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FORD, EDISON AND THE CHEAP EV THAT ALMOST WAS

THAT HENRY FORD and Thomas Edison were good friends late in their lives is well-known. They camped together, presented each other with lavish gifts, even owned homes adjacent to each other.

Many Ford enthusiasts also know Ford, when he first drove his Quadricycle on the streets of Detroit in 1896, worked for Edison at Detroit Edison Illuminating Company. And historians know Edison, when introduced to Ford some months later and shown Ford's plans for a gasoline automobile, encouraged the budding industrialist to pursue those plans.

What is far less known is Edison and Ford worked together on an affordable electric vehicle.

This is the story of what happened and why the car never came to be.

At about the time Ford Motor Co. was founded in 1903, Edison had made inroads with battery technology and started offering nickel-iron batteries for several uses, including automobiles. Later that year, he announced plans to convert four large touring cars to electric power (using his own batteries, of course), a plan that reeks of a publicity stunt to sell batteries but was enough to get him listed in the Standard Catalog. And though he prodded Ford into producing gasoline cars, he was soon denouncing them:

> Electricity is the thing. There are no whirring and grinding gears with their numerous levers to confuse. There is not that almost terrifying uncertain throb and whirr of the powerful combustion engine. There is no water-circulating system to get out of order — no dangerous and evil-smelling gasoline and no noise.

Ford, however, still high on Edison's encouragement, not only left Detroit Edison and rigorously pursued the gasoline-powered car, he ordered the development of a flywheel magneto system for the Model T specifically to

avoid using batteries. (One story I've read, possibly apocryphal, is that the battery in Ford's pre-production Model T overturned during a camping trip, ending his jaunt and prompting him to ban batteries from his new low-priced car.)

Ford began to change his mind, however, and by early 1914, word spread that he was working on a low-priced electric car. Reports appeared in the *Wall Street Journal*, in trade magazines and in newspapers as far away as New Zealand regarding Ford's foray into EVs. Ford confirmed the rumors in *The New York Times* on January 11, 1914:

> Within a year, I hope, we shall begin the manufacture of an electric automobile. I don't like to talk about things which are a year ahead, but I am willing to tell you something of my plans.
>
> The fact is that Mr. Edison and I have been working for some years on an electric automobile which would be cheap and practicable. Cars have been built for experimental purposes, and we are satisfied now that the way is clear to success. The problem so far has been to build a storage battery of light weight which would operate for long distances without recharging. Mr. Edison has been experimenting with such a battery for some time.

Ford may have fibbed when he said "multiple" experimental cars, but at least one was built in 1913. That's it outside Ford's Highland Park plant in the main photo.

The EV was tiller-steered with an unusually swoopy frame and batteries under the seat. The man operating it, Fred Allison, was an electrical engineer from Detroit charged with designing the motor. Ford Richardson Bryan notes in his book, *Friends, Families, & Forays: Scenes From the Life and Times of Henry Ford*, the car's electrical system and overall design were the work of Alexander Churchward, who was at the time vice

president of Gray & Davis. General mechanic's duties were assigned to Samuel Wilson, a former Cadillac employee. Churchward had, one year earlier, written a paper on the standardization of the electric car (he argued, among other things, for a 25 mph maximum speed). Wilson had experience with Cadillac's self-starter program.

Work continued into 1914, as we can see in the photo above of Allison perched atop a second experimental EV. This one used a Model T frame, suspension and front axle, a Model T steering wheel and a worm-drive rear axle. The latter indicates the motor, mounted behind the driver in the first prototype, was up front in the second, near an additional bank of batteries. Bryan notes in his book *Henry's Lieutenants* that Eugene Farkas was responsible not only for the worm-drive rear axle that was later modified for use in the EV, he was responsible for the car's chassis.

Rumors, stoked by Ford's secretary, Ernest Liebold, swirled in the

automotive press for the remainder of 1914. Edsel Ford was said to have been put in charge of the Edison-Ford. Henry Ford was said to have bought an electricity-generating plant in Niagara Falls and a site off Woodward Avenue in Detroit specifically for the production of the Edison-Ford.

As the year wore on, the rumor mill had the EV coming in 1915, then 1916. Details varied: It would cost somewhere between $500 and $750 (between $10,000 and $15,712 today) and would go somewhere between 50 and 100 miles on a charge. Even today, reports vary as to whether the car would have a brougham or cabriolet body. Edison, in an interview with *Automobile Topics* in May, 1914, divulged no details and made his best "It's coming, just be patient" speech of the kind General Motors has perfected in recent years with the Chevrolet Volt:

> He called attention to the fact that a new automobile, especially one embodying such radical features as a $500 or $750 electric pleasure car naturally must have, cannot be designed and constructed in a few weeks.
>
> "Mr. Henry Ford is making plans for the tools, special machinery, factory buildings and equipment for the production of this new electric. There is so much special work to be done that no date can be fixed now as to when the new electric can be put on the market. But Mr. Ford is working steadily on the details, and he knows his business so it will not be long.
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> "I believe that ultimately the electric motor will be universally used for trucking in all large cities, and that the electric automobile will be the family carriage of the future. All trucking must come to electricity. I am convinced that it will not be long before all the trucking in New York City will be electric."

Edison, by the way, was himself no stranger to electric cars. Bryan noted in *Friends, Families and Forays* that Edison built a battery-powered

front-wheel-drive electric in 1895, and the industrialist owned some of the very expensive electric cars then in production.

We've so far seen no evidence that the press of the day ever got its hands on photos or other solid evidence of the experimental EVs. Eventually, the media seemed to forget about the Edison-Ford altogether. Some conspiracy theorists believe the oil cartels got to Ford and Edison and prompted them to abandon it. These theorists offer as evidence the "mysterious" fire that nearly destroyed Edison's workshops in West Orange, New Jersey, in December, 1914. Besides the fact all work on the EV took place in Dearborn, Michigan, (and Edison had the entire place rebuilt by the next spring), *The New York Times* noted on December 10, 1914, that the fire skirted the two buildings in which any work on the electric car would have taken place:

> It was seen that the only important buildings that could be saved were the experimental laboratory and the storage-battery building, and all attention was given to them.
>
> Mr. Edison was in the experimental laboratory when the fire began. He helped in the salvage work, and when that was finished he went to the storage battery building and directed the protection of that structure.

Rather, as Bryan wrote, the downfall of the Edison-Ford electric car came about because Ford demanded the use of Edison's nickel-iron batteries in the car and would have no other battery powering the car. Edison's batteries, however, were found to have very high internal resistance and were thus incapable of powering an electric car under many circumstances. Heavier lead-acid batteries, which would have made the car too ponderous, were substituted behind Ford's back. When he found out, he went ballistic. The program quickly fell by the wayside as other

projects demanded Ford's time. According to *The Ford Century,* Ford invested $1.5 million (almost $31.5 million today) in the electric-car project and nearly bought 100,000 batteries from Edison before the project fell apart.

Churchward, who had already racked up dozens of patents and would be issued dozens more, returned to Gray & Davis and for a time also served as vice president of A.B.C. Starter Company, which later employed Allison as chief engineer. Of the patents granted to Allison that we've found, one (1,225,558, dated May 8, 1917) was assigned to the A.B.C. Starter Company, while two others (1,478,196, dated December 18, 1923, and 1,508,377, dated September 16, 1924) were assigned to Ford Motor Company, so Allison very well may have leveraged his experience with the electric car to a career at Ford. Both men were instrumental in Ford's adoption of the electric starter and electric lighting systems in 1919.

And now we come full circle. Ford says it will invest $135 million in electric-car development and 10 to 25 percent of its fleet will be electrified in some way by 2020.

Here's hoping, Henry.

Photos: The Collections of Henry Ford / Flickr

This story was originally published by Hemmings Blog, where Daniel Strohl is an associate editor.

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