

Business

Aerial giant may finally get off ground

The hybrid aircraft Airlander is pushing for £300 million to make a dream come true, writes **James Hurley**

It has cost about £140 million and has endured a crash landing, project delays and warnings from its auditors about its financial footing, but a government-backed company developing one of the world's largest aircraft is finally close to bringing its design into production.

The Airlander 10, a hybrid of a plane and an airship designed to be the world's most efficient large aircraft, could be in service by 2029, including regional air travel in Spain and tourism expeditions in the Arctic.

A factory in Doncaster has been lined up to produce 24 Airlanders a year, which would create 1,200 jobs and produce annual sales of about £1.2 billion a year for Hybrid Air Vehicles (HAV), the company behind a project that it hopes will "transform what aircraft can do".

First, though, there is the small matter of raising tens of millions of pounds more to keep the government-backed company in business: it expects it will need a further £300 million over the next few years to reach break-even.

"We're done prototyping. The next step is multiple aircraft going through production," Tom Grundy, HAV's chief executive, said. "The sort of thing air taxis are going through now, we've put behind us."

The Airlander 10, nicknamed the "flying bum" owing to its distinctive posterior, is intended to be a low-emissions aircraft with more than a hundred seats.

The craft, which emerged from an abandoned US military surveillance project, is capable of carrying more than ten tonnes for logistics purposes, is able to stay airborne for more than five days and can land on "fields, tarmac or sea", so does not need traditional airport infrastructure.

The Airlander is the first new large aircraft to go through the Civil Aviation Authority type certification process since 1979: a "big milestone" for a "big and unusual project", Grundy said.

About \$2 billion of aircraft have been reserved, including by the Spanish company Air Nostrum, one of Europe's largest regional airlines. A consortium is also exploring using the Airlander for passenger and freight transport in the Scottish Highlands and Islands, and there are expected to be logistics and military applications as well.

Grundy, 47, said the low emissions of the aircraft were compelling

Tom Grundy, boss of HAV, said the Airlander was suitable for domestic travel



The Airlander stops traffic during a trial. It could have more than a hundred seats and is capable of carrying ten tonnes

for an industry under pressure to reduce its enormous carbon footprint. "We've got a path to taking 75 to 90 per cent of the emissions out of flying," Grundy said. "There's nothing else out there that can do that so imminently."

With a top speed of 130km/h, which is comparable with trains and a little slower than commercial helicopters, Airlanders are not going to be replacing airliners on flights to New York but an alternative to jets for domestic air travel is a viable option, Grundy argued. "Industries have to start somewhere. [Our customers can] set leadership."

Unlike airships, which people associate with famous disasters and which declined as aeroplanes came to dominate air travel, Airlander relies on a combination of aerodynamic lift and engine power for take-off and landing (like a plane) and buoyant lift provided by helium (like an airship).

"There have been years of trying and failing to make airships work commercially," Grundy said. "Helium brings all sorts of problems and means an airship needs to be really big because it takes a lot of volume to do the job. Our platform can be smaller, and smaller generally means cheaper so we can address different markets. Uniquely for a green technology, we are coming in without needing to charge a green premium."



Arctic tourism is one possible use for the slow-flying, low-emission aircraft

As it becomes less acceptable to use emission-intensive aircraft on very short flights, Airlander can step in, Grundy said. HAV says it reduces emissions by up to 90 per cent when compared with traditional aircraft on similar trips.

On entry to service it will be powered by traditional aircraft fuel, with an all-electric Airlander powered by hydrogen fuel cells planned for 2030.

Overall travel times for most domestic Airlander journeys will be comparable to taking the plane, Grundy argued, because of the time savings of

avoiding traditional airport infrastructure. The ability to operate on water means it could take off and land near city centres, for example.

"In a lot of cases you'd be using rail if you could, but perhaps there's water in the way. Airlander can use airports but doesn't have to. You don't need big terminals."

In military applications such as surveillance, potential cost savings are also producing strong interest and HAV is consulting on projects with the US Department of Defense.

In logistics, meanwhile, a future,

larger iteration of Airlander able to carry more than 50 tonnes could find a market between energy-intensive air freight on one side and slow shipping on the other.

Grundy, a former senior engineer at BAE Systems and Airbus, hopes that by 2027 the company should be completing test flights of aircraft built in its new factory in Doncaster and that by 2029 Airlander will be flying paying passengers.

Caution should be applied to such projections: five years ago, Grundy suggested that Airlander city connector services could be "in service in 2025". "We are not yet running at the pace we want to run," he admitted. "Dates have been slipping a bit."

Airlander hit the headlines in 2016 after the aircraft was damaged when it nosedived on landing during its second test flight, causing significant damage to the cockpit and in the following year when a prototype broke free from a mooring mast. It has since completed numerous successful test flights and the design has been refined.

Grundy reckons that HAV needs £300 million to get the company to break-even point and is in negotiations to secure the first tranche of that, expected to be in the realm of "multiple tens of millions".

In its most recent accounts, the group's auditors, RSM UK, warned that "material uncertainty exists that may cast significant doubt on the company's ability to continue as a going concern".

Alongside an institutional funding round, Grundy is hoping for more UK government backing to help its move into manufacturing. Taxpayers are shareholders in the business via the pandemic Future Fund scheme.

"It's very clear to me that this project is strategically important, a product that has environmental and economic benefits, provides jobs and revenues," he said. "We are in a global competitive space. We are pushing to do this in the UK and looking for mechanisms like the National Wealth Fund to help."

He shares the concerns, however, of those who say that growth capital is too hard to secure in the UK. "In the UK we are brilliant at research and development of technology and bringing customers on board. We are there. We struggle with the bridge to commercialisation. We need to capitalise on being a research and development powerhouse."

Given the company's links to the United States, could developing the project there or elsewhere overseas be a possibility should enough support in the UK not be forthcoming? "There's always that possibility. You look to the US as a natural home for this sort of project. That is something we look at and are actively working on."

If that happens, many of the economic benefits could be missed by the UK, he warned. "For the business, that's fine ... but as a leader of a UK business it would seem a shame."