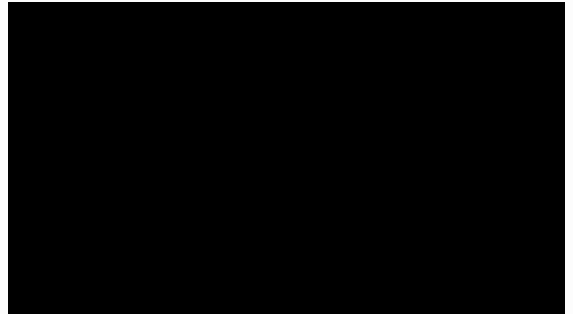


4,431 views | Feb 20, 2019, 07:00am

# Billionaire Richard Chandler Takes Control Of Eviation, Giving It Funds To Make Electric Passenger Plane Take Flight



**Jeremy Bogaisky** Forbes Staff  
 Aerospace & Defense  
 Deputy editor for Industry; eyes on the skies

f

🐦

in



An artist's rendition of the Eviation Alice, which is designed to carry a maximum of nine passengers with two pilots. COURTESY OF EVIATION

Many in the aviation industry believe that an electric passenger plane with a useful range and seating capacity is at least a decade away. The

that it can get there a lot sooner.

The company is working feverishly to assemble a prototype of its nine-passenger battery-electric plane by June to display at the Paris Air Show, and to gain an airworthiness certificate shortly thereafter to begin flight testing in the United States.

The 35-employee company is getting its funding and supply chain squared away. It says it's secured the roughly \$200 million it needs to get through certification, and it announced Wednesday that it will source high-power electric motors from Siemens.

The lion's share of its funding is from Clermont Group, the private investment fund of Singapore-based billionaire Richard Chandler, which is giving Eviation \$76 million in exchange for notes convertible to a 70% stake in the company, according to a filing with the U.S. Securities and Exchange Commission dated January 3.

Eviation is developing a plane targeted at the regional transportation market in North America, believing there's untapped demand for short-haul flights of 50 to 500 miles at a lower price than currently possible with the piston and turboprop planes that ply many secondary routes.

**YOU MAY ALSO LIKE**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

urban air taxis that can take off and land vertically,

Eviation stand out with its strategy to tack a new propulsion system onto an airframe that isn't radically different from existing ones, and to serve and expand an existing market, which could give it greater near-term odds of winning regulatory approval. Washington State's Zunum Aero is also taking a similar approach, but the Boeing-backed company is planning to use a hybrid gas-electric propulsion system.

Eviation says its plane, dubbed Alice, will be able to cruise at 275 mph with a maximum range of 650 miles, with a half hour of recharging time for every hour in the air. Priced from \$3.5 million to \$4 million depending on options, Eviation claims that the plane's reduced maintenance demands and the much lower cost of electricity relative to aviation fuel will give it direct operating costs at best of \$165 per hour, or 7 cents per available seat mile, 60% to 75% less than turboprop planes with comparable seating capacity.

"This is a game-changing cost reduction," CEO Omer Bar-Yohay told *Forbes* in a telephone interview. He's betting Alice's low operating costs will motivate fleet operators of small planes to replace decades-old Cessna Caravans or Beechcraft King Airs.

Eviation debuted a one-third-scaled autonomous version of the plane at the 2017 Paris Air Show that the company has flown to validate its design. Alice will have a maximum takeoff weight of 14,000 pounds and measure 60 feet across the wings, larger

the weight accounted for by the batteries, which will be distributed throughout the fuselage and wings. In contrast to standard turboprop planes, where propellers pull the plane forward, Alice will have a main propeller mounted behind its tail that will push it forward, and two smaller pusher propellers behind the wingtips, which the company says will make for efficient cruising and reduced drag.

The electric motors and a Honeywell-designed fly-by-wire system will also enable the plane to continuously vary the thrust produced by each propeller, allowing for computer-controlled adjustment of the plane's orientation in the air without using traditional control surfaces like rudders and elevators. Combined with the plane's weight, Bar-Yohay says this will make Alice exceptionally stable.

"This plane will fly crisper and be more resistant to turbulence than anything this size," says Bar-Yohay, who spent 13 years in the Israel Defense Forces as a paratroop officer.

His cofounder, Aviv Tzidon, is a former fighter pilot in the Israeli Air Force and serial entrepreneur who has taken three tech startups public on the Nasdaq.

Siemens will supply electric motors with an output of 260 kilowatts; lithium-ion batteries will be supplied by Kokam of South Korea. The French company Multiplast is producing the composite airframe and is assembling the initial prototype.

discussions with the U.S. Federal Aviation

Administration on requirements for certification, a milestone he hopes to achieve in 2021, with first deliveries in 2022.

While Bar-Yohay acknowledges that there could be a first-mover disadvantage in being the first company to try to certify a commercial electric passenger aircraft, he says it won't require the rule-writing that will be needed to bring radical new designs like VTOL air taxis to market.

“Our plane behaves like a plane and looks like a plane,” says Bar-Yohay. “For the regulatory bodies we're probably the aircraft they want to see first.”

Nonetheless there are a multitude of safety questions that the FAA has never addressed before, warns Ernie Arvai, head of the consultancy AirInsight, including the fire risks of the batteries, charging degradation and power reserves, and the agency could proceed cautiously and potentially painfully slowly for Eviation. “If there's something that they don't understand there's a risk aversion and they won't push it,” he says.

Arvai anticipates the certification process, which is painstaking and expensive even in the best cases, could cost 1.5 times the norm for Eviation.

Bar-Yohay says he has a sufficient war chest to make it through to what he calls initial “embryonic” production of 10 to 20 airframes a year, with roughly \$200 million in capital raised and loans. That's largely courtesy of billionaire Richard Chandler, a native of New Zealand who moved to

Group, an investment firm he cofounded with his brother Christopher. Chandler's Clermont Group has also invested in MagniX, a Redmond, Washington-based startup [developing an electric propulsion system for aircraft](#).

Bar-Yohay says that in addition to the disclosed \$76 million investment, "substantial further commitments" from Clermont Group are on the table that Bar-Yohay includes in his \$200 million total.

An Isle of Man-registered company called Timon Limited also has made a \$10 million investment in Eviation, according to an SEC filing.

In connection with the change in control, Eviation filed to deregister its U.S. listing as an over-the-counter stock.

Bar-Yohay says Eviation has firm orders from two small commercial carriers for a "double-digit number" of aircraft, enough to account for the first two years of production.

Eviation may be targeting the right market, says Arvai, and he's impressed by the plane's design, but he's skeptical that the current generation of batteries have a high enough power-to-weight ratio to allow the company to deliver a product that has competitive operating costs.

Many short-haul planes operate for 11 to 12 hours a day, notes Arvai, with perhaps one 15-minute refueling. If the Eviation Alice will need a half hour of charging for every hour in the air, and it can only

of rights it could perform and the revenue it could earn.

“I think they’re ahead of where the battery technology needs to be,” Arvai says. “We will get there, but I think it’s 2030, not 2022.”

Bar-Yohay believes batteries are good enough now and that this is a rare moment when scrappy entrepreneurs can elbow their way into aerospace by leveraging new technologies. “Someday we’ll look back and say, ‘These were the good old days.’”



**Jeremy Bogaisky** Forbes Staff

---

I help direct our coverage of autos, energy and manufacturing, and write about aerospace and defense. Send tips to [jbogaisky@forbes.com](mailto:jbogaisky@forbes.com)

