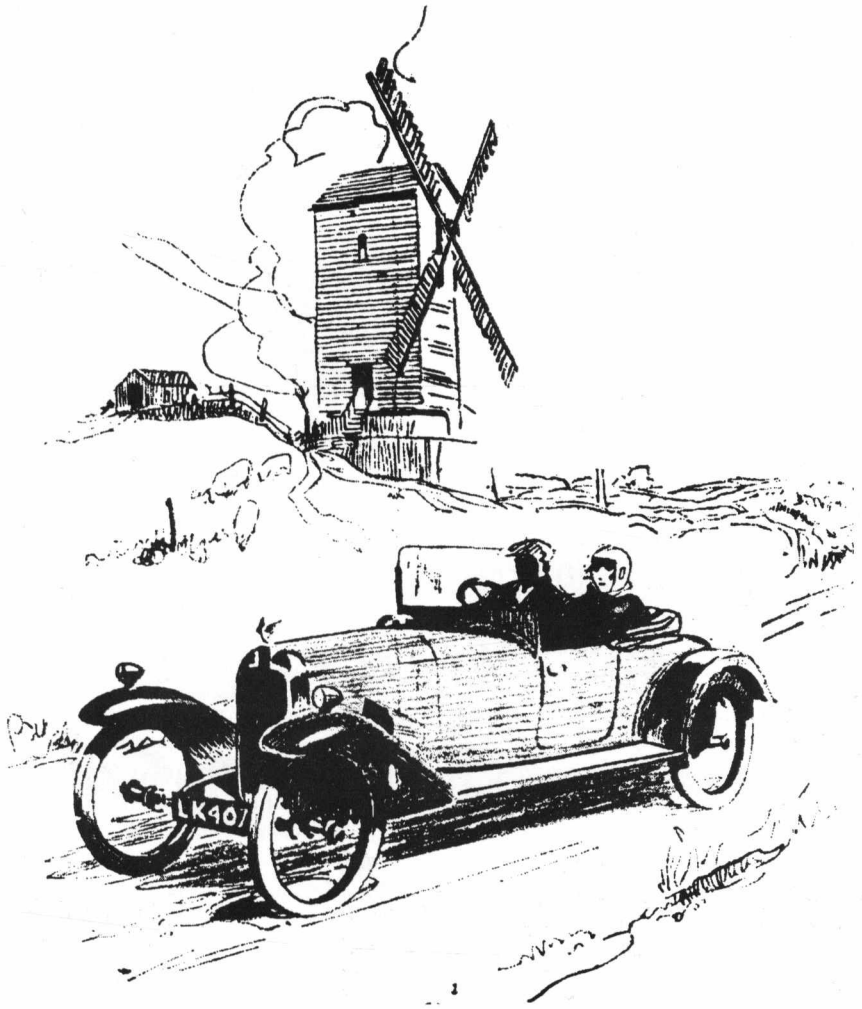
Many of those questionable names in "The Also-Rans" had been included in *The World's Automobiles*. At the end of each of their alphabetical chapters the authors had listed "Additions" which were cars on which their only information, usually, was the name and date and country.

Their first "Addition" for the United States was the Abenaque of 1900. This turned out to be a one-of-a-kind car made by the Abenaque Machine Works of Westminster Station, Vermont. After that venture the company concentrated on their engine and farm equipment business and abandoned the car angle.

Doyle and Georgano separated their "Additions" by countries. The greatest number of these "May-bes" were those supposedly manufactured in the United States, followed by a large number produced in France and in Great Britain, with a minimal number of cars made in other countries.

In the "A Section" of 1963 there were twenty listings for France, eighteen for Great Britain, but thirty-eight for the United States, and that proportion continued throughout the book. This edition, a revision by Mr. Georgano, had 5,045 makes of passenger cars listed. Of those, the largest number, 2,113, were ones reported to be made in America, 938 in Great Britain, 922 in France, 359 in West Germany and 151 in Italy. Other countries had less than a hundred each. This demonstrated how a few countries dominated the automotive industry.

Considering the enormity of the challenge to straighten out the questionable American cars on their lists, SAH members decided to start with them. They believed that historians in other countries would pursue the matter and try to clear up their own mysteries. They were learning that many, like Doyle and Georgano, had been working on their car puzzles for years.



THE LITTLE COCKROACH THAT FLEW: The G.N. cyclecar was the subject of SAH's first feature article in Newsletter No. 2. Illustration courtesy of author Irv Silverman.

The "Also-Rans" continued in the SAH *Newsletters* until the Roster Committee took over and published the findings.

More and more references were cited. In Issue No. 8, just six months after the Society's founding, Marshall Naul added the following: For the International Field, in addition to the 1963 Edition:

G.R. Doyle's *The World's Automobiles*, 1st Edition, 1932; 2nd Edition, 1957; 3rd Edition, 1959; all published in London.

G.N. Georgano's *The World's Commercial Vehicles*, 1965. G.N. Georgano's *The Complete Encyclopedia of Motor Cars*, 1968.

For the United States, in addition to National's "AUTObiography" of 1964 and "MoToR's Historical Tables" of 1909 mentioned in Issue No. 3:

Automobile Club of Michigan, Detroit, *Tallyho*, 1954. California State Auto Association, *Gas Buggy Memories*, 1960.

Plummer H. Riddle, *Cars of Today and Yesterday*, Salem Press. Frank D. Sampier, "All American Automobile Record," Laramie, WY 1954.

E.A. Steiner, *International Auto Index*, Berkley Springs, W.Va., 1959.

Wayne State University, *Automobiles of America*, Detroit, 1965.

For the U. S. Regional Field, in addition to Bishop's "Automobiles of New England":

Charles W. Bishop, "Automobiles of New York" in *Bulb Horn* editions of 1951-1953.

Brigham-Motomart, *Road to Yesterday*, 1960s, cars of various states.

Wallace S. Huffman, *Indiana-Built Automobiles*, 1967. W. Everitt Miller, "Made in Southern California" in *Road & Track*, Jan. 1951.

Kenneth G. Stauffer, "Automobiles Manufactured in Pennsylvania" in *Antique Automobile* of January 1962.

Stanley K. Yost, "Did You Know 494 Automobiles and Trucks were Manufactured in Illinois?", Mendota, Ill. 1961.

The "Also-Rans" with its lists assembled mostly by G. Marshall Naul and Frank T. Snyder, Jr., continued to be printed through Issue No. 7 of March 1970. At that time the Roster Committee published its first report, one page on twenty-three cars starting at the Abbott of 1915-18 plus one page of an explanation.

This committee consisted of the chairman, R.A. Wawrzyniak, Richard Brigham, Ralph Dunwoodie, and Marshall Naul. However, as it was pointed out in an editorial, "Actually every member of the Society is in a sense a member of the committee, for it will take the combined efforts of all of us to dig out the facts concerning so many makes of cars built over a period of almost 80 years in widely scattered places."

Chairman Wawrzyniak, in his introductory remarks, stated: "The first order of business should be cars of the U.S.A. and Canada, and the second a similar list of trucks and busses. The third should be cars and trucks of other countries."

He went on to describe the kinds of vehicles to be listed: passenger cars and trucks, self-propelled, vehicles made for sale, dual transport types, public service vehicles, even prototypes and some built only for the owner's use. Then he wrote of the ones to be excluded: bicycles, riding lawnmowers, tractors and allied machinery, and those made to operate only on rails.

He urged members to check the rosters as they were published and send corrections and additions to editor Brigham. They had already been responding well with numerous comments and questions when the "Also-Rans" lists appeared.

One question which came up every so often was "What makes a MAKE?" Richard M. Langworth wrote an article in Issue No. 7 about "The Place of 'Sub-Makes' in a Roster of Makes." He cited as an example the "Corvair and Chevelle of the Sixties, and how they relate to the parent make, Chevrolet." Another was the Henry J, which most people regarded as a make but, as reported by Langworth, "to Kaiser-Frazer Corporation it was a Kaiser!" He agreed with Charles Bishop who wrote in the previous newsletter:

"I favor inclusion of any car exhibited at any automobile show, where there exists a written record of the same date of its being on exhibition. Otherwise the record will lose those prototype cars which are often of great importance in the long run."

In the second SAH *Newsletter* Marshall Naul wrote, "It would not be outside the purpose of this organization to form a set of rules to govern the acceptance of a brand of vehicle as a "make."

On a similar matter Charles W. Bishop provided a translation of "An Early Debate on What Is an Automobile Manufacturer." In an 1899-1900 publication *La France Automobile,* the president of the Auto Club of France, Baron de Zuylen de Nyvelt de Haar, stated that there were 600 makers of automobiles in France though, he admitted, not all were in "full swing." He said he did not

Just a few of the nameplates researched by Society members. Courtesy of Grace R. Brigham.

include the "inventors or the builders-on-paper...but only those builders, big or little, who have a mechanical shop, employ a certain number of workmen, and have produced their first functioning automobile."

Mr. Bishop considered the Baron de Zuylen's definition "to be completely fair as a standard to determine who should be considered an auto maker (at least up to 1900)."

A few issues later, Mr. G.H. Brooks of Tranmere, South Australia, wrote that he thought the Baron's definition "rather unfair to some private individuals who made a car for their own use and produced something which gave years of satisfactory service...My own view is that, if a car can be proved to have existed and actually functioned, and was more than just a hodgepodge of proprietary parts, containing some element of the maker's ingenuity, then it justifies classification as a 'make' regardless of the circumstances surrounding its birth."

A variety of opinions was being offered to the Society's *Newsletters*. Questions continued to be asked about makes and makers. Rarely-known facts were being discovered. Additional lists were mentioned. Members were showing that they were not neglecting any aspect of vehicular history.

Henry H. Blommel told of cars made in Connersville, Indiana, a place he called "Indiana's Little Detroit."

Glenn H. Baechler wrote that he and Hugh Durnford "were continuing our efforts on the history of the Canadian Automobile Industries."

Frank T. Snyder had been sending in items of information, especially on the postwar cars. It happens occasionally these later ones are harder to authenticate than those of the early 1900s. Perhaps the company lost money on its gamble and wanted to put the matter off record.

Harlan E. Appelquist reported the production numbers of cars made in the United States, even as early as 1900 when electrics and steamers were dominating the market. No better proof of a make was needed than reliable figures of its production. From Austin Maxwell Gregory came a letter for the September 1970 issue: "I am compiling a dossier on Australian made cars...There is quite a representative group of surviving cars from the early times."

One thing he regretted was the fact that "the rate at which first-hand sources of information, namely the memories of old timers, are passing."

Along that line, Burton M. Cohen wrote of his difficulty in finding information on the coachbuilders, particularly those formerly engaged in construction for Rolls-Royce and Bentley. Much information was lost during the London Blitz of World War II. Mr. Cohen said it was "astonishing how little knowledge concerning these builders exists, other than what is filed in Mr. Pulfer's fertile mind."

Harry Pulfer had been offering information and pictures plus data from a looseleaf notebook he had assembled with A.R. Thurn and C. Kruger. Pulfer's best proof that an elusive car actually existed was the emblem from that car.

All this and more - in its first year of existence the Society of Automotive Historians was proving to be an outstanding source of vital information on the story of self-propelled vehicles.

The Roster Committee continued its work, and the findings were printed first within the Newsletters, then, as the reports increased in size, lists with verified details were published separately.

As more and more automotive references were being uncovered, the usefulness of a Bibliography Committee was demonstrated. From the beginning of the Society both Naul and John Peckham had stressed its need.

An early book that Mr. Wawrzyniak had used for checking the numbers of cars made in the United States was C.B. Glascock's *The Gasoline Age*. The lists in it were credited to Mr. Wellington Everett Miller, with some additions from Mr. A.O. Dunk of Detroit. Their total for the various names and makes was more than 1,500. In spite of the research done by both Miller and Dunk for Glasscock's book, Wawrzniak soon found errors in the lists and started on his own corrections and additions. This demonstrated to him as early as his school years the need of information from a variety of sources.

Mr. Wawrzyniak was not alone in adding more names to the list of vehicles produced. The numbers were growing by the hundreds, with every new book and article on the subject contributing names and dates (whether verified or not) and occasionally the company, seldom more.

Mr. Gar H. Schurger wrote concerning this matter: "I have several books listing names of autos and trucks made in the U.S.A. and worldwide. Of these only one, Doyle and Georgano's *The World's Automobiles*, gives the manufacturers and cities in which the cars were built. None have any reference background at all about the people responsible for building them. Thus, my enthusiastic response to your Society's purpose, the preservation of automotive history."

As an example, Mr. Schurger could have cited a *Saturday Evening Post* reprint appearing some ten years or so before in *Antique Automobile* magazine. A seven-page listing of trucks, buses, and fire engines was titled "Roll Call of 1801 Makes of Trucks Sold in the United States During the Past 55 Years or More."

It was a good inclusion for the Antique Auto Club's Special Truck Issue of February 1959 which featured pictures and articles about a number of the commercial vehicles owned by members. Henry Austin Clark, Jr. wrote a little on the history of some of the trucks in his Long Island Automotive Museum.

Although the list's subtitle was "Compiled for automotive historians by the *Saturday E ening Post*," any historian would be frustrated as only the names of vehicles were given, along with the dates on most. Interestingly, though, those trucks, buses, and fire engines which were still in production at the time (1959) had their names printed in capital letters. Long-lasting ones such as American La France, Mack, Seagrave, and Walter were thus featured, as well as, naturally, Chevrolet, Dodge and Ford. Unfortunately, some dates given on even these well-known makes were questionable.

When G. N. Georgano's book on commercial vehicles came out in 1979, many of the discrepancies on those dates were resolved. By then more information was available. Historians from around the world, including some from SAH, contributed photos and confirming reports on the trucks Mr. Georgano was listing and describing. In fact, G. Marshall Naul was named "Contributing Editor."

The Society of Automotive Historians was continuing to "correct the roster," first with information in the *Newsletters*, then in August 1972 there was a fifteen-page *Research Supplement* with their findings.

In it, the sources of information were given, such as "HA 11-95:33" for the Daley auto produced by M.H. Daley in 1895 at Charles City, Iowa. This meant that an item appeared concerning the car in the November 1895 issue of *Horseless Age* on page 33. The SAH "Research Supplement" included a greatly-expanded list of references. Over sixty books, periodicals, and registration records were used to verify the information on the vehicles covered, ten more than was cited in the Roster Issue of the year before.

Each publication had its own code letters, such as the "HA" for *Horseless Age*. Besides that magazine, two others were named as primary sources of data for the earliest years: *Cycle and Automobile Trade Journal* (CATJ) and *The Automobile* (TA). At the other extreme were those cars still in production at the time (1972). Since usually there was plenty of publicity on them, no reference was added. Comet, Corvette, Cougar, and Dodge names, for instance, were followed by dashes to indicate no further verification was needed.

The system used was more or less based on the recommendations that John M. Peckham had given in his report printed in

the October 1970 *Newsletter*. He stated that, "First of all, let's complete the List of Periodicals as soon as possible. This project was started in the second issue of the *Newsletter*, based on earlier work by Marshall Naul, which appeared in the May/June 1969 issue of *The Bulb Horn*...I am sure many of us can add missing titles to the *Bulb Horn* list." He knew, as many others were learning, that an increasing number of publications concerning automotive records was coming out. He was also sure that there was an even greater amount of older papers with valuable information yet to be discovered by the historians.

When Marshall Naul listed some pre-1890 vehicles in *Newsletter* 11, he named four which were illustrated by Clarence P. Hornung in the Spring 1963 issue of *Automobile Quarterly*. Mr. Hornung had read descriptions of some early self-propelled vehicles but could find no illustrations of them. For these rarities there had been no Audubon to discover and picture the early 1800s steamers by Blanchard, James, Kinsley, or T.W. Walker.

Several on Naul's list had been included in Bishop's "Automobiles of New England." States in that section of the country, particularly Connecticut and Massachusetts, proved to be fertile ground for the development of these experimental vehicles.

Another source of information cited was the *Scientific American*. That was a magazine which for many years reflected the most prolific period of individual inventiveness in the United States. Regularly it printed names and numbers of patents on everything from small tools and gadgets to large vehicles designed by inventors all over the country. Since development and marketing of the designs often depended on individuals or small groups with limited capital often nothing more was heard of the invention.

In the same issue (No. 11) with Naul's list, editor Brigham wrote concerning the Roster: "Mail received at this office indicates...there were a great many more very small automobile companies (who may or may not have produced cars) than any of us ever suspected."

Then in his comments on the Roster, chairman Wawrzyniak stated that ideally, "...we should have the production figures for every car ever made. Obviously this is not possible...Besides the makes that actually got built, there was an indeterminate number that did not get into the production stage. For some time I have been pondering what to do about this problem. Shall we record these or not?"

For many months, the chairman and the Roster Committee had been struggling with such questions. Their work had been made interesting but time-consuming as SAH members sent in additions to the lists, corrections of the printed rosters, and puzzles to add to the questions already raised.

As Wawrzyniak had indicated, it would not be possible to have complete and correct production figures. One SAH member had tried.

Harlan E. Appelquist had for many years been compiling information on production in the United States. On one of his charts he gave the figures for electric, steam, and gasoline vehicles produced between 1900 and 1925. In 1900 there were 1,681 electrics made, but only 22 in 1925. In 1900 there were 1,575 steamers, but 3 in 1925. Then the changes came. In 1900 there were 936 gasoline vehicles, but in 1925 the figures had risen to 3,617,638. Mr. Appelquist gave as his sources the magazines *MoToR, Automobile, and Literary Digest*.

For a 1922 list he used "New Passenger Car Registrations" with the figures given by R.L. Polk & Company. In that year there were 1,568,505 new motor car sales. Of those, only 405 were electrics and no steamers were mentioned.

Outside of production figures, there is another point on which there has always been disagreement: the number of makes produced, whether passenger cars, trucks, steamers, electrics, whatever kind of vehicle and ranging from the pre-1900 ones and even up to some of the current ones. With the latter, there is always the confusing matter of the time of year a new vehicle is introduced.

Dick Langworth put forth the idea that "the car's 'introduction' date is the date when the first models were available for purchase — direct, not by advance orders." This statement was in SAH Newsletter No. 26 in 1972, in an article in which he requested members to define both "introduction date" and "production" car versus "prototype."

The numbers of those makes had been changing year by year. When G.R. Doyle published his third edition of *The World's Automobiles* in 1959, the number of passenger cars listed was 4,119. Just four years later, the revision by G.N. Georgano stated that the total covered in the book was 5,045. By the time *Automobile Quarterly's* editors printed their *American Car Since 1775* they gave the number, over 5,000, as the count for marques in the United States alone.

Stanley K. Yost, in his "Greetings" as new SAH president in November, 1973, wrote, "I know that the 5,500 marque list is a gross understatement. I really feel that before we can come to any final conclusion, there will be a listing of over 10,000 in North America alone."

Every new book concerning automotive history which was coming out had an increasing number of vehicles listed. Georgano in his various books described those offered for sale. Other recorders did not limit themselves in this way, but included cars and trucks made solely for the owner's use as well as the prototypes developed by the manufacturers.

Some were lists like those in the Eaton Company's *Chronicles of the Automotive Industry in America, 1893-1946*, with approximately 1,700 cars and trucks and the *Saturday Evening Post* with 1,801 included names with no other information than the date, and occasionally that was missing. What was "American Ice?" It was included in the *Saturday Evening Post* list, as well as in *Gas Buggy Memories*, a 1960 publication by the California State Automobile Association. Both stated that it was a truck. Others do not mention American Ice.

Fortunately, more of the books were including details along with their sources and often pictures of the vehicles. This was especially true of Georgano's encyclopaedias of motorcars and of commercial vehicles, and a few years later Beverly Rae Kimes came along with well-detailed *Standard Catalog of American Cars 1805-1942*.

With the help of libraries, transportation museums, manufacturers, local archivists, organizations like The Society of Automotive Historians, and researchers everywhere, the lists that are published currently are being revised continuously. Those authors who have benefitted from this assistance know that their information is more accurate than in the past when they had to dig through hazy records all by themselves.

The SAH Roster Committee was finding its task easier in some ways because of the spread of information; on the other hand, the increasing number of vehicles discovered was making it harder. When chairman Wawrzyniak requested some help, William Watson of Winnipeg, Manitoba, became the new Roster Chairman. Meanwhile, his predecessor went on to work on the truck records while continuing to assist the committee.

As a result of his researching on trucks, Mr. Wawrzyniak reported in March 1972 that he had found an independent historian who was able to identify the mystery vehicle which had remained a mystery for over a year. This unorthodox machine was a Mercedes, according to Michael Rosen. His special interest was the history and development of tracked vehicles, plus the work of Walter Christie and his front-wheel drive tractors and race cars.

Every so often additional lists were being printed in the newsletters, and, after 1973, in the Society's magazine *Automotive History Review*. In the same issue with Mr. Wawrzyniak's account of finding another special interest historian, Janius Eyerman gave some information on twenty-four "Cars

Behind the Iron Curtain." Most were made in the USSR. Of them, the GAZ, which was started in 1932 by Ford people, resembled the Model A during the early years, and the ZIS was the one, Eyerman wrote, "that copied the Packard." He also stated that three were not included as they were essentially Fiats. Another list dealing with the international field covered the early automotive production in Czechoslovakia, from the first, a steamer made by Joseph Bozek in 1815, to the Aero cars of the Thirties and Forties. Marian Suman-Hreblay was the author of this article.[13]

Then there was a review of a new book compiled by George H. Brooks and Ivan Hoffman, *South Australia Motor Cars 1881...1942.*[14]

One of the books considered important for historians was *60 Ans d'Autocatalogue*[15] by Serge Pozzoli and Jacques Rousseau. Although printed in French, the reviewer Griffith Borgeson recommended it as a "comprehensive book for the cars of France." It covered them from 1900 to 1963.

Fred Roe had an article[16] on the complications that occur "when the cars of one country are offered for sale in another. There are problems with names of both makes and models; with the spread of automobile manufacturing to all parts of the world...the same model may be used on completely different cars in different parts of the world." Five examples are given: De Leon, Viqueot, Aster, S.P.O., and Napier.

In his series of articles on "Canadian Mutations,"[17] R. Perry Zavitz explained the "Canadian versions of the Big Three's U. S. cars." His first article dealt with the Dodge. "First of these to deviate from the Detroit pattern was Dodge." They started in December 1933 with the 1934 model. Zavitz's second part of the series dealt with the General Motors models built in Canada, and the third with the Ford Company cars.

On vehicles made in the United States, Stanley W. Liszka, Jr., added some information by sending a list of Minnesota-made ones. He had found in the Fall 1972 issue of *Minnesota History* an article by Alan Ominskey entitled "A Catalog of Minnesota-Made Cars and Trucks."[18] This "Catalog," Mr. Liszka stated, gave dating and information; his list had only names.

Usually the regular roster material was not printed in the SAH magazine, *Automotive History Review*, but the Fall Issue of 1981[19] provided pages of supplemental information for "The Automobiles of New York." Although author Charles W. Bishop and his collaborator G. Marshall Naul had studied the subject for years, "The authors made no pretension that the material was any more than a working research tool...and it was issued as a guide and incentive to further research." The additional entries, which were provided by Ralph Dunwoodie, John Peckham, Fred Roe, and Keith Marvin, were put in order by Marvin for printing in the magazine.

Donald J. Summar collected a different type of list - pictures and accounts of some of the surviving automobile plants in Pennsylvania.[20]

J.H. Valentine did a similar job in California, especially in the Los Angeles Area.[21] Besides the plants, he also had found some "Unlisted Angelinos."[22] At the time of his report (1979) none of these seven vehicles had been included in any of the car or truck lists, not even in the California State Automobile Association publication, *Gas Buggy Memories*. Most of the seven were experimental cars or prototypes.

In *Newsletter* No. 31, Fred Roe commented that "Every issue of our Newsletter contains a number of fine exchanges of information on historical matters pertaining to car makes...I like Mike Worthington-Williams' suggestion that roster entries carry a bit of pertinent information with them. At the risk of requiring too much space it would seem also a good idea to note the existence and location of surviving examples, especially of those makes which are very scarce and obscure."

This suggestion, if actually followed, would help verify the existence of some questionable makes. The many photographs which have been sent in to the SAH publications over the years have supplied some answers.

However, a photograph was no guarantee that truth was being served. Jerry Gebby sent eight pictures to illustrate his article on "Automotive Deception at Indianapolis."[23] For example, "The Ogren company had been building passenger cars in Chicago for only a year when they bought this older complete Duesenberg racing car to rename as an Ogren for the Indianapolis race." Mr. Gebby then commented that the photographs were..."representing just a small sampling of the cars which ran there under assumed names, in the hope of gathering glory and publicity for the sponsor."

Accurate reporting was among the subjects discussed at the April 27th, 1985, meeting of the SAH Pioneer Chapter.[24] The members were disturbed by "the continuing presentation of misguided and erroneous statements concerning automotive history which have appeared in a great number of books, magazine articles, and newspaper items, or presented in radio, television programs, or even in motion pictures."

In the same issue with the Pioneer Chapter report, the editor mentioned that there were two articles which demonstrated the sometimes unreliability of several sources which could lead future readers or historians to be misinformed. "First there is the case of the Eagle ('The Phantom of Cincinnati' by Keith Marvin) which existed only in the form of a brochure which was short on illustrations and completely devoid of text." Editor Brigham went on to discuss the Beaver Six of Gresham, Oregon. "Richard Larrowe devoted much time and effort to the research of the Beaver's history, and has come up with several accounts provided by former employees and other people who were involved at one time or another with the doings of the Beaver State Motor Company, but these accounts disagree in many particulars...so future historians may write different stories about the history of the Beaver."

As far as published material is concerned, John Pollitt wrote in *The Bulb Horn* "Historians' Corner"[25] "Seeing a thing in print means nothing unless it is correct...The early days were full of pitfalls for the unwary. A vast number of cars were offered under other names than that of the actual builder." Walter O. MacIlvain was one of the straightener-outers of the many car-truck-company tangles with "Life Lines of the Motor Car." His large "Automotive History Chart," published in 1974, traced the cars of the United States from 1890 to 1975 in chronological order and alphabetically. It was embelished with line drawings of many vehicles and with emblems of some cars and trucks. One section was devoted to that usually neglected period of war production (1940-45) when all companies which could shifted to making tanks, military trucks and various types of specialized war equipment.

From its beginning, the Society of Automotive Historians had been busy straightening out those tangles. In the seventh issue[26] Richard Brigham wrote "a story of the S.A.H. at work." Frank Snyder sent a request he had received from a correspondent in New Zealand for information on a Stork-Kar which, he reported, had a 4-cylinder Lycoming engine, Borg & Beck clutch, a Zenith updraft carburetor, and "the radiator emblem is an elongated diamond."

Brigham was unable to find any reference to a car with that name, but just a week later another letter about the Stork-Kar came from C.L. Malthus of Waimate, Canterbury, New Zealand. "I wonder if you could help me in my search for information on my rather rare vintage car...The car in question is a 1919-21 Stork-Kar 4...The radiator badge is a diamond-shaped affair." Mr. Malthus sent a picture of his car, a copy of which was printed in the Newsletter, and also sent information and a sketch of the serial plate on which were the names "STORK-KAR" and "Stork-Kar Sales Company, New York, U.S.A."

Brigham continued the story: "In the same mail with the letter there was a copy of the Spring 1970 issue of *The Upper Hudson Valley Automobilist* sent by Keith Marvin of Troy, New York. This issue carried a reprint of an article entitled 'The Vanished Ventures of Virginia's Auto Makers,' which was originally published in 'The Commonwealth, The Magazine of Virginia' in April, 1965. Marshall Naul submitted this article to 'The Automobilist' and it was reprinted by permission of James S. Wamsley, editor of 'The Commonwealth'."

"The article included an account of the doings of the Piedmont Motor Company, Lynchburg, Virginia. This company built the Piedmont car but it also did a brisk business in supplying the same product under other names to just about anybody who wanted to be an automobile manufacturer without a factory. The Bush...was a Piedmont with a Bush nameplate. The 4-cylinder models of the Lone Star...were also stock Piedmonts, as was the Alsace, an export model with right-hand drive."

"Pictures of the Piedmont and the photo of the Stork-Kar match detail for detail, and so do the available specifications supplied by Mr. Snyder and Mr. Malthus."

"This information has been sent to Mr. Malthus, along with a wiring diagram and minor tune-up specifications (Piedmont, of course)."

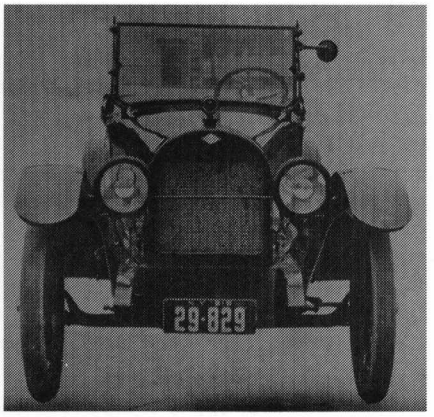
"Now, just as this article was being prepared for printing, another fragment of the Stork-Kar story has been received - this by telephone from Marshall Naul. It seems that the Philadelphia Library has a Stork-Kar catalog of 1920, which states that the car...was made in Martinsburg, West Virginia. Martinsburg is the home of the Norwalk Motor Company."

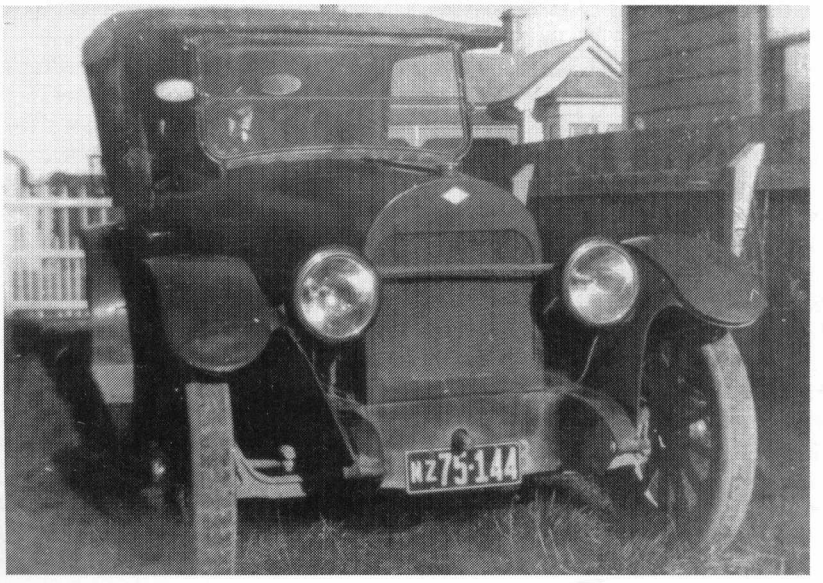
"This led to a search for Norwalk specifications which were published in "Motor Age"...Piedmont specs were on the same page which made comparison easy. The result? Once again, identical cars - even to the model number."

Richard Brigham ended his article on the Stork-Kar 4 with: "All of this leads to several unanswered questions. Did the Piedmont Motor Company take over the plant of the Norwalk Motor Car Co. and use it to continue the Norwalk and the Stork-Kar - both Piedmonts in disguise?" This question and the others were considered during the following months. Then in *Newsletter* No. 17, about a year later, there was another article in which the specifications of the Piedmont, Norwalk, Stork-Kar, Bush, and Lone Star were printed illustrating how identical they were. In this later article, "The Stork-Kar and Other Duplicates," Brigham wrote,[27] "Almost from the beginning of the automobile industry, manufacturers have depended upon outside suppliers for some parts - a practice which continues to this day. However, the era of the completely assembled car reached its peak in the late teens and early twenties and ended, for the most part, after 1932...However, the policy of assembling cars from parts made by outside suppliers did enable a lot of small producers to remain in business for years on a capitalization which wouldn't keep a modern giant automobile company in operation for more than a few hours."

"Others supplied complete chasses, ready for body and tires, to any one who wanted to become an automobile company." Then, some so-called motor car makers had little to add to complete vehicles they bought other than their own nameplates. To radically paraphrase William S. Gilbert:[28]

The historian's lot is not an easy one.





Above, the New York Stork-Kar; below, the Stork-Kar from New Zealand. Both photos courtesy of Grace R. Brigham.

NOTES

1. The name of the Society of Automotive Historians resulted from suggestions submitted on the questionnaires.
2. G.N. Georgano
3. Dr. Vicente Alvarez
4. Keith Marvin
5. William S. Jackson
6. Glenn H. Baechler
7. Dr. B.L. Mundhenk
8. Kenneth H. Stauffer
9. John M. Peckham
10. Harry Pulfer
11. Stanley K. Yost
12. Ralph Dunwoodie
13. *Automotive History Review* No. 19.
14. *Automotive History Review* No. 23
15. *Automotive History Review* No. 16
16. *Automotive History Review* No. 16
17. SAH *Newsletters*, Nos. 14, 16 and 22.
18. *Automotive History Review* No. 6
19. *Automotive History Review* No. 14
20. *Automotive History Review* No. 4; SAH *Newsletter* No. 27.
21. *Automotive History Review* Nos. 6 and 8.
22. *Automotive History Review* No. 10
23. *Automotive History Review* No. 16
24. *Automotive History Review* No. 20
25. *The Bulb Horn* Vol. 10, April 1949.
26. SAH *Newsletter*, March 1970
27. SAH *Newsletter*, March 1970
28. "The Pirates of Penzance."

Joseph Renshaw Brown: The Prototype Pioneer

by John M. Peckham

The turn-of-the-century dime-novel developed an image of a spectacular but unreal type of person to recreate the early pioneers of the West. This fictional good-guy was usually three or four people rolled into one. No individual could possibly do or be all the things these stories piled on the shoulders of their heroes.

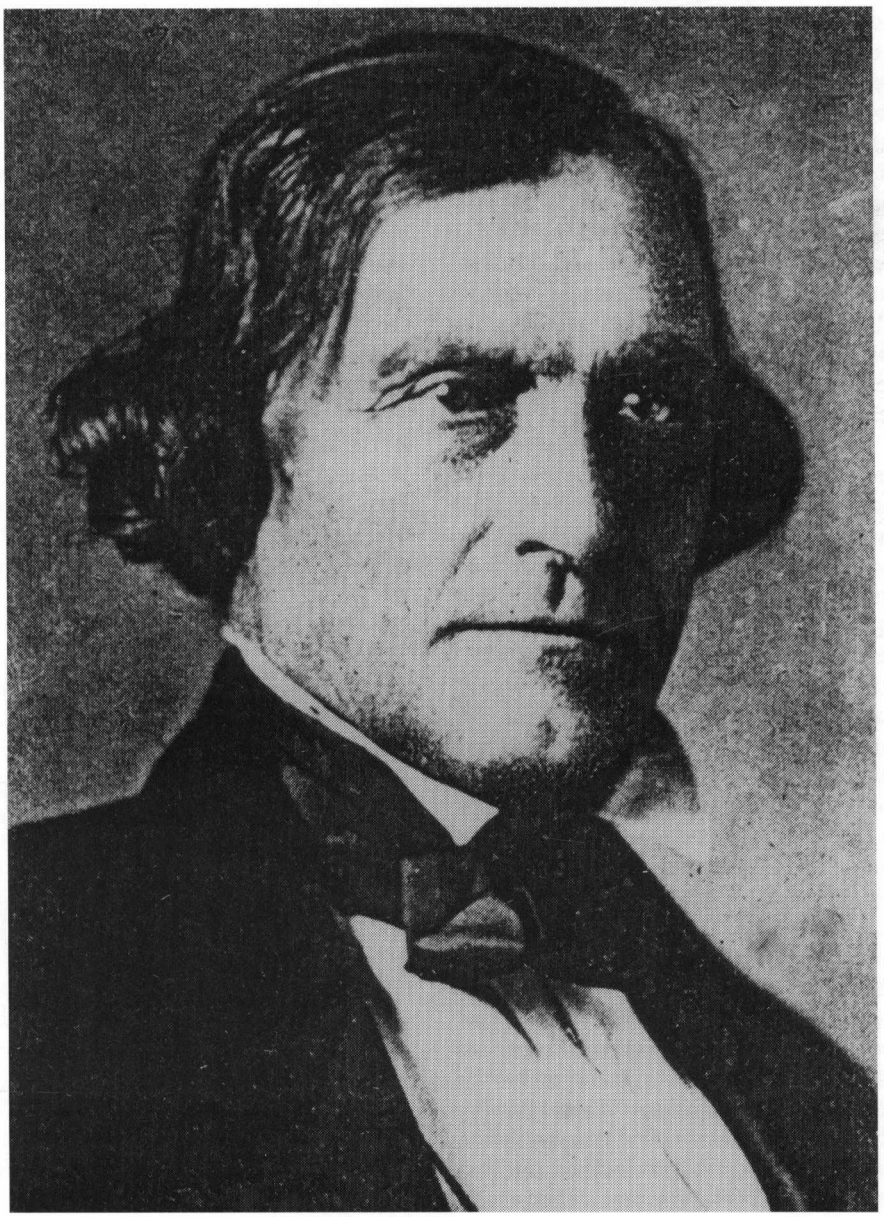
Typically, the lead character might have been a poor minister's son. Perhaps he was a runaway apprentice printer who joined the Army as a drummerboy at some tender age. Later, he might be a First Sergeant, and an explorer of the untamed wilderness of the West. Leaving the military, he would become the first farmer in the territory, the first lumberman, and, of course, the Indian Agent. The good-guy image would come through with his being the founder of the town, the newspaper editor, and a staunch fighter for territorial recognition and statehood.

Needless to say, this hero would not swear, drink or gamble. A strong, personable character was a prerequisite for the dime-novel hero, as were modesty, shrewdness and a touch of genius. For excitement, there would be Indian battles. His family might be kidnapped by the savages and have a miraculous escape. Of course, in the long run, he would forgive the Indians and carry on the fight for their rights.

All this rolled into one man! Well, fictional heroes are usually impossible in real life. On the other hand, the subject of this article was everything listed above...and more. And he was very real. Joseph Renshaw Brown might be called by the dime-novels "the prototype pioneer."

It is unfortunate that no one has done a thorough biography of Brown, since there is little doubt that it could be both immensely interesting and significant. To touch on the basics he was born on January 5th, 1805 in Hartford County, Maryland, to the Reverend Samuel Brown and his wife, Emily Renshaw Brown. His mother died the following year, and at the age of thirteen he was apprenticed to a printer. Finding a considerable dislike for his trade and his master, he ran away and became drummerboy with detachment of the Fifth Infantry. Under the leadership of Col. Henry Leavenworth, this group headed for Fort Snelling, near the present site of Minneapolis, Minnesota. It is said that in 1819 Brown played the first reveille at the fort on a fife.

He is credited by some with being the first farmer in the territory, and he is known to have been the first to float rafts of timber down the St. Croix River. He neither swore, drank nor gambled, although he enjoyed an occasional cigar, and by 1838 he had been appointed Justice of the Peace for Crawford County. This brings up a surprising and interesting anecdote. In spite of his keen sense of morality and status, Brown operated a "groggery" near Fort Snelling. It became a nuisance to the military authorities; "...because a passion for drink among American soldiers of the time, was fairly equal to that of the savages." One report states, "On June 3, 1839, a party from the garrison resorted to an establishment across the Mississippi kept by Joseph R. Brown... The effect of the goods sold there was such that forty-seven of the men were in durance of the guardhouse



Joseph Renshaw Brown, January 5th, 1805 to November 9th, 1870.

that same night." Well, no one is perfect.

Brown's contact with the Indians was almost constant and in situations which varied from warm, personal relationships to bloody battles. He worked as Indian agent for some time and got to know and understand many of their problems. He constantly tried to help them, but 1862 and 1863 must have been particularly hard on him. These were the years of the Sioux uprising in which 450 settlers were massacred and his own wife and children kidnapped. More than a month later, they gained their release. As an aide to General Sibley, Brown was engaged in several battles, including a particularly savage one in September of 1862, at Birch Coulee. After the uprising, he returned to helping the Indians and was often referred to by the Indians as "Father."

It was this man, Joseph R. Brown, who founded the city of Henderson, Minnesota, and its newspaper, *The Weekly Democrat*, which he edited. He also served in the territorial legislature and was one of the hardest workers for statehood. It was said that he was "...born with wildness in his blood, but so superbly gifted that whether in wigwam or legislative hall he was always the leader of men." Another source states that Brown was "...sort of an intellectual lion, who sported with the Savage Sioux, or ruled a political caucus, with equal power." It is quite possible that he could have been Minnesota's first governor if he had cared for that type of job. But Joseph Brown was an active man who had to be out and doing things, not shackled to a desk.

And just what did he want to be out and doing? For one thing, he wanted to build steam wagons to haul freight and passengers throughout this new territory. It was a passion that would consume much of his time and most of his money for twelve years. In the end, his frustration may have caused his death.

Since most of Brown's early papers were destroyed when the Sioux burned his house in 1862, there is no information leading up to the building of his first steam wagon, but it can be assumed that the project started early in 1859. Nor is there any way of telling how he became acquainted with one John A. Reed of New York City, the man he approached to actually build the machine.

Reed was a resident of Newark, New Jersey. His office was at 203 Broadway, New York City according to the 1859-1860 directory, but, like so many people of the time, he moved constantly. He is listed as having thirteen addresses within a 22-year period. There is no indication of where exactly the steam wagon was actually built, except that it was in New York City. An individual who had worked for Reed claimed that it was constructed at the famous Novelty Iron Works. However, his facts have proven so unreliable in other instances, that, except that it would have been the most logical place, the statement should not be taken as fact.

The first piece of information that gives us any concrete facts is an entry in Joseph Brown's account book. "Steam Wagon Experiment. Oct. 30, 1859 Paid to Jno. A. Reed for construction, $4,000." Most likely, this was an advance payment, but there is nothing to indicate whether it was the total cost or not. The vehicle was completed by the end of March or early April of the following year, and shipped by rail and boat to Henderson, Minnesota.

The St. Paul *Daily Pioneer and Democrat* of May 13th, 1860 noted that the main part of the machine had reached that city and was waiting on the levee for the rest to arrive. From that point, the various pieces were loaded onto the steamer "Eolian" for the final hundred miles up the Minnesota River. On the 19th of May, it was unloaded at Henderson. The cost of the shipping from New York City was $963.75.

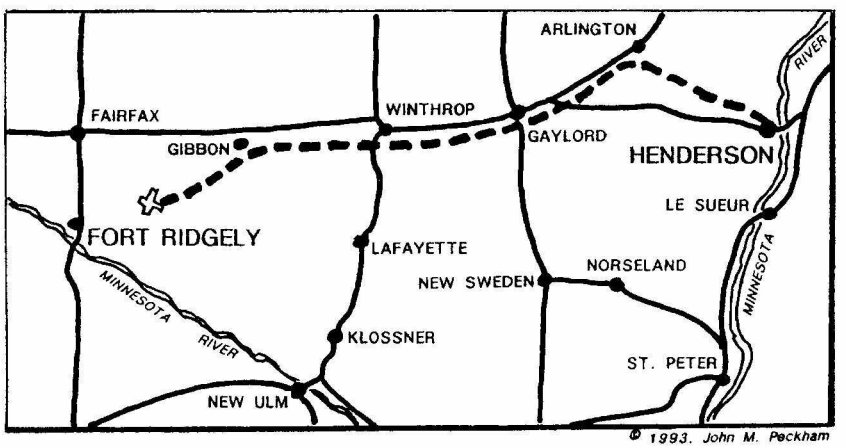
In the issue of the *Henderson Democrat* which announced the vehicle's arrival, there also appeared a brief article stating that the road from that town to Fort Ridgely was, at that time, in excellent condition and bragged that no town on the river had better roads. Since it was this road that Brown planned to use on the first part of the wagon's proposed trip to Fort Abercrombie, on the Red River of the North, things looked pretty bright. They did not remain that way for long.

More than a month later, on June 16th, the assembly of the steam wagon was not yet completed and Reed, who was to supervise the whole operation, hadn't shown up. Nevertheless, the promise was that the job would be completed in time for the celebration on July 4th. Beside the usual activities for that day, a gala ball was planned at Dickson's American House in honor of Brown and his steam wagon. Visitors who came to see the machine were assured of accommodations at the establishment. All in all, it would be quite a day.

Brown's creation was the main attraction, and people came from miles around to see it. A load of excursionists had even come down on a steamer from St. Paul to witness the event. The sight they saw was exciting...and disappointing.

As to the wagon's overall appearance, information is scanty. A letter from Reed to Brown written in 1870 compares their first steam wagon to the English traction engine by Thomas, which was being assembled in New Jersey. Both were three-wheeled affairs, and Reed said, "The forward wheel...operates as our first did. In fact the only difference is in the rubber [tires] and size of machines." The steering was apparently effected by a steering wheel similar to a ship's pilot wheel, a set of bevel gears and a shaft to the pivot point of the guide wheel. An article on the Thomas steamer in *Scientific American* does not describe the steering mechanism nor does the accompanying illustration offer much help. Reed continues, "It has a wrought iron frame and two tanks hung underneath as our first one was." Brown's wagon may have had a horizontal boiler, but no description gives that information. Except for the fact that it had three wheels, it looked like a locomotive.

The drive mechanism was, to say the least, the most unusual feature. According to the local newspaper, each drive wheel was made up of boiler plate, with an outer rim of about eight feet in diameter and eighteen inches wide. Around this rim, about five inches from each of the outer edges, were a



Traversing Sibley County and beyond, Brown's first steam wagon left Henderson, Minnesota, for Fort Ridgely, but got bogged down in a swamp nearly 33 miles out, about four miles short of its destination.

series of equally spaced holes. Inside this rim was a second wheel, nearly six feet across and one foot wide. This was supported by spokes and a hub, as a normal wheel would be. Around its circumference, near the outer edges, were rows of knobs or teeth which fitted into the holes in the inside of the larger rim. Around the outside of the inner wheel was a rack, or external gear, six inches wide. At the top of this wheel, and between it and the outer rim, was a small pinion gear which meshed with the larger gear. The small one was driven directly by the crankshaft of an oscillating engine. The outer rim was held in place by roller which worked against its inside, at the sides and top. The front wheel was simply a broad wheel made of boiler plate, and was three feet high.

The demonstration on the Fourth was far from an out-and-out success. Reed had not arrived until July 3rd, and Charlie Sloat, Reed's mechanic, was forced to piece the jigsaw puzzle together without the designer's guidance. Some parts had been lost in shipment, while others had suffered various degrees of damage. Sloat overcame these problems, but things were not as finely adjusted as Reed would have liked. July 3rd was devoted mainly to extricating the vehicle from the mud into which it had settled, and the fine tuning had to be foregone.

Independence Day arrived and the crowd assembled to see the behemoth put on its show. Steam was raised and the wagon began to move, but it was obvious that there was a considerable loss of power. Apparently, excessive friction due to a misadjustment was the primary cause. But it did move.

The throng roared its approval and the celebration was on. For the rest of the day it was driven forward about two blocks and then reversed to its former position, all the time loaded with cheering and laughing men and boys. As Huck Finn would have said, it was the bulliest show anyone had ever seen. The newspaper claimed that it was an unfair test, owing to the malfunctioning apparatus. Brown looked forward to a better run in the near future.

On the following Tuesday, the 10th, Brown's steam wagon ran again. This time everything was in perfect order. After steam was up, it was driven down Main Street as before and on up the hill to the road leading to Fort Ridgely. About half way up, on a 20 per cent grade, the machine was turned around and taken back to town. Successful as it may have been, Reed insisted in doing more work on it, and tested it again on Friday afternoon. Freight wagons were attached this time, and the subsequent trial was reported as completely successful.

The next report on the wagon did not appear in the local paper until October 6th, 1860. It had last been seen by the paper's correspondent climbing the hill towards Arlington and it and the drivers were waiting somewhere for further orders. But this was not quite the same wagon that had excited the crowd on the Fourth of July. While there is no account of what had been going on during the past three months, it was said that the wagon had been materially altered and both friction and weight had been greatly reduced. The most logical conclusion is that the complicated rear wheels had been rebuilt to conform to a more conventional pattern. Meanwhile, the machine had been christened, "...by bestowing upon it the paganish Dakota cognomen of Mazomanie, which meaneth in the vulgate Walking Metal."

Sometime in the week prior to October 27th, Mazomanie and a crew of three or four men headed west. It was to be a slow trip, since, for reasons not explained, its road was to be made as they went along. In addition, the gearing was such that it had a speed limited to 2 1/2 miles per hour, hauling two ten-ton wagons behind it. These carried the baggage, wood fuel, and water. Brown estimated, more reasonably than earlier newspaper accounts, that it hauled the load of 20 tons up a grade of 200 feet to the mile.

There seem to be no contemporary accounts of the trip, so it is necessary to piece the story together from information passed on forty to fifty years later by two participants. They are Beers Johnstone, a mechanic and friend of Brown's and probably the "steersman" of the machine, and B.H. Randall, a personal acquaintance of Brown and a representative of Fort Ridgely. Between these two, some idea of the events can be unraveled.

The wagon left the area of Henderson, heading in the direction of Arlington, strangely not using the road. Because of this, Johnstone encountered such obstacles as boulders, trees and marshes. Their problems were compounded by the fact that the boiler only held a one-hour supply of water and, about 20 miles out, Mazomanie's wood and water gave out. One of the wagons, ponderous affairs, with wheels twelve feet height and 20 inches wide, and a heavy timber frame 24 feet long, was abandoned. From that point on, wood had to be cut not only for fuel, but for timbers to build sections of road over marshy areas.

As Mazomanie and her crew neared Fort Ridgely, Randall sent out fuel wood from the Fort's supply. By this time they had been under way for more than three weeks, covering only about ten miles per week. Later on, when the route had been improved and the machine's gearing changed, it would be a matter of hours from Henderson to Fort Ridgely.

On the 28th day, disaster struck. The end of November was approaching and, while there had been snow flurries, now a real storm settled in. Near Three-mile Creek, about four miles from the Fort, the machine left its road, sank into a mire and half tipped over. As the snow swirled around the dying monster, she was abandoned by her crew. By the next morning, drifts of one to four feet surrounded the derelict and it was decided that it would be hopeless to attempt to haul it out of the swamp.

Brown did salvage the two engines and use them in a mill in Henderson. From that time on, the only use anyone had of the remains was by raiding Indians who used the smokestack for target practice.

In spite of this setback, Brown was not discouraged enough to give up all ideas about the use of steam wagons. There was, however, a hiatus of a little over a year. There doesn't seem to be any record of what went on, although some of his activities must have been directed at securing more capital. As for Reed, David Osborn, a mechanic in his employ, claimed that he had been contracted to build John Ericsson's gunboat, Monitor, and could not work on the new steam wagon project.

This statement may have had a hint of truth to it. The famous warship was actually built by several firms, the Novelty Iron Works being one of them. It is quite possible that Reed was hired by them as an engineer to work on the turret, which was Novelty's part of the job. Considering that this "Yankee cheese-box on a raft" was built in 101 working days, Reed could have been kept completely involved for much of that time. The Monitor was launched on January 30th, 1862. Brown's account book, however, notes a payment of $5,900 for construction of the second steam wagon to Reed on January 3rd. Since Reed's work on the Monitor would have been finished well before the launching, the date seems reasonable.

The destruction of Brown's papers in 1862 still leaves certain mysteries surrounding the new machine. However, it was finished about the end of April, and shipped from New York to Elizabeth, New Jersey on the 7th of June. Some testing was done in the New Jersey hills before it was loaded on a train five days later.

This time, Brown chose Nebraska City, about 40 miles south of Omaha, as the starting point for a new route to the West. It was his plan to start a freight line to follow the "Nebraska City - Fort Kearny Cut-off"

of the Oregon Trail, continue along the Platte River and then down to Denver. Since the railroads had not reached that part of the country, it was a potentially lucrative business.

The wagon reached St. Joseph, Missouri on the 15th of July and was loaded onto the steamer West Wind, for the 200-plus mile trip up the Missouri River to Nebraska City. Four days later it arrived.

The boiler was filled from the river, steam raised, and the machine was driven from the deck of the boat onto the levee. Coming up to the town from the landing point, it had to climb a variety of grades, from 13 to 15 feet. The muddy Missouri did little to help the quality of the steam, and the engines had a tough time of it. Nevertheless, everyone seemed impressed with "The Prairie Motor," as the local paper dubbed it.

The new machine was considerably different than the one sent to Minnesota. It was propelled by four engines, each with ten horse power. The cylinders were of the oscillating variety, as before, and had a bore of twelve inches. No mention was made of the stroke. On one end of the four crankshafts was a pinion gear which meshed with an external gear ring six feet in diameter. This was attached to the special, looped boiler plate spokes of the drive wheels. These wheels were ten feet in diameter and eighteen inches broad. The steering wheels, this time there were two, measured six feet high and one foot across.

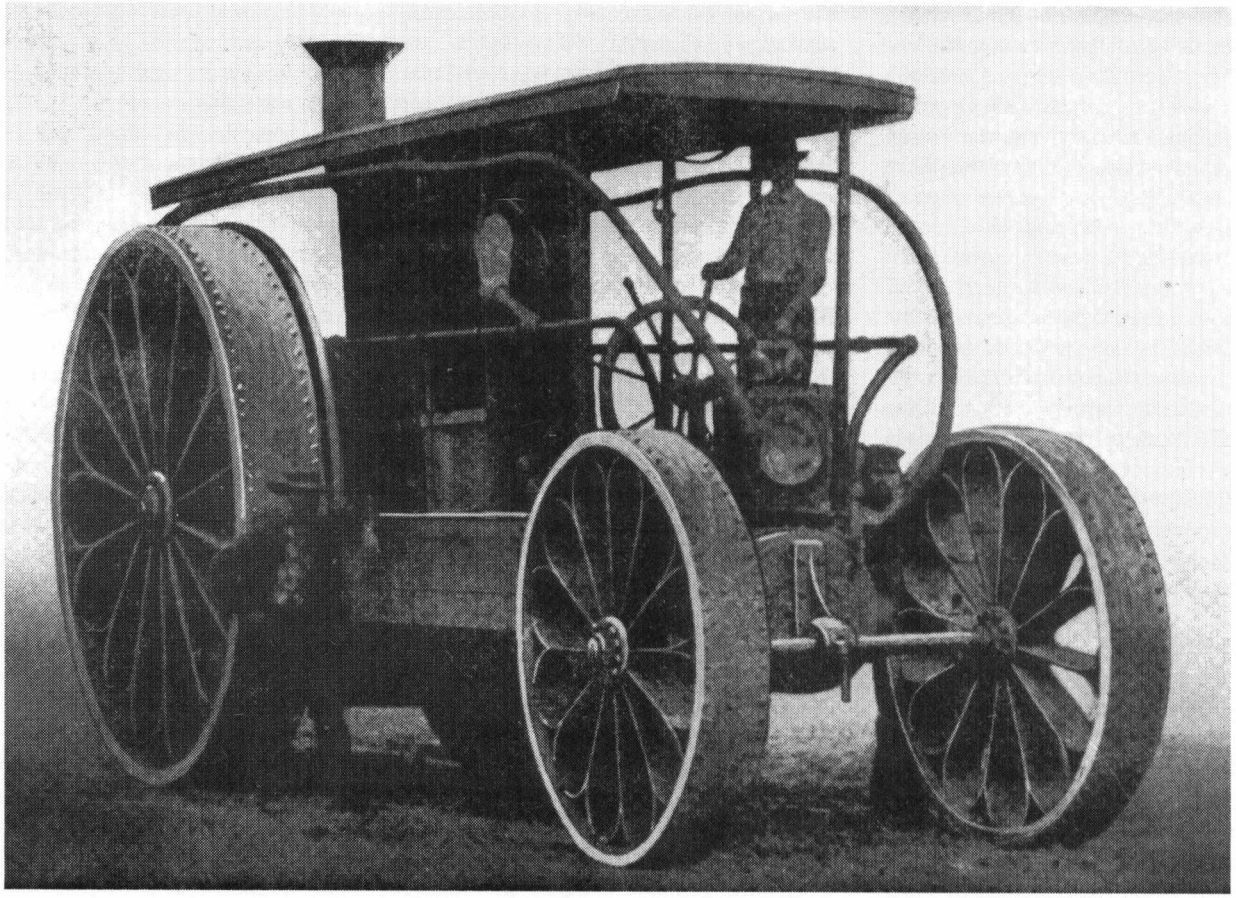
The main body of the Prairie Motor consisted of a long, horizontal waster tank with an upright tubular boiler aft. The engines were mounted vertically, next to the boiler, two to a side. The water tank held 15 barrels (472.5 gallons), which was supposed to run the wagon for four to five-and-a-half hours. Fuel was consumed at a rate of one cord of wood every eight hours, at four miles an hour and two-ton load behind.

The front axle was a single bar, attached at the center of the front of the water tank by a ball and socket arrangement. This allowed considerable vertical freedom to the wheels as they travelled over rough terrain. The design of the steering apparatus was quite simple. A large ship's-type wheel was attached to a drum on a horizontal shaft, around which a heavy rope was wrapped a few turns. A length of this rope went down each side of the wagon, passing through a pulley, and was fastened to the ends of the axle, near the wheels.

On July 20th, after the boiler and engines were stripped of Missouri River mud, a difficult and extensive test was conducted. In the midst of a steady drizzle that made the Nebraska soil as slippery as grease, the vehicle was driven up hills, across creeks, through gardens, over level sod, through hazel bushes and sumac, making tight turns no freighting team could equal and, in general, showing off to anyone willing to brave the water to watch. Regardless of the condition of the soil, the Prairie Motor conquered the terrain with relative ease, including grades of up to nearly 20 per cent. The next day or so was spent towing a large military freight wagon loaded with the local citizenry around the community and, finally, preparing for the trip to Denver.

The *Nebraska City News*, of July 26th, 1862, ran the following notice of the departure of the wagon and crew:

The Prairie Motor left this city, at 5 o'clock, on Tuesday [July 22] evening last, for Denver, via the Great Central Route. It ran over the two steep hills just west of town with apparent "ease and comfort" itself. It will not



The Nebraska City steam wagon of 1860. Unfortunately, a side panel below the roof and behind the rear wheel has been retouched out. One wonders how successful the spring wheels were. Probably not very, but Brown stuck with them. The illustration is from Wm. W. Folwell's The History of Minnesota.

reach Denver for several weeks, as it is the intention of the proprietor to have all necessary grading, bridge-strengthening, etc., done on the outward trip. The road once put in order, the machine can make its trips regularly and on time.

The steam wagon pulled three wagons with a total load of five tons of freight and two cords of wood. In addition, for the first mile or two, the wagons carried all the excited and cheering citizens they could hold. After the passengers had dislodged themselves, they watched their new-found friend, the Prairie Motor, disappear in the west. As they walked slowly back to town, it is a safe guess that a new plan for building a real road for the machines dominated conversations.

Even before the road wagon had arrived in Nebraska City, Joseph Brown had been hard at work. Probably with the backing of a local citizen, Sterling Morton of the Otoe County Board of Commissioners (later to be Grover Cleveland's Secretary of Agriculture) was approached with a plan for the County to get involved in building a road for the steam wagon. There is nothing to tell us how much of a job it was for Brown to convince them of the soundness of his scheme or of its benefits to the community, but on July 7th, 1862, the following order appeared in the County Commissioners' Records:

It is hereby ordered by the Commissioners of Otoe County in the Territory of Nebraska that sufficient tax will be levied upon the property of the Otoe County to build and grade a road from Nebraska City on said County and Territory to the western boundary of said Country with a grade not to exceed three hundred feet to the mile with bridges of sufficient strength to support and hold Steam Wagons of twenty tons each. Provided that a majority of the voters of Otoe County shall cast their votes in favor of said levy and expenditure at the coming October election and provided that J.P. Brown shall give to the County Commissioners of Otoe County sufficient guarantee and assurances that he will bring sufficient Steam Wagons and machinery to run a daily line from said Nebraska City to Denver in Colorado Territory.

This was signed by George E. Lee, H.C. Wolph and R. Justice, County Commissioners.

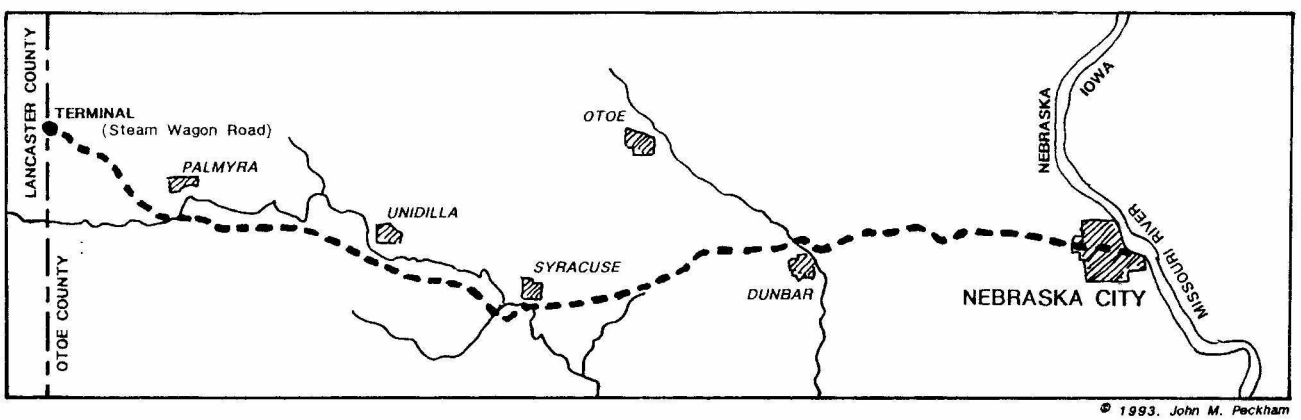
On August 2nd, those who had not already heard of it by word of mouth, saw in the newspaper that the Prairie Wagon had broken down. About twelve miles out of Nebraska City, just as the land was about to run level and clear, one of the crankshafts snapped. It was said that the breakage had been caused by "an original flaw" which had gone undetected at Reed's shop. The wagon was hauled to Morton's nearby farm, Arbor Lodge, and Brown left immediately for New York with the offending parts to get replacements made. While the accident was disappointing, everyone still seemed to have the utmost faith in the enterprise.

On his arrival in New York, Brown found all the local shops so involved with military work that he was not able to have the new parts made and shipped until the 16th of August. They had not reached Nebraska by the 25th but were expected on the next boat. Needless to say, the people were getting anxious. They had called a mass meeting on August 28th to discuss the new road, and the Sheriff had already picked a site for the depot and shop.

In the meantime, Brown and Reed had drawn up Articles of Agreement. They covered the following:

1. Rebuilding the first steam wagon by enlarging the drive wheels and pinion gears and attaching a 500-gallon water tank so the wagon could draw twelve tons of freight at five miles per hour. This project was to be completed and delivered to Nebraska City by the end of October.
2. Building six new steam wagons. These were to have ten-foot drive wheels with 20-inch wide tires, horizontal boilers, 700-gallon water tanks, four rotary cylinders of eight-inch bore and twelve-inch stroke, and two steerable wheels of six-foot diameter and fifteen-inch width. Each wagon was to be supplied with two of Reed's "Patent Pumps" to draw water. In addition, each steam wagon was to be supplied with two "cars" with Reed's spring wheels, eight feet in diameter, bloater and frame, enclosed and capable of holding freight securely. Six feet above the floor of the car was to be a second floor. This was to be set up with seats, convertible into berths for sixteen people. The steam wagons were to be delivered with one headlight, hose, jacks and other paraphernalia necessary for the road.
3. The first one was to arrive in Nebraska by March 1863. It was also specified that it should be capable of hauling twelve tons at eight mph on a grade not exceeding 250 feet to the mile (five per cent), with a supply of wood and water to run 25 miles on hard roads. Two more steam wagons, with freight wagons, were to follow by the end of June. No specific delivery date was set for the remaining three.
4. Reed granted Brown the rights to use his patents and to build and use steam wagons of his design in Minnesota, Iowa, California, New Mexico, Nevada, Washington and Utah.

This leaves little doubt that the August 2nd breakdown was considered by everyone to be no more than a very minor setback. In fact, in a letter dated August 16th, 1862, to the editor of the *Nebraska City News*, Brown



The steam wagon road as planned through Otoe County, Nebraska, in 1862. In concept, it was to have gone as far as Fort Kearny, and possibly on to Denver, Colorado. This map is based on a series of the complete route to Ft. Kearny, drawn about 1935 by Arthur Edward Fuller, which is now in the Nebraska State Historical Society.

informed the people of the order for the new, 70-horsepower machines, the rebuilding of the Minnesota wagon, and his plans to have the whole affair running tri-weekly trips to Denver and back, all to happen by the end of October 1863. Reed was to take the wagon from Fort Ridgely to Nebraska City and to look into the building of a foundry and shops there so that at least four of the vehicles would be built at the eastern terminus. At the close of this letter, Brown said, "I leave today for Minnesota, and will reach Nebraska City in about a month." At dawn, August 18th, 1862, the Sioux went on the warpath. The news reached Brown at LaCrosse, Wisconsin, and included the distressing information that his family had been massacred at the Upper Agency, near the confluence of the Yellow Medicine and Minnesota Rivers. His house and all his belongings were no more than a mound of ashes. Literally, he believed everything had been taken from him except his life.

But shortly after returning to Minnesota, he was informed that his wife and family were alive! However, they were still held captive by Sioux. With a small degree of relief, he went to serve with General Sibley as a Major in the militia. More than a month later, his family was released by the Indians, quite possibly because of his past help, and because his wife was part Dakota. He continued with Sibley, participating in several battles, until the cessation of the hostilities in 1863.

All this time, the people of Nebraska City maintained enthusiasm about the prospects of the steam wagon line. By the end of August 1862, $2,000 had been raised by personal subscription, and work was expected to start shortly.

By the 12th of September, the steam wagon had been repaired and was ready to run. Reed suggested taking the repaired wagon and going to Minnesota to haul the other one back. Since the uprising was largely centered in that area, such a venture could have meant disaster. Under the circumstances, there was no way to get Mazomanie repaired before winter.

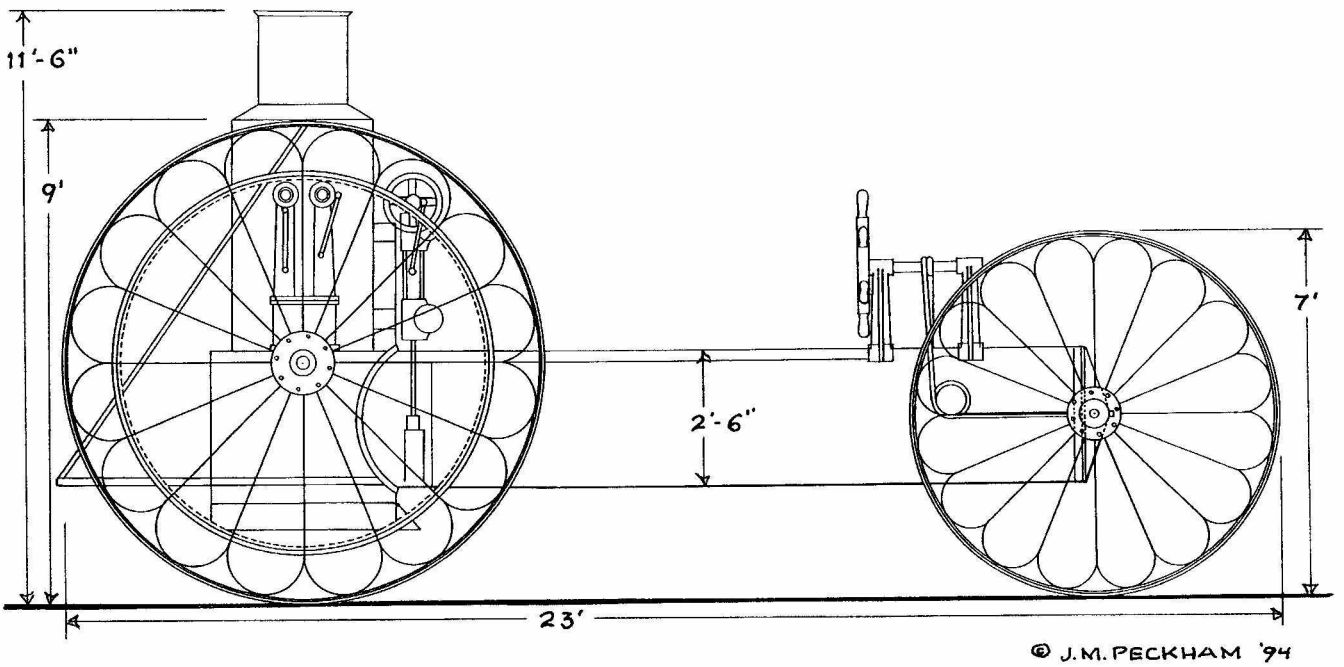
The vote on the tax for the road was taken on October 14th, but was later claimed to be null and void, due to the notice not being legally prepared. A special vote was called to raise $2,500 by taxes. On December 29th, the proposal was adopted by the voters of Otoe County, and plans continued. In March of 1863 the commissioners appointed W.E. Hill to supervise the road building and purchase the needed materials.

The big problem was Brown's total lack of capital. He found it almost impossible to find the money to pay his two mechanics who had remained in Nebraska with the machine. As for the wagons Reed was to build, that was totally out of the question, at least for the time being.

Both he and Reed were trying to raise money, without much success. On the other hand, almost 20 miles of the road had been completed by June of 1863. The remainder of the year was spent in vain attempts to form a company and raise capital. Apparently this lack of success made Brown decide to drop the whole affair for a while and try to recoup his losses. A period of six years was to separate the Nebraska plans from his efforts, but, by mid-1869, Brown and Reed were at it again.

Although no correspondence seems to exist on the matter before September of that year, plans had progressed sufficiently well to indicate that the project was more than a month or two old. By September 21st, a model of a new wagon had been built, drawings completed and work was about to start on the castings. Reed's office, now at 80 Broadway, New York City, was sort of Brown's eastern headquarters, and he spent much of his time there. Reed had also changed his residence. He now lived at New Market, New Jersey, not far from Plainfield, where this third wagon would be constructed.

The plans for the Nebraska City-to-Denver line had been dropped when the railroad invaded the territory. Now the idea was to start a similar project along the western border of Minnesota, northward along the Red River of the North to Fort Garry, near Winnipeg "in the territory formerly owned by the Hudson's Bay Company". In one of many letters sent out to various prospective capitalists, Brown even speculated about sending his steam wagons on to the Saskatchewan River and the base of the Rockies. From this point on, a long string of correspondence between Reed and Brown and between Brown and his son Sammie



Brown's last road wagon, redrawn from an original drawing by John A. Reed in the Minnesota Historical Society.

kept us well informed of the constant trials surrounding the new machine.

In a letter to his son dated October 5th, 1869, Brown stated that the wagon was to be small, calculated to pull five tons at five mph, or 8 mph with one ton behind it. The main idea was to make it as light and efficient as possible. Even the grate in the furnace was to be part of the water tube system, helping to generate steam. The four engines were to be light enough, so one man could lift one.

They had hoped to test the wagon by the 25th of October, but five days before that date they hadn't even received the steel from Pittsburgh. The delays bothered Brown immensely, and he said "...[he] would get discouraged if there was any use in it." Obviously, such problems had become common. On Sundays he would go out to Reed's home near New Market, sometimes walking out to a rock on which George Washington used to sit while watching the activities of the British when they had possession of New York. This was the Major's only relaxation, and he enjoyed it thoroughly.

Continual problems beset them. Parts had to be recast to correct defects, and the steel, ordered from Pittsburgh on October 2nd, had not arrived on December 16th. The freight wagons had nearly been completed, but they were just getting to work on the engines and assembling the wheels as the year came to an end. Brown commented, "I have done many difficult jobs, but none equal to this of Steam Wagon making."

Over a month later the wheels remained in pieces, the boiler was about half cast, and the furnace pattern worked so badly that it had to be redesigned, again adding to the delays. A month later, on March 9th, 1879, the boiler had been fitted, but the furnace wasn't ready, and wasn't expected to be for still another week.

Much of the problem continued to be money. Reed was constantly asking for it in sums of $1,000. Little had been forthcoming from Brown's pleas for capital, so it had to come out of pocket. He must have had to put down some sort of down payment. Then there was an additional $1,000 in November of 1869 and $1,000 in February of 1870. In April, a close friend, Colonel Clark W. Thompson, lent him $1,000 for the project. By this time he was referring to the machine as The Cursed Thing. He spent most of April in Washington, trying to get a government grant, but he wrote that there were so many applied for that he might fail. If it hadn't been for Col. Thompson, he would have returned to New York empty-handed.

May came and went, and still no wagon. Reed had started to put the boiler and furnace together, only to find that the furnace rings were out of true. Two weeks were lost in rectifying this problem. The parts had to be returned to the shop that had done the work, in Jersey City, where it was found that the machine that had done the job was an eighth of an inch out of adjustment. Reed was furious. There was no excuse for this error, especially on a tool for which they charged $9.00 a day, then a fortune.

After this problem was corrected, Reed expected to have the boiler and engines on the wheels during the first week in June. A slight modification in design was made; he changed the plan from external gear drive, as in the Prairie Motor, to internal gear drive. At the end of one letter Reed said, "I assure you will not be more pleased to see it moving away from the shop than I, for the thing haunts me day and night."

July arrived, and the "thing" had made no progress. Even at the end of the month, Brown wrote to Sammie that it was not yet on wheels. The boiler had been tested up to 175 pounds per square inch, which was 50 pounds more then would be required. At least something was successful!

In spite of Thompson's loan, money was still lacking. At the end of August, Brown wrote, "I am literally living from hand to mouth, but am determined not to give up..." The wagon was on wheels, but far from finished. To add to his problems, the Major learned that Sammie had been in an accident in Minnesota, and was partially paralyzed. With things so far along in New Jersey, and assurances from home that things were as well as could be expected, Brown decided to remain in the East.

On September 23rd, he wrote to his son, bitterly saying, "As to the skeptics in regard to the wagon, I cannot help it if they don't think it will work. If they have no interest in it, however, it appears to me to be pretty much none of their business whether it works or not." He also said that they expected to fire it up in a day or two. But it still hadn't been run on October 5th.

Finally, the 10th of November, the steam wagon was ready to be tested. Reed went to Brown's hotel to let him know, and to head for New Jersey. Repeated rapping on the locked door brought no response. In desperation, the door was forced and Brown was found lying dead across his bed, the bedclothes undisturbed. On November 9th, 1870, only hours before his steam wagon was to have been driven for the first time, at 65 years old, Major Joseph Renshaw Brown had lost the battle against time.

So much of his personal money, nearly $7,000, had been pumped into his dream, that his family was unable to raise the additional $300 or so that it would cost to finish the machine and prepare it for shipping. Reed made some more tests of the boiler, up to 220 psi. He was particularly satisfied, and Brown's relatives seemed anxious to get it out to Minnesota.

In February of 1871, the Nebraska wagon came back into the picture, by way of a letter from Sterling Morton. He was of the opinion that the machine, which was still at Arbor Lodge, having been badly eaten up by rust, was worth nothing, except as scrap iron. This was the last to be heard of wagon number two, although a couple of pieces of it survive to this day.

Reed still had number three, and suggested that it be put under cover, at a cost of about $50. Apparently this was not done, and it had to be painted twice to prevent rusting.

Discussions of what to do with it came to no avail. It would cost $350 to ship it to St. Paul, Minnesota, in addition to the $300 to complete it. This included putting on the wheel and tire fenders and testing it on the road. On June 2nd, Reed made a scale drawing of the road wagon and sent it to Sammie, in hopes of encouraging the family to get it out of his way. At the time, he was adamant in his desire to get rid of it, either by the Browns taking it to Minnesota, or his disposing of it in New Jersey.. He was, however, reluctant to disassemble it and sell the parts. It seems that he, too, had shared part of Major Brown's dream, and maintained considerable faith in its being successful.

Strapped for funds, the family made attempts to get permission to sell some of the Major's land in Minnesota, but things were tied up legally, and, even after much begging and explaining, nothing could be done.

By May 21, 1872, it was Reed who was begging. He wanted his money, and he wanted the steam wagon out of his place. It was not until October 24th that he received $242.63, to cover expenses of painting and moving the machine when the railroad put a line through the yard of his shop. Even then, it was not finished.

On April 9, 1873, the last known correspondence was exchanged between Reed and Sammie. He was about to paint the vehicle for the third time, and it is obvious that he was totally fed up with the whole thing.

What happened to it after that is unknown. The Browns still wanted it, but it never went to Minnesota. The fate of Major Brown's steam wagon remains a mystery, but it is certain that the great man's fondest dream died in frustration, just as he had.

A Sports Car for Edsel Ford

by W. Dorwin Teague

One of the most important clients of Walter Dorwin Teague Associates was the Ford Motor Company. The first job for them was their exhibit for the second season of the Chicago "Century of Progress" fair in 1934. The previous year I had become the third employee of the Teague design office. The Chicago job was followed by the design of the Ford display for the New York Automobile Show, and their exhibit in the California-Pacific International Exposition in San Diego.

In 1935 the Teague office designed the Ford exhibits in the automobile shows in New York, Chicago, Detroit, and San Francisco. By 1936, we were doing all of Ford's automobile shows, the Ford Pavilion at the Dallas World's Fair, Ford showrooms in five states, and even room interiors for the Ford family. In 1937, work was started on the Ford Building for the 1939-40 New York World's Fair, the largest single project for the Teague office up to that time.

As the result of the staff build-up for the New York Fair, our office outgrew the available space at 210 Madison Avenue and moved up to 444 Madison Avenue where it eventually occupied three floors. My father kept in his office a model car that I had built while I was living in Boston. This embodied some features that had occurred to me after I had designed the Marmon 16.[1] During the work on the Ford Building, Edsel Ford used to drop in occasionally to check on progress.

Edsel saw the model and was intrigued. Somewhere along the line he discovered that I had designed it. After this, we used to chat about body design, and, eventually, in 1940, he asked if I would care to visit some of the forthcoming automobile shows and write him a note with my thoughts on auto body design, and where it was headed. Naturally, I lost no time in complying and on November 13, 1940, I wrote a report which raised the possibility of a "Ford Continental" which would not entail many changes from the 1941 model Ford (sidebar, pages 19-20).

(text continues on page 23)

1. See "Classic Marmons and Classic Memories," *The Classic Car*, March 1994. That model, and the original model of the Marmon 16, I later donated to the National Design Museum (formerly the Cooper Hewett Museum) in New York City. They are occasionally on exhibit there and abroad.

WALTER DORWIN TEAGUE
444 *Madison Avenue*
NEW YORK

January 24, 1941

Dear Mr. Ford:

We are mailing you the drawings and renderings on the proposed Ford and Mercury Sports model together with the renderings of the new designs and the present Mercury Convertible.

With this I am enclosing two copies of a report in which we have listed the external changes made in the stock design, and our reasons for doing so.

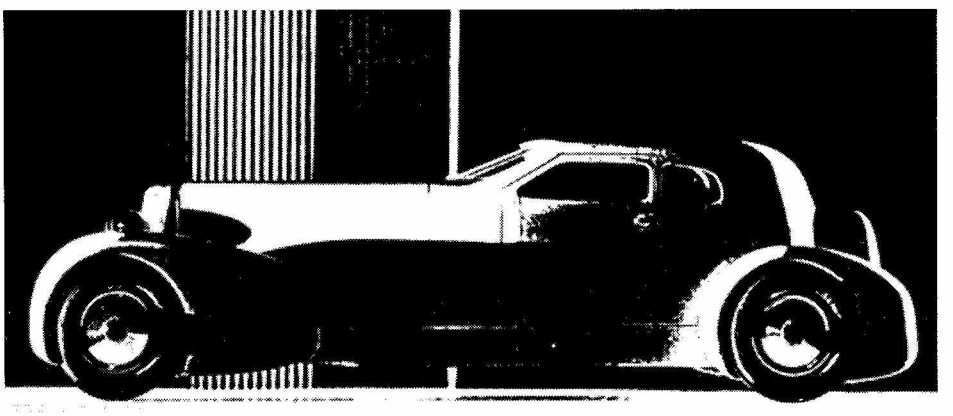
I shall be very much interested to discuss these designs with you and your engineers at the first opportunity.

Yours sincerely,

Walter Teague

Edsel Ford, Esq.
Ford Motor Company
Dearborn, Michigan

Above, the letter which forwarded Dorwin Teague's second set of drawings to Edsel Ford (illustration opposite and page 21) and the second report (sidebar, pages 21-22). Below, the model designed and built by Dorwin Teague which served as the basis for the design of the Marmon 12. All illustrations courtesy of the author.



The Possibilities of Ford "Sports" Car Design

"A Ford Continental"

This report is taken directly from the Ford Museum archi es but the letter of transmittal is apparently missing. I assume that, in accordance with the usual Teague office practice, the letter of transmittal was written and signed by my father. The first reference to my report which can be found in the archi es is a letter from my father to a Mr. A. J. Lepine in the administration building dated January 8, 1941.

For many years the American motor car industry has not offered anything in a small car other than the strictly stock low-priced models. Of late the convertible models, which have not almost entirely replaced the strictly open models, have advanced in price over the closed models and now run considerably higher ($900 to $1,000 as compared to the base prices of $600 to $700). These however have the same chassis and motors as the closed models. One Plymouth model this year is selling for $1,400 and offers special windshield and body trim but still no definite improvement in appearance or performance.

The European market, on the other hand, has always produced a number of smaller cars of very high quality as to appearance and performance. Prices vary from medium to very high but all endeavor to offer something better than the "family type" in the way of appearance, performance and handling characteristics. Many consider this tendency to be a result of the high horse power tax imposed abroad, and this undoubtedly has some effect. However since most of the true "sports-car" types are sold at prices over $2,000 the cost of the horse power tax is not a primary consideration to these owners.

The primary reason for this market is that the European buyer, as opposed to the average American citizen, feels that the best handling, performance, and appearance characteristics may be obtained in an automobile of small or medium size. In many of these models certain comfort features are sacrificed. The European sports car driver does not care whether his car can carry three or four in the front seat or not, and does not object to more difficult entry and exit. He feels that a form-fitting bucket-type seat is more comfortable on a long run than a wide flat seat.

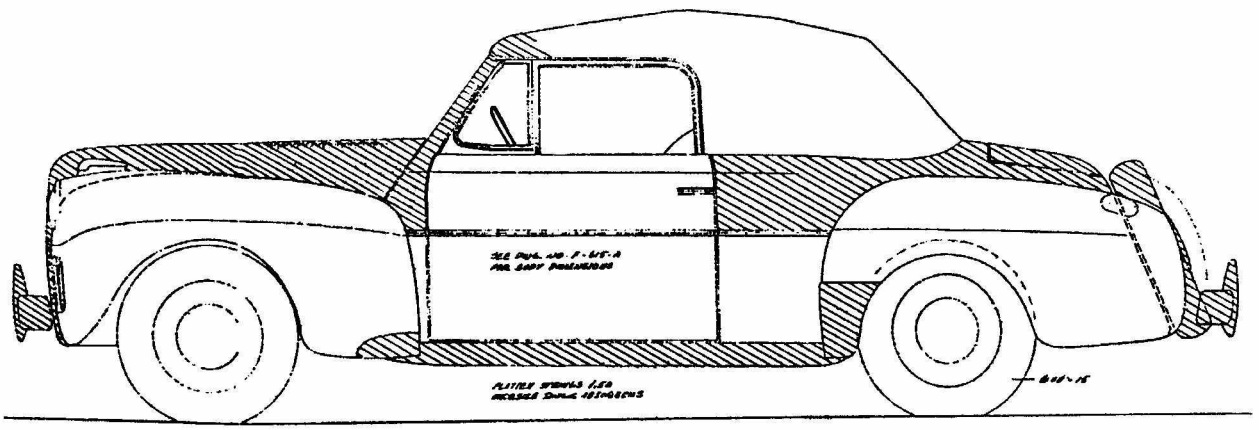
On the other hand he places much more emphasis on ability to corner well; good driving visibility (on almost all true "sports" models both front fenders may be seen from the driving position); easy, direct steering for quick manipulation in emergencies; low center of gravity and similar characteristics. In appearance he prefers a lower and lighter effect rather than massiveness. Springing must not be soft to the point of producing roll and sway upon a deviation from a straight line, and braking must be very good. All these characteristics may be summed up by stating that the "sports" car is designed to travel faster and more safely on any type of road than the "family" type of automobile.

Examples of this type of car are the Alvis, Acedes, Bentley, Jaguar, Lagonda of England; Bugatti and Delahaye of France; and BMW and Mercedes of Germany.

As stated above, some of these models are lacking in some of the comfort characteristics of even the cheaper American cars. No true "sports" model can carry as many people comfortably as a popular-priced American sedan. Some, not all, are less comfortable at low speeds on a bumpy road. On all these upkeep is more difficult and expensive for the non-mechanical minded due to inferior mass production technique. For the same reason reliability is not so great in most European types.

Any one who doubts that the foreign "sports" car excells (sic) in the aforementioned desirable characteristics has only to refer to records of recent races in this country or abroad in which American and foreign stock types have competed. This is especially true of the road race which more closely approximates normal driving conditions. The special racing car itself, either American or foreign, is proof of the fact that speed, safety, and desirable handling qualities require a moderately sized unit. This, of course, has nothing to do with the straight-away record cars, which are designed only for traveling at speed in a straight line for a few miles on a specially prepared course.

It is not possible, of course, that this



"Sports" modifications to the 1941 Ford convertible coupe, as proposed by Dorwin Teague.

(continued from page 19)
type, as now built in Europe, will ever have any wide appeal in this country. However, the existence of a market for a modified version of this idea seems definite. This modification would take the form of a special model of a low priced car. Several reasons point to the existence of this market: First, the fact that a large number of convertible models at quite an advance in price, are sold. Foreign cars, even at very high prices, with repair facilities limited have a small but steady market. Younger people, college students and others who are not primarily interested in maximum comfort to the exclusion of certain other features almost invariably react favorably to this type of car; although at present market conditions prevent most of them from realizing any desire to own one.

The Plymouth special phaeton mentioned above is a first step toward a car of this type. Of the three popular low priced cars it would seem that Ford is best qualified to bring out a special model. For some time the Ford has enjoyed the reputation of giving the best performance of the three leaders. Fords are usually the choice of the young open-car buyers, many of whom could easily afford a more expensive car. This is probably because it comes closer to the true "sports" model than any other.

This car would not entail a great amount of chassis changes, motor changes, or even new body parts. The Ford chassis might be retained as is except for possibly stiffening spring action and limiting its travel. Larger dash-controlled shock absorbers would give a more solid and safer riding action for faster driving and cornering. Stiffer shorter spring action would also help this factor in addition to lowering height of body. Another worth-while feature would be the use of smaller diameter wheels to further decrease height as on the special Buick at the New York Show. A more direct steering ration could be fitted to improve handling. On this job accurate and quick steering should be more desirable than extreme ease in parking. At the same time the steering post could be given an increased rake and with this and a slight modification in control pedals the driver's seat could be moved further back and lowered. Another valuable chassis modification would be the reduction of unsprung weight by tubular front axles and lighter rear-end parts.

Motor modifications would not need to be extensive. Perhaps the option of the Mercury motor would be a good feature. Optional higher compression heads or special four-carburetor manifolding might also be offered. Another feature which would be very valuable would be a slightly better motor and motor comportment finish than on the standard line. This would not cost much but would mean a lot to the type of purchaser who would buy this car.

Body changes would entail the most parts but do not mean entirely new dies by any means. Probably the four passenger convertible body type is the best to consider. By employing sufficient ingenuity many body parts might be adapted with slight modifications. For instance, Zephyr fenders might be employed but would be set much lower than on the Zephyr. Certain parts would have to have special dies but these would be kept to a minimum. An extremely low, well-proportioned effect similar to the Continental Zephyr on a smaller scale, would be sought after. If done well enough this style body might be retained for several years without major changes.

CHASSIS MODIFICATIONS

5.50 - 16 tires

Add leaves to springs and flatten to limit action, front and rear

Use tubular front axle

Cut weight of rear end if possible

Extend clutch and brake pedals to rear by amount necessary (2" ?)

Special low ratio steering gear box and Pittman arm. Increase rake of steering column, make adjustible (sic), special steering wheel and gear lever.

OTHER MODIFICATIONS

90 h.p. motor

Polished aluminum or copper alloy heads. 7.75-1 ratio

Polished aluminum intake manifold

Chrome-plated cap nuts for heads and intake manifold

Baked enamel finish on special exhaust manifolds. Twin burgess type mufflers and tail pipe assembly

Chrome-plate certain motor parts - semi-show finish in motor compartment.

In addition to the "Sports Car" designs, the correspondence between the Teague office and Edsel Ford concerned proposed concepts for the front end of the 1942 Lincoln Zephyr and radiator ornament designs.

Jan. 29,
1941

Mr. Walter Teague,
New York City.

Dear Mr. Teague:

I have received your letter of January 24th, together with your memorandum regarding the Ford and Mercury Sports Car design, also the drawings and small scale renderings which I have turned over to our Body Engineering Department for development.

We will examine this suggestion in detail, and ascertain how many changes are involved in producing a cabriolet such as you suggest.

We would not care to have you do any more work on the front end design of the Lincoln Zephyr model, inasmuch as we have adopted for 1942 production a design which is already in process of tooling.

I would also suggest that you defer any further work on the motor court until Mr. Fred Black returns and the matter can be gone into more thoroughly with our Hotel Manager.

The radiator ornament design which I saw in your office last Friday seems very interesting, particularly the Lincoln Zephyr dog design, and I also feel that by reducing the scale of the Mercury model it may be satisfactory. The Ford, I think, needs some further working on.

Yours sincerely,

President

EBF:C

Address: 444 Madison Avenue,
New York City.

WALTER DORWIN TEAGUE
444 *Madison Avenue*
NEW YORK

January 31, 1941

Dear Mr. Ford:

Thank you for your letter of the 29th. It will be very interesting to see what your Engineering Department has to say about the Sports Car designs.

We stopped work on the front end designs as soon as we knew that you had practically arrived at a decision. Also, we have done no further work on the Motor Court after completing the sketches of the service portion of the project.

We are working on a more interesting version of the Ford radiator ornament and will have the Mercury ornament reduced to about 75% of its present bulk. We will also get the Lincoln-Zephyr dog into shape, eliminating the fin, and I will hope to have all this ready for you on your return from Florida.

I hope you have a fine vacation, and I am sorry it is not going to be longer. With best regards,

Yours sincerely,

Walter Teague

Edsel Ford, Esq.
Ford Motor Company
Dearborn, Michigan

Ford and Mercury Sports Car Design

January 14, 1941

Following our first report - "Possibilities of Ford 'Sports' Car Design - A Ford Continental" - we have worked out preliminary drawings and renderings to develop this idea. These preliminary designs have been developed on the Ford and Mercury chassis.

Since one of our first objectives has been to use as many of the present body and chassis parts as possible, we have selected the convertible cabriolet as the most suitable model from which to develop the "Specials". Although the "sports" models which we are trying the approach have been built largely as open cars in Europe, we do not feel that the strictly open type has a wide enough appeal in this country to make it at all popular. Furthermore, by deciding upon a convertible, practically all of the present top and door mechanisms can be used without change.

After investigating the Ford and Mercury convertible coupes it was decided that the Mercury chassis perhaps offered the best possibilities for the following reasons.

For one thing, in this special design, the appearance should tend towards a longer hood in relation to the rest of the car. The windshield and top should set back in relation to the wheels, and excessive overhang in front of the front wheels should be avoided as much as possible.

According to the drawings received, the Ford and Mercury convertibles are identical (except for trim) from the rear of the hood back. The Mercury, however, has a longer hood without greater front overhang and front wheels are set further ahead, both desirable features. Thus, as may be noted in the drawings, we can produce a very desirable result on the Mercury chassis with a minimum of changes.

With the Ford, however, if we make only the changes made on the Mercury, the appearance is not nearly as good for this type of car. We have, therefore, indicated some additional changes on the Ford job to overcome this difficulty. A special hood is used, extending all the way back to the windshield to increase it apparent length. A new front grille assembly is indicated to reduce the front overhang and to prevent the present effect of the front wheels dividing the mass of the hood almost exactly in half.

On the Mercury the lower rear panel below the trunk lid is retained without change and the spare tire is mounted as on the regular model. The Ford, however, has the luggage compartment shortened and the spare mounted outside, as on the Lincoln Continental, a feature quite necessary on the Ford to cut down the apparent length of the rear end in relation to the hood. This of course would also improve the Mercury, but with the longer hood it is not a necessity.

A second reason for the choice of the Mercury is because of the price angle. Of course there is inherently nothing about either of the "specials" to make them more costly to manufacture than the present standard convertibles, given equal production. In the beginning, at any rate, production will not be as large as on present units, and it will be more economical to employ present parts with modification wherever possible rather than to use new dies throughout. This special work will necessarily mean a substantial increase in cost of the "Special" car over its standard counterpart.

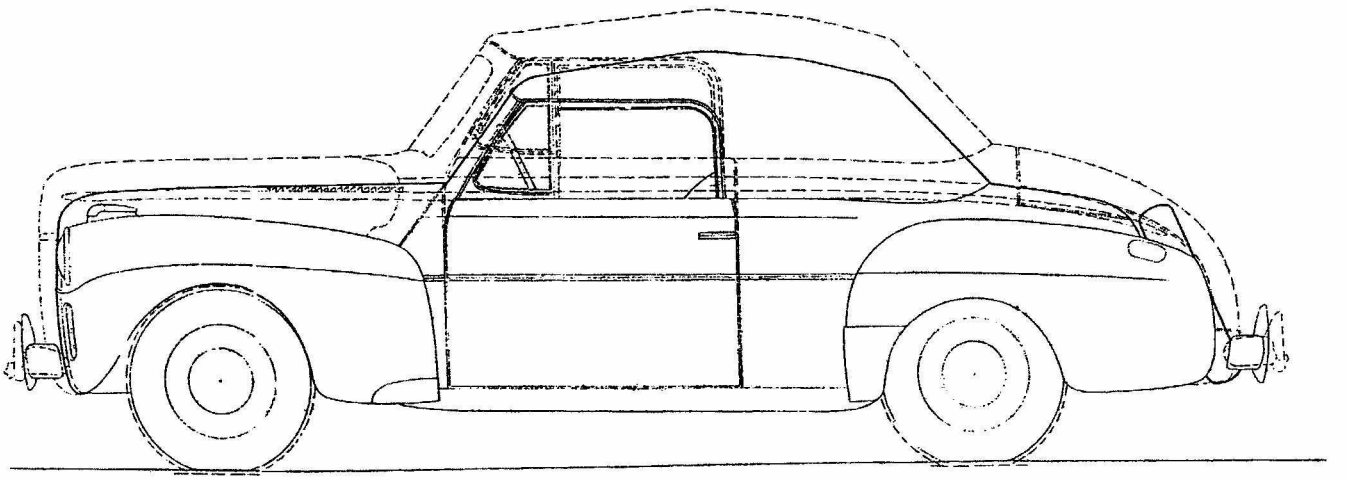
The present schedule of list prices for the convertibles runs as follows:

Ford -	$935
	difference - $170
Mercury -	$1105
	difference - $696
Lincoln Zephyr -	$1801
	difference - $977
Lincoln Continental	$2778

It does not seem possible that the price of the "Special" if on the Ford chassis could fall between the Ford and Mercury. Therefore a Ford "Special" would fall somewhere in between the Mercury and the Lincoln Zephyr convertibles. In view of the fact that considerable effort and money have already been spent to convince the public that the Mercury has a superiority over the Ford which makes it worth more, it might result in some opposition if the Ford "Special" price was considerably higher than the Mercury.

With the changes shown on the drawing it is quite possible that the Ford "Special" would cost more to build than the Mercury. As stated above, the only difference between the two standard models is a few extra inches of metal in the Mercury chassis, fenders and hood, plus motor changes and trim. The extra changes necessary on the "Ford" special would more than take up this difference, so that the selling price would probably have to be at least as much as the Mercury "Special".

By using the Mercury chassis we can still get the desirable features of the Ford, since overall length is not greatly



Another of the drawings sent to Edsel Ford on January 24th, 1940. This one compared the proposed "Ford Special Convertible" to the standard 1941 car.

(continued from page 20)
increased, plus the advantage of the superior qualities that have already been pointed out to the public.

Of course, the question of the name of the"Special," as to whether it would even contain the name "Ford" or "Mercury," would have some bearing on the subject.

Changes on the stock Mercury convertible coupe are as follows:

1. A special flat windshield and new upper cowl. The lower parts of the stock cowl may be used here, and possible parts of the upper half of the cowl. (Ventilation, upper door hinge, etc.) Cowl is 3" lower on chassis. Flare removed from bottom of lower half of cowl panel. (Possibly 1939 part?)

2. Present hood is used with 3" cut off lower edge all around.

3. Stock door is used with 6" piece removed as shown, making top of door 6" lower on chassis. Also flared-out portion at bottom is removed. (Possibly 1939 door?) Stock C.V.'s, window, window mechanisms, etc., etc.

4. New skirt in place of present running board.

5. New rear quarter panel top half. Lower half is stock panel cut off and upper half may use parts of stock panel (door post,. etc.) Flare removed from lower half (Possibly 1939 part). This panel tapers to upper rear corner of rear finder.

6. New luggage compartment door.

7. Stock top except new front header to fit flat windshield. Same lowering mechanism. Top is 6" lower on chassis due to portion removed from door to rear quarter panel.

8. New fender guards as shown. Rubber or satin finish stainless.

9. Steering wheel lowered approximately 4.4" at center.

10. Front seat lowered two inches (Results in 37" headroom instead of 41"). Also cut out as indicated for rear seat toe-room.

11. New rear seat five inches lower (approximately). Also flatter, resulting in 35" headroom instead of 38".

12. New molding to cover points on cowl, door, and rear quarter panels.

13. Trim. - Exterior trim has not been fully worked out except for new molding mentioned above. Probably a certain amount of special work or elimination would be desirable on hood moldings, hub caps, bumpers, tail light, luggage compartment handle, license plate holder, etc.

The same applies to the interior trim, none of which is indicated in our drawings.

Changes on the stock Ford Super Deluxe Convertible Coupe are as follows:

1. New hood running all the way back to windshield.

2. New radiator grille

3. Panel below luggage compartment door is replaced by the new panel, which carries exterior spare tire mounting. This panel also extends to finish inside of rear fenders. A new luggage compartment door opening on top, similar to the Lincoln Continental, is shown.

4. Also all changes listed for Mercury.

In addition to the changes mentioned above, certain chassis changes have been indicated in the drawings for both cars as follows:

1. 6.00 - 15 wheels and tires on both cars instead of 6.00 - 16 on the Ford and 6.50 - 16 on the Mercury.

2. Normal (unloaded) position of chassis to be 1.5" lower in relation to wheel center. This 1.5" is to be gained by flattening springs to lower the body. Due to the above tire changes we have a gain of .5 and 1.0 inches in fender clearance on the Ford and Mercury respectively. The reduction in fender clearance of 1.0 inches on the Ford and .5 on the Mercury is to be taken care of by a slightly stiffer spring and special oversize shock absorbers. At the same time this will result in less sway and roll and give a little "stiffer" ride throughout - a desirable characteristic for this type of car.

All the changes and specification mentioned above are to be regarded as tentative. The next procedure probably should be to build actual models of one or both of these jobs. This is probably the easiest method of determining the feasibility of the above suggestion.

W.D. Teague, Jr.

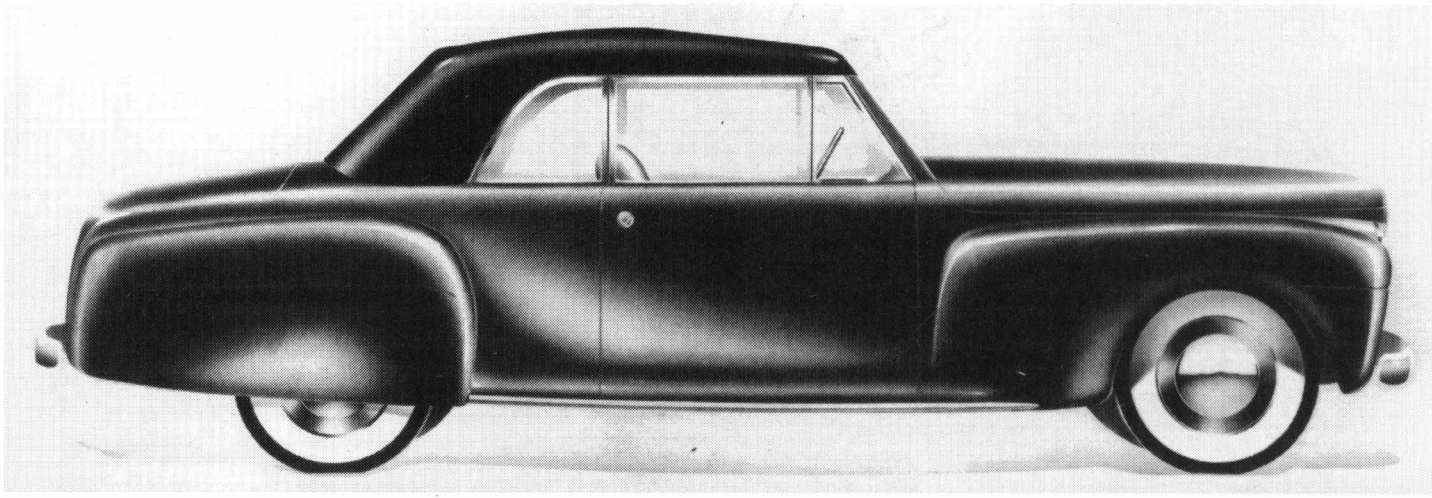
WDT Jr:RM

Further Data

In addition to the scheme already outlined for using the 1941 (or 1942) chassis and body for the "Specials", an alternative procedure suggests itself. One of the major differences between the "Specials" and the European version of a sports model will be in width. Since we are not particularly concerned with seating three people in front or rear seats (two formfitting bucket-type seats would be the most desireable arrangement in front) the extra width in the 1941 Fords and Mercurys is unnecessary, and in fact undesirable.

In order to avoid this extra width, it might be well to consider, at this time, using some of the 1940 Ford convertible dies instead of the 1941 parts. This model is considerably narrower (4 or 5 inches) and, if the dies are still available, it might be economical to do the job in this way. It might be possible, for instance, to use the 1940 Ford hood, part of the cowl, door, top, etc., treated in the same way as we have shown the 1941 parts. These might even be mounted on the 1941 (or 42) Mercury chassis, with Mercury front fenders and perhaps radiator grille. This of course would require special treatment in the form of filler strips between fenders and cowl, or a special hood might be necessary. This also depends on the difference between the 1940 and 1941 Ford chassis as to whether the body mounting could easily be revised to mount the 1940 body.

Since we do not have information sufficient to determine the feasibility of this method, no drawings have been made. The side view, however, would correspond quite closely to the drawings and renderings of 1941 bodies. Front and quarter views would be improved due to the decreased width.



A photo of the rendering of the final version of the Ford sports car after Edsel decided not to use the existing dies. Note that this rendering, contrary to the usual practice in the industry, is drawn exactly to the side elevation and is not exaggerated in any way. The actual car in three dimensions would look much lower and more attractive. None of the original renderings has been located in the Ford Museum archives.

Apparently the letter authorizing me to go ahead with a design to illustrate what I had in mind has been lost. However, such authorization must have been given because my two drawings of the "sports" modifications are dated December 26, 1940. They are side elevations to a scale of 1:10. In addition I made some renderings which my father sent to Edsel on January 24, 1941, together with my second report dated January 14, 1941 (sidebar, pages 21-22). In this report, called "Ford and Mercury Sports Car Design" I presented a detailed analysis of the changes that would have to be made to the stock 1941 Ford and Mercury convertibles, as well as commenting on a hybrid that would use parts from both the 1941 and narrower 1940 models.

Considering that these reports were written over 50 years ago, they are quite prophetic. Aside from the main premise of a smaller sports car such items as bucket vs. bench type seats, lower center of gravity, better handling, better braking, neater engine compartments, and less unsprung weight, are essential features of today's cars.

One might argue that my prognostications were too conservative. Why didn't I specify four-wheel independent suspension, for example? This was not because I was unaware of such advances. I had seen the Lancia Lambda chassis with pillar suspension on all four wheels, and I was familiar with the details of the independent springing on the Auto Union and Mercedes race cars. But I was trying to interest Edsel in a new concept which would not entail ground up revisions of the entire car, that could be introduced at reasonable expense.

Edsel was quite pleased with the design and in his letter of January 29, 1941 (page 20), he stated that he had turned the drawings and rendering over to the Body Engineering Department for development. My father thanked him, on January 31, 1941, with the remark that it "will be very interesting to see what your Engineering Department has to say about the Sports Car designs." (page 20).

Apparently the initial cost estimates were somewhat high, so Edsel asked me, during a visit to Dearborn, if I could work up something which reduced the new body parts even further. I did some drawings of a Mercury sports model which were delivered to Edsel with a letter on June 26, 1941 (below). We had reduced the number of new body parts to "an absolute minimum and includes only the top half of the rear quarter panels and the trunk lid." The result was not as attractive as the first suggestions, but they were still a marked improvement over the stock Fords and Mercurys. Unfortunately, the drawings are not to be found in the Ford archives. However, Edsel seemed to like them, commenting in a letter to my father on July 2, 1941 (below) that if priorities permitted he would have a Mercury body cut to conform with these suggestions, having "no doubt that it will be a very good looking job when it is finished."

Later, Edsel changed his mind and asked me if I would work up a design without worrying about using any of the stock body parts. This was most encouraging so I again made one-tenth scale drawings plus an air brush rendering to scale. Although the drawings and original rendering have disappeared, we do have a photograph of the rendering.

Edsel was extremely pleased with this result, which was finished around the end of 1941. However, by this time the Ford factory was beginning to concentrate on war production so the introduction of a new model wasn't in the picture and all new developments were mothballed for the duration.

Tragically, Edsel died prematurely on May 26th, 1943. This was a sad blow to Ford Motor Company, and to the entire industry. Here was a unique combination of talent and personality. He had compassion and humility in spite of his immense power as president of the world's largest privately-owned corporation. Ironically, the word Edsel has become synonymous with product failure. The Edsel car fiasco, a decade and a half after his death, was the antithesis of everything Edsel stood for; if he had been alive, it would never have happened. It was a rare privilege to have known and worked with him.

WALTER DORWIN TEAGUE
444 MADISON AVENUE • NEW YORK
W.D. TEAGUE JR. • JOHN D. BROPHY

JUN 30 1941

PRESIDENT'S OFFICE

June 26, 1941

Edsel B. Ford, Esq.
Dearborn
Michigan

Dear Mr. Ford:

As a result of our discussion of the proposed Mercury Sports Model, when I last saw you in Dearborn, we have made a simple revision of our original design and reduced still further the number of new parts required. This is now an absolute minimum and includes only the top half of the rear quarter panels and the trunk lid.

The changes suggested, however, reduce the over-all height 4½", and the model would be lower than any other stock car on the market except the Lincoln Continental. It should result in a very smart job and should fill a need even in these times. It would of course be very easy to build a sample to test its appearance.

Yours sincerely,

Walter Teague

Walter Teague

July 2, 1941

Mr. Walter Dorwin Teague,
New York City.

Dear Mr. Teague:

Thank you for your letter of June 26th together with two prints of a simplified design for the special Mercury Sports Cabriolet.

If we can fit in an alteration job without interferring with any of the more vital work we are doing, I will have one of these bodies cut to conform with the suggestions you are making and we will look it over. I have no doubt but what it will be a very good looking job when it is finished.

Yours sincerely,

EBF:C

Address: 444 Madison Avenue,
New York City.

The Forgotten Land Speed Record of 1905:
A Short History of the Dufaux Racing Cars of Switzerland

by Ferdinand Hediger

This article has been translated and expanded by the author from his article in Automobil Chronik *9/75 –Editor*

Shortly after the turn of the century, two young Swiss, Charles and Frédéric Dufaux, opened a workshop in their native town of Geneva. Among the sportsmen of the period they both were well known for their success in national and international bicycle races and events. The bicycle had become very popular within just a few years but the two champions were convinced that the future would belong to the motorcycle and the automobile.

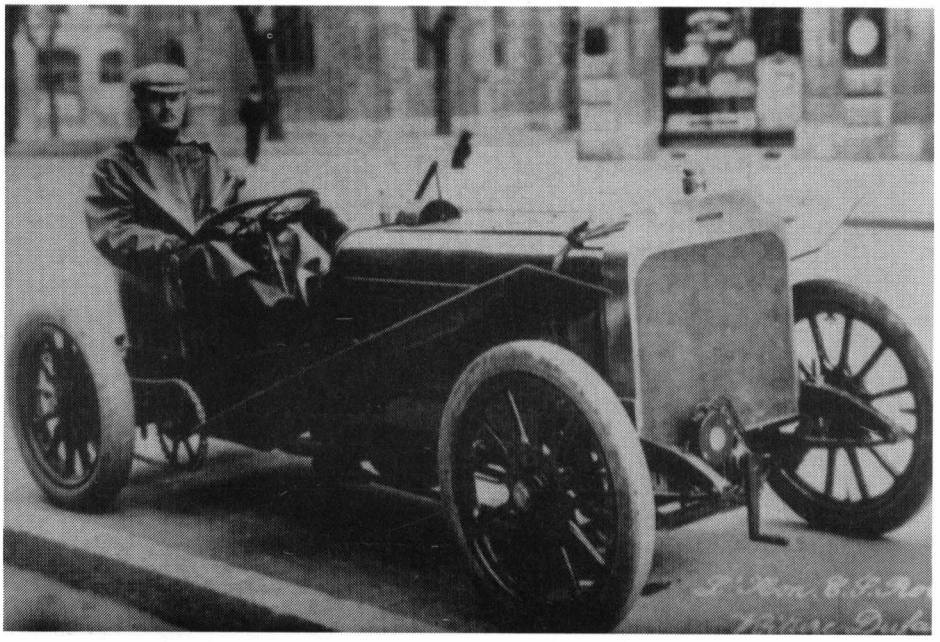
They surprised everybody by developing and marketing a special light motorcycle for ladies. It had a single cylinder engine mounted on one side of the rear wheel hub. Top speed was said to be about twenty miles per hour. Dufaux Brothers also took over the agency of the two famous motorcycle makes Griffon and Werner. At that time, racing success was by far the best and most efficient way to promote sales. In May 1903 Charles Dufaux started in the kilometer race and won the 50 kg-class with a speed of 47.5 mph. Apart from the foreign makes, the young company also sold the "Motosacoche," which was a very clever and quite famous device allowing the conversion of any normal bicycle into a light motor-bicycle with very little cost. This engine unit was designed by Henri and Armand Dufaux of Geneva, two relatives of the brothers. Business, however, was definitely less than brilliant; perhaps the two young men were too often engaged in sporting events. Anyway, before the end of the year the Kursaal-Garage, as the workshop was named, had to close down.

Whoever thought this failure would discourage the two motoring enthusiasts would soon be proven wrong. The Swiss Automobile Club nominated Frédéric for the Gordon Bennett Race of 1904. His mount was nothing less than a brand new Dufaux racing car designed by his brother Charles. This contender was brimful with the most interesting technical details. Most of the motorcar manufacturers believed that they had reached the pinnacle of modern engineering with their four-cylinder gasoline engines, some still clung to the single cylinder or twins, and the most advanced flirted with six cylinders. But the Dufaux Brothers presented a sensational straight eight. It is true that eight-cylinder engines existed before this in France and the United States, but usually these consisted of two four-cylinder units built together. Contrary to these, the new Dufaux racing engine was planned and designed from the start as a straight eight. Its bore was 125 mm (nearly 5 inches) and stroke 130 mm (5 1/8 inch) for a capacity of 12.76 liters (779 cu. in.). Peak power reached 70 to 90 hp at 1200 rpm. Just prior to the start of the Gordon Bennett Race, the steering arm of the car broke, apparently the result of an act of sabotage as it was said that traces of fresh sawing were detected at the breaking point! Investigations came to nothing. The Frenchman Théry won the 512 km race on his Richard Brasier with an average speed of 55 mph.

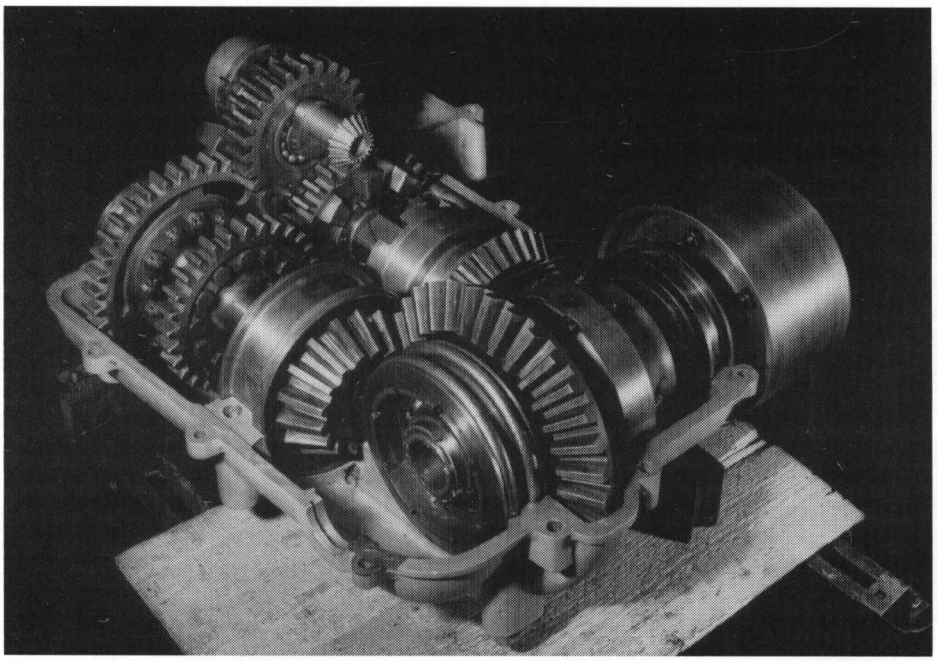
In the fall of 1904, Frédéric Dufaux won the Kilometer race at Geneva with a flying start on the Gordon Bennett racer, averaging 72 mph and setting a new Swiss record. Other laurels were won in the hill climb of Trelex-St. Cergue, and in the spring events of Dourdan, in France.

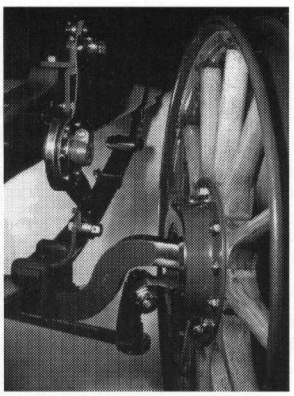
In April 1905 the First Swiss Automobile and Bicycle Exhibition of Geneva opened its doors. The Dufaux Brothers presented their new touring cars of 15 and 35 hp on a beautifully decorated stand and the straight eight racer was a fine attraction. In the middle of the booth, however, keen connoisseurs detected a huge four-cylinder engine which was not quite finished - we shall meet this power plant later on. For the Gordon Bennett Race of 1905, which was to be held in July in France, the Dufaux Brothers entered not less than three cars. Quarrels with the Swiss Automobile Club, however, led to their withdrawal.

At about the same time, a young English nobleman by the name of Charles Stewart Rolls paid a visit to the small company in Geneva and was enthusiastic about their fast cars. In August 1905, the monstrous four-cylinder racing car whose engine had been on display in the spring, was shipped to England. Rolls intended to participate with it in several races. Disappointingly, teething troubles kept the racer from running properly, and even the personal attention of Frédéric Dufaux was to no avail.



Hon. Charles Stewart Rolls at the wheel of the Dufaux straight eight 80 horsepower racing car for the Gordon-Bennett-Coupe 1904 in Geneva. Ferdinand Hediger Collection from Mlle. A. Dufaux.





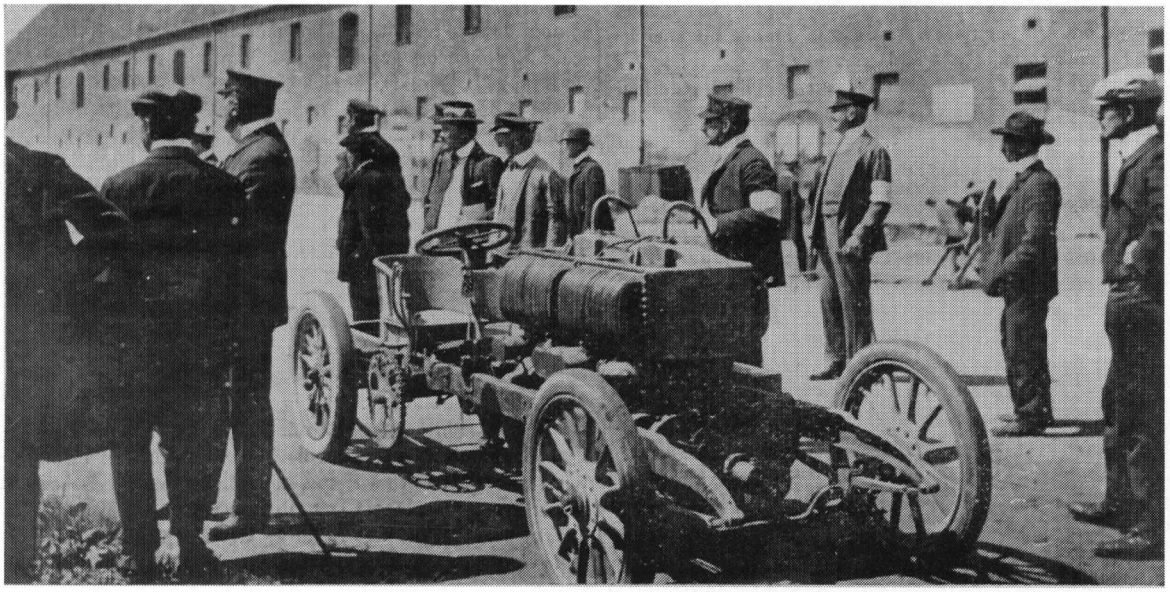
***Left, the gearbox of the 1905 Dufaux racing car. It** is of the so-called "French" type with three speeds in a row. Reverse is separately engaged. The differential and the brake drum are integrated. At 1000 rpm, top speeds are 48, 91, and 137 km/hr (30, 57, and 86 mph) respectively. Above, the patented steering swivel pin in the center-plane of the front wheel is clearly visible. Both photos courtesy Verkehrshaus der Schweiz, Lucerne, Ferdinand Hediger Collection.*

The car had to be shipped back to Switzerland, and the plans for Dufaux cars to be distributed in England by the Hon. C.S. Rolls were abandoned.

Further trials in Geneva, however, did show that the racing cars, after some modifications and improvements, would be very fast indeed. In the minds of the two brothers, the idea of attacking the Land Speed Record became more and more an obsession.

Let's have a closer look at this giant racing car. The enormous over-square four-cylinder in-line engine has two blocks. The bore is 225 mm (about 8 7/8 inches) and stroke 166 mm (about 6 17/32 inches), giving the nearly unbelievable total capacity of 26.4 liters (1611 cu. in.). In other words, each of the four cylinders has a capacity of 6.6 liters, about the same as all eight cylinders together of a Chrysler V8 engine of 200 hp in 1974.[1] Two standing valves per cylinder are on the right hand side and actuated by one camshaft. Ignition is by magneto. Peak power is 150 hp at about 1000 rpm. Instead of a conventional radiator, there is a large number of thin copper tubes on both sides of the cylinder heads. Water circulation is on the thermo-syphon principle. Power is transmitted to the rear wheels through a metal cone clutch, a three-speed gearbox and short stubby roller chains. In view of the envisaged high speed, the sprocket wheels on the differential shafts have a large diameter. Front and rear axles are made of toughest chrome nickel steel. They are fixed to the light chassis with U-shaped frame members by semi-elliptic leaf springs. The steering swivel pins were put in the center plane of the front wheel according to a patent granted Dufaux. The wooden wheels are shod with Michelin tires. Considering the potential speed of the car, it is equipped with a rather flimsy drum brake on the driveshaft. In order to comply with the regulated maximum weight of 1000 kg for racing cars, the vehicle does not have a body. The two bucket seats are simply mounted on a chassis crossmember. It is a stark example of pure machinery cut down to the essentials and it takes a brave man to ride the beast.

In the early morning of November 15th, 1905, we find the two Dufaux brothers and a few of their employees with the racing car on the straight and level piece of road between



The Dufaux four-cylinder racing car of 150 horsepower at the Herkomer-Fahrt, 1905. Ferdinand Hediger Collection, from La Vie Automobile, 1905.

Salon and Arles in Southern France. The measured distance is between the 49th and 50th Kilometer marking stones. Messieurs Gaudichard and Hunziker from Paris, two officials of the Automobile Club de France, the responsible organization for international records, have already set up their chronometers. According to contemporary reports, the official Land Speed World Record is in the possession of the French driver Rigolly. With his streamlined Gobron-Brillié, he'd covered the kilometer the year before in Nice in 23 2/5ths seconds.

A good distance from the measured start, the last preparations are made. The night before, rain had fallen and the road still is not fully dry but a clear day is dawning. Frédéric Dufaux climbs behind the flat steering wheel of considerable diameter. The engine is started and fills the air of a quiet morning with its thunder. After a short while, the stuttering misignitions change into a steady beat. With regular vibrations, the huge machine seems to announce its readiness to leap ahead for the first trial. Signal flags confirm that the road is clear.

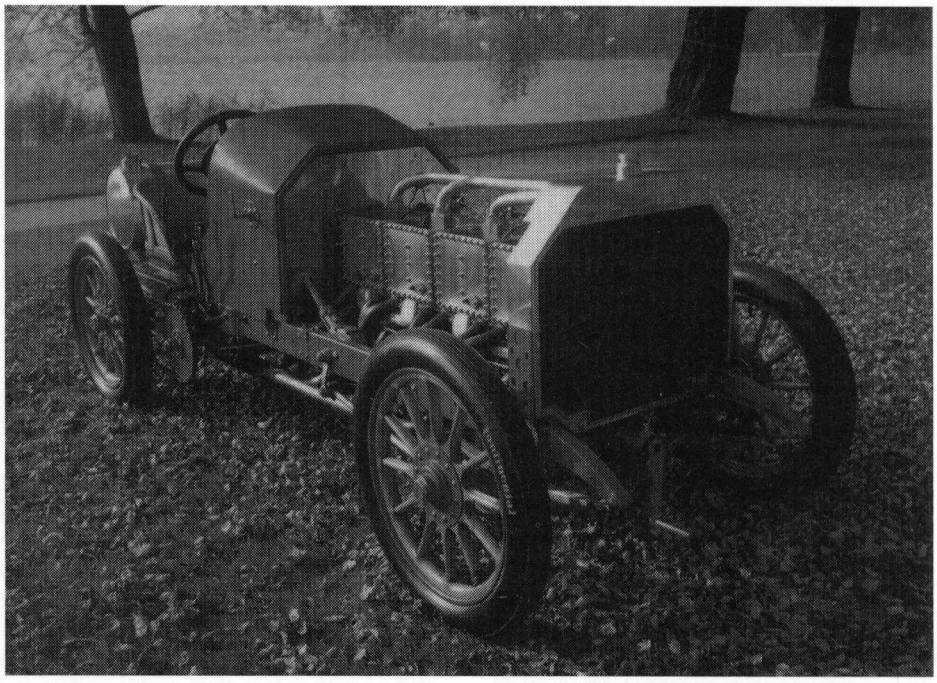
The people surrounding the car try in vain to shout above the tremendous noise of the big engine. Frédéric, grinning, waves to his friends, presses the heavy clutch, engages first gear, and slowly picks up speed. Flames are shooting out of the four stubby exhaust tubes. Second gear: speed is rapidly increasing. Third gear: trees and bushes on the roadside seem to fly by. The noise of the engine peaks at an infernal roaring and is accompanied by the higher pitch of the gear wheels. The wind is rushing at the fearless driver and the mechanic who is crouching as low as possible in his bucket seat, tearing at their leather jackets and making breathing difficult. Now, the measured kilometer! With all the concentration he can muster, Frédéric keeps the monster on a straight course. The tiniest mistake could mean disaster.

On the third trial, the chronometers are stopped at 23 seconds flat and Frédéric Dufaux is the new, official Land Speed Record holder with an average speed of 156.522 kph (97.26 mph). There is great joy and probably lots of champagne when the young hero and his success are celebrated. Outsiders with comparatively little means had succeeded in designing and building a racing car that had been hurled through the officially measured kilometer faster than any other car ever before, beating the elite of the large companies and the big names in racing.

Although the World Record was recognized by a responsible association, the Automobile Club de France, and was published in the sporting press of France and Switzerland, it cannot be found in either contemporary books[2] or in later lists and land speed record literature.

There is a high probability that the reason for this curious situation is the faster run of the Frenchman Baras on a 100 hp Darracq almost exactly one year before. On November 13th, 1904, Baras had covered the kilometer in 21.6 seconds, averaging 168.22 kph. However, the course, near Ostende in Belgium, had not been officially measured at the time Baras stormed through it. Frédéric Dufaux's achievement fell into complete oblivion when, six weeks later, his record was eclipsed on the Salon-Arles road by another Frenchman, the famous driver Hémery. His mount was the new Darracq V8-engined 200 hp racer with 22.5 liters capacity. He covered the kilometer in 20.4 seconds at a speed of 176.476 kph (nearly 110 mph).

On the Dufaux exhibition stand at the Geneva Automobile Salon of 1906, visitors could admire the Land Speed Record car, as well as a straight-eight racing car, a small 15 hp car, and a grand luxe 120 hp straight-eight berline.



Above left, the Dufaux straight eight 100 horsepower racing car of 1905, as restored. Another view of this car is on the back cover. Lower left, Frédéric Dufaux sets the new land speed record covering the kilometer in 23 seconds on November 15th, 1905. The four-cylinder engine has a capacity of 26.4 liters. Ferdinand Hediger Collection from Mlle. A. Dufaux.

Three different Dufaux cars participated in the 1906 Marchairuz hill climb. Charles hurled the 80 hp eight cylinder racing car around the many bends and Frédéric roared up the mountain on a new, slightly larger 100 hp. According to the rules, all cars were supposed to have mufflers but the two brothers couldn't care less, they were there for fun and what glorious fun it was. Their younger sister, Emma, probably one of the first women to ever compete in an official race in Switzerland, drove a 15 hp tourer and was enthusiastically cheered by the crowd. They got special permission to conquer the Simplon Pass (altitude 2009 meters or 6000 feet) using the touring car.

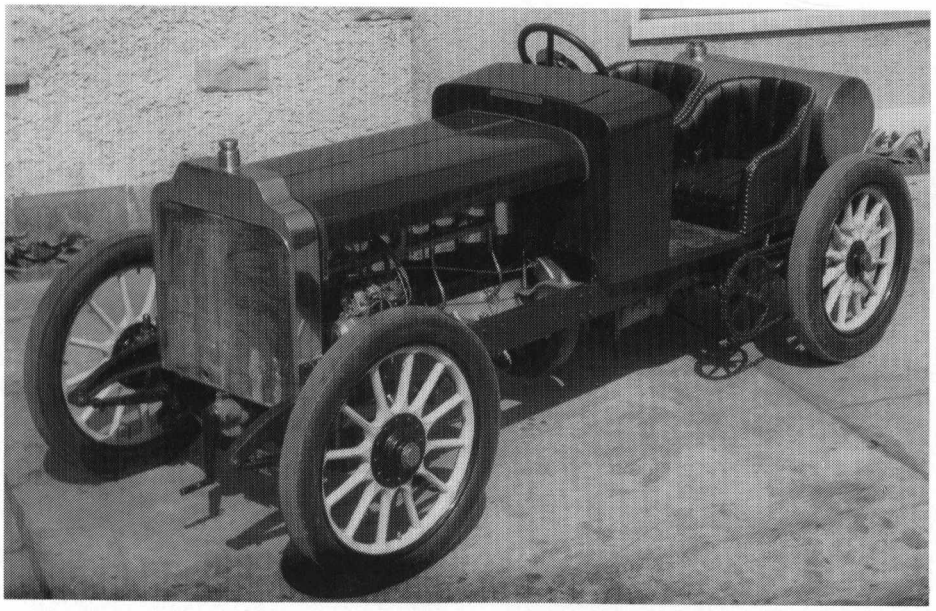
This was good publicity and proved the product to be well suited for alpine roads. Alas, there were just a few enthusiasts who bought the well-made but expensive Dufaux cars. At the end, Frédéric began the Grand Prix of the Automobile Club de France in 1907 at Dieppe, on a Dufaux-Marchand eight-cylinder racing car entered by Italy but fell by the wayside with mechanical troubles in the seventh lap. Then the darkness of silence fell upon the marque Dufaux. The short life of a company which had resembled a display of fireworks had come to an end.

Several decades later, two Dufaux eight-cylinder racing cars turned up, one shortly after the other. They had belonged to Frédéric Dufaux. The first, probably the Gordon-Bennett car of 1904, was completely restored and made roadworthy by the well known Veteran Car collector and enthusiast, Arthur Tognazzo, of Zurich. It was presented to the public in the fourth Swiss Veteran Rallye in 1961 and later was purchased by Fritz Schlumpf for his fabulous collection, where it can still be admired very close to the entrance.

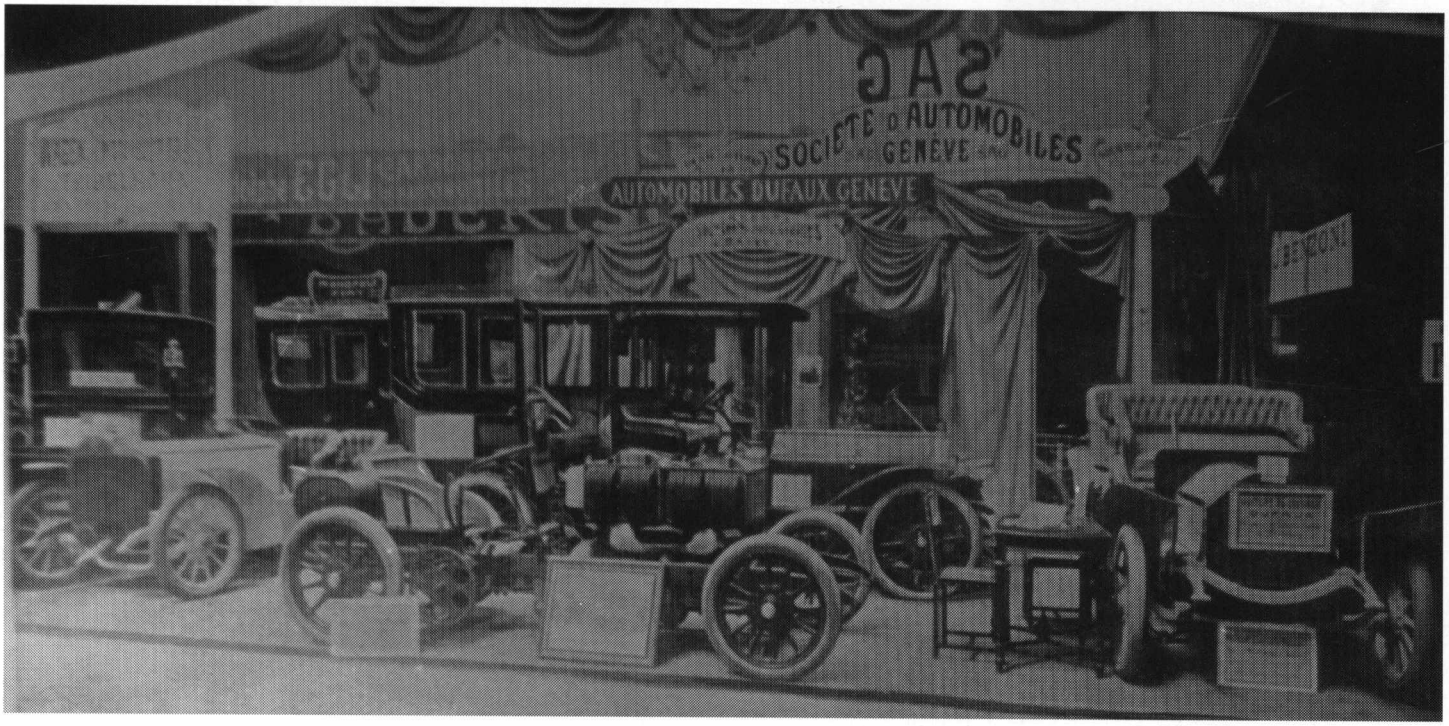
The other Dufaux of 1905 was carefully restored in about 2000 hours by the Hahn Brothers of Kriens and since 1965 has been the main attraction of the automobile section of the Verkehrshaus der Schweiz in Lucerne. Before it was put on display, several trials were conducted and the author had the privilege to ride in the mechanic's bucket seat for several miles on the newly opened autobahn near Lucerne. The sheer disbelief of motorists looking up from their sedans on being overtaken by the old monster will stick in my memory forever.

NOTES

1. Apart from aero-engined track cars and Land Speed Record contenders in later years, there were two huge four-banger racing cars even surpassing this engine capacity, the Fiat S79 with 28.4 liters, and the nearly unknown Italian Dobelli with 29 liters.
2. Such as *Ten Years of Motors and Motor Racing* by Jarrott, or *A Record of Motor Racing* 1898 - 1908 by Rose.



Above, the Dufaux eight cylinder 80 horsepower racing car of 1904 after its restoration in the 1960s. It is now in the former Schlumpf Museum at Mulhouse, France. Ferdinand Hediger photo. Below, the Dufaux exhibition stand at the second Swiss automobile exhibition in Geneva, 1906. Ferdinand Hediger Collection, from Automobil Revue, *10/1906.*



The Car Comes To The Comics

by Keith Marvin

Cartoons have been around for a long time–about as long as these United States - but, for the most part, they were politically targeted in one way or another. Some were comical; some were downright cruel. But the political cartoon was in existence long before its direction changed course and headed toward the comical.

I think it has been pretty well established by historians and other pundits that the first true cartoon was "The Yellow Kid" by Richard F. Outcault which surfaced as a single-panel feature in 1897. The multi-panelled comic strip as we know it today was yet to come.

Historian Mark Sullivan explained it thus:

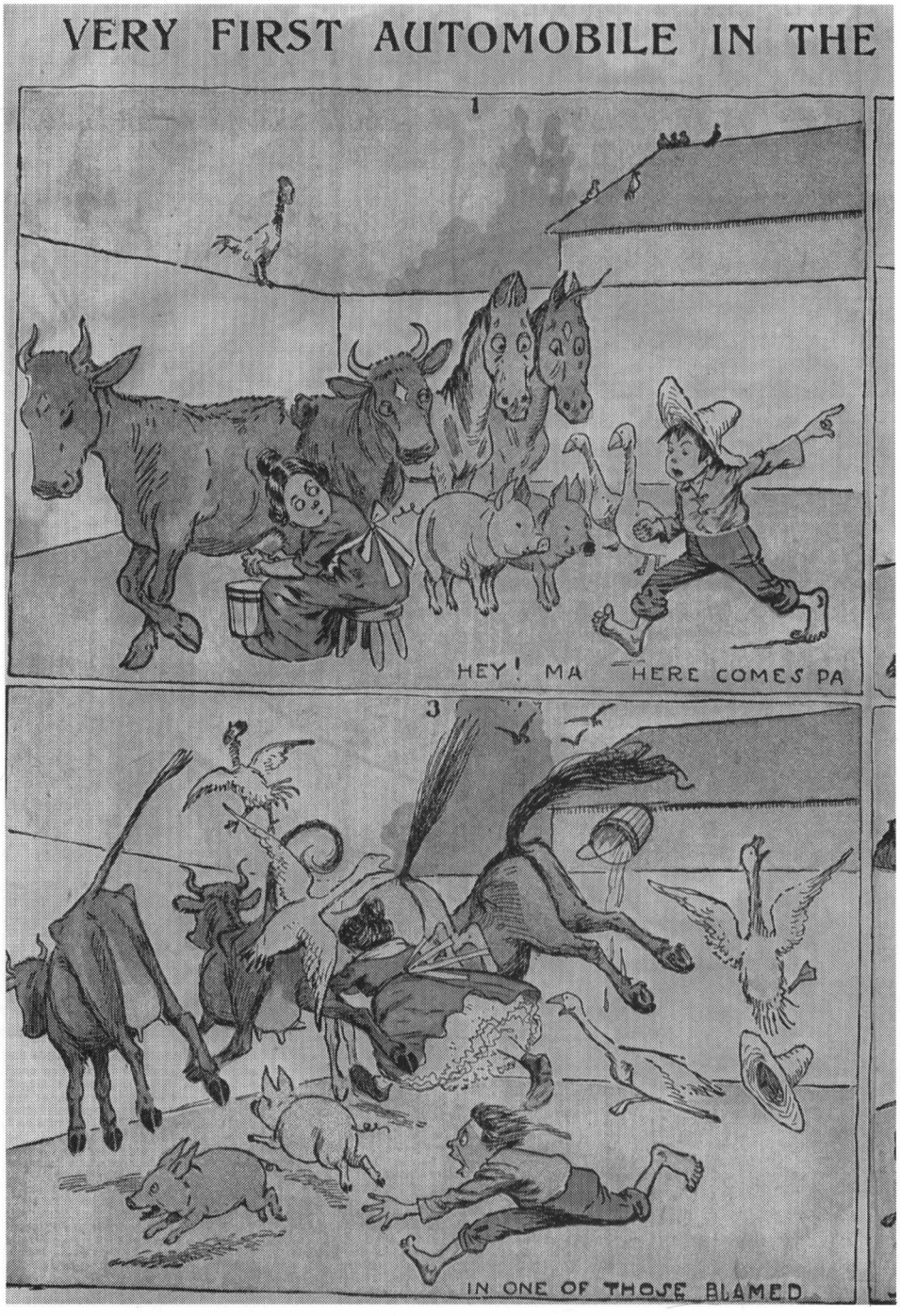
The egg of the comic supplement and the comic strip was hatching in New York in the shape of Richard Outcault's "Yellow Kid," chiefly under the auspices of Mr. Hearst's racy newspapers, then also beginners. The fact that Mr. Hearst's newspapers were the forum of the Yellow Kid's antics resulted, in some of the political controversies of the time, in Hearst being himself called the Yellow Kid.[1]

This presumably led to the term "yellow journalism," described as "the use of sensational reporting and conspicuous displays as a means of attracting readers to a newspaper or journal. - yellow journal.[2]

The basic reason for the Yellow Kid's color was further quoted by Sullivan in the same chronicle, explaining that up to this time black-and-white was the standard formula for newspapers, that there were difficulties in trying to reproduce "wishy-washy color schemes." Hearst's colorist at the time, one Charles W. Saalberg, was working up an Outcault drawing when he was approached with the idea of "the kid." At that time, Outcault was also drawing another cartoon feature, "Hogan's Alley." Saalberg looked at the new feature. "All right," he said, "I'll make this kid's dress solid yellow." It was the birth of a tradition—the comic sketch or sketches—which have delighted young and old the world over ever since. Sullivan further notes that "the kid in his yellow dress was a one-toothed infant" which "in the group of ragamuffins stood out like sunrise." The kid also spoke in slang.

"Outcault was bought by Hearst," Sullivan concludes, "but the *World*[3] continued to use Hogan's Alley, drawn and colored, however, by George B. Luks, since famous as a painter of first rank. The two kids ran against each other in the rival comics, lent their 'yellow' to the extravagant competition, and added a new designation to newspaper vernacular."

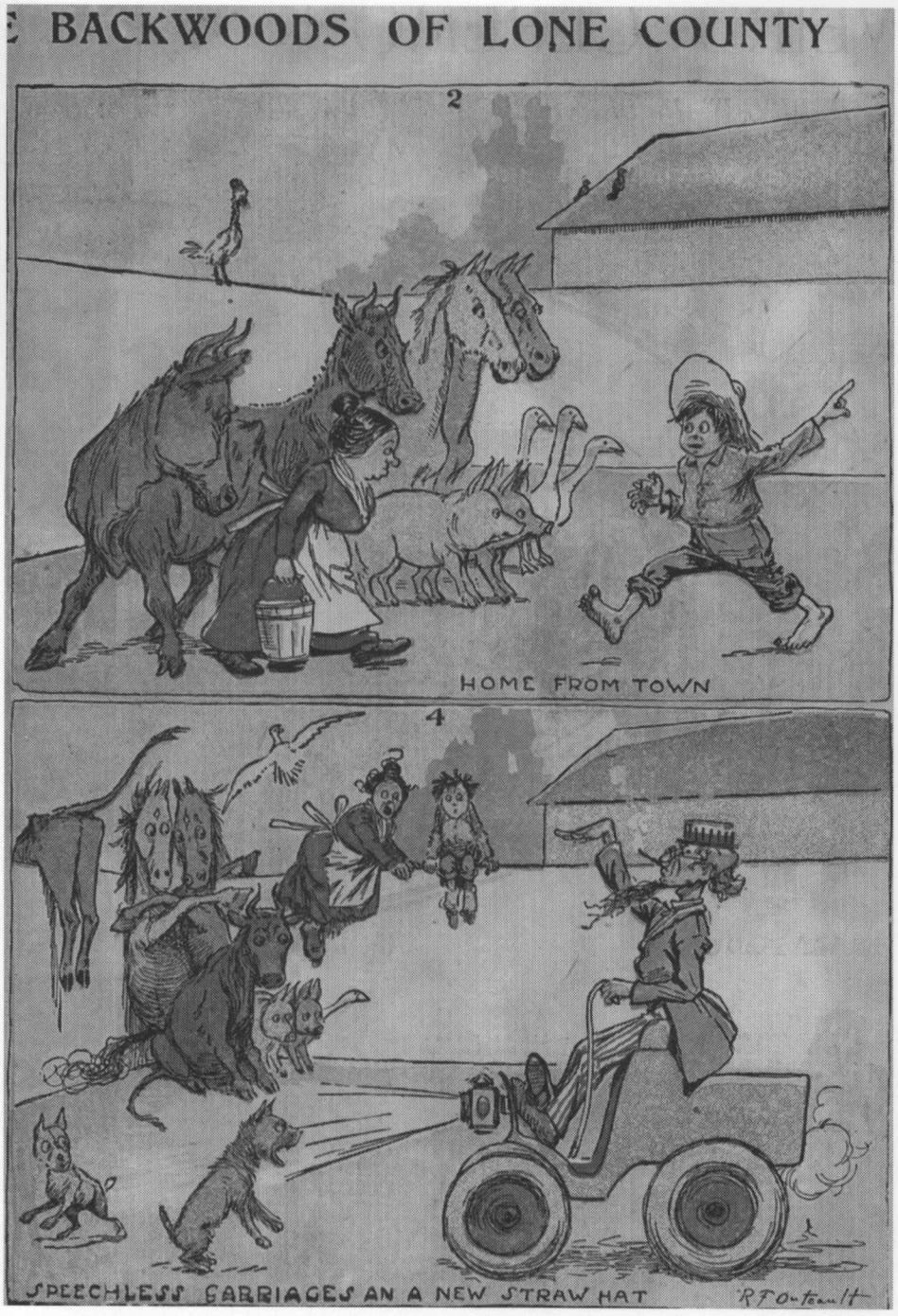
The result snowballed, and within a few short years, comic strips swept the land, the single-panelled strip being quickly supplanted with multi-panelled types in full colors, some of the pioneers being "The Katzenjammer Kids" by Rudolph Dirks;



F. Opper's "Happy Hooligan;" "Foxy Grandpa" by "Banny," and what might be considered the most elaborate use of true art, in Winsor McCay's "Little Nemo in Slumberland."[4]

Like the comic strip, the automobile was also in its infancy at this time, so it was a natural target for artists and illustrators to experiment with sketches of the new self-propelled toy. We do not know when or by whom the first sketch was drawn, but the lithograph by Henri de Toulouse-Lautrec, "L'Automobiliste" of 1898, depicting a fur-coated goggled driver at the controls of a car, pointed up the novelty and attraction as well as exuding excitement to the viewers.

Our subject is a four-panelled strip by Outcault entitled "Very First Automobile in the Backwoods of Lone County." It dates from Sunday, August 26th, 1900, making it one of the very earliest multi-colored cartoons featuring the horseless carriage. It pretty well explains itself, aided by the sub-caption, "Hey, Ma. Here comes Pa home from town in one of those blamed speechless carriages an(sic) a new straw hat."



"Speechless carriage?" Either the boy was a real farm boy, or this might have been an actual fin-de-siècle term, such as "scorching" for "speeding."

What I find of interest is Ma's hairdo which looks identical to that of Mrs. Katzenjammer. Coincidence? Unlikely, as Dirks' "Katzenjammer Kids" debuted in 1897, as did the "Yellow Kid." And imitation is the sincerest form of flattery.

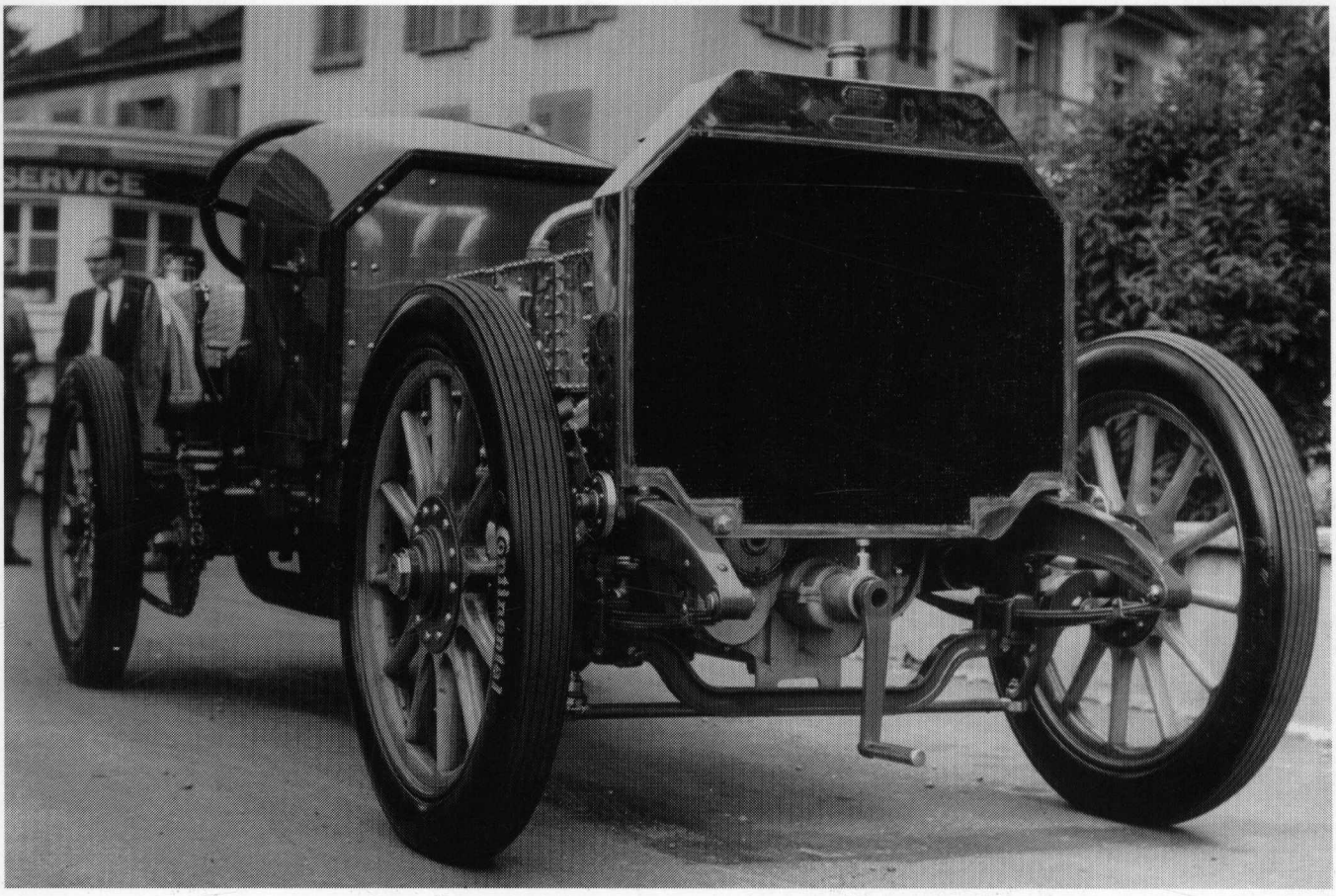
But since this is by Outcault and neither the "Yellow Kid" nor "Hogan's Alley," what Sunday paper printed it? My copy shows the date but the name of the paper is missing. Was it one of Hearst's many papers? Was it the World, published by Joseph Pulitzer? Or was Outcault moonlighting with yet other papers?[5]

I feel that this record of the "Very First Automobile in the Backwoods of Lone County" is a rare example of the earliest form of the colored comic strip. It is good comic art, too, as may be seen in the expressions of the cows, horses, pigs, dog, geese, and chicken!

But the question remains: which paper published it?

NOTES

1. Sullivan, Mark, *Our Times: The United States 1900-1925*. Volume 1, "The Turn of the Century", Charles Scribner's Sons, New York and London, 1926, rev. ed. 1937.
2. *The American College Dictionary*. Charles L. Barnhart, Editor-in-Chief. Random House, New York, N.Y. 1953
3. *The New York World*, published by Joseph Pulitzer
4. This strip debuted in 1905 and its popularity and almost unbelievable artwork brought it such popularity that composer Victor Herbert wrote his operetta "Little Nemo" based on the strip,its première being performed in Philadelphia September 28th, 1908.
5. Judging from the typeface used in the date and the words "COLORED SECTION" on the top of the page, this could very possibly have been published in *Sunday Herald* of New York City.



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