

Chariots to Steamboats to E-Fans: The Next Way Around Just Waiting to Be Invented

“You see, Tom, the world goes on at a smarter pace now than it did when I was a young fellow. It’s this *steam*, you see.”

Mr. Deane to Tom Tulliver —
George Eliot’s *The Mill on the Floss*

Heaven help Mr. Deane were he around today.

In our non-stop world of transportation & transport technology, for at least the past decade it is without question the electric *car* that has drawn most of the attention — from Detroit to Wall Street to Main Street. And whether that attention concerns the successes and failures to date of electric engines, battery-charging stations or the promised CO₂ reduction — personal-use, electric-powered automobiles (barring a late-inning comeback by nuclear-powered) are seemingly the future of “getting around.”

When “the future” will actually show up is pure guesswork.

Case in point — coming one day to an airport near you are — the future of electric-powered *airplanes*.

A recent event in support of that future, and the consensus highlight of longtime French airplane builder Airbus Group’s (with Aero Composite Saintonge participation) E-Aircraft Day — was celebrated this past April at Aéroport de Bordeaux-Mérignac, France. The company’s “E-Fan” experimental aircraft performed without incident for its inaugural public exhibition flight, wowing a sizeable crowd — including no less than French Minister of Industry Arnaud Montebourg. Essentially a “training” craft, the E-Fan — of all-composite, energy-saving construction — also serves as a, well — *sales demo*.

As what might be an indication of how nascent this technology remains — or more to the point, its commercialization — you’ll find scant technical information online about the E-Fan’s electric engine. But, why quibble — this is Power Play, not the U.S. Patent Office.

The bird is “skipped” by — e-FADEC — e-*FADEC*? — try rolling *that* off the tongue — an integrated energy management system that interfaces seamlessly with all the craft’s electrical features, in turn optimizing system monitoring and control.

So in fact how far along are we with electric air travel? Consider how long the *electric car* and its consumer acceptance and full commercialization are taking. A couple of factoids provide some perspective, courtesy *Wikipedia*. In 1883, Gaston Tissandier (a *balloonist*) was the first to use electric motors in airship propulsion. (Unintended product placement here): Tissandier fit a Siemens electric motor to a balloon and, voilla — the first — technically — electric-powered flight.

Electric motors have been used for model fixed-wing aircraft (those are *toys*, for God’s sake) since at least 1957, with a challenged claim from 1909.

The point being, apparently the *concept* for electric aircraft is anything but novel. Aviators have been strapping electric motors on their balloons and dirigibles for near 150 years.

Yes, these things take time, as Airbus (and Boeing, to name just one serious competitor) is well aware — and in some cases require the courage of one’s convictions on the part of the inventor.

Consider inventor/entrepreneur Robert Fulton; we learned about him in high school history. Remember “Fulton’s Folly?” What he considered his state-of-the-art steamboat and his business plans for it were a general laughingstock before the vessel had even left the dock. Fulton had the last laugh — all the way to the bank. “Fulton’s Folly” is credited as “the first vessel to demonstrate the viability of using steam propulsion for commercial river transportation.”

Sometimes, things don’t turn out so happily — even when you have the science on your side. Consider Nikola Tesla (whom, alas, we *didn’t* learn about in high school — not *U.S.*



high-schools), the mercurial, brilliant Serbian-American inventor, electrical engineer, mechanical engineer, and futurist. His research was instrumental in the development of the AC (alternating current) motor, a technology thought impossible by physicists at the time. But were you aware that the beloved Spencer Tracy — *Thomas Edison* — inventor of the *direct current* (DC) — did everything possible to discredit Tesla’s superior alternating current system — *including electrocuting an elephant with Tesla’s system* to portray it as dangerous? Somehow, successful attacks like this eventually led to Tesla’s bitter dissipation and death — a penniless laughingstock. *Today*, of course, every wall outlet in the world outputs AC power, and Tesla’s *eccentric* research is regarded as pioneering in electromagnetism (and an electric car company bears his name).

And just one more object lesson before we go — the Wright Brothers. After Kitty Hawk, the Bros regularly demonstrated their “airship” capabilities over a field in Dayton, Ohio for nearly a year. U.S. officials — Cabinet or otherwise — never once showed up to observe, discuss, or collaborate. *Scientific American* magazine, for its part, published stories about “The Lying Brothers.” The Dayton dailies played hands-off as well, never once sending a reporter.

Finally tired of being treated as if they had invented leprosy — not aviation — the boys fled to Europe, where of course they were enthusiastically embraced. As were the aircraft contracts they had to sell to the French, Germans, and Brits. **PTE**