ELECTRA.AERO

Learnings from testing Electra's blown-wing aircraft

PRESENTED BY

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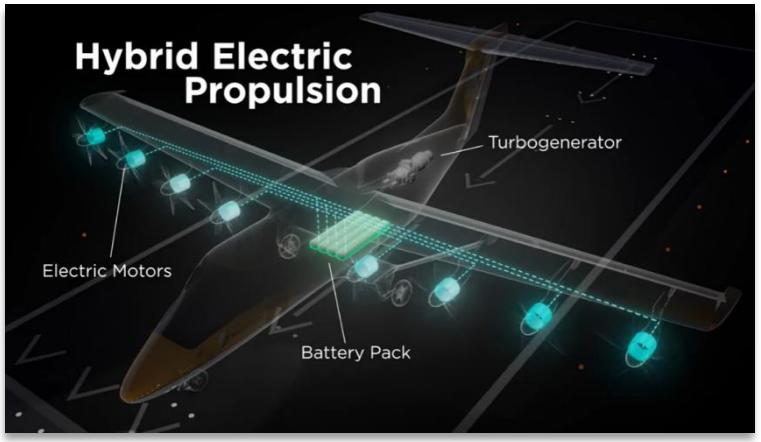
PROJECT DATE

April, 22nd, 2026

Why Did We Build a Hybrid Blown-Wing uShort Aircraft?



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Mature Core Tech = No Miracles Required

Ground footprints comparable to vertical lift vehicles, with fixed-wing comparable costs.

Secondary benefits of distributed propulsion are reduced noise, increased safety, and reduced maintenance costs. Hybrid propulsion can reduce fuel burn/emission on short missions.

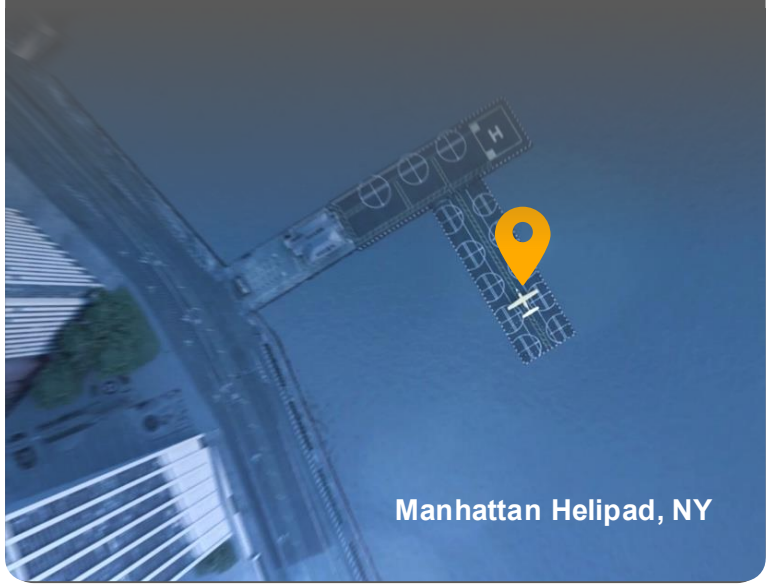
Direct Aviation - Three New Operational Models

Innovation allows operations not possible with traditional aircraft

01

ADD NOVEL ACCESS POINTS

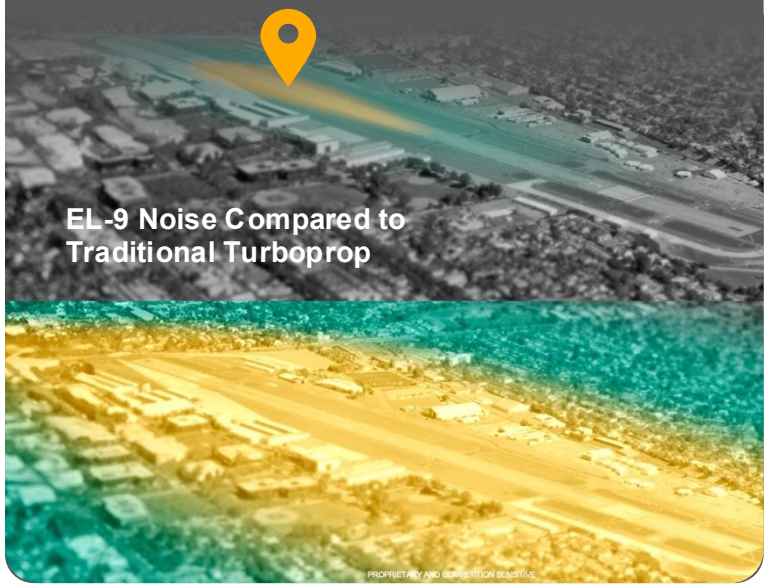
Helicopter-like convenience



02

MAXIMIZE GA AIRPORTS

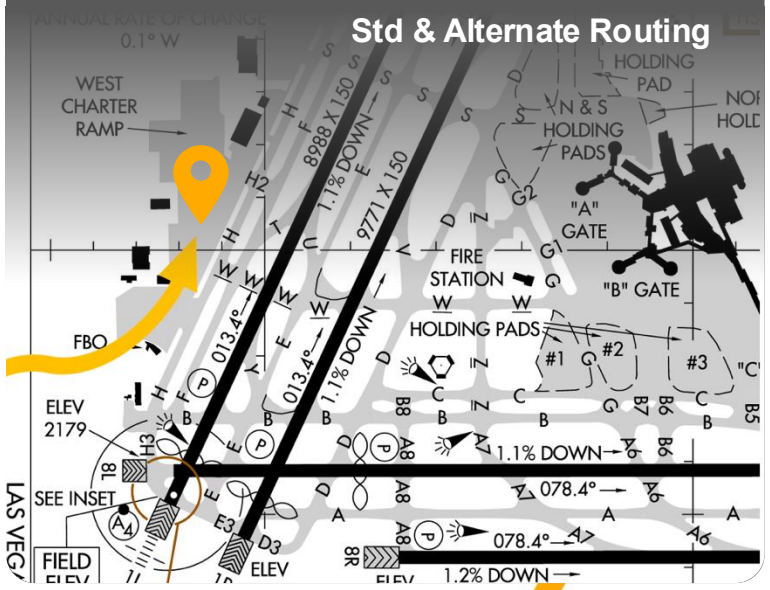
Good neighbor policy



03

FEED LARGE AIRPORT HUBS

Congestion-free integration



The rule of 6

Balanced algorithm Required for Mesh Aviation Network

Access and Quiet

Payload and Range

Affordable and Safe

Electra Pursuing Three Paths to Unlock Airport Feeder Service

DOT eIPP

Foreword leaning, commercial airport feeder pilot programs 2026-2028

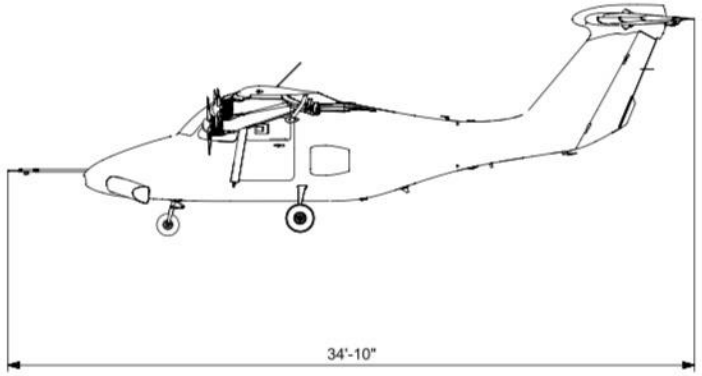
VA Smart Airspace Program

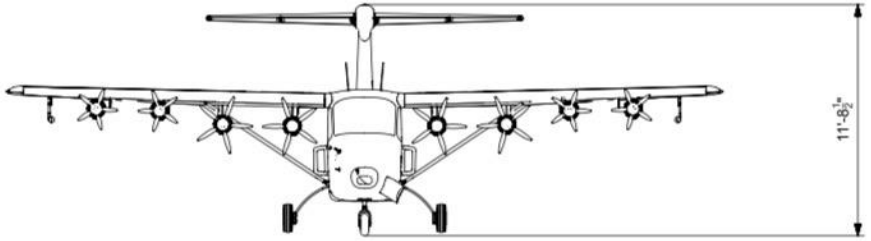
Novel instrument flight procedures (IFPs) for Ultra Short operations

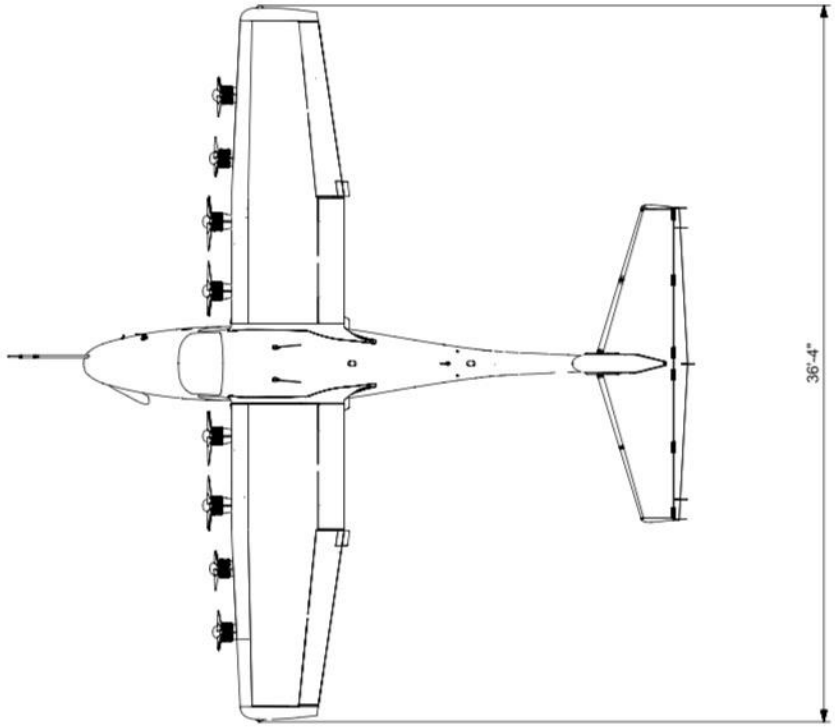
FAA Tech Center

FAA-led testing of Ultra Short operations on various airport surfaces

EL2 Technology Demonstrator







EL-2 Key Parameters

Max. Takeoff Weight	3100 lb
OEW	2603 lb
W/S	16.9 lbs/sq. ft
Span	36.3 ft
Static Thrust/Weight	0.60
Motor Power	8 x 45kW (360kW total)
Turbogenerator Power	120 kWe
Battery Energy	2 x 11 kW-hr

Turbogenerator optimized for cruise power

Batteries boost power for takeoff and landing

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Electra Technology Demonstrator

Reduction for blown wing handling qualities, precision flight controls

All-flying horizontal tail

Blown wing

Ground-adjustable fixed pitch propellers

Air-cooled COTS motors

Mechanical control system

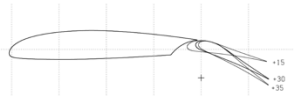
Outboard flaperon Low-speed attitude control

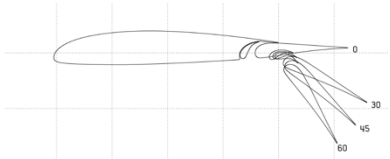
Battery Radiators

Batteries for peak power (2x10kW.hr)

Custom 130kW turbogenerator

Inboard high-lift flaps





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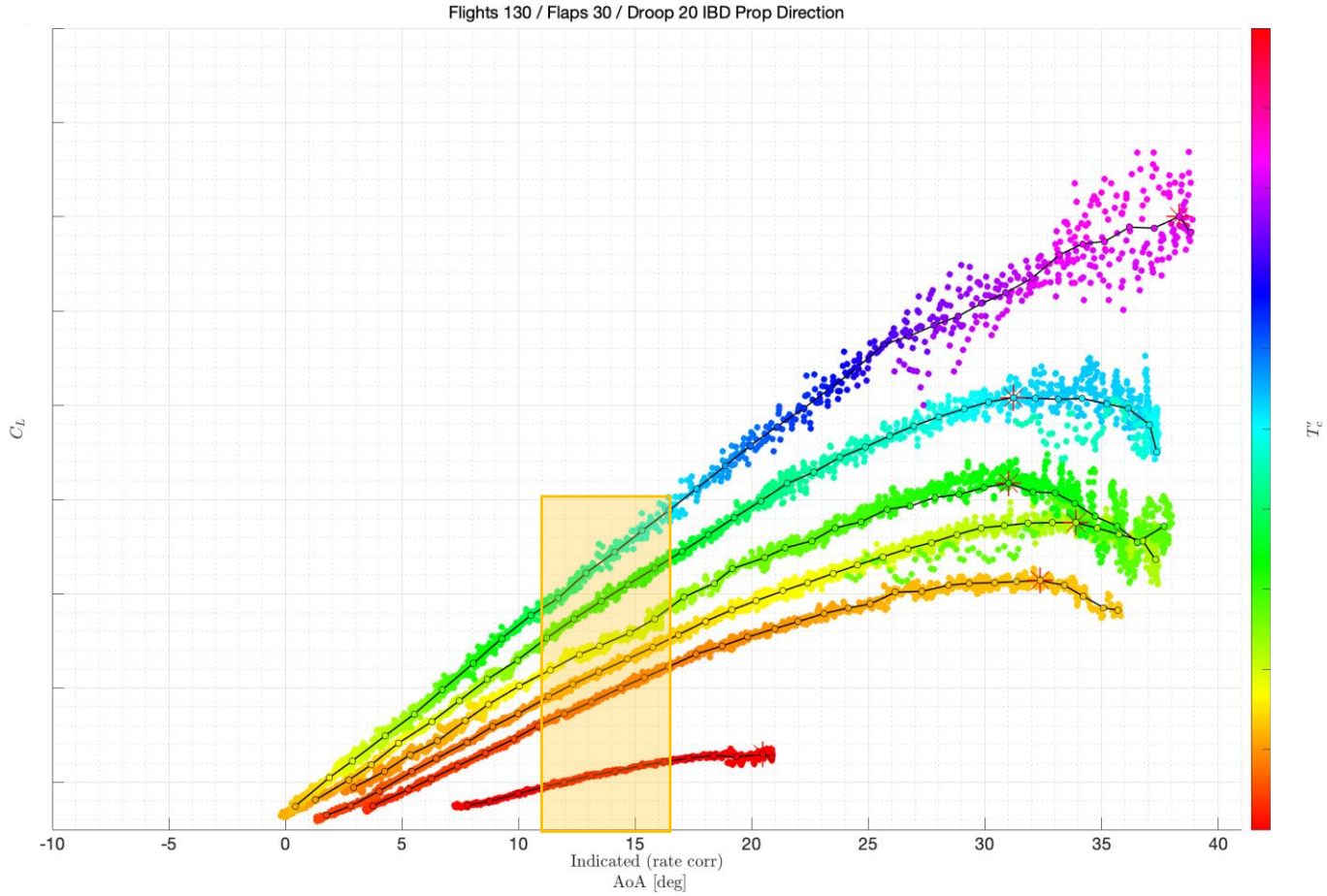
Blown-Wing

Quantifying the limits of the flight envelope and how stall angle varies with effective blowing level

Operating points are far from aerodynamic limits

Drives performance and control system design on landing

AoA measurement critical, had to bias air data probe on EL2 to measure the high aoas



Ultra short operations are possible with large angle of attack margins to stall

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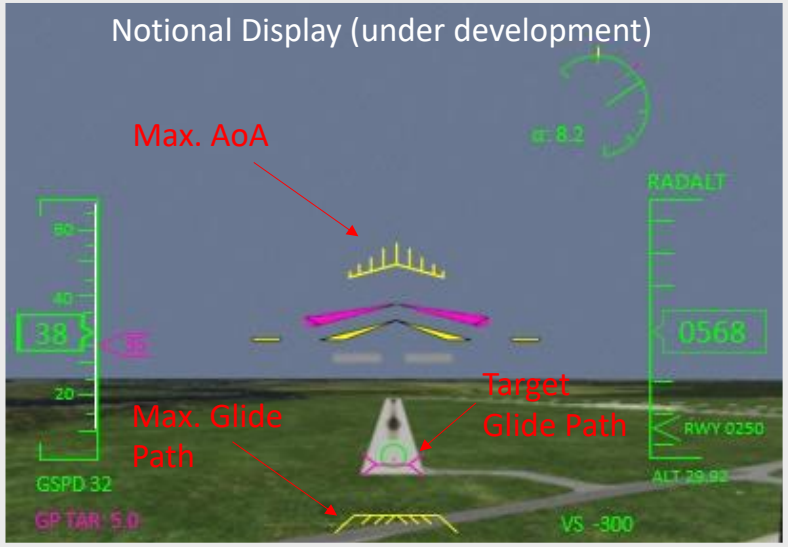
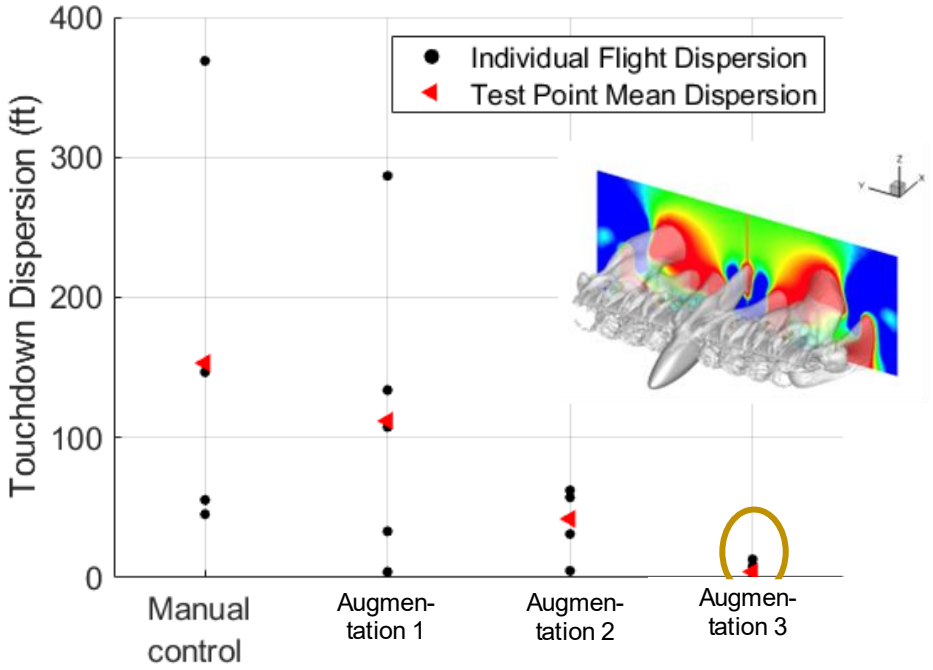
Low speed flight controllable with augmentation



- **Camera** (visual guidance) with flight path prediction
- Full automated **envelope protection**
- **Autothrottle** with glide slope tracking
- **Fly-by-wire/stability augmentation** system mixes controls and motor rpms as needed to **simplify flight controls** for the pilot

Sim based on detailed, aerodynamic model



- Pilot augmentation systems enable **high precision, low-speed landings** with steep glide slopes

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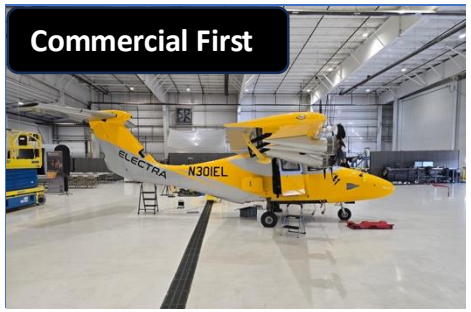
EL2 Flight Heritage Validates Tech Stack's Trust & Performance

Nov 2023 First Flight
200+ Operations
Dozen+ Passengers
NY to VA Geo Operations
Flap 65 Operations
~20 KIAS Slow Flight
26 KIAS Rotation
70'-90' Landing /TO rolls

Historic First

First-ever flight by a U.S. government agency head on an electric aircraft (NASA Administrator Dec 2024)



Commercial First

First-ever flight by US Major Airline CEO

Military First

First-ever flight by U.S. General Officer on an electric aircraft

Defense First

First-ever flight by DOD appointee on an electric aircraft

First-ever Ultra Short Commercial demo flight (Surf Air Aug 2025)

Multiple DOD Demos, Austere Surfaces

Myself!

EL2 validated Ultra Short safety, technical maturity, performance, flight quality

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Commercial Demos

Bristow Demo

@ Snowshoe Ski Resort (Nov 2025)

Popular WV ski resort 4.5 hrs from DC
2,000+ skiers from DC per day in season

4,800ft, 10degC, Headwinds < 5kts
Grass runway of 400x100ft=120x30m

Surfair Demo

@ Virginia Tech / Blacksburg (July 2025)

"With the EL9, we can get you there direct."
"By not requiring all the infrastructure…
the opportunities are tremendous."

2,000ft, 30degC, headwinds < 5kts
300x75ft=90x20m drone runway, access road and grass field

Dual-Use Commercial Demo

Alongside Future Flag 2025-3 (Sept 2025)

Congestion-free airport integration for mainline carriers and regional partners

EL2 takeoff and landings on non-runway surfaces (e.g. taxiways and ramps)

SL, 25degC, Headwinds ~14kts
Taxiway

- Safe operations on range of surfaces (prepared, unprepared)
- Safe flight demonstrations (intentionally disabled motors, turbogenerator and one parallel battery pack)
- Various loading (forward and aft CG) and environmental conditions
- This year: get real limit for crosswinds operations and landing precision

Operationally viable and learnings for EL9 design and vertiport design

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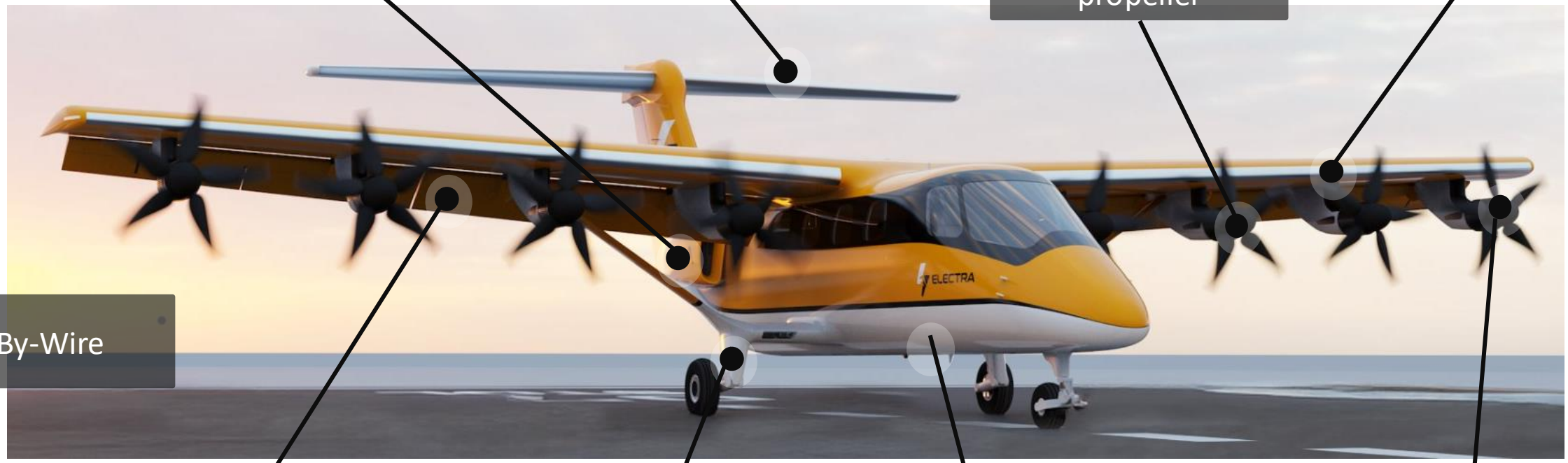
From EL2 Prototype to EL9 Product

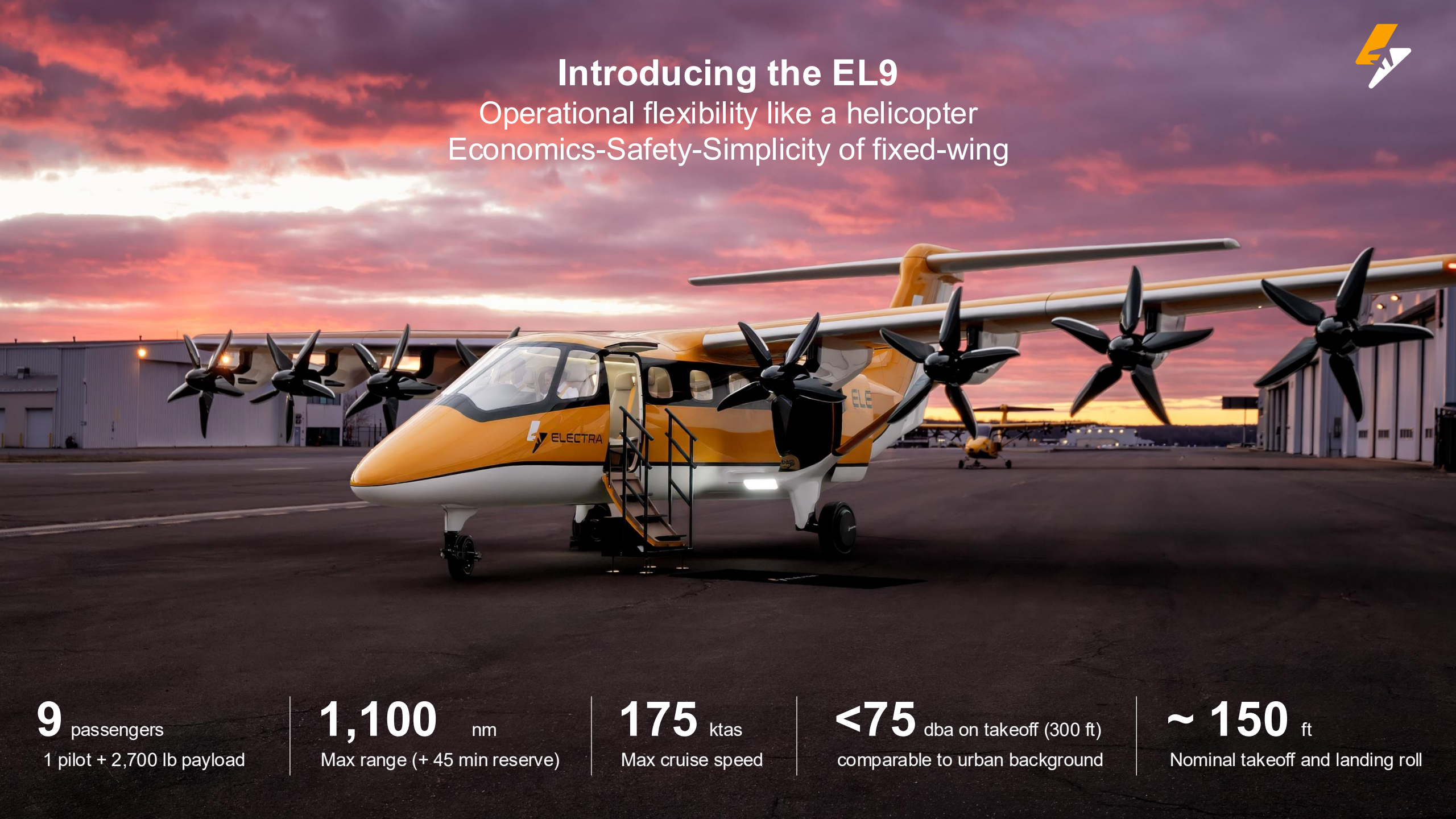
EL9 geometry



Introducing the EL9

Operational flexibility like a helicopter

Economics-Safety-Simplicity of fixed-wing



9 passengers
1 pilot + 2,700 lb payload

1,100 nm
Max range (+ 45 min reserve)

175 ktas
Max cruise speed

<75 dba on takeoff (300 ft)
comparable to urban background

~ 150 ft
Nominal takeoff and landing roll

Defining a new safety standard for Part 23 aircraft

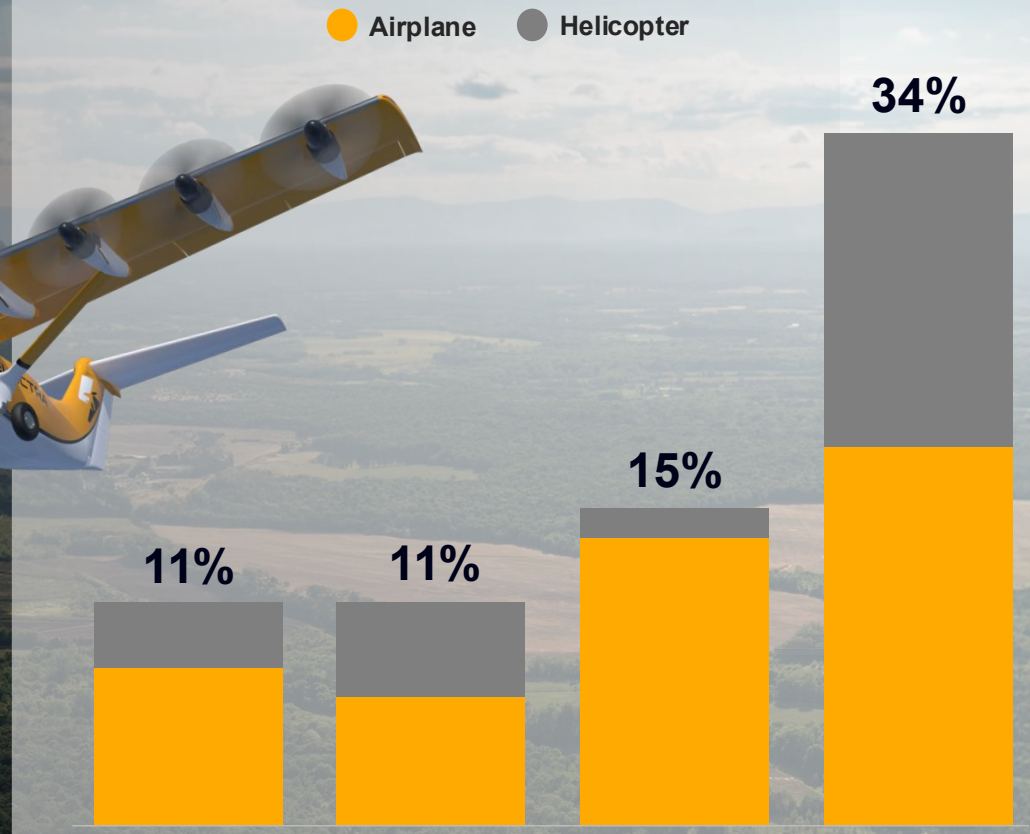
EL9 goes further than current last-resort parachute and emergency autoland systems:

Multi-layered Propulsion Redundancy
Quad-redundant hybrid-electric propulsion system with 4 independent battery packs, plus turbogenerator

Advanced Digital Pilot Aids
Digital fly-by-wire control system with envelope protection, auto-land, and precision landing

Ultra Short Landing Capability
Divert anywhere. Only 300' of clearing needed to land safely, low energy 35 kt landing

Part 121 Class Safety Monitoring
Real-time maintenance and performance data downlink to Part 135 SMS, HUMS, FOQA, and to better inform dispatch



Source: NTSB, 2012 - 2019

Laying the technological foundation for next generation of low-emissions transport aircraft.

Electra EL2

(2-seat prototype that will be used for Test Arena flying)

Electra EL9

(9-passenger full-scale product)

Hybrid-electric propulsion and aero-propulsive integration scale to enable step-change noise and emissions reductions on larger airframes.

Questions?

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Pioneering air travel **without airports, emissions or noise**

www.electra.aero