ARE ELECTRIC AIRPLANES REALLY STARTING TO TAKE OFF?

News / Manufacturer

Shocking, I know. But car makers aren't the only ones turning to electricity to charge up their industry. NASA, as part of its New Aviation Horizons initiative, is devoting millions over the next 10 years to improving energy efficiency in commercial aviation, including the development of hybrid electric aircraft. Similarly, in the private sector, Siemens and Airbus Group are piloting the industry into the wild blue yonder.

What's the big deal?

In April, Siemens and Airbus -- two companies already spreading their electric wings -- inked a deal, further demonstrating their commitment to making electric flight a reality. The two companies will work together in pursuit of "demonstrating the technical feasibility of various hybrid/electric propulsion systems by 2020." Although both companies revealed that they "will be making significant contributions into the project and have sourced a team of around 200 employees," specific financial terms were not discussed.

Ultimately, the two companies hope to develop various prototypes, with applications ranging from short local flights in planes with 100 seats or fewer to helicopters or unmanned aerial vehicles in short- to medium-range flights.

Other entries in the flight log

The partnership between Siemens and Airbus isn't the first foray either company has made toward making electric flight a reality. Flying into the record books last year, a demonstration aircraft featuring Airbus Group's E-Fan technology (E-Fan 1.0) became the first all-electric, two-engine

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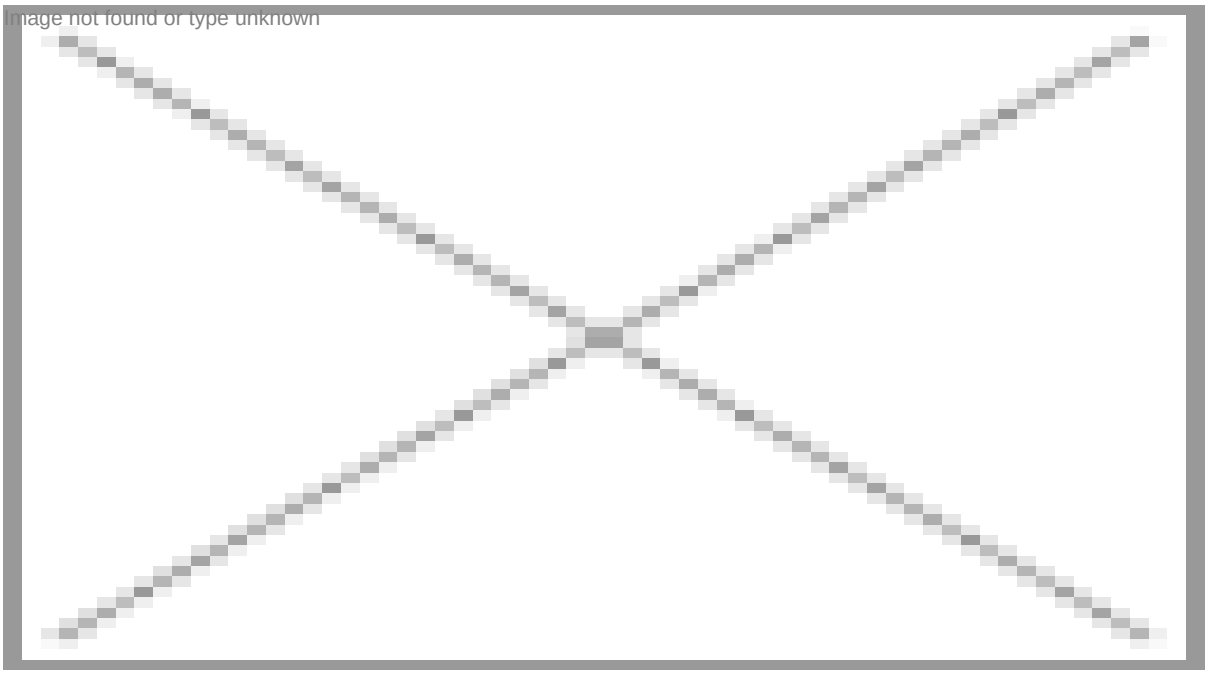
aircraft to successfully cross the English Channel, taking off by its own power.

The successful flight took Airbus one step closer toward its goal of bringing electric aircraft to market. Initially, the company is targeting annual production at 10 of the E-Fan 2.0 beginning in late 2017.



The fruit of a 20 million euro investment from overall design to development, the E-Fan 2.0 will be a two-seat pilot trainer. Subsequently, Airbus expects to offer a larger model, the E-Fan 4.0, in 2019. Both the E-Fan 2.0 and 4.0 will have one-third the operating costs of traditional aircraft, according to the company's estimates.

Though Airbus enjoyed the spotlight with the flight across the Channel, its partner is far from standing in the shadows. In the beginning of July, Siemens also entered the history books with the first public flight of a plane featuring its electric motor. At a record-setting continuous output of about 260 kilowatts, the electric motor from Siemens is nearly five times more powerful than the 60 kilowatt motor in the Airbus E-Fan 1.0.

Siemens will share the technology with Airbus -- technology that is scalable and could thus be used in much larger aircraft. According to Frank Anton, head of eAircraft at Siemens, electric drives will power aircraft that will transport up to 100 passengers a range of approximately 1,000 kilometers by 2030.

Anyone else on board?

Apparently, the rest of the aviation industry isn't as passionate as Siemens and Airbus. Industry titan General Electric -- whose aviation segment booked $6.3 billion in revenue for the first quarter of 2016 -- doesn't appear to have anything regarding electric flight on its radar. Pratt and Whitney, developer of aircraft engines for United Technologies, also shows no interest in electric flight. In fact, it appears that the company doesn't even consider electric flight a realistic possibility.

According to Alan Epstein, Pratt and Whitney's vice president of technology and environment, three technological "miracles" must occur before electric flight becomes possible.

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Though nothing is on the horizon, Epstein suggests that if and when it becomes viable, United Technologies will be at the vanguard of developing the technologies.

Should the market evolve into something that either company deems worthy of entering, it seems reasonable that they would have no problem contributing resources to compete with Siemens and Airbus. The companies could seek the acquisition of smaller, experienced companies, or they could appropriate some of their massive research and development spending toward development of the engines. Over the past three years, GE has averaged more than $5.3 billion on R&D; United Technologies has spent more than $2.3 billion on R&D over the same period.

The takeaway

It may be a long time before we hear flight attendants asking passengers to be patient while the flight crew unplugs the plane and prepares for take off. But electric cars didn't appear overnight in the volume that they do now. Should Siemens appear to make real progress in its novel aviation endeavors, it's reasonable to expect that GE and United Technologies will soon follow -- and that increased competition may be what really spurs advancements in the industry.

And there's always the possibility of other interested parties with vast resources entering the conversation. Elon Musk, for example, has repeatedly stated that he has an idea for an electric jet, but he doesn't have time to pursue it. Electric flight is a long-term story whose success may be much more than just hoping on a wing and a prayer.

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