

# The History of the Twentieth Century

## Episode 57

### “In My Merry Oldsmobile”

#### Transcript

[music: Fanfare]

“I don’t know anything about history, and I wouldn’t give a nickel for all the history in the world. The only history that is worthwhile is the history we make day by day. Those fellows over there in Europe knew all about history; they knew all about how wars are started; and yet they went and plunged Europe into the biggest war that ever was. And by the same old mistakes, too. Besides, history is being rewritten every year from a new point of view; so how can anybody claim to know the truth about history?”

“History is more or less bunk. It is tradition. We want to live in the present, and the only history that is worth a tinker’s dam is the history we make today.”

Henry Ford.

Welcome to *The History of the Twentieth Century*.

[music: Opening Theme]

Episode 57. In My Merry Oldsmobile.

The development of the automobile is a story crucial to the history of the twentieth century, and we haven’t tackled it head on in this podcast yet, so let’s take the first steps today, in this episode. Transportation in the nineteenth century had been revolutionized by the railroad. By 1900, many ordinary people were able to travel about from city to city on railroads at speeds that would have been unimaginable to their grandparents. But the drawbacks of trains are obvious. You can only go where the train goes, and only on the train’s schedule. To create a new train line requires laying new track, an expensive and time-consuming project.

It doesn’t take a huge leap of imagination to look at a locomotive and ask yourself, “Why couldn’t there be a self-propelled vehicle just like this, only smaller, and one that moves about on ordinary roads instead of on special tracks?” The short answer to that question is that there can be. There’s no particular reason why such a vehicle would be impossible; the devil is in the

details. A number of technological hurdles need to be mastered before such a vehicle can be put onto the road.

Your self-propelled vehicle would have to be smaller, for one thing. A full-size locomotive would sink into the ground. When an engine gets smaller, generally speaking, it gets less efficient. Steam engines, as we have already seen, aren't terribly efficient in the first place. Internal combustion engines are more efficient, but these have their drawbacks, too.

In fact, at the beginning of the twentieth century, there were automobiles on the road powered by steam, by internal combustion, and even electric cars powered by batteries. In the end, the internal combustion engine won out, but in 1900, that would have been hard to predict.

I'll come back to that issue, but before we get there, we have to talk about bicycles. Because you can't talk about the history of the automobile without also taking into account the history of the bicycle. We've already talked a little about this, the development of the modern bicycle, originally known as the "safety bicycle," and its surprising connection to the airplane, via the Wright Brothers. But bicycles also paved the way for automobiles.

Think about it. The development of, first, John Dunlop's pneumatic tire, and second, the safety bicycle, made bicycles into something that was practical for the ordinary person to purchase and use. They had their obvious limitations: they required you to provide your own propulsion, they weren't especially fast, and they left you exposed to the weather, which made them useless at many times and in many places. So they were inferior to trains in all these respects. But they did have that one magic feature that trains lacked: independence.

Once you purchased a bicycle, it was yours. You didn't need to buy a ticket to ride it. You didn't need to look at a schedule. And best of all, you weren't limited to where the tracks were laid. Anywhere there was a road, you could take your bicycle, and you could come and go as you pleased. Weather permitting. And as the bicycle fad spread in the late 19<sup>th</sup> century, laws were passed guaranteeing the rights of cyclists to use public roads, much to the annoyance of those riding in carriages then and equally to the annoyance of those riding in automobiles today.

Much has been said about automobiles in the twentieth century giving young people the means to escape parental supervision and thereby helping to trigger a revolution in sexual mores. But the fact is, long before the automobile became common, the bicycle was giving young people more and better opportunities to find a private spot so they to get up to canoodling. Before the bicycle, your only option was the hayloft, and that didn't work so well because that was always the first place your parents would look. The automobile merely reinforced what the bicycle had already started. In fact, popular culture began linking bicycles with romance very early on, but you already knew that, right?

[music: "Daisy Belle"]

You recognize the song, I am sure, and you probably know it as “A Bicycle Built for Two,” or “Daisy,” although its official title is “Daisy Bell.” It was written in 1892, as the bicycle craze was taking off, by the English songwriter Harry Dacre, during a visit to the United States. It quickly became a hit on both sides of the Atlantic and has been sung ever since.

In 1961, “Daisy Bell” became the first song ever sung by a computer, at Bell Labs in New Jersey, in a demonstration of the then-amazing new technology of speech synthesis. One person who witnessed that demonstration was the English science—and science fiction—writer Arthur C. Clarke. Three years later, Clarke would begin collaborating with American filmmaker Stanley Kubrick on the screenplay for what would become the 1968 motion picture *2001: A Space Odyssey*. And it was the Bell Labs demonstration that inspired Clarke to write that poignant moment in which the HAL 9000 computer reminisces about being taught to sing “Daisy Bell,” and then sings it...as he is being shut down. In our day, I suppose that performance is the best known version of the song.

But I digress. The bicycle helped prepare western culture for the coming of the automobile by normalizing the idea of individuals owning a vehicle that they could take out onto the open road as they pleased. The bicycle manufacturing process also prepared the way for automobile manufacturing. The increased demand led to the perfecting of manufacturing techniques that allowed for the mass production of bicycles, techniques like tubular steel construction, reliable welding, and the precision manufacture of gears and chains, as well as a dependable gear shifting system. All this manufacturing know-how will soon be repurposed to make automobiles.

The price of a bicycle in the United States dropped from about \$100 to \$50 between 1890 and 1900. In today’s currency, call that a drop from about US\$2,000 to US\$1,000, as bicycle manufacturers learned how to make increasingly reliable vehicles at lower and lower prices.

The other invention that was crucial to the automobile as we know it today was the internal combustion engine. We’ve already looked at the development of the internal combustion engine with regard to the invention of the airplane. Internal combustion was actually more crucial to the airplane than it was for the automobile, which is why I mentioned it there first. Internal combustion gets you more power for the engine weight, which is essential for airplanes, less so for cars, although weight matters in cars, too.

Steam power was used in early automobiles. Steam has the advantage of being a familiar and well-developed technology in 1901. Steam engines can operate over a wide range of speeds. And steam engines can build up steam pressure even when not turning, which makes them great for a standing start. You sit there and boil, and then when you’ve got the pressure up, you let her rip. This also means they don’t require complex transmissions. But as we’ve seen, steam is less efficient, and the engine is heavier.

Electric cars were on the road in this era, and they have advantages, too. They also do well from a standing start, and all you need to do to turn them on is flip a switch, which was very attractive

in an era when internal combustion engines still required you to crank them to get them started. As you can imagine, the ability to start a car without having to get out and physically turn the engine with a crank appealed especially to women. But the batteries of the time were enormous—some electric cars had batteries that weighed more than a ton, heavy enough that those cars struggled to make it up a steep hill. They had ranges of only 20-50 miles, and you had to plug them in to recharge them. At this time, only urban areas are electrified, meaning they appealed primarily to city dwellers. But city dwellers often have other, and better, transportation options.

And that leaves internal combustion. Of course, internal combustion engines have their drawbacks, too, as I've said. They have to be manufactured with more precision than other kinds of engines. Internal combustion engines are only efficient over a small range of RPMs. This means your vehicle is going to need a complex transmission with multiple gears.

They also require gasoline, a dangerous fuel and limited in supply. They are noisy, and the exhaust gases smell bad and are potentially dangerous. Even in 1901, there were people arguing that internal combustion engines generated too much pollution to be allowed on the open road.

We've already talked about the petroleum industry a little bit on this podcast, and it's a topic I'm going to come back to in a future episode. I've already mentioned that gasoline was an unwanted waste product that oil companies used to just throw in the river, until increasing use of internal combustion engines created a market for it. There is also asphalt, a sticky semi-solid substance that is another component of petroleum, which also was of limited use until people started mixing it with gravel and using it to surface roads to make them nice and smooth, which allowed first, carriages, then bicycles, and finally, automobiles to move along the road at a much faster speed.

We've already seen how the first automobiles worthy of the name were being developed in Germany, particularly by the Benz Company and the Daimler Motor Company. The 1901 Mercedes, manufactured by Daimler, was the last word in automobiles. This is the car of that time most recognizable to our eyes today as an automobile. It had upholstered seats, front and back, with a convertible top, a steering wheel, 35-horsepower engine up front, with a radiator in front of that, headlights, even a spare tire, and it could reach speeds over fifty miles per hour. But the company only manufactured a few hundred units that year, and they were definitely for wealthy customers only. I haven't been able to find a source that quotes an exact price, but it's a safe bet that, in modern currency, one of these cars would have cost upward of US\$100,000.

But at the turn of the twentieth century, the country with the largest automobile industry was France. The influence of France on the automobile industry is apparent in the number of automotive terms in English that are borrowed from French. Words like "sedan," "coupe," "chassis," "carburetor," and of course, the word "automobile" itself, which is still the preferred

formal term for a car to this day in the United States, although in the UK, folks seem to prefer the home grown term “motorcar.”

The French had a leg up in the automotive world, because the French had been experimenting with steam automobiles since the late eighteenth century. At the beginning of the twentieth, the largest automobile manufacturer in France and in the world was De Dion-Bouton, a company that was founded to build steam engines and experimented with steam automobiles until 1889 when one of its founders, the Marquis de Dion, concluded that internal combustion engines were the way to go. The Marquis also made a name for himself as a right wing crank, assaulting French President Emile Loubet with a cane at a horse race at the height of the Dreyfus affair, which I talked about back in episode 7, because the Marquis was upset that the President had gone so easy on that terrible traitor, Alfred Dreyfus.

In 1901, De Dion-Bouton was producing about 400 cars and 3200 engines per year. Other automobile manufacturers were building cars around their engines, including still-familiar names like Peugeot, an old manufacturing company that got into cars in the 1890s, and the brand new Renault Automobiles, founded in 1899 by three brothers, Louis, Marcel, and Fernand.

And I can’t talk about the early automobile industry in France without also talking about the Michelin Brothers, Édouard and André. They operated a farm equipment business in south central France, until one day in 1889 when a local cyclist showed up, looking for a tire repair. The brothers agreed to repair the tire, but in those early days, pneumatic tires were actually glued to the rim. So the brothers had to use a solvent to detach the rubber tire, remove it, patch it, and then glue it back onto the rim, and then wait overnight for the glue to dry. The brothers learned from this experience and designed a tire that could be removed and replaced much more easily. By 1900, Michelin—Americans like to say “MISH-el-in”—was France’s dominant manufacturer of both bicycle and automobile tires.

But their success posed a problem. They couldn’t increase market share any more; so what could be done to increase the demand for new tires? The brothers hit on an answer: they needed to encourage people who already owned cars to drive more and take longer trips. And so was born the Michelin Guide.

In those days, people who owned cars mostly drove them locally. That was partly because, in those early days, services for car owners were few and far between. If you ventured into unfamiliar territory, there were no guarantees you could find a gas station or a mechanic if you needed one. The first edition of the guide was printed in 1900, covered all of France, and gave listings for gas stations, mechanics, hotels and, most famously, restaurants. So wherever you went, you knew where to find services for your car and yourself. The guide also had road maps and helpful information for car owners, like advice on troubleshooting and how to make simple repairs. In 1900, Michelin printed 35,000 of these guides and gave them away free. Soon they were publishing guides for neighboring countries. In 1920, they began charging for them. In

1931, the cover of the guide was changed from blue to the now-familiar red. The guide began putting stars next to the names of the restaurants that were particularly recommended, and later, one, two, or three stars, for different levels of quality.

Today, the Michelin guides are best known for their restaurant ratings, long regarded as the most important restaurant guides in Europe. Michelin also famously keeps the identities of its inspectors a close secret. These inspectors visit the restaurants anonymously and never, ever talk to the press. In the France of our time, the release of each year's guide is a media event, with close coverage of which restaurants have gained or lost a star in the new edition.

The French were also early and ardent enthusiasts of automobile racing. In the late 19<sup>th</sup> century, car races on public roads were becoming popular. Most of these were from Paris to some other French city and back again. By the early twentieth century, races were from Paris to other capitals, like Berlin or Amsterdam. In 1903, a race from Paris to Madrid was organized, a distance of 1300 kilometers, or a little over 800 miles. Remember that this is an age in which most rural roads are unpaved. And it goes without saying that there are no air bags, seat belts, padded dashboards, um, roofs, bumpers, crash helmets, or even windshields. You wear goggles to keep the wind and dust out of your eyes, and that was pretty much the beginning and the end of your safety equipment.

More than 200 drivers participated, including one woman, Camille du Gast, a 34-year old incredibly wealthy widow, who was making a name for herself as a thrillseeker and a pioneering feminist. She was a veteran of the 1901 Paris to Berlin race and the 1902 Paris to Vienna race. The French press called her the "Valkyrie of the Motorcar." Also participating in the race were two of the Renault brothers, Louis and Marcel, who were hoping to build the reputation of their company's cars.

The first leg of the race was to Bordeaux. Cars were started at one-minute intervals. The race proved much more difficult and dangerous than expected. The roads were rough and dusty, as there had been no rain for two weeks. Crowd control was nonexistent; spectators stepped into the road to look for the cars, which was, of course, incredibly dangerous. The racers reached speeds of 80 miles per hour on unpaved roads, causing many inexperienced drivers to crash.

Louis Renault had drawn a good starting position and was the first driver to arrive at Bordeaux. Camille du Gast was in eighth place at one point, but she stopped to help a driver who had crashed and came in 77<sup>th</sup>. Marcel Renault drew the 60<sup>th</sup> starting position, but drove like a demon, and almost caught up to his brother, until, sadly, he attempted to pass another car through a cloud of dust. The road had a curve. Marcel did not see the curve, and ran into a ditch at 80 mph. The car flipped end over end three times and landed on top of him. He died the following morning, and the surviving Renault brothers never raced again.

The public outcry forced the French government to cancel the race. Initial press reports wildly exaggerated the numbers of deaths and injuries, but the real numbers were plenty bad enough.

Five racers and three spectators had died that first day, including one small child who had gotten away from his mother and wandered onto the road. The French press speculated that these tragedies would mean the end of sport car racing. This would not be the case, but it would take until 1927 before the French government was ready to allow racing on public roads again.

The automobile, as we have seen, was born in Germany and lived its reckless youth in France. But it would come of age in America. No one watching that Paris to Madrid race in 1903 could have imagined it, but in ten years, the United States would become the world's number one producer of automobiles, leaving France in the dust, as it were, and would dominate the automobile world for decades to come.

Why is that? There are a number of things that make America ripe for the automobile. One important reason is the discovery of large oil deposits in the central United States, running from Kansas to Texas, which mean that the US is about to displace the Russian Empire as the world's largest producer of petroleum. The growing oil industry creates potential for the automobile industry because, again, gasoline is a petroleum product that has very little value other than in internal combustion engines, so a booming oil industry means lots of cheap gasoline lying around, looking for a buyer.

Second, as we have also already seen, the United States is growing rapidly, both its economy and population. And in the United States, incomes are distributed more equally than in stodgy old aristocratic Europe. This means a rising middle class, with rising incomes. The United States is also a much larger country, in terms of area, with a population much more dispersed. Railroads are great, but they can't be everywhere, and rural and small-town Americans in particular are looking for better ways of getting around. And, of course, the usual economic advantage the US has over Europe of being a large integrated market with no tariffs.

But the European model of car manufacturing wasn't suited to North America. An operation like Daimler, where large numbers of skilled craftsmen essentially hand make a small number of high quality premium cars for the very wealthy just didn't fit in an America with fewer rich people. Not to mention fewer skilled craftsmen.

But while the US may not have had craftsmen like Europe, what it did have was a manufacturing tradition of interchangeable parts put together on assembly lines. Both of these innovations had come about in the United States. So the American contribution to the story of the automobile is the mass production of large numbers of lower cost vehicles on assembly lines. And the American who first put this principle into practice was...wait for it...Ransom Olds.

[music: "In My Merry Oldsmobile"]

Ransom Olds was born in 1864, in Ohio. He grew up, married and settled in Lansing, Michigan. When he was 33 years old, in 1897, he founded the Olds Motor Vehicle Company. Now, by this time, people are getting excited about automobiles, and a lot of new companies are springing up,

in the US and in Europe, too many for me to mention them all. Lots of these companies' founders, like the Renault brothers in France and Ransom Olds in the United States, were young men fascinated by these new machines and skilled enough to be able to build a few with their own hands.

Which is all well and good, but the tricky part is making the leap from building a few machines with your own hands to hiring employees and turning out your cars in commercial quantities with reasonable quality control at an affordable price and turning a profit on the whole thing. In his first three years, Ransom Olds had built and sold a grand total of eleven vehicles. But he was learning and perfecting his designs, and in 1901, he opened an assembly line and began selling what he called the Oldsmobile.

Remember when I said the 1901 Mercedes looked recognizably like a car as we know them today? Well, the 1901 Oldsmobile looked like a horse-drawn carriage without the horse. Just four wheels and a single seat. The engine was in a box under the seat, and there was a convertible top. It had a one-cylinder, five horsepower engine, two-speed transmission, a horn that you blew by squeezing a rubber bulb, and a tiller to steer her with. Her top speed was 20 mph. Not exactly a Mercedes, but she sold for \$650, about US\$20,000 or so in today's currency, making her within the reach of an average middle class American family.

By 1904, Olds was producing over four thousand cars per year. Here's a telling statistic. That year, the Daimler plant in Germany was producing less than one Mercedes per worker per year; Ransom Olds was producing six Oldsmobiles per worker per year. Cars were being embraced by Americans, the better-off ones, anyway. Even the fledgling motion picture industry immediately incorporated cars into their stories, and car chases quickly became a staple element of both dramas and comedies in American film, and have remained so ever since.

Tin Pan Alley took up the subject of cars in its songs of the time, most famously, "In My Merry Oldsmobile," which we have already heard. That song is still pretty well known today. It makes the connection between automobiles and romance with lyrics that were pretty racy for the time. I mean, "She says she knows why the motor goes/The sparker is awfully strong." Uh-huh.

In other words, where 1892's "Daisy Bell" used a bicycle built for two as a metaphor for getting married, thirteen years later, in 1905, "In My Merry Oldsmobile" used a ride in a car as a straight-up metaphor for having sex. Welcome to the twentieth century; it only gets worse from here on out.

In 1958, there will be an American TV program called *The Oldsmobile Show with Patti Page*, which would use "In My Merry Oldsmobile" as its theme song, which is surely part of the reason why the song endures.

Anyway, Ransom Olds could easily have become the guy whose use of assembly lines to manufacture affordable cars would make him the premier manufacturer of automobiles, the

biggest name in the industry, and the first name Americans think of when they think of early cars. But it was not to be. Olds's business partner died, and his son and heir had a falling out with Olds and pushed him out of the company in 1904. Olds founded a new company to compete with the old company, but it was never the same. Oldsmobile would be sold to General Motors in 1908, and General Motors would continue to manufacture cars under the Oldsmobile name until 2004.

And that's the reason why the name most Americans think of when they think of early cars is not Ransom Olds, but Henry Ford. Henry Ford was born in 1863, on what was then farmland about ten miles from Detroit, Michigan. He was the oldest of five children, and displayed mechanical talents by the time he reached his teens. He was apparently much closer to his mother than to his father. Her death when he was in his adolescence was a serious blow to him. His father wanted him to take over the farm, but Henry Ford wasn't interested in agriculture. He worked as a machinist and studied bookkeeping, and occasionally got called back to the farm. He married Clara Jane Bryant in 1888, and they would have one child together, a son, Edsel.

In 1891, Henry Ford got what might have been his dream job: working as an engineer for Thomas Edison's Edison Illuminating Company, in Detroit. Like most automotive pioneers of this time, he got into it as a hobby at first. His new job gave him enough of an income to experiment with building his own gasoline-powered car. He completed his first in 1896. Improving on the design, he build a second one by 1898. Flush with enthusiasm, the now 36-year old Ford resigned from the Edison company in 1899, after attracting enough investors to set up the Detroit Automobile Company. That folded in 1901, but Ford and his investors had not given up. They created a second company, the Henry Ford Company, that same year.

But that company did not prosper, either. Ford was by this time taking an interest in racing cars, which was most definitely *not* what his company was supposed to be making. And so, Ford left the company in 1902, under an agreement that allowed him to take back his name. The Henry Ford Company would be renamed after the French explorer who founded the city of Detroit, and would become the Cadillac Automobile Company. Cadillac would be acquired by General Motors in 1909, and they have been selling cars under the Cadillac name ever since.

Ford built a race car, the "999," and recruited a bicycle racer named Barney Oldfield to drive it in October 1902 at the Grosse Point horse racing track, in the Manufacturers Challenge, sponsored by the Detroit Automobile Club. The reigning champion was Alexander Winton, founder of Winton Motors, then a noted manufacturer of premium vehicles. In spite of reputedly only learning how to operate the controls of the 999 that morning, Oldfield and his car beat Winton and his Winton Bullet by half a mile.

The race made celebrities out of both Ford and Oldfield. Over the years to come, the name "Barney Oldfield" became synonymous with racing champion, and was frequently used sarcastically. For example, you are walking down a dirt road and some city slicker roars by in a

car, kicking up a cloud of dust into your face. What do you do? You shake a fist at him and you yell, “Who do you think you are, Barney Oldfield?” Old timers would be doing this well into the 1950s.

I should emphasize that at this time, cars were largely still a hobby, and early car owners did tend to be well off city and town dwellers, who used their vehicles primarily to escape the city for a rural outing, perhaps a Sunday picnic. These city types of course annoyed the rural farm folk, people who could not afford a car themselves, and who resented the noise and the dust and the bad manners of those early enthusiasts. Woe to the city slicker who ran out of gas or got a flat tire or needed an emergency repair on his Sunday outing. Expect a long wait, surly service, and a bill for about five times what you thought it was going to be.

In 1903, Henry Ford and a new group of investors incorporated the Ford Motor Company, and this one is the Ford company that we know today. The initial capitalization was \$28,000, and after that, Ford Motor Company never sold another share of stock again until after Henry Ford passed away in 1947. From 1904 to 1908, the company did reasonably well, although the competition from Ransom Olds was tough. Ford cars developed a reputation for reliability and value, though. In 1906, Ford introduced the Model N, which was their best seller to date. They sold about 9,000 of them at \$600 each.

In 1907, Henry Ford began designing the car he is best known for, the Model T. And this was also when Ford began to introduce assembly line techniques into his manufacturing operation. Up until now, most cars, apart from Oldsmobiles, had been built by hand, by skilled machinists. This method is slow, not least because the parts aren't always uniform and often they have to be filed or milled to fit. Skilled workers are hard to come by, and they command a high wage.

Assembly line workers, on the other hand, are as interchangeable as the parts, which were now being made out of high quality steel so that they came out consistent to a very small tolerance, and no longer needed to be machined on the factory floor. The Model T's four-cylinder engine was cast as a single solid block, another innovation that saved much time and money. And, most famously of all, once the design was finished, it stayed the same until the last Model T came off the assembly line in 1927. And as for the color, well, you probably already know what Henry Ford said: “Any customer can have a car painted any color that he wants, so long as it is black.”

In 1908, the first Model Ts cost \$825; that would be about US\$22,000 in today's money. With the design fixed and the economies of scale getting better all the time, the price went down every year thereafter. By 1916, a tin lizzie cost \$360, or about US\$9,000 in today's money.

The car was a success. In the end, Ford sold over fifteen million of them, an amazing number in an industry that was accustomed to measuring production runs in the thousands. True, they were simple and Spartan, but there was an aftermarket of literally thousands of gadgets and modifications available if you wanted to spend some more money and upgrade your car.

And Henry Ford, the man who had grown up on a farm, marketed the Model T not to the well-off urban hobbyist, but to rural communities. His car was not a plaything. It was a practical and economic tool. A 1913 ad for the Model T summed it up by doing a point-by-point comparison between the car and a horse. The horse weighed more; it cost a little less, the ad noted, but the Model T had twenty times the power, could go faster and farther, and was cheaper and easier to maintain.

And it was during the run of the Model T that in America the automobile went from a plaything for the well-to-do to a means for ordinary people, especially rural people, to better their lives. The social changes began almost at once. Doctors could now more easily visit a greater number of patients. Hospitals became easier to get to. Goods moved more easily and prices went down. The traditional American one-room schoolhouse gave way to centralized, modern schools.

The automobile and the airplane appeared at about the same time, but the story of the “invention” of each is quite different. For the airplane, it’s pretty simple to pinpoint the people, the place, and the time: Wright Brothers, Kitty Hawk, 1903. The first flight of a heavier-than-air powered vehicle carrying a passenger. Although, as we saw, there was incremental progress toward that goal for a long time. The Wrights didn’t do it alone.

But the story of the automobile is more complicated. You could ask, “What was the first powered vehicle to carry a passenger on a road?” But that would be a difficult question to answer. There are a lot of contenders. But more to the point, that question isn’t really very interesting. People already had practical means of carrying themselves and their goods along a road. The more interesting question is, “When did self-propelled vehicles become a practical alternative to the existing over-the-road options?” That was also a gradual process, and it took a century or more. But once Henry Ford is able to make that practical argument that you can get more for your money out of a car than from a horse, you can be sure that the automobile has arrived.

We’ll have to stop there for today. I’m going to be attending Mythmoot, which is a conference on imaginative literature, the first weekend in June 2017, in Leesburg, Virginia. Mythmoot is about all forms of fantasy and speculative fiction, but with a particular emphasis on the works of J.R.R. Tolkien. If that sounds interesting to you, or you’d like to know more, go to [mythgard.org](http://mythgard.org) and click on “events,” or go to [historyofthetwentiethcentury.com](http://historyofthetwentiethcentury.com) and click on “events.” And if you decide to attend Mythmoot, tell them Mark sent you, and look me up when you get there. And I hope you’ll join me next week, on *The History of the Twentieth Century*, as we turn to events in China. We haven’t visited the Middle Kingdom since episode 15, so it’s about time we stop by and get caught up. That’s next week, on *The History of the Twentieth Century*.

Oh, and one more thing. In the early twentieth century, most rural communities in the United States had a blacksmith. We might be tempted to think of the village blacksmith as having been run out of business by the newfangled automobile. But in fact, blacksmiths always did a lot more

than just shoe horses. They did metalwork of all kinds, including repairs to carriages and wagons and farm equipment. And so, the earliest automobile owners would often take their cars to the blacksmith for repairs and body work. In time, the other kinds of work disappeared, but the blacksmiths were still in business, and they're still in business today. It's just that nowadays, we call them mechanics.

[music: Closing Theme]