



---

March 2021



# Aerion's Mission: To Connect The World

## Our Purpose

To create a more vibrant and compassionate world where distance and time are no longer barriers

## Our Vision

We are building a future where humanity can travel between any two points on our planet within three hours

## Our Strategy

### Usher in an Enduring Supersonic Jet Age

Introduce first generation sustainable ultrafast aircraft

- Pioneer the supersonic ultra-luxury business jet
- Disrupt the military aircraft market with long-range supercruise
- Transform commercial aviation with hypersonic and all electric supersonic aircraft

### Stop Climate Change

Decarbonize Global Mobility

- Design efficient aircraft to run on 100% carbon neutral energy
- Pioneer hydrogen with captured carbon fuels
- Develop all-electric zero-emission supersonic aircraft

### Emerge as the Leader in Global Travel

Create a point-to-point ecosystem

- Create a secure digital mobility platform
- Connect point of departure to point of destination travel
- Create a mobility ecosystem on our platform for speed



# The AS2 Supersonic Business Aircraft – In A Class Of One

- First supersonic aircraft to enter commercial service in 51 years
- First supersonic engine in 55 years
- First supersonic business aircraft in history
- First certified aircraft to run on 100% engineered hydrogen/carbon captured fuel
- First supersonic aircraft that does not require afterburning engines
- First Boomless Cruise™ supersonic aircraft in history

**1,000 MPH**

150% faster than  
today's fastest  
business jets

**THE FUTURE OF  
LUXURY**

Reimagining the  
business jet

**ULTRA RESPONSIBLE**

Designed to be the most  
environmentally responsible  
aircraft in history



# The AS2 – The World's First Supersonic Business Jet – Global Range at 1,000 MPH



**1.4**

Supersonic cruising  
speed (Mach)

**0.95**

Subsonic cruising  
speed (Mach)

**4,200**

Supersonic range  
(nautical miles)

**5,400**

Subsonic range  
(nautical miles)

**8-10**

Passengers

**\$120M**

Purchase price

**300+**

Delivered aircraft over 10 years  
(First Flight – 2025; EIS 2027)

## 1 Speed

Fifty percent faster  
than today's fastest  
business jets

World's First  
Boomless Cruise™

## 2 Luxury

Setting a New Standard of  
Luxury, User Experience,  
and Lifestyle Integration

Cabin cross section larger  
than G600 and Global 6500

## 3 Environment

Designed to meet the world's  
strictest noise standards

World's first aircraft designed  
to run on 100% synthetic  
fuels

# AS2 Cabin and Performance

Designed for a new era of commercial supersonic



## Exterior Dimensions

Length	144 ft 11 in / 44.2 m
Width / Wingspan	79 ft / 24.2 m
Height	29 ft / 8.8 m

## Interior Dimensions

Max Height	6 ft 4 in / 1.9 m
Width, Mid-Cabin	7 ft 11 in / 2.4 m
Cabin Length	34 ft / 10.3 m

## Performance

Supercruise <sup>(SM)</sup> Speed / Max Range	1.4 Mach / 4,200nm (7,780 km)
Long-range Subsonic Cruise / Max Range	0.95 Mach / 5,400nm (10,000 km)
Maximum Cruise Altitude	57,000 ft
Maximum Payload for Max Range (4PAX)	880 lbs. / 400 kg
Passengers	8-10



# Aerion Park Engineering and Manufacturing Campus Preparation for Production Start in 2023

- Integrated campus for R&D, manufacturing and customer customization
- Capability to manufacture 48 aircraft per year for civil and government customers
- Located in Melbourne, Florida's space coast corridor with a high density of aerospace engineering and manufacturing talent
- Florida provided ~\$500M in incentives
- The Park will be a model for environmental operations
- Groundbreaking in Fall 2020
- Aerion employees have begun transitioning to the temporary engineering building



# Aerospace Industry Coalescing Around Aerion

The Only Complete Industry Team Working On A Supersonic Aircraft Development Program

Powered by:



**GE Aviation**

Affinity™ - the first civil supersonic engine in 55 years

Backed by:



**BOEING**

Aerion and Boeing: a powerful team

Enabled by:

**LATÉCOÈRE**



**SIEMENS**



**LIEBHERR**



**UNIVERSAL**™ AVIONICS  
an Elbit Systems Company

**BAE SYSTEMS**



**F/LIST**



**AER**nnova

**EAT•N**

**Honeywell**





# Together With Our Industry Team, We're Focused On Finalizing The AS2 Design And Preparing For Production





# Aerion's Regulatory Strategy – No Changes Required

## Airport Noise

Meets the strictest noise requirements

Stage 5 levels

## Sonic Boom

Flies subsonic over land, faster than any other commercial aircraft

Boomless Cruise™ capability

## Emissions

Designed for 100% synthetic fuels

Committed to carbon neutrality

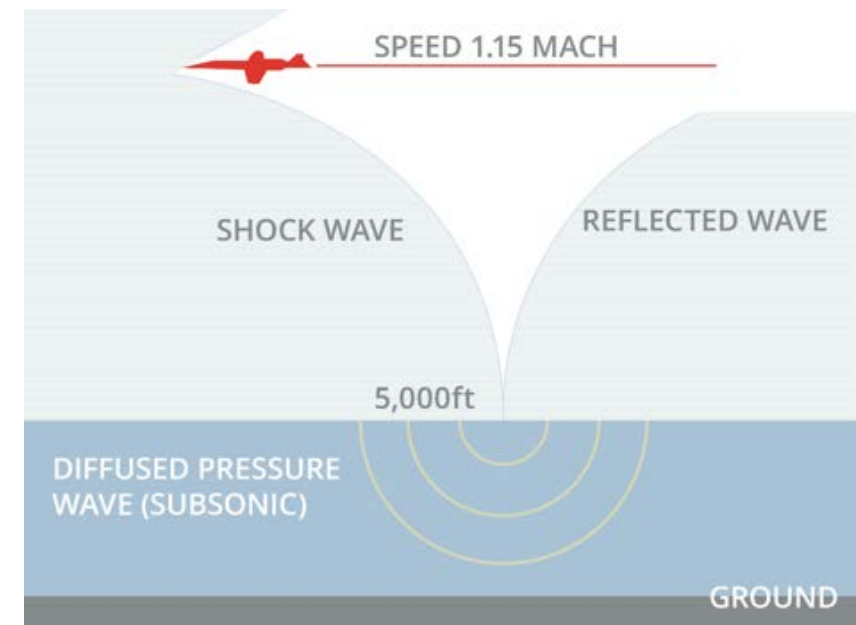
# AS2 flies subsonic over land faster than any aircraft – compliant with current regulations and the first aircraft in history to fly supersonic without a boom hitting the ground

## Sonic Boom Approach

- Where supersonic flight is prohibited, operate at Mach 0.95
- Mach 1.4 operation over open water and sparsely populated areas where sonic booms are allowed
- No aircraft aerodynamic features or compromises are required
- Low Boom technologies not required for overland flight – too many compromises and uncertainty
- Over populated areas where supersonic flight is allowed, operate with **Boomless Cruise™** autopilot

## Boomless Cruise™

- At Mach 1.4 a boom descends to the ground or sea
- As the AS2 approaches land, it slows to Mach 1.2
- The boom refracts off denser, warmer layers of air



# To certify the AS2, we've already begun an extensive process with the FAA, implementing a first of its kind, early collaboration

To build our certification program, we recruited a 30-year industry veteran who has led numerous aircraft type and production certificate architectures

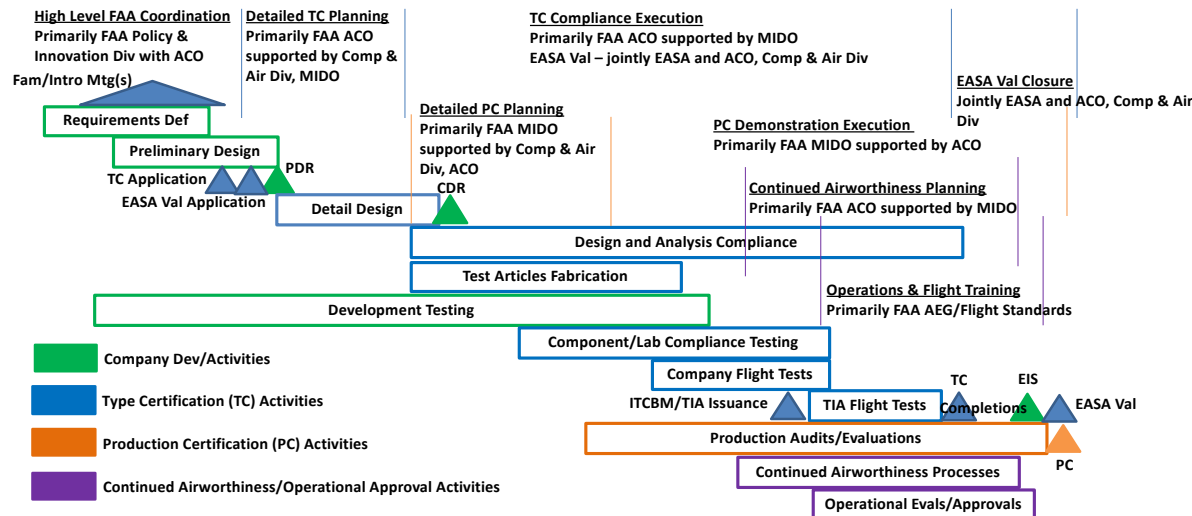
- Experience at the FAA and the Air Force Flight Test Center
- Directly involved in the AS2 design process, reports to the COO



**Randy Griffith**

VP Airworthiness  
& Certification

## AS2 Certification Framework



Our certification planning is well underway, with ongoing working sessions with the FAA and EASA, and a development schedule that ensures 2027 entry into service (EIS)



# Aftermarket support for the AS2 is being designed into the aircraft to create a new level of customer experience

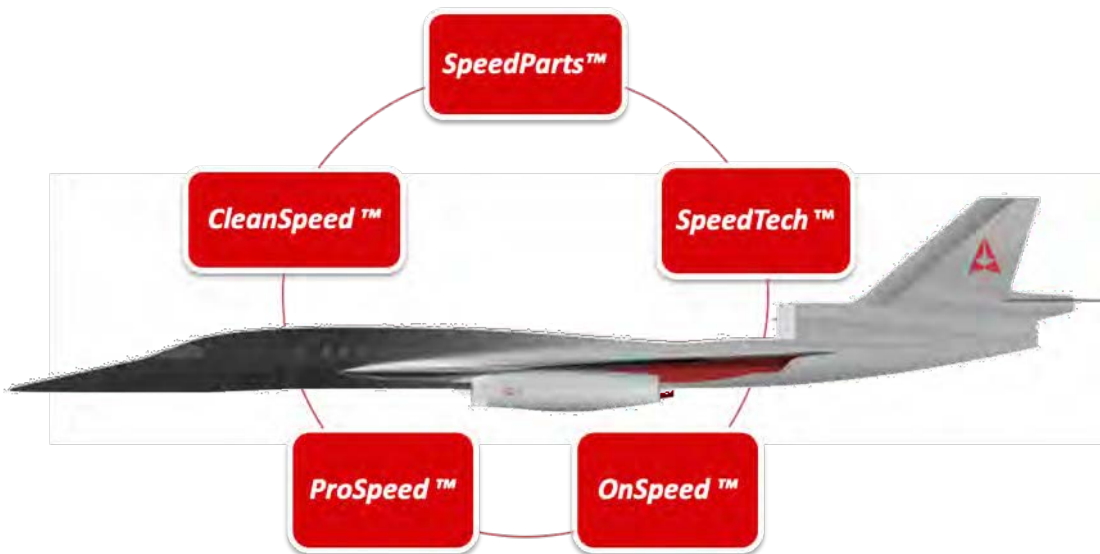
To build our aftermarket support, we recruited a 40-year industry veteran with reputation for building world-class support teams

- Previously SVP Customer Support and Services for Embraer Executive Jets; established the customer support organization and led it to top ranked status
- Directly involved in the AS2 design process, reports to the COO



**Scott Kalister**

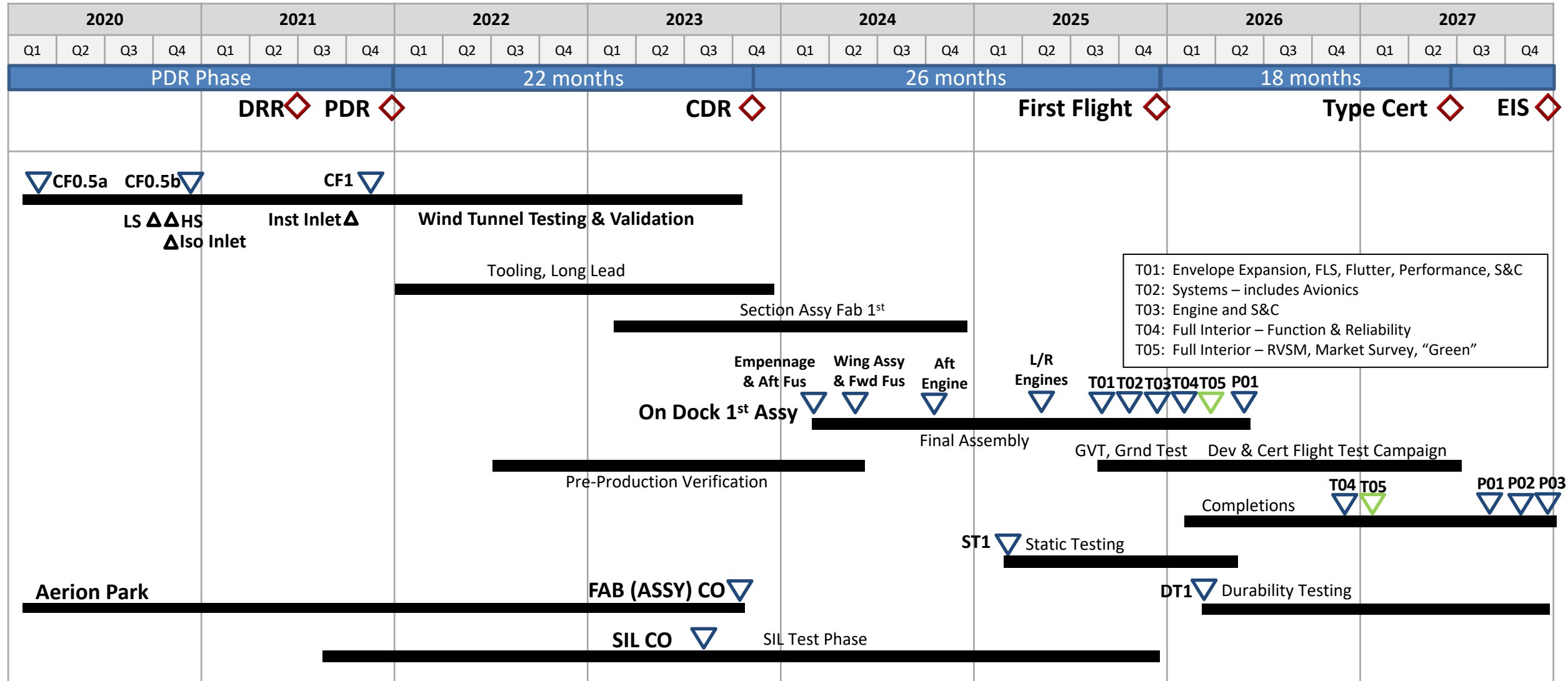
VP Worldwide Support  
& Logistics



**PureSpeed™** family of programs providing one source for all maintenance and parts needs, streamlining the support process

# Begin Manufacturing The AS2 In 2023; Complete First Flight In 2025; Deliver The First Aircraft To Customers In 2027

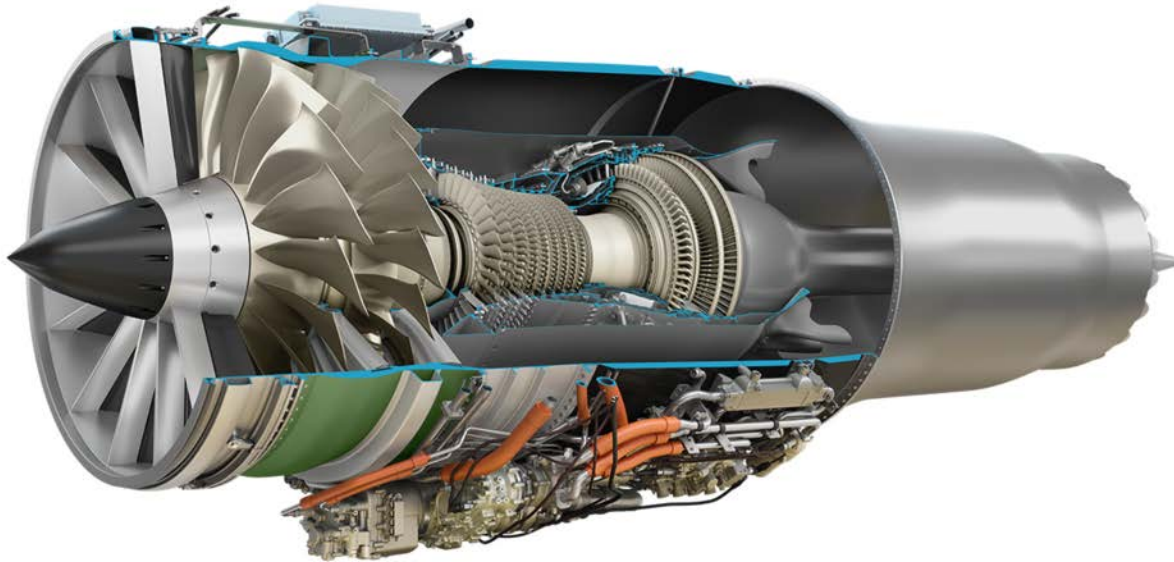
Dated: 06/30/20



# GE Affinity™ Supersonic Turbofan

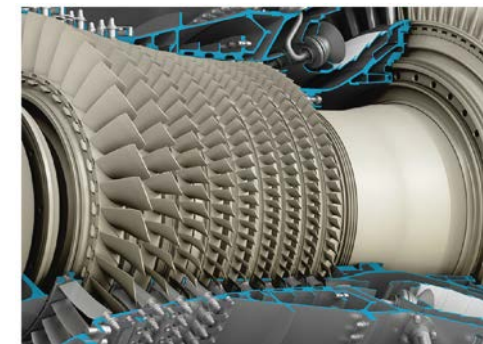
## The First Civil Supersonic Engine in 55 Years

Integrates a unique blend of proven military supersonic experience, commercial reliability and the most advanced business jet engine technologies



**Fan** – GE's Affinity will have the highest bypass ratio ever for a supersonic engine. It includes an advanced twin fan, sized to deliver efficient performance with minimal drag and noise.

**Thermal barrier coatings** – These coatings are used to protect state-of-the-art components. They act as a heat barrier to keep parts cooler, allowing the engine to run at higher temperatures for greater efficiencies. The coatings minimize interaction with combustion gases, further protecting components inside the engine.



**World's most popular core** – The Affinity's high-pressure core optimizes state of the art aerodynamic efficiencies of a proven commercial airline engine, advanced alloys and thermal systems management for supersonic cruise durability, and the power of a military fighter engine. The Affinity core is based on more than 1 billion hours of service, giving Affinity owners confidence in performance during all speeds of operation.



### Sustained super cruise

Optimized for prolonged high speed use. Durable combustors for hot and harsh conditions and advanced coatings for turbine section.



### Operability redefined

Performance throughout the flight envelope with a high-altitude service ceiling of 60,000 feet.



### Noise compliant

Acoustically treated throughout, the Affinity is designed to meet or exceed regulatory requirements.

# 20K

### Pounds of thrust

Takeoff thrust: 16,000 lbs - 20,000 lbs

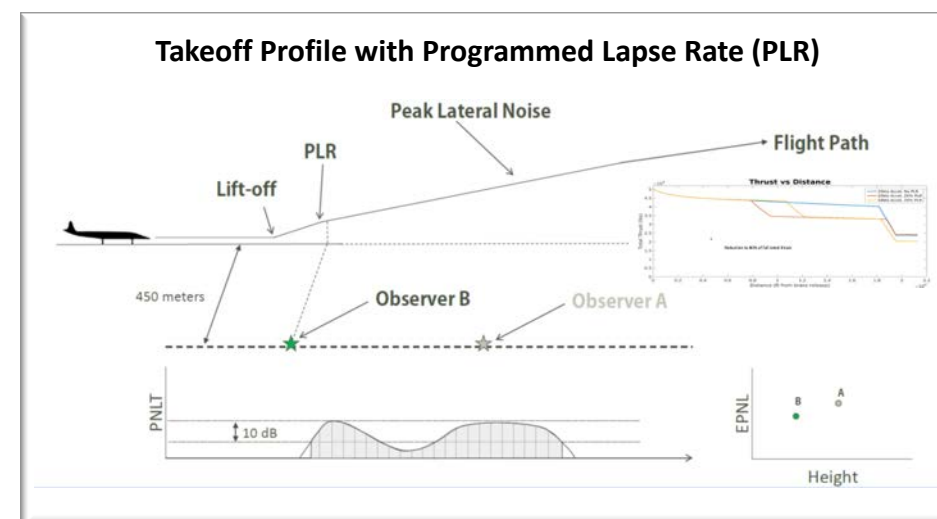
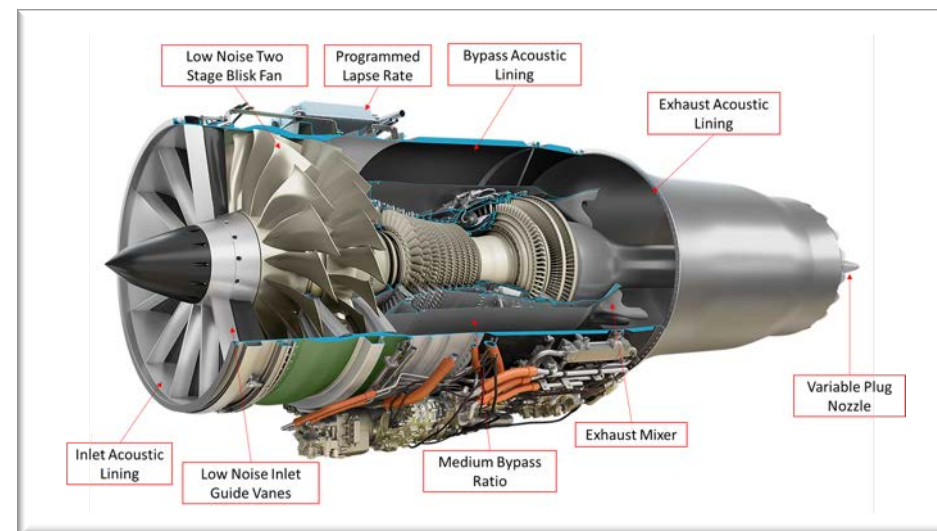


### Environmentally friendly

Designed to run on 100% biofuels



The AS2 will not only meet the latest FAA proposed rules, but more importantly will meet global public demand for quiet takeoff and landing



# We are committed to pioneering the first supersonic business jet and the first carbon neutral aircraft and company

## Our aircraft is designed for fuel efficiency

Creative new aircraft designs – advanced aerodynamics and non-afterburning fuel efficient engines

## Our fuels runs clean

First aircraft and engine in the world designed from the start to run on 100% SAFs. DAC Fuels 100% Net CO<sub>2</sub> Neutral

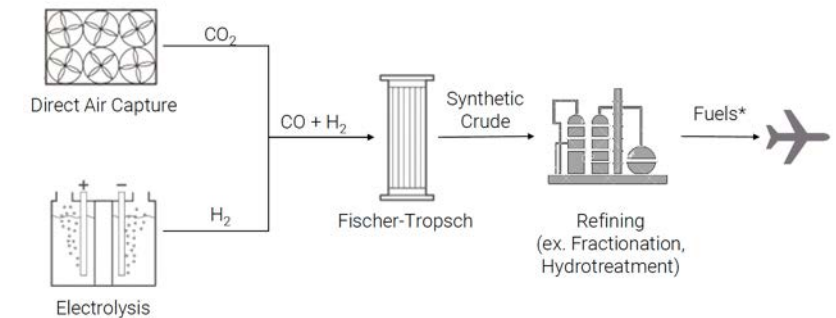
## Aerion Foundation investing in carbon sequestration programs

Aerion Foundation will plant 100,000,000 trees and invest in captured carbon to storage technologies

## Our customer CleanSpeed™ program

First customer care program that provides carbon offsets for all customers

## Technology Available Today – Air to Fuel



- DAC Process removes CO<sub>2</sub> from the air and combines it with Hydrogen from electrolysis of water
- Process uses mature technologies to de-risk and scale production capability
- Mature and ASTM approved Fischer-Tropsch processing creates synthetic crude
- Standard refining processes transform the syncrude into very clean burning ASTM-compliant jet fuel




# Carbon Engineering Partnership

**Airlineonline** | [HOME](#) | [AIR TRANSPORT](#) | [DEFENSE](#) | [COVID-19](#) | [SOLUTIONS IN B2B](#) | [SUBSCRIBE](#)

## Aerion Forms Partnership To Explore Synthetic Fuels

By Aaron Levine - July 8, 2020 10:30 AM



Aerion's AS2 with Carbon Engineering will have the capacity not only exploring fuel requirements for the AS2 supersonic business jet but development of a direct air capture plant to develop synthetic fuels. (Photo: Aerion)

Continuing on a quest to lay the foundation for environmentally friendly supersonic travel, Aerion Supersonic has signed a memorandum of understanding with direct air capture specialist Carbon Engineering to explore the possible use of synthetic fuel in its AS2 Mach 1.4 business jet. Founded in 2009, Squamish, British Columbia-based Carbon Engineering produces fuels from carbon dioxide captured through the atmosphere, water, and clean electricity.

Aerion chairman, president, and CEO Tom Vice said at the AIAA Aviation Forum in June that Aerion was focused on direct-air capture methods because this approach enables factories to have smaller footprints and to be built and accessible anywhere. "The technology really is huge," he said.

Aerion and Carbon Engineering will jointly evaluate requirements to ensure that the GE Aviation Avionics engine, which will power the AS2, can run entirely on synthetic fuel. In addition, the partners will consider collaborating on an air-to-fuel plant to produce synthetic fuel specifically for the AS2, Aerion added.

"The fundamental value of fuels made from atmospheric CO2 is that they create a circular system of emissions," said Carbon Engineering CEO Steve Ockham. "Our DAC technology captures yesterday's emitted CO2 and converts it into fuel."

**Business aviation financing.**  
For those who value simplicity.

**GLOBALJET CAPITAL**  
LEASING & FINANCING SOLUTIONS

**LATEST** **TRENDING**

SEP 15, 2020 - 2:03 PM  
CA Pre-clearance To Resume at Shannon Airport

SEP 14, 2020 - 12:21 PM  
AirNights In The Pilot Shortage Over?

SEP 14, 2020 - 12:14 PM  
New Long Island FBO Set to Break Ground

SEP 14, 2020 - 12:07 PM  
SmartSky Prevails in Gogo Patent Challenge

SEP 14, 2020 - 11:48 AM  
Universal Launches Kapture CVR/DRI Line

SEP 14, 2020 - 11:25 AM  
WAI Launches Virtual Girls in Aviation Day Globally

THANK YOU TO OUR AIRLINE SPONSORS  
AERION AIRWAYS

**Forbes**

## Can Aerion's Supersonic Jet Be Green? A Carbon Neutral Fuel Tie-Up Hinges On Regulatory Reform And Image As Much As Technology

Eric Taylor Contributor  
Aerospace & Defense




When Aerion Supersonic announced July 8 that it would explore using synthetic jet fuel made by Carbon Engineering, a Canadian company developing technology to suck carbon dioxide out of the atmosphere, the underlying message was that the company is committed to making a supersonic business jet that potential customers can claim is environmentally responsible. Aerion has pledged to make its administrative, manufacturing, materials and supply chain processes carbon neutral, but its aircraft is the

**MIT Technology Review**

[Sign in](#) [Subscribe](#)

[Topics](#) [Magazine](#) [Newsletters](#) [Events](#) [Menu](#)



A rendering of Aerion's AS2 supersonic jet adjacent to a direct air capture facility. COURTESY: AERION

**NEW ATLAS**


[HOME](#) | [LIFESTYLE](#) | [SCIENCE](#) | [TECHNOLOGY](#) | [TRAVEL](#) | [SUBSCRIBE](#) | [AD-FREE](#)

The savings you expect — PLUS AN ADDITIONAL **15%** — GEICO GET A QUOTE

applied to all six months of your auto policy (coverage not available in all states)

## The "perfect storm" behind Aerion's supersonic business jet

By Aaron Levine - July 8, 2020



Between Virgin Galactic, Boom, Spike and Aerion, a new crop of contenders are springing up to pick up where the Conquest left off, putting supersonic civilian flights back on the menu after nearly 50 years without it.

**AVIATION WEEK** | [MARKETS](#) | [PRODUCTS](#) | [SERVICES](#) | [EVENTS](#) | [ABOUT](#) | [LOG IN](#) | [REGISTER](#) | [AIAA ACCESS](#)


[BACK TO BUSINESS AVIATION](#)

**REFUEL SAP-FREE DEC 2020** [LEARN MORE](#)

**Jet Protection**

## Aerion Teams With Carbon Engineering On Sustainable Fuel

By Aaron Levine - July 08, 2020



Aerion says that AS2 will be the world's first carbon-neutral Mach 1.4-plus commercial aircraft. Credit: Aerion

**PRO-STAR CHALLENGER 600 SERIES**  
Quality service and expertise you can trust  
[Contact Us](#)

**Related Content**

**BUSINESS AVIATION**  
Carbon-Capture Sustainable Fuel Developer Prometheus Gets BMW Backing

**BUSINESS AVIATION**  
LanzaJet Secures \$25M To Launch Sustainable Fuel Production

**BUSINESS AVIATION**

Climate change / Carbon sequestration

## How carbon-sucking machines could cut aviation emissions

Carbon Engineering and Aerion have teamed up to test whether synthetic fuels derived from captured CO2 can enable carbon-neutral flights.



# CE and Aerion - working together to de-carbonize supersonic travel

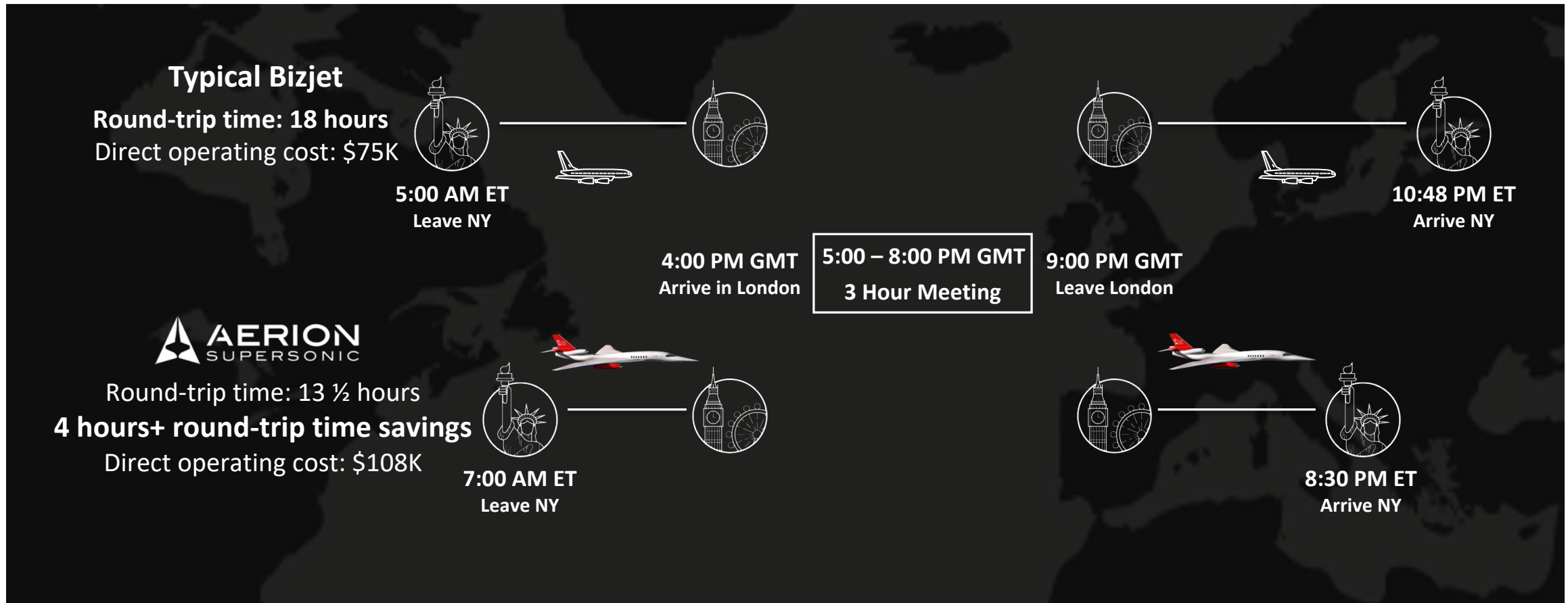
- Aerion wishes to use CE's synthetic fuel to power the AS2 jet
- Our Engineering teams will work together to optimize CE's fuels for Aerion's engines
- Use of CE fuel expected to start during Aerion's test program
- CE and Aerion exploring the development of an AIR TO FUELS plant to produce fuel for the AS2 program



MAKING THE AS2 THE WORLD'S ONLY CARBON NEUTRAL SUPERSONIC JET

As the only high-speed business jet, the AS2 will create new travel opportunities and give our customers back their most precious resource, their time

### Example Trip: Attending a 3-hour meeting in London from NY and returning the same day



Note: Trip estimates compare an AS2 to a Bombardier Global 6000  
Sources: Conklin & deDecker, Aerion research & analysis



# The AS2 Has A Bigger Cabin Cross Section Than The Market Leaders



**BOMBARDIER**



**Gulfstream**



**Aerion AS2**

Cabin Height  
6'4"

Cabin Width  
7'11"



**Global 6500**

Cabin Height  
6'2"

Cabin Width  
7'11"



**Gulfstream G600**

Cabin Height  
6'2"

Cabin Width  
7'7"

Sources: Aerion, OEM websites, Business & Commercial Aviation 2020 Purchase Planning Guide







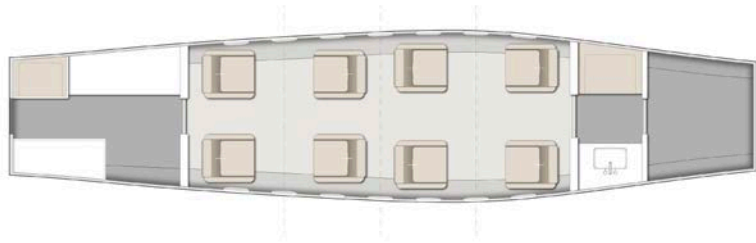


# Cabin “White Mock Up”

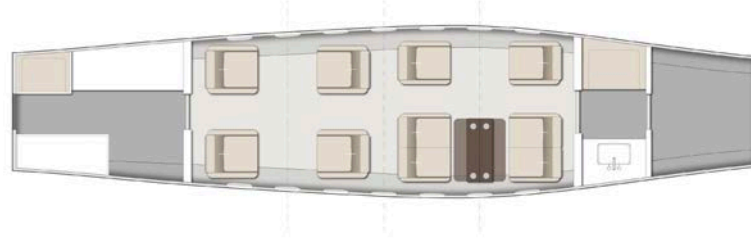




# Cabin Layouts



**01 CLUB SEATING**



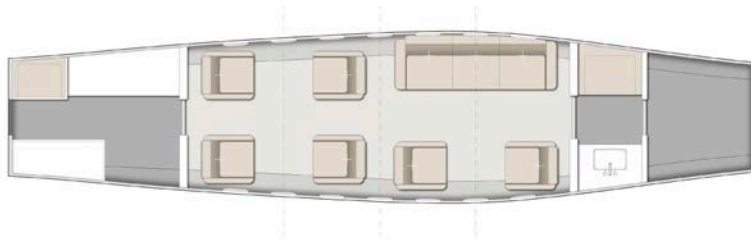
**02 DOUBLE CLUB (LH) - CLUB (RH)**



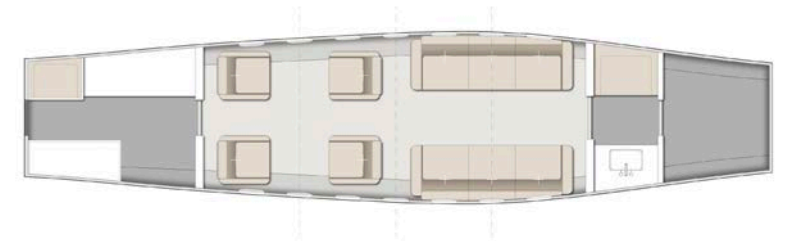
**03 DOUBLE CLUB (LH) - CREDENZA (RH)**



**04 DOUBLE CLUB (LH) + DIVAN (RH)**



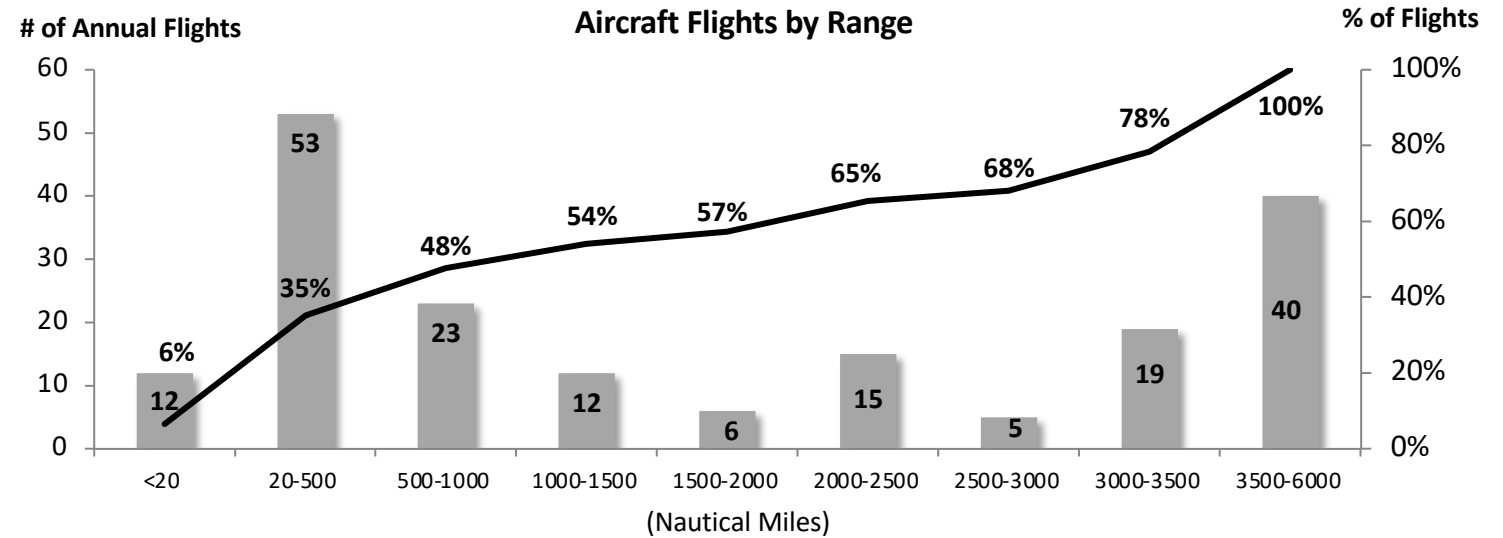
**05 SINGLE CLUB (LH) - DIVAN (RH)**



**06 DIVAN - DIVAN**

# Case Study: New York Financial Services Firm

The AS2 Would Save ~142 Hours Annually For Each Passenger



Sources: FAA, Aerion research & analysis

SEATTLE Travel time 6:18 Save 2 hrs 5 mins	DENVER Travel time 6:05 Save 2 hrs 7 mins	NEW YORK Travel time 4:04 Save 2 hrs 2 mins	BERMUDA Travel time 3:58 Save 2 hrs 6 mins	BUENOS AIRES* Travel time 9:09 Save 3 hrs 46 mins	CAPE TOWN* Travel time 8:38 Save 2 hrs 36 mins	BEIJING Travel time 7:12 Save 1 hr 39 mins
SAN FRANCISCO Travel time 7:27 Save 1 hr 54 mins	DALLAS Travel time 6:08 Save 2 hrs 10 mins	MIAMI Travel time 5:03 Save 2 hrs 43 mins	GRAND CAYMAN Travel time 5:36 Save 2 hrs 49 mins	SÃO PAULO* Travel time 8:01 Save 2 hrs 59 mins	MUMBAI Travel time 6:05 Save 1 hr 49 mins	SYDNEY* Travel time 15:52 Save 3 hrs 43 mins



\*Includes a 1 hr Tech Stop  
Time savings compared to a Global 6000



SINGAPORE*	SYDNEY*	MIAMI	SÃO PAULO	MADRID	PARIS	MOSCOW
Travel time 13:45	Travel time 13:45	Travel time 1:24	Travel time 6:02	Travel time 4:10	Travel time 4:15	Travel time 5:58
Save 4 hrs 53 mins	Save 4 hrs 47 mins	Save 37 mins	Save 2 hrs 18 mins	Save 2 hrs 11 mins	Save 2 hrs 10 mins	Save 2 hrs 17 mins
SHANGHAI*	LOS ANGELES	BUENOS AIRES	CAPE TOWN*	LONDON	NICE	CAIRO
Travel time 10:43	Travel time 3:20	Travel time 7:24	Travel time 9:56	Travel time 4:04	Travel time 4:39	Travel time 7:57
Save 4 hrs 1 min	Save 1 hr 3 mins	Save 1 hr 51 mins	Save 4 hrs 56 mins	Save 2 hrs 2 mins	Save 2 hrs 24 mins	Save 1 hr 53 mins

