

**From:** [REDACTED]  
**To:** [ManstonAirport@pins.gsi.gov.uk](mailto:ManstonAirport@pins.gsi.gov.uk)  
**Subject:** A supplement to my representation Mr J C Eagle  
**Date:** 25 June 2019 10:55:02  
**Attachments:** [Representation suppliment.pdf](#)  
[Aviations electric future.pdf](#)  
[Electric Airports.pdf](#)

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Dear PINS,

Attached is a supplement to my previous submission containing new information, also attached are two pd files "Aviation's future lands at the Paris Air Show" and "Electric aircraft transform regional air travel."

Please note I object to the proposed restriction to passenger departure times to post 1200 hrs.

Regards,

Julian eagle

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This is a supplement to my representation in support of the Manston Airport DCO.

This years Paris Air Show presented a “progress report” concerning developments in electric air transport that support my previous submission with regard to the stimulus that electric air transport will give to provincial airports including Manston and to my assertion that electric air transport is not science fiction but becoming, imminently, a science fact.

In support, is a two page article by Kerry Lynch, “Aviations future lands at the Paris Air Show”, (pdf attached). The article is self explanatory and includes a photograph of the Alice, all electric prototype aircraft and details of the very large sums of money being poured into R & D in this area and by whom. The future of aviation is almost silent and clean. Aircraft like the Alice could be used to connect to hubs like Schiphol, Paris or Heathrow or to other provincial airports like Edinburgh, Sheffield or East Midlands from Manston Airport, this could be happening in less than five years from now.

Manston Airport was closed just as the post 2008 depression was ending, triggering the unprecedented increase in the demand for passenger and freight transport in the following years. Now, on top of that realised increased demand, are the opportunities presented by electric aviation which could transform the connectivity of South Kent and take some of the load from Heathrow in a sustainable and environmentally friendly manner. The economic benefit in this area will not be available if Manston Airport becomes a housing estate.

I note that it is proposed that the hours of operation available for passenger transport at Manston are proposed to be limited, in view of the above, this would be a own goal for the project; I object.

Also please note that electric aircraft will be able to land at night with a hardly detectable noise footprint.

I suspect that even RSP do not yet understand the commercial possibilities that are imminent in this area including opportunities for airside R &D, plus test flying in the open Flight Information Region (FIR) near to the Manston Airport runway. Electric transport for journeys of less that 700 miles is almost available, it is incredible to me that this matter has not been more widely considered as an aspect of the DCO application.

Electric freight could undercut the belly cargo market for distances of less than 700 miles, but hundreds of small electric aircraft will not be welcome at passenger hubs like Heathrow where high landing fees would discourage small aircraft. Much of this small cargo could be forwarded to the door by autonomous drone flights so every aspect of cargo chain could operate from Manston Airport.

Attached (in pdf) is an article by Chad Berndt on behalf of the Tesla Corporation in the US, (but the information is relevant to the UK), “Electric Aircraft could transform short distance regional aircraft, but some bullet points are:

- “Electric and hybrid aircraft have the potential to open new regions, revitalise small neglected airports, and create jobs in small communities... “
- “60% Reduction in operating costs”.
- “80% Lower emissions and noise”.

- “In a globalized economy, communities without a good air service struggle to attract investment and create jobs”.

Manston Airport is in the right location, as the airport nearest to Europe in the UK, at the right time, (the age of electric air transport is almost upon us) and no government finance is required, if the DCO is approved, Manston will be available in just in time to allow aircraft like the Alice to operate from South Kent.

Related to finance, please note that if you add the sum of money in the RSP accounts (that have been presented to yourselves) spent on the DCO process to date, to the sum of money that RSP have established that they have on hand at the bank, held for the possible CPO land purchase and it's compensations, the sum achieved is near to the sum that was required for the original £27 million CPO that was rejected by TDC because RSP “did not have the money”. The discredited local politician whose assertions blocked that CPO application has now run away, but the assertions relating to RSP's ability to pay continue to be made. The simple calculation I suggest (above) could be a guide to who has been making accurate judgements about RSP's access to capital in the past.

# PARIS AIR SHOW

## AIR TRANSPORT

### Aviation's Electric Future Lands at the Paris Air Show

by Kerry Lynch

June 16, 2019, 7:28 AM



*Israel's Eviation is displaying its Alice all-electric prototype at Le Bourget this week, marking the aircraft's public debut. (Photo: David McIntosh).*

The electric revolution is making its mark at this year's Paris Air Show with industry giants such as Airbus to nascent developers such as Eviation highlighting technologies that include electric aircraft, urban air mobility vehicles, and autonomous advancements. Their arrival at the show signifies that these technologies will likely become a key component of the future market.

"The Paris Air Show is an exhibition essentially oriented towards the future, which it helps to shape. This is why Innovation is one of the main themes of this 53rd edition," show organizers said.

As such, the show is marking the return of the Paris Air Lab in the Concorde Hall to provide a venue for presentations and discussions about current and future innovations. Underscoring the interest in next-generation of technologies, the first edition of the Paris Air Lab in 2017 attracted 55,000 trade and general public visitors and 55 delegations.

Among the exhibits are startups in the electric vertical takeoff and landing (eVTOL) market, which is raising high hopes with analysts suggesting it could be a cumulative \$285 billion business by 2030.

To date, more than \$1 billion has been poured into eVTOL and hybrid VTOL concepts and at least 125 designs are now on the drawing board in anticipation of what is expected to be at least a \$30 billion market annually. Well-known industry players including Airbus, Boeing, Bell, and Embraer are joining companies such as Intel, Amazon, Honda, Toyota, and Uber to explore concepts. And they are among myriad eVTOL startups in the market, and the lab will feature some of these start-ups,



of projects in the works, is showcasing its Vahana all-electric, autonomous VTOL demonstrator that uses eight 45-kilowatt electric motors and a tandem tilt-wing configuration.

While VTOLs begin to take shape, manufacturers are continuing to progress on the electrification of more traditional designs. Israel-based Eviation (Chalet 282, Static B8), is making the global public debut of its all-electric nine-passenger Alice commuter aircraft prototype this week in Paris.

Alice is currently one of the largest aircraft to solely run on electric power. Eviation has teamed up with Embry-Riddle Aeronautical University (ERAU) on research and development of the commuter aircraft—the largest aircraft to solely run on electric power. Eviation hopes to fly the aircraft in upcoming months.

Powering the Alice are Siemens motors, though Eviation announced a second engine option for the MagniX engine in late April. Over the past decade, Siemens (Chalet 59) has become a fixture at the Paris Air Show and is now a key driver in numerous of all-electric designs.

The company signed a memorandum of understanding at the 2013 Paris Air Show to explore technologies with Diamond and Airbus (then EADs). In 2017, Siemens' 260-kW motor powered the Extra 330LE aerobatic plane that performed at the Paris Air Show flying display in 2015.

Airbus, meanwhile, arrives at Paris just weeks after signing an MoU with SAS Scandinavian Airlines for hybrid and electric aircraft eco-system and infrastructure requirements research. Airbus already has been testing hybrid-electric subsystems as it explores the potential for powering the next-generation narrowbody, working with companies such as Siemens.

French startup electric-hybrid aircraft manufacturer VoltAero (Static A6) is displaying an iron bird" mockup of its concept as it preps for flight testing of its Cessna 337-based "Cassio 1" hybrid-electric aircraft.

This type of research is being carried out throughout the industry with major engine-makers such as Rolls-Royce, GE, Honeywell, and Pratt & Whitney all testing hybrid-electric concepts. UTC is investing \$50 million in a new lab, "The Grid," that is devoted to the development of new electric power technologies for future electric and hybrid aircraft. This includes research to further the project 804, a hybrid demonstrator that involves a re-engined de Havilland Dash 8-100 stationed at Pratt & Whitney's facility in Montreal, Quebec.

Several airframers have flown or tested concepts, including Diamond Aircraft. And stay tuned—many more are in the works.

[AIRCRAFT](#)   [ENGINES](#)   [ENVIRONMENT](#)

<https://www.ainonline.com/aviation-news/air-transport/2019-06-16/aviations-electric-future-lands-paris-air-show>

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# Electric aircraft could transform short-distance regional air travel



By Chad Berndt

Posted on January 28, 2019

Whenever the subject of electric aircraft comes up I see the room filled with skeptical looks. The looks are not unwarranted. Even electric cars remain in the low single digits for worldwide market share and electric flight is undoubtedly a greater hurdle. The enemy of flight is weight after all and batteries are rather heavy. The skepticism though,

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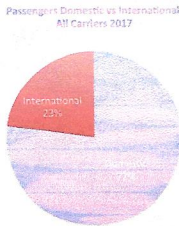
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while justified, is misplaced.

The problem is that we tend to think of air transport as large intercontinental craft flying thousands of miles at a time. Those certainly exist and there's even one that travels 9000 miles, flying 17 hours from Perth to London. The reality for most air travel, however, is somewhat different. Statistics from the US Bureau of Transportation show that the overwhelming majority of US passengers are on domestic flights and what's more, nearly half of those are under 700 miles.



Source: Bureau of Transportation Statistics, T-100 Market (All Carriers), Passengers, All Scheduled Domestic and International within/to/from USA 2017



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Source: Bureau of Transportation Statistics – T100 domestic, all carriers

The data graphed above shows that 20% of domestic passengers are flying under 350 miles in the USA, with nearly 50% under 700 miles. Forget about the 9,000 mile international flights, this is the market for electrified flight in the near-term. The aircraft to support it are nearly here.

I've written in the past about the [various electric aircraft in development](#) from companies like Zunum Aero, Wright Electric, Airbus/Siemens, NASA, Eviation, BYE, and others. It's still very early but advancement is steady and the age of electric flight is coming. For a moment consider Zunum Aero's aircraft, the ZA10. It's a 12-seat hybrid for regional transport, slated to begin test flights next year and deliveries in the early 2020s. The aircraft is targeting a range of 700



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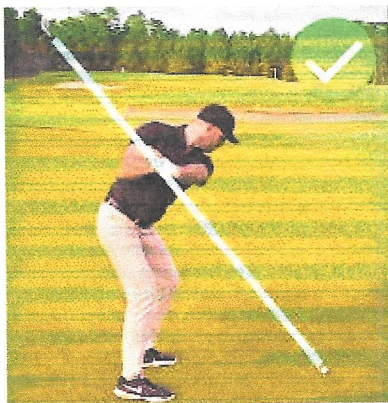
miles and will have a shorter range all-electric version. There's also a larger variant planned.



### Zunum Aero's ZA10



- 60 to 80% reduction in operating costs
- 80% lower emissions and noise
- 40% reduction in runway needs
- Hybrid-electric range of 700 miles



Back to those skeptical looks. The financial driver for electrification is huge, with the potential to reduce operating costs 60 to 80%. More so with carbon pricing. If said hybrid aircraft also create less pollution, require



shorter runways, reduce maintenance, and produce less noise, well then which carriers wouldn't want to use them? Particularly in a regional market which, as noted previously, includes nearly 50% of all domestic flights in the US.

That all seems great, but even this understates the impact of electrification. What's missing from the analysis is the potential for electric aircraft to fundamentally transform air travel as we know it, to vastly increase the number of flights under 700 miles.

## **THE DATA WE HAVE TODAY SHOWS US THE PAST, BUT THIS IS THE FUTURE:**

Electric and hybrid aircraft have the potential to open up new regions to air travel, revitalize small neglected airports, create jobs in small communities, and make travel more enjoyable for everyone. This vision will become a necessity if we hope to have a cohesive society and growing economy,



# **“In the globalized economy, communities without good air service **struggle to attract investment and create jobs**” – Zunum Aero**

There's a wonderful [write-up](#) on IEEE Spectrum which highlights how electrification can be the catalyst that rejuvenates regional travel. The article's authors are from Zunum Aero, including the founder and the chief technology officer.

The article includes some interesting statistics on the current state of air travel. For example, the authors note that only 1% of the airports in the USA are responsible for 96% of the air traffic and that since 1980 the average aircraft seat capacity has increased by a factor of 4. What if





electric aircraft can increase travel to just some of those other airports?

The current state of air travel is largely the result of financial choices made over many decades. Larger aircraft are more economical to purchase and operate, while fewer routes keep aircraft load factors high and simplifies logistics.

## **“Regional Travel is Ripe for Reinvention” – JetBlue Technology Ventures**

The problem with this is that large airplanes require large infrastructure to support them (think space, buildings, runways) and the noise they generate is not well liked by residents.

There aren't many airports able to accommodate these needs so people are funneled to major airports located outside of major cities, sometimes inconveniently out of the way of the passengers'





ultimate destinations. This means more time is spent traveling to the airport, at the airport, and flying on the airplane, for an experience that is all too often chaotic and impersonal. In fact, door to door travel times have actually gotten worse for regional air travel, not better. Add in a snowstorm or a single large aircraft delay and it can become a logistical nightmare.

The benefits of electric aircraft are particularly well suited to regional air travel needs. The question is, will it be enough to usher in a renaissance for regional flight, where smaller aircraft travel more routes and to smaller airports? I certainly think so. Toronto has a great example of how this might occur. The Toronto Island airport can only operate small aircraft due to noise restrictions, but its use has grown steadily. Its accessibility from downtown and the spectacular speed of service are key drivers. With electric aircraft I believe this type of scenario will become the norm.

