

## Daphnis Fournier - Eco Airliner

Peter Lobner, 8 February 2022

The Eco Airliner is a 2012 conceptual design by French industrial designer Daphnis Fournier for an all-electric commercial passenger airliner. The passengers and crew are carried in a relatively conventional fuselage that is suspended by a novel wing structure from a broad, inflatable lifting body that is topped with a flexible photovoltaic array.

The 213 foot (64.9 m) long airliner is designed to achieve high speeds propelled by four electrically-driven turbine engines and carry between 216 and 324 passengers, comparable to a Boeing 787.

It is likely that the aircraft has a hybrid solar / fuel cell power system, with primary power during takeoff and climb being delivered by the fuel cell and supplementary power being provided by the photovoltaic array throughout the daytime segments of the flight.

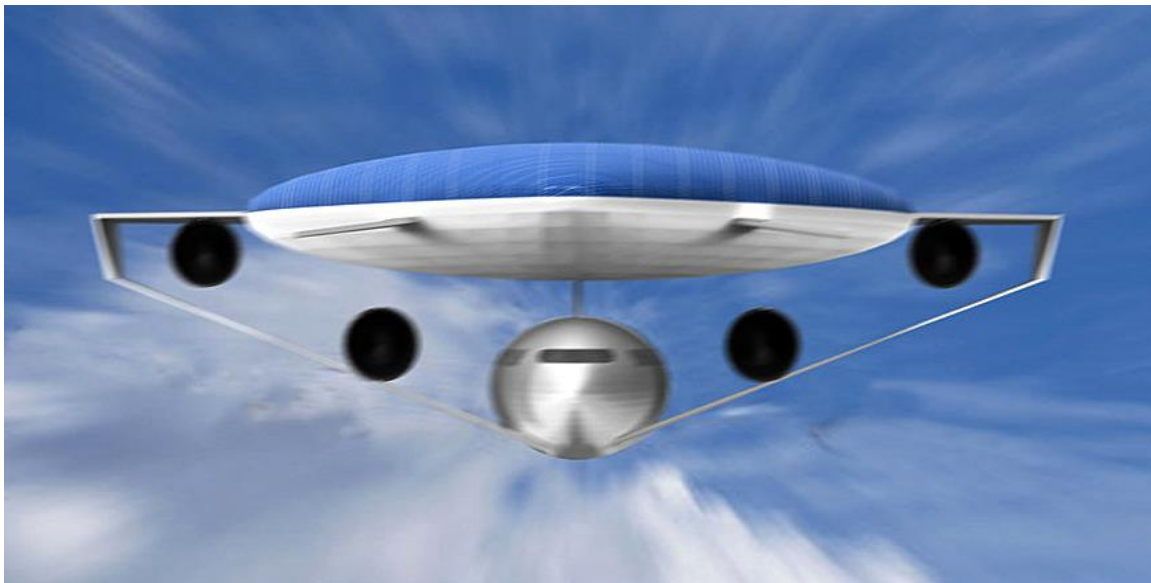


*Eco Airliner climbing out after takeoff. Source: Coroflot (2012)*

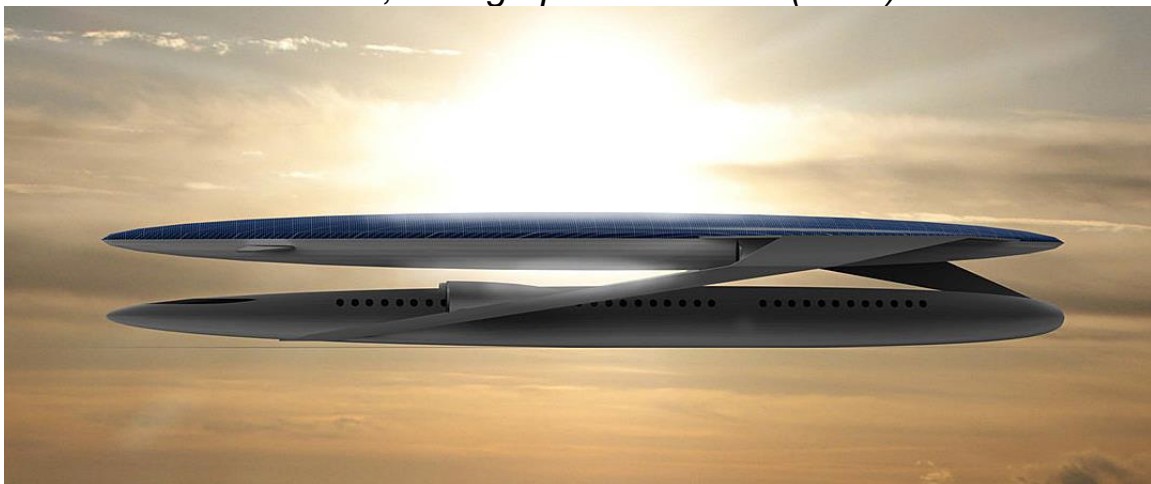
Other than to carry the solar array, the function of the large lifting body is unclear. In contemporary articles on the Eco Airliner, it was described as being “air inflated to reduce energy loss.” These articles

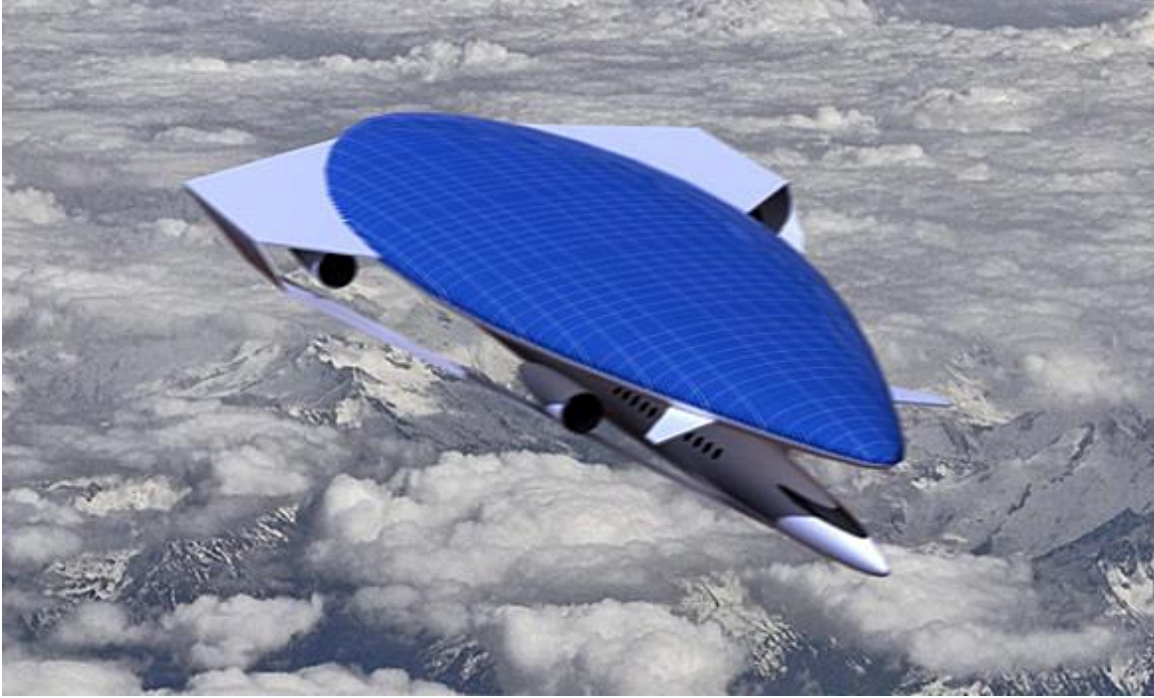
reported that the large lifting body was relatively flat at takeoff and inflated as the airplane climbed to its maximum altitude.

While not described as such by Fournier, it seems that this inflatable structure would be a useful buoyant envelope for helium or hydrogen lifting gas. Operating as a semi-buoyant aircraft would reduce the power demand on the turbine engines and contribute to good short takeoff and landing (STOL) performance, like an Aereon Dynairship and an Ohio Airships Dynalifter. With the great current interest in developing hydrogen-fueled aircraft, the Eco Airliner also seems well suited for carrying a large inventory of gaseous hydrogen fuel in the inflatable lifting body.



*Bow-on view (above) and profile view (below).  
Source, both graphics: Coroflot (2012)*

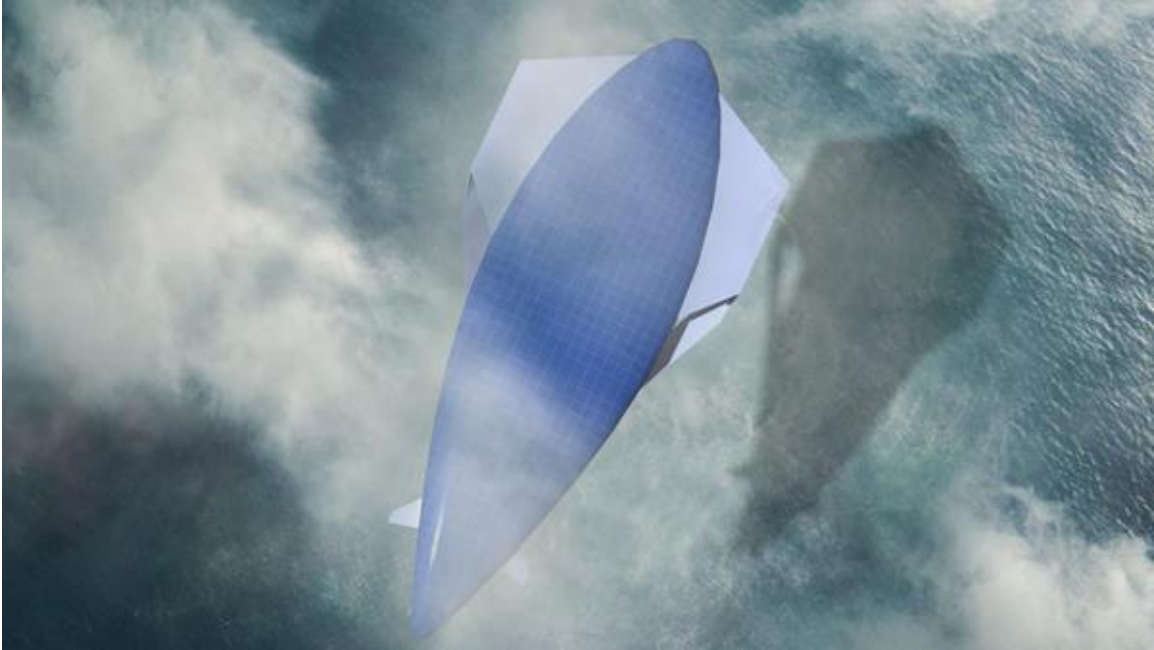




*Two views of an Eco Airliner in flight, showing the scale of the solar array. Source, both graphics: Coroflot (2012)*







*Overhead view of the Eco Airliner.*



*An Eco Airliner in a hangar.  
Source, both graphics: Coroflot (2012)*

## For more information

- Daphnis Fournier, “Ecologic Aircraft Design Concept,” COROFLOT, 9 December 2012: <https://www.coroflot.com/daphnis/Ecologic-Aircraft-Design-Concept>
- Michael Hines, “Daphnis Fournier’s Jet Concept is Designed to Clean Up the Skies,” TrendHunter, 14 December 2012: <https://www.trendhunter.com/trends/daphnis-fournier>
- Troy Turner, “Eco-Airliner,” Yanko Design, 29 January 2013: <https://www.yankodesign.com/2013/01/29/eco-airliner/>
- Agis F, “First Ecologic Airliner,” wordless Tech, 31 January 2013: <https://wordlesstech.com/first-ecologic-airliner/>
- Tim Hornyak, “Ecologic Aircraft concept is part airship, part plane,” CNet, 6 February 2013: <https://www.cnet.com/news/ecologic-aircraft-concept-is-part-airship-part-plane/>

## Other *Modern Airships* articles

- *Modern Airships - Part 1*: <https://lynceans.org/all-posts/modern-airships-part-1/>
  - Aereon Dynairship & Aereon 26
  - Ohio Airships Dynalifter
- *Modern Airships - Part 2*: <https://lynceans.org/all-posts/modern-airships-part-2/>
- *Modern Airships - Part 3*: <https://lynceans.org/all-posts/modern-airships-part-3/>