



NEXT GENERATION
LIGHTER-THAN-AIR
HYBRID AIR VEHICLES
THE FUTURE IS
AIRLANDER

**HYBRID Air
Vehicles**

AIRLANDER™

**GHAC, Lisbon
11 October 2017**

**Airlander – a new option
for airborne relief and comms**

Airlander 10 – The ideal platform to provide airdrop humanitarian relief to conflict and disaster zones, and re-establish communications

Let's imagine on September 6th this year, that our Airlander 10 was not working under a Permit to Fly (as it is with EASA and the CAA) but had a full type certificate (due in 2020). Hurricane Irma has just been upgraded to a category 5 and is due to pass Barbuda en route to the British Virgin Islands (BVI)

This Airlander 10 has a 10,000 kg payload capability and is also able to provide emergency mobile phone and internet communications. It is despatched from the UK with emergency building materials (corrugated iron, telegraph poles etc) and with a full comms fit suitable for operation with existing mobile phone handsets in the BVI.

The aircraft transits via Portugal, the Canary Islands, Cape Verde and French Guiana to the BVI (~ 10,000 km). It arrives at Beef island on September 9th and distributes the emergency building materials. This proves to be substantially cheaper to the UK government than hiring an Antonov.

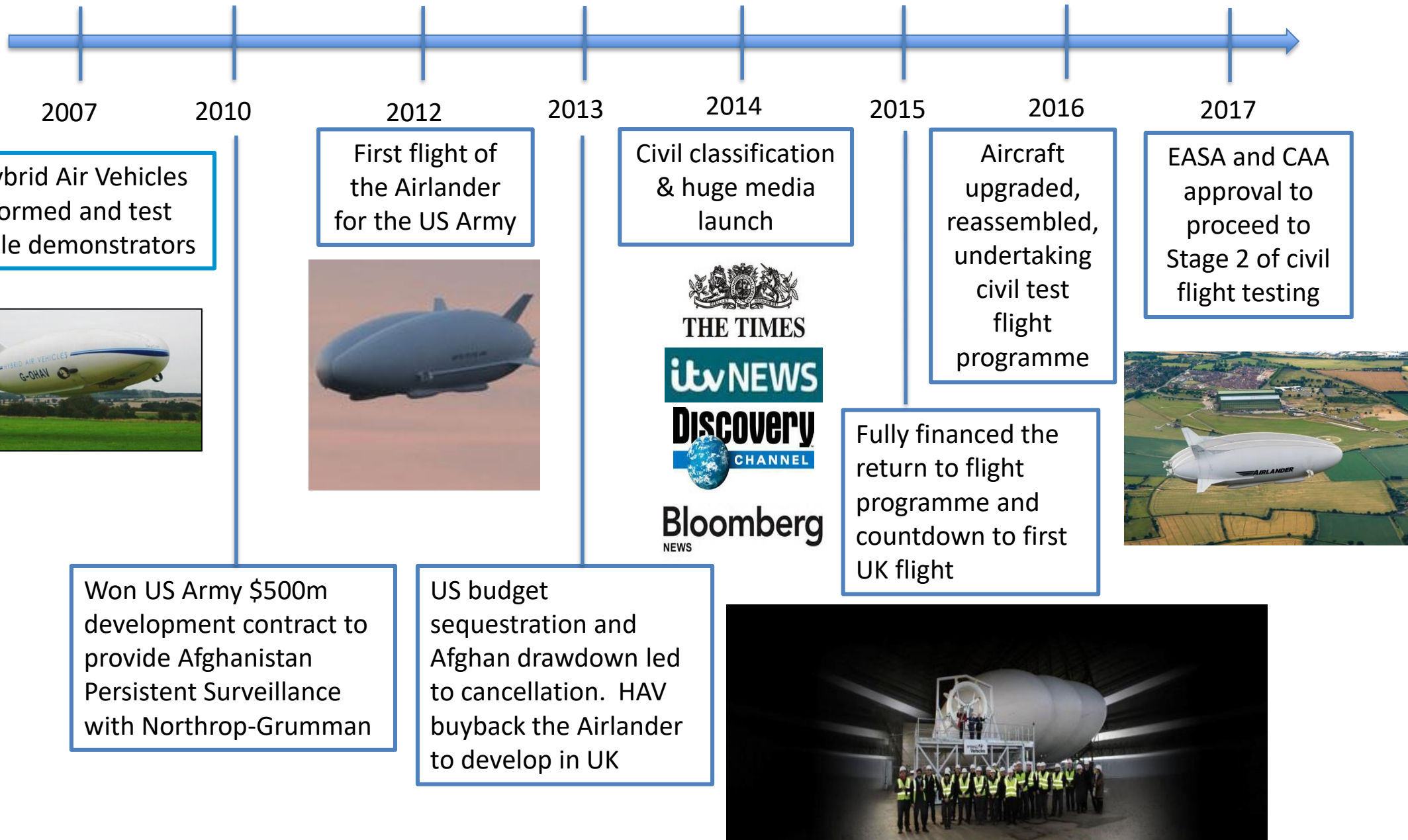
Airlander 10 – re-establishing communications. Later on September 9th the Airlander, configured in emergency comms recovery mode, takes airborne station just north of Road Town on Tortola. This gives a range of 10 to 15 km from the Airlander for modern multiband mobile phones that can operate at multiple frequencies including at approximately 700 MHz. The Airlander uses microwave or satellite backhaul for connectivity.



The Airlander story so far...

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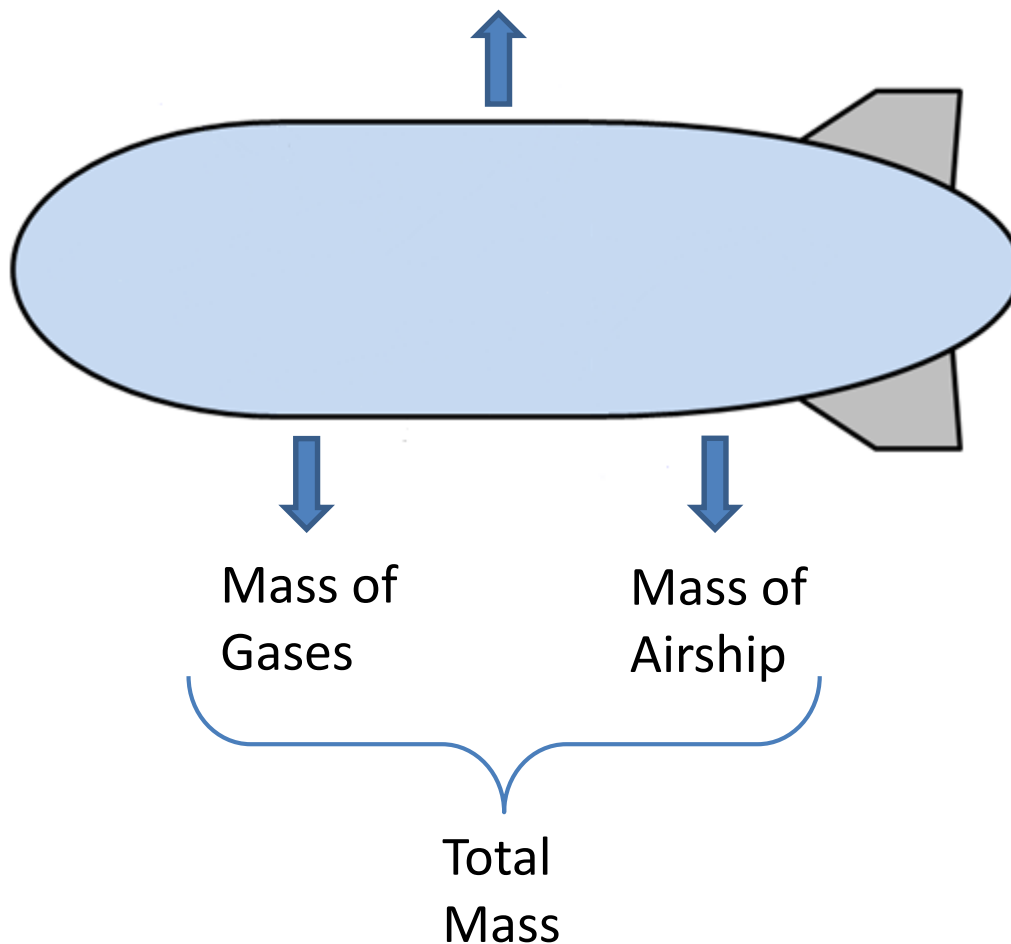




Hybrid Air Vehicles

Archimedes' Principle states that the upward buoyant force is equal to the weight of fluid that is displaced

Displaced Mass = Volume of Airship x Density



Heaviness

Total Mass > Displaced Mass
Heavy

Total Mass < Displaced Mass
Light

Total Mass = Displaced Mass
EQ or EQUilibrum

The mass of 1 m³ of air is 1.225 kg

The mass of 1 m³ of helium is 0.1693 kg

The gas lift of 1 m³ of helium is 1.056 kg

Traditional Airships - Wind Shifts Could Be A Problem

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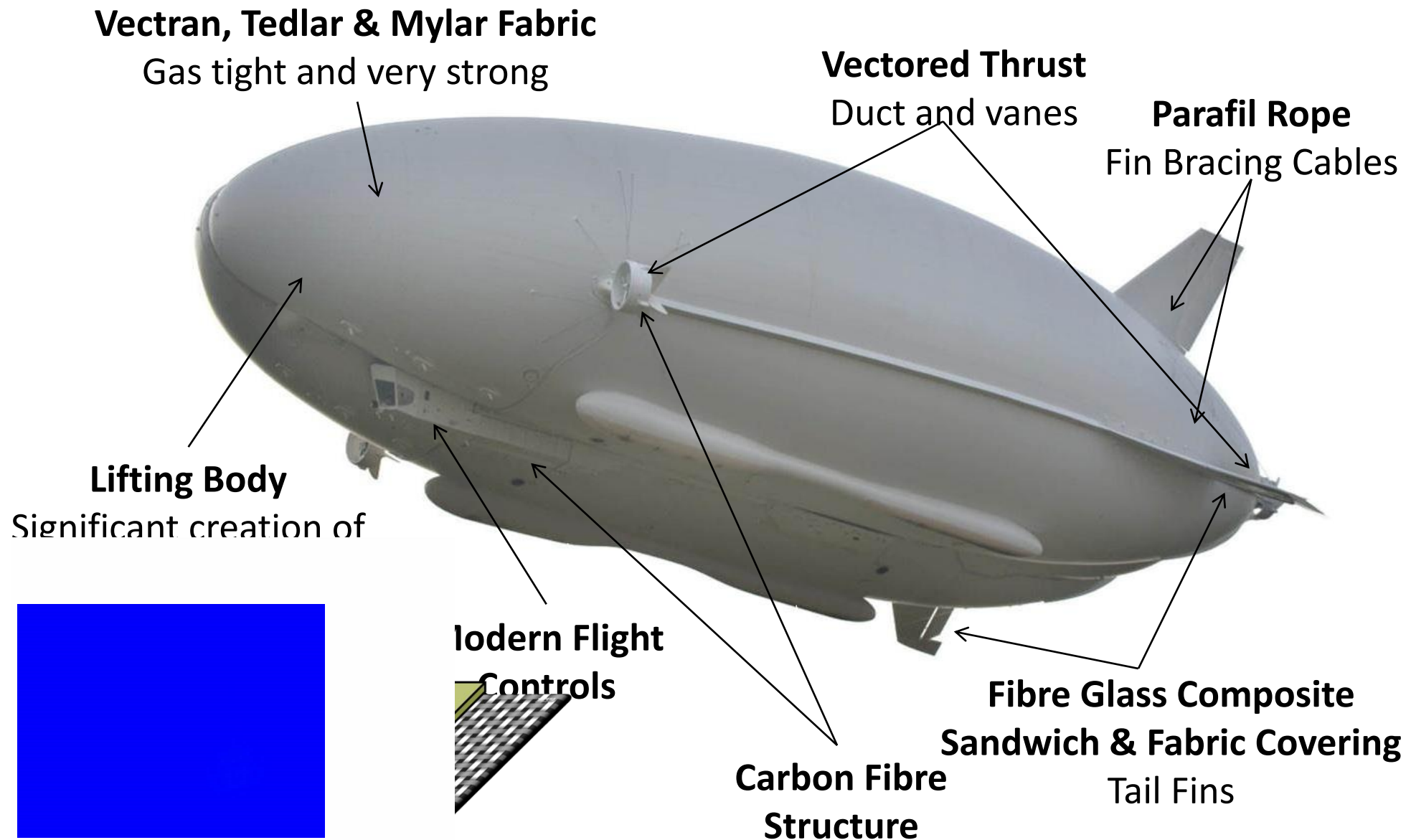
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Photo # NH 84569 USS Los Angeles stands on end, 25 August 1927



Traditional Airships - Ground Handling Issues





Airlanders land like a conventional aircraft

They power themselves on to the ground

Airlanders require far less ground crew



Benefitting from the substantial aerodynamic lift that our aerofoil hull shape gives, we operate heavy and thus “sit” on the ground

First Civil Landing – 17th August 2016

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Hybrid Air Vehicles

Airlander 10 will be the largest, most innovative and greenest aircraft flying in the world

It will revolutionise remote logistics and can provide emergency communication:

- Ability to fly for days at a time and at speeds up to 80 knots, giving extraordinary range and endurance
- Land and take off vertically from a multitude of surfaces – grass, desert, ice, water, etc.
- Ability to transport significant amounts of freight or passengers without any need for airports or infrastructure
- Can carry outsize loads thousands of kilometres.
- It will revolutionise disaster relief and supplying remote communities

What are the capabilities of hybrid aircraft?

- Long endurance due to low fuel burn
- Long range due to low fuel burn
- Ability to operate in areas with little or no infrastructure
- Can operate at a range of different speeds
- Stable





What would you like to use Airlander for?
Please get in touch ☺

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