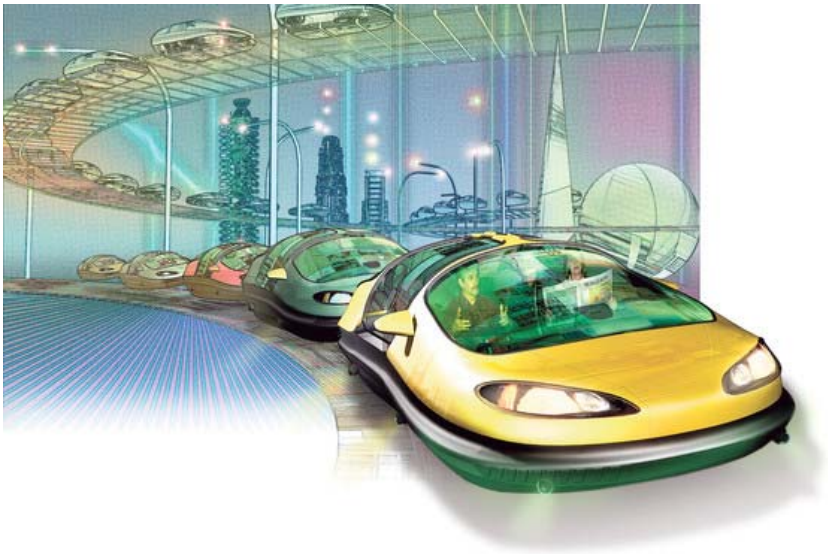
ESSAY | MARCH 20, 2010

# Taking the Driver Out of the Car

*Why robocars, and not high-speed rail, could revolutionize transportation in the next decade*



By RANDAL O'TOOLE



Jean-Francois Podevin

'Your grandchildren will snap across the entire continent in 24 hours on a new kind of highway and in a new kind of driverless car that is controlled by the push of a button," futurist Norman Bel Geddes promised in 1940. Mr. Bel Geddes designed Futurama, the most popular exhibit at the 1939 New York World's Fair, which in many ways inspired the construction of the Interstate Highway System.

Driverless cars have so far remained the stuff of science fiction. Seventy years after Mr. Bel Geddes's promise, they are finally close to reality.

Consumers today can buy cars that steer themselves; accelerate and brake to maintain a safe driving distance from cars ahead; and detect and avoid collisions with other cars on all sides. Making them completely driverless will involve little more than a software upgrade.

Yet the potential for advanced personal mobility is being ignored in debates over surface transportation. These debates come to a head every six years, when Congress hashes out how to spend federal gas tax revenues. Congress has increasingly diverted the funds—$40 billion a year by last count—from highways to transit.

The Obama administration and House Transportation Committee Chairman James Oberstar (D., Minn.) want to go even further in the next reauthorization, now scheduled for 2011. The administration has focused on a new national high-speed rail system, as well as streetcars, light rail and other projects, to reduce driving and congestion.

Yet driverless cars could render the hand-wringing over roads versus rail needless. Driverless technologies were demonstrated in 1997 on a California freeway when eight cars without drivers successfully operated just one car length apart at 65 miles per hour. In 2007, six cars negotiated the Defense Advanced Research Projects Agency Urban Challenge, following all traffic rules in an urban environment with other vehicles.

Volkswagen says enhanced global positioning systems can keep cars within two centimeters of their desired location on streets and highways. This summer, the company will demonstrate its technology by running a driverless Audi at racing speeds up the twisty Pikes Peak road.

At the 2007 event, General Motors vice president of research Lawrence Burns predicted that completely driverless cars would be on the market by 2018. He added that the primary obstacles were legal and bureaucratic, not technological.

Driverless vehicles offer huge advantages over current autos. Because computer reaction times are faster, driverless cars can safely operate more closely together, potentially tripling highway throughput. This will virtually eliminate congestion and reduce the need for new road construction.

Toyota's recent recalls naturally lead to worries that computer glitches could cause serious accidents. Since each car will be independently controlled, a failure in one would simply lead others to avoid that car. Modern cars already have numerous built-in computers that do things, such as anti-lock braking, far more reliably than humans, even those who are not texting or inebriated. Any serious problems could be quickly corrected through wireless software upgrades.

Driverless cars and trucks will be safer. They will also be greener, first by significantly reducing congestion, and eventually because vehicles will be lighter in weight due to reduced collision risks.

Perhaps most important, driverless vehicles will bring mobility to everyone, not just those able to pass a driver's test. While many people will still choose to own a car, increased numbers may rely on car sharing. Outside of ultra-high-density areas such as Manhattan, driverless cars will render urban transit and intercity passenger trains even more obsolete than they are today.

The American automobile fleet turns over every 18 years, so if Mr. Burns's prediction that driverless cars will hit the market by 2018 comes true, we could have a completely driverless system by 2036. State highway officials could accelerate this timetable by working with auto manufacturers to set standards and a transition path. State and local highway agencies could install wireless communication systems at major intersections and highways—a much less costly undertaking than building new roads, much less high-speed rail.

President Obama's so-called high-speed rail plan mostly consists of moderate-speed trains running at top speeds of 90 to 110 miles per hour, speeds attained by many railroads in the 1930s. This will attract few people out of their cars. The proposals for trains running at 160 to 220 miles per hour in California and Florida will cost at least 10 times as much to build as the 110-mph lines, but they are not likely to attract 10 times as many passengers.

As Burlington Northern Santa Fe CEO Matt Rose testified to Congress last April, building a national network of true high-speed rail lines would cost roughly $1 trillion, more than twice as much as the inflation-adjusted cost of the Interstate Highway System. While interstates paid for themselves out of gas taxes and other road user fees, all the capital and billions of dollars of annual operating costs of high-speed rail will be borne by general taxpayers, most of whom will rarely ride the trains.

America's population distribution makes passenger trains here less effective than in Europe or Japan. Yet even abroad, the average residents of France and Japan ride high-speed trains less than 400 miles per year, making up just 4% to 6% of all passenger travel.

France and Japan have each spent roughly as much per capita subsidizing their high-speed trains as we spent building our interstate highways. Yet the average American travels 10 times as many miles on the interstates as the average French or Japanese travel on high-speed trains.

Amtrak's high-speed Acela trains between Boston and Washington cover most of their operating (but not capital) costs. To do so, fares are some 10 times greater than many relatively unsubsidized bus services that carry about three times as many passengers in the northeast corridor as the Acela.

Claims that trains are environmentally friendly may apply to freight trains, but not passenger. A 50-ton railcar can carry 100 tons of cargo, making freight trains highly energy-efficient. However, a 50-ton passenger car carries only about 15 tons (170 people), and more typically carries about 2 to 3 tons (25 to 35 people), resulting in average weights per passenger that are several times

Let the Sun Shine In

All Aboard the Butler Bandwagon

**Most Popular**

Read | Emailed | Video | Commented

1. Obama Gets Aggressive
2. iPhone U.S. Monopoly May End
3. Opinion: Rude for Reid
4. Opinion: Best of the Web Today: Tea and Mockery
5. Manure Raises a New Stink

Most Read Articles Feed

**Latest Headlines**

Militia Probe Included Undercover FBI Agent

Obama Set to Unveil Offshore Drilling Plan

Flooding Threatens East Coast Again

Chamber Aims to Blunt Health Plan

FDA Cleared of Criminal Wrongdoing in Review Process

High Court Revives Case on Fund Fees

Obama Signs Health Fix, Student-Loan Bill

Transit Systems Reinforce Security Measures

Obama Gets Aggressive

Nine Charged in Militia Plot

More Headlines

greater than for cars or buses.

In January, Secretary of Transportation Ray LaHood eliminated Federal Transit Administration requirements that federally funded streetcars and other rail transit be "cost effective" relative to buses. The FTA then funded costly streetcar projects in Dallas, Detroit, New Orleans and Tucson despite the fact that low-cost investments in traffic signal coordination, buses or many other projects would do far more to relieve congestion and improve mobility.

A return to rails would turn the clock back to a time when only the wealthy had access to easy mobility. The 19th century witnessed several amazing transportation breakthroughs, including steamboats, steam trains and electric streetcars. Yet in 1910 most Americans enjoyed little more personal mobility than they had 100 years prior. High fares for steamboats and passenger trains mainly limited such travel to the wealthy. Streetcars served only urban areas and were popular with the upper classes.


Several auto makers are betting that the "park-assist" option, which allows vehicles to park in spaces with little input from the driver, will catch on in the mainstream market. But are the systems worth the extra $395 to $4500? WSJ's Lee Hawkins tested three vehicles—the Toyota Prius 5, the Ford Escape and the pre-production BMW 5 series to see for himself.

The revolution that finally brought mobility to the masses was Henry Ford's low-cost Model T, which most factory workers could afford. Since 1910, individual travel has grown from an average of about 3,000 to well over 18,000 miles per year. Cars contributed to a seven-fold increase in personal incomes.

Automobiles continue to maintain a huge cost advantage over passenger rail. Counting both subsidies and personal costs, Americans spend less than 25 cents a passenger mile on autos, nearly 60 cents a passenger mile on Amtrak, and more than 90 cents a passenger mile on urban transit. No wonder 85% of all our passenger travel is by automobile.

The call to spend hundreds of billions of dollars in subsidies to build the world's finest, 1930s-era transportation network would benefit the wealthy and those willing to live and work in expensive quarters near rail stations.

In contrast, the driverless scenario relies on new technology, not old; and will largely be self-funded by users rather than paid out of tax dollars. Most important, driverless vehicles will bring mobility to almost everyone.

—Randal O'Toole is a senior fellow with the Cato Institute and author of "Gridlock: Why We're Stuck in Traffic and What to Do About It."

MORE IN LIFE & STYLE

Email Printer Friendly Order Reprints

Article Tools Sponsored by Constant Contact

Share:



## Related

**The Skinny on Self-Parking**

## Related Stories

**Government Scientists to Study Car Electronics** 6 hrs ago

**Forcing Airlines to Play Nice With Fliers** 3/4/2010

**Public-Transit Passengers Face Rough Ride** 1/2/2010

**An Airline Report Card: Fewer Delays, Hassles Last Year, but Bumpy Times May Be Ahead** 1/7/2010

**Airlines Threaten to Cancel Flights** 3/11/2010

**The Road to Vancouver: A Last-Minute Guide** 1/21/2010

**Smokeless Products Are Tough Test for Reynolds** 3/26/2010

**Toyota Turmoil Puts LaHood in Spotlight** 3/15/2010

## Editors' Picks

**Horseshoe Sandwich Delivers Kick in Gut**

**Cycling's Mystery Man Shows His Face**

**Tech Guru With a Social Vision**

**Creating Etsy's Handmade Marketplace**

**Spinning Blood Isn't Just for Athletes**

BACK TO TOP