Rear engine/ turbine

A large ducted-fan type engine at the rear also functions as a wind turbine to capture excess electrical energy during cruise and descent.

Solar panels

By 2030 the aircraft could ultilise hyper-efficient quantum solar dot cells which can capture the other 50% of solar energy in the infrared spectrum. These would make up giant solar arrays on the wings and top of fuselage. Electrical power will be stored in batteries in the cargo bay and the endoskeleton structure of the wing.

Smart skin

Viñals envisages the aircraft incorporating 'smart skin' and 'shape memory' meta-materials — able to repair itself after damage.

Take-off engines

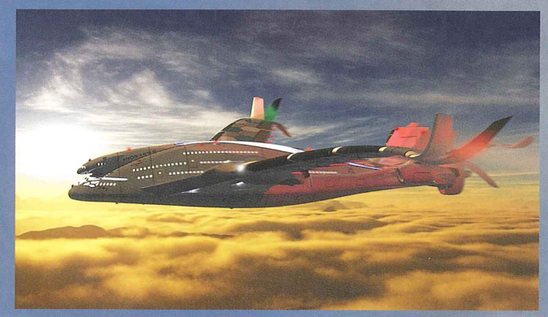
Four auxiliary engines for take-off and climb also feature vectoring nozzles to reduce take-off distance. Hydrogen would provide the fuel for take-off and climb phases of flight.

Biomimicry

The Progress Eagle features low-drag triple winglets, two on top and a ventral winglet, similar to birds' tip feathers. The structure also takes its cues from nature, with a ultra-lightweight hollow endoskeleton.

A room with a view

As well as the traditional three classes, the Progress Eagle introduces a fourth class 'pilots class' for premium passengers located in the nose, which gives unobstructed views out of the front through large windows.



Oscar Viñals

Oscar Viñals

AIR TRANSPORT

Airliner 2030 flight of fancy

From Spanish designer Oscar Viñals comes this vision of an 800-seat hybrid hydrogen/electric zero-emission airliner of the future, the 'Progress Eagle'. Viñals' futuristic concept for a three-deck widebody airliner of the 2030s seeks to exploit 'quantum' advances in materials that will be in place by then, such as smart skins, graphene carbon nanotubes and ceramics to create an aircraft that is ultra greener and 75% quieter than current airliners. The 314ft wingspan Progress Eagle has five superconducting engines, with four that are just used for take-off and landing, the fifth being a large diameter ducted-fan/windturbine for cruise. Most radical of all, Viñals claims that the Progress Eagle will able to generate excess energy during flight, using its high efficiency solar panels, rear wind turbine and by 'harvesting' radio and electromagnetic waves and kinetic energy using piezoelectric nanogenerators during flight.