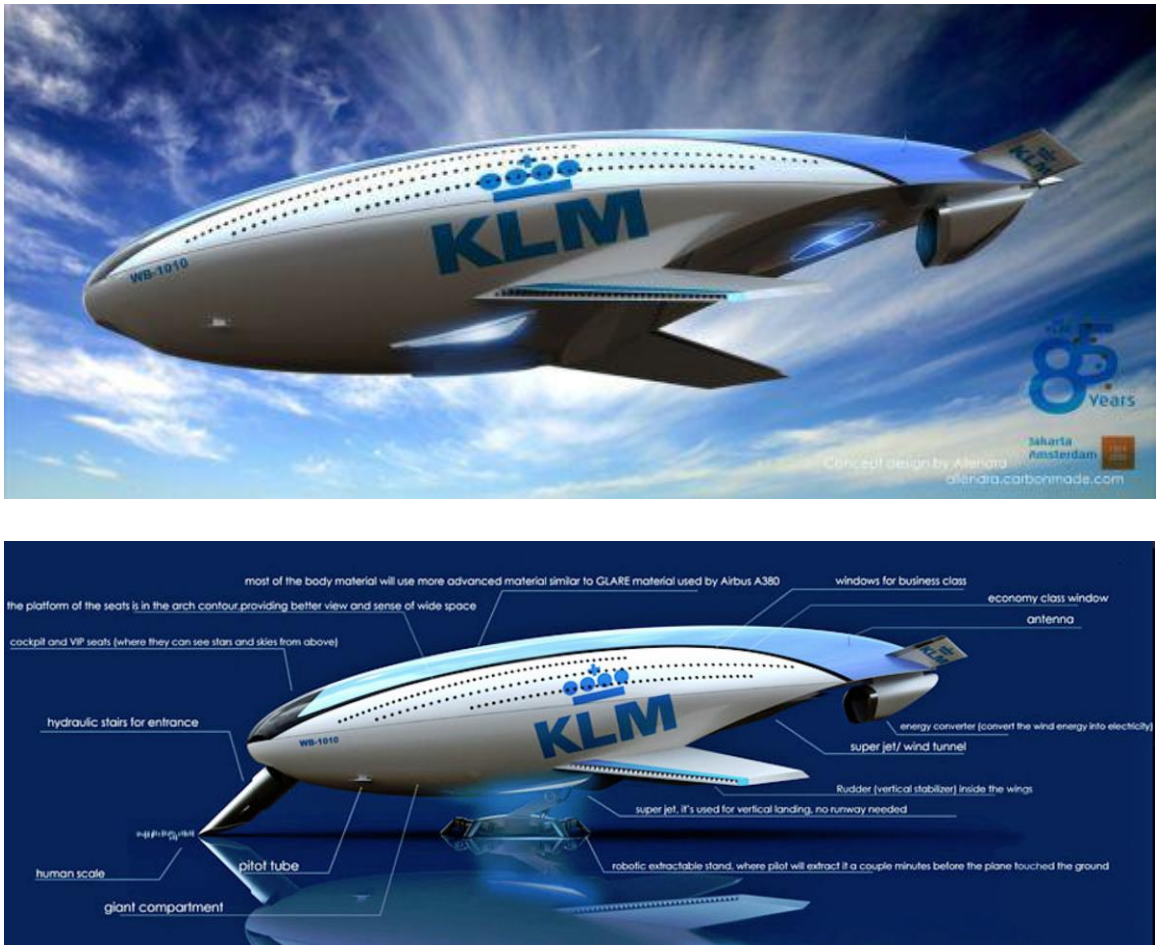
The KLM WB-1010 Spruce Whale semi-buoyant aircraft

Peter Lobner, 3 August 2019

KLM Royal Dutch Airlines' 90th anniversary celebration in 2009 included a celebration starting in October 2009 of KLM's 85 years of presence in Indonesia. The KLM Indonesia celebration kicked off with an aircraft design competition described as "a journey of inspiration towards the next level of aircraft design." The challenge of the competition was for the entrants to conceive and design an aircraft that might exist 85 years in the future. You can read more about KLM's anniversary here:

http://europe.etbtravelnews.global/91701/klm-celebrates-85-years-in-indonesia/

One of the submittals was a graceful, whale-shaped, hybrid aircraft concept designated the WB-1010, aka the "Spruce Whale," designed by Reindy Allendra. In general form, Allendra's hybrid aircraft concept resembled the whale-shaped "Manned Cloud" flying hotel airship concept developed earlier (circa 2005 - 2007) by French designer Jean-Marie Massaud. However, Allendra's hybrid aircraft makes use of yet-to-be-invented materials and technologies, and is more like a high-performance Dynalifter semi-buoyant aircraft (developed by Ohio Airships) than a hybrid airship.

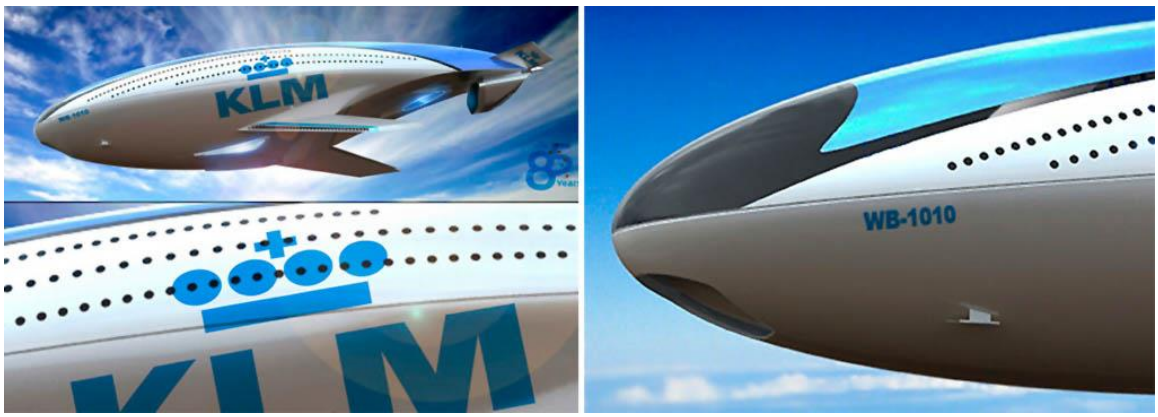


Three views of the WB-1010 Spruce Whale hybrid aircraft concept. Source: Danny Allen / Gizmodo.com, 14 October 2009

The WB-1010 ("WB" stands for Wright Brothers) was designed for style, speed, comfort, and large passenger capacity. Some of the (speculative) features of this futuristic hybrid aircraft concept included:

- Passenger capacity: more than 1,500 people
- Maximum speed: nearly 1,000 kph (620 mph)
- Hull made of glass-reinforced fiber metal laminate made of thin layers of metal and glass fiber and windows made of "smart glass."
- Helium is "injected in the body to make the plane lighter." Perhaps this means that there are large helium cells inside the hull and, as in a Dynalifter, the aerostatic lift from this helium provides a fraction of the total lift required for flight; perhaps as much as 50%.

- Conventional aviation fuel is the main energy source.
- The aircraft also is able to “harvest wind energy” in flight. Perhaps this is a simple ram air turbine, which often is used as an emergency power source on military aircraft, or it may be an aeronautical perpetual motion machine.
- A “superjet” of unspecified design enables this hybrid aircraft to land vertically, without the need for a runway. A large landing foot is extended under the aircraft, reducing the need for airport infrastructure.
- This hybrid aircraft also can land like a conventional aircraft.

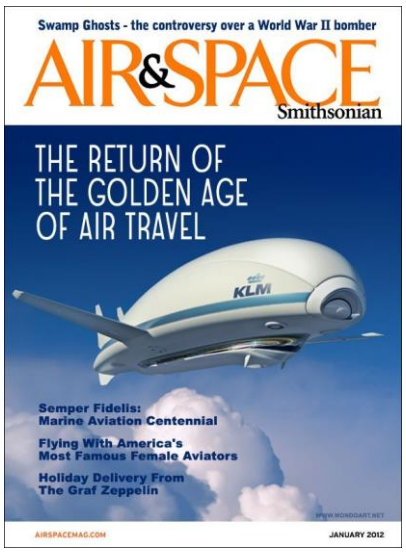


Source: Danny Allen / Gizmodo.com, 14 October 2009

Current practicality aside, Reindy Allendra’s Spruce Whale is a beautiful design concept. Perhaps 85 years in the future, a design like this may be possible. You can read more about the Spruce Whale on the Yanko Design website here:

https://www.yankodesign.com/2009/10/14/the-spruce-whale/

In 2012, Chris Wren and Kenn Brown, from MondoWorks – Mondolithic Studios (www.mondoart.net), developed another KLM semi-buoyant aircraft design concept, the Cloudliner. They put their design concept on an unsolicited mockup of a cover for the Smithsonian Air & Space Magazine.



Cloudliner rendering on an unsolicited mockup cover page (not a real cover)

Source, both graphics: http://www.mondolithic.com/?s=airship&id=m