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Some Ramblings About The Automobile Age

It was on January 8, 1981 that this Society listened to a most entertaining and informative paper with the title "The Magnificent Model T". The author of that paper is in our group tonight and I ask his permission to use his final line as my beginning. I quote, "As one fellow said to another when asked if he had heard the last Ford story, 'I hope so'".

This presenter will honor that response. Ford and his magnificent Model T has been ably covered by one of our number who is a master in the use of the English language.

The most important development in the past 100 years has been the birth and development of the automobile. For almost 100 years, the automobile has been and continues to be the largest industrial segment of our economy and has become a "necessity" to our way of life.

It will be my purpose to hold up a few of the things that happened along the way as the Automobile Age developed. I hope to help some of you to recall those happenings. For those who cannot recall, I hope to interest you in reading the history of the automobile in the United States. The automobile has been a part of the social and economic history of our country for the past 100 years.

There had been little advance in man's mobility for thousands of years. The domesticated horse and the wheel had been around for centuries. Man had made good use of the wheel and use of horse power. The idea of the self-propelled vehicle dates from at least the 13th and 15th centuries based upon speculation made by Roger Bacon and Leonardo da Vinci. Man is a dreamer --- and dreams precede reality. The idea of the automobile had to flow from the dreams of men before it could become real.

History tells us that the first self-propelled vehicle was constructed in China in 1665 by two French missionaries. Between 1765 and 1770, Nicholas Cugnot, a Swiss engineer, subsidized by the French government, developed steam tractors for pulling cannons. These were determined to be less efficient than the horse and were abandoned. Richard Trevithick, a Cornish engineer, developed a high-pressure steam engine and built steam carriages in 1801-1803. These steam carriages moved at speeds up to twelve miles per hour. An American inventor, Oliver Evans, developed a steam vehicle in 1787 and was given, by the Maryland legislature, exclusive rights to operate steam-powered vehicles on the public roads.

Up until the latter part of the 19th Century all self-propelled vehicles were powered by steam. It was in the mid-19th Century that the internal combustion engine came onto the scene. Steam power continued to be used for water and rail transportation. The U.S. railroad system and our many waterways, both subsidized by the government, were suited to the use of steam power. It should be noted that the steam power folk did not easily give up on the automobile. As late as 1906, a Stanley Steamer set a record of 127.66 mph at Ormond Beach, Florida. This was a new record for land speed. Stanley continued until 1925 making a few hundred vehicles each year for a disappearing market.

It appeared that every bicycle mechanic in the world was feverishly working on his own ideas and planning to start his own shop to produce his creation. France and Germany were ahead of the United States in producing the automobile.

It was in 1893 that Charles and Frank Duryea of Springfield, Massachusetts, were first to design a gasoline powered car. They were inspired after reading a description of the Benz tricylce in the 1889 Scientific American. They became the first Americans to build a successfully gasoline propelled automobile.

The Duryea brothers were opposites. Charles was eight years older than Frank and had a boisterous, self-promoting attitude that sometimes makes for a super salesman. Frank was a quiet, unassuming, hard working person, who did not leave a job unfinished. Charles had the idea of a gasoline motor to drive a carriage. He invited brother Frank, a toolmaker, to join him. In January of 1892, Charles began looking for a place to construct their new vehicle and finally found a large second floor room above the Russell Manufacturing Company in Springfield.

In their excitement, they had completely forgotten about money, a commodity that neither of them had. Charles, the salesman, took on the job with gusto. He offered Erwin Markham 10 percent in all future profits in return for $1,000.00. Mr. Markham looked the deal over carefully. He knew nothing about the business, but to his knowledge the engineering concept was new and he felt in a gambling mood. The venture was underway!

The first purchase was a secondhand buggy - which was loaded in the freight elevator and lifted to the second floor workshop. Frank was hired at $17.90 per week. A close calculation showed that the $1,000.00 would be spent within nine months. Would nine months be adequate time to produce a saleable car? Work began April 4, 1892. It was their aim to keep it simple and to produce a buggy with a one cylinder gasoline motor. Charles visited the junk heaps of all the bicycle manufacturers and salvaged many of the needed parts. They made some parts while using their landlord's machine shop during slow periods.

There was excitement that summer of 1892 and every problem solved revealed another waiting for a solution. Among the problems: how to transmit power to move the carriage, how to disengage the power when stopping, would a belt of rubber be able to turn the axle drum, should the belt be leather, or should a chain be used?

By September 1892 Charles was discouraged and ready to give up and decided to leave it with Frank. Frank wouldn't give up, but finally was forced to admit he was ill and went into the hospital where he was diagnosed to have typhoid. It was not until January 1893 that he was able to return to the shop. By February he had the motor attached and was ready for a test. About all that happened was the motor started and the carriage moved across the shop floor. Money was gone, the motor would have to be redesigned, but the knowledge gained was invaluable. Could he sell that result to Markham, the investor? Markham finally agreed to put more money into what he must have thought was a bottomless pit.

By September of 1893, the buggy was ready for its first run on the open road. It was put on its end in the elevator. Once on the ground, it was pulled by horses to a manure barn on the outskirts of town. At 9:00 a.m., September 20, 1893, Frank Duryea was about to make history. He mounted the seat, manned the steering rods while his friends pushed him down the road. He put the car in gear, the motor started, he adjusted the proper lever and the motor responded. A carriage moving without a horse! It was a silly, thrilling sight! Duryea was thrilled and in the excitement headed for a six inch dirt curb - the car stopped - the motor still running. The rubber belts being used as a power transmitter to the axles had failed. He had to admit that in failing this test, the auto was not yet ready for the public.

Mr. Markham had had it and refused to put in another penny. Frank worked without pay or funds as he redesigned the engine and the transmission. With unpaid bills and rent in arrears, he somehow talked a Mr. H. W. Capps into backing him. Capps agreed to furnish funds to rebuild the engine and to organize a company that would manufacture the car as soon as the new model was completed and tested. On April 23, 1895, the new car passed all tests with flying colors. In a letter to brother Charles, Frank said it would climb hilly streets at seven miles an hour, could overtake any horse on the straight-away, after weeks of testing continued to run and there was no trouble keeping it in order.

Mr. Capps gathered a group of interested investors together. None knew anything about the automobile, but agreed that if a certain Mr. Slater, a specialist in steam engines, approved it they would invest. Slater arrived in July 1895, and in the company of the prospective investors, the machine was inspected. The inspection included an unexpected road test with Mr. Slater as a passenger. It was not the route Frank wanted, but he was in no position to object. The route was 18 miles long, over hills, curves and perilous downgrades. Mr. Slater decided they should take an even more rugged return trip. The automobile made it with both Frank and Mr. Slater beaming their satisfaction.

Mr. Markham was repaid the full $3,000.00 he had invested plus a $2,000.00 profit. The Duryea Motor Wagon Company began preparation for making cars. The car's name was to be the Buggyaut, a self-propelled buggy.

By the end of the following year, 13 Buggyauts had been produced and America was in the new age - the Automobile Age.

No industry in history developed in a more favorable climate of public acclaim. By 1900, a Boston financial information agency predicted that within 10 years there would be more automobiles in the large cities of the United States than there were horses. That the automobile would soon replace the horse was accepted by the public. It was reported that 15,000 bicycle agents throughout the states were "fairly howling" for automobiles to meet a growing demand. The scene in Detroit was reported thus, "Now the demand for automobiles is a perfect craze. Every factory here has its entire output sold and cannot begin to fill its orders---and all of it is spot cash on delivery, and no guarantee or strings attached of any kind."

"Horseless Age", a new magazine for the automobile age, in 1903 stated that apposition to the automobile was very rare in this country. A few dailies occasionally printed strong editorials denouncing speed excesses and careless driving but, on the whole, the press was practically unanimous in recognizing the automobile as a legitimate pleasure vehicle and as destined to have a great future in the commercial world.

The favorable acceptance in the United States was not to be duplicated in all other countries. There is always a vested interest in the old ways of doing things. The vested interest of England as early as 1865 passed a law favoring the railroad monopoly. The Locomotive Act limited self-propelled vehicles (at that time it was steam) from exceeding two miles per hour in town and four miles on the open road. The act also required that there be a flagman 60 yards ahead carrying a flag by day and a lantern by night. This law was finally repealed in 1896.

It is most interesting that the bicycle mechanics became the auto builders and auto mechanics; but what is most surprising is the part that bicycles played in the development of the road system. Bicycles required good roads. The "safety bicycle" had been introduced in 1883 and had spread from England to America. It was about this time that the Farmers' Alliance and the Populist Movement had targeted the railroads as a monopoly. Good roads became a popular political issue during the 1890's. The League of American Wheelmen was a leader in pushing for good roads. They petitioned Congress which resulted in the creation of the Office of Road Inquiry in the U.S. Department of Agriculture. This was to become the Office of Public Roads.

The Office of Road Inquiry made the first census of American roads in 1904, revealing that only seven percent of the roads were surfaced - only one mile of improved roads for every 492 inhabitants - and all of poor quality. The leading historians of the automobile age tell us that apart from impact on road improvement in the U.S., no preceding technological innovation - not even the internal combustion engine - was as important to the development of the automobile as the bicycle. (As a supporter of the bicycle, this makes me appreciate it even more.)

The early buyers of the American automobile were from the same group that purchased them in other countries: wealthy sportsmen, doctors, businessmen and engineers. The local doctor was usually the first owner of an automobile in town. This pattern in America was soon to be changed due to

mass production, lowered cost and a large middle class of people able to buy a family car. The higher income per capita of the American consumer and a more equitable income distribution resulted in mass personal automobility a full generation ahead of Europe.

By the 1920's, the middle class Americans were buying family cars and by 1950 the working class Americans were doing the same. The family car remains, even today, an uniquely American institution. Family togetherness was a major benefit claimed in selling the family car.

A former governor of New Jersey, E. C. Stokes, made this claim in 1921, "Next to the church there is no factor in American life that does so much for the morals of the public as does the automobile." "Any device that brings the family together as a unit in their pursuit of pleasure is a promoter of good morals and yields an influence that makes for a good American civilization." "If every family in the land possessed an automobile, family ties would be closer and many of the problems of social unrest would be happily resolved...the auto is one of the country's best ministers and best preachers."

The real effect of the family car wasn't long in surfacing. When young folk substituted a ride in the family car for a visit in the family parlor, a cry arose, "The home is endangered!" The major source of intergeneration conflict across mid-America was the use of the family car. Being reared in a one car family, and having four brothers gave me first hand knowledge. The family car can cause problems.

The auto permitted a dating couple to get away from the parlor sofa, the hovering mother, the watchful father and the curious siblings. Henry Ford (pardon me) allegedly designed his Model T so as to discourage its use as a place to engage in sexual intercourse. Nash outdid Ford and introduced the fold down bed which came to be known as "the young man's model." Later came the van, owners of which were mostly single men under thirty.

Then came drive-in fast food stands, tourist cabins and drive-in movies. The drive-in has been covered by a member of this august body, but let me tell you how FBI Chief J. Edgar Hoover referred to the tourist cabins. He called them "camouflaged brothels" and claimed that many tourist courts refused accomodations to travelers so they could concentrate on local "couple trade." It became obvious that the family car was like most things - with great possibilities for both good and bad. The consumer had to make that choice.

It seems strange that we can count the U.S. automobile producers today on one hand. Ford, General Motors, and Chrysler will almost cover them. The entry into automobile manufacturing in the U. S. was open until the late twenties. At that time, the market for new cars had about reached a saturation point. The small under capitalized concern had already found the market too difficult to penetrate and the large capital requirements beyond his reach. The industry was becoming one in which only the giant corporations could compete. Even after World War II, when the post-war demand for cars was high, not a single new firm ever got started. Two attempts should be mentioned.

Kaiser-Frazer Corporation was organized shortly before the end of the war in 1945. It started with 54 million dollars in capital, a 44 million dollar loan from the Reconstruction Finance Corporation, and 30 million dollars from bank loans. They produced three-quarters of a million automobiles and captured only about five percent of the market. Kaiser-Frazer failed in 1955 and supposedly from being under capitalized!

A second attempt was made by Preston Tucker, a Chicago businessman. He spent twenty-two million in developing and bringing to the market his rear-engined Tucker Torpedo, only to find himself with financial problems. He closed in 1949. Others attempted but none survived!

MIT has reported on what we can expect in the future. In their report they say, "The automobiles's future as a prime means of personal transportation is quite secure because of the flexibility of the basic concepts and robustness of the automotive technology."

It is estimated that the ultimate saturation point of the automobile in the U.S. is seven hundred per thousand population. The saturation point for most European countires is estimated at four hundred-fifty per thousand.

It is quite possible that some of us will live to see the return to mass transportaion. Personal automobility is an expensive commodity and is only supported by a super affluent America. The expense is not only an individual one, but an economic and social one. It seems a waste of good raw materials, approximately one and one-half tons of steel, so that you and I can drive our personal cars to Athenaeum!

When we consider the pollution that our autos put out and the risk we become to our fellow-man, it seems that cost is too high.

The Automobile Age is here but we all should re-evaluate the cost! An improved local and national mass transportation system and a return to the bicycle is my recommendation; but, let me keep the family car!

The informational material for this paper was gathered principally from the following books:

The American Automobile by John B. Rae, published by University of Chicago Press, 1965

The Automobile Age by James J. Flink, published by MIT Press, 1988

Other resources include many periodicals.