

Dirigibles to Grace Skies Over Germany Once Again

Companies are betting that giant airships not seen since World War II can pay off in ferrying tourists and heavy objects - and perhaps even doing science

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For people who recall images of the zeppelin Hindenburg's fiery demise in 1937, the thought of the cigar-shaped ships - and flying in one - might stir an unsettling feeling. This spring, a company called Zeppelin Luftschifftechnik hopes to wipe away those disturbing thoughts with a new breed of airship to carry tourists in Germany, and eventually to other European countries.

Hot on its heels is a company designing the world's largest airship, a dirigible for transporting heavy machinery that could make its debut in about 2 years. Fueling the dirigible's renaissance is what appears to be a healthy demand from sightseers and a niche market in the cargo world. Research trips could soon follow. "This is just the starting signal for the development of new airships," says aviation engineer Ingolf Schäfer, a consultant based in Lahnau, Germany.

Dirigibles hit the comeback trail in 1988, when the company Luftschiffbau Zeppelin, which had long since gotten out of producing dirigibles and into producing radar aerials and silos, asked staff engineers Klaus G. Hagenlocher and Florian Windischbauer to study whether airships had the potential to fly again. The duo reviewed the safety and flying records of all 119 zeppelins produced before the airships were shelved in 1940. They concluded that dirigibles could offer a safe alternative to hot-air balloons and other sightseeing vessels - but that there would be too few customers to make transatlantic crossings pay.

In 1993, Zeppelin Luftschifftechnik was established to make dirigible tourism a reality. The firm was situated in a nostalgic location: Friedrichshafen, where Count Ferdinand von Zeppelin made his dirigible dream come true when he took his LZ 1 into the air on 2 July 1900. Exactly 100 years later, the count's granddaughter, Elisabeth Veil, baptized the modern prototype "Friedrichshafen".

The project Zeppelin NT ("New Technology") has exploited a host of recent advances in materials science to make the modern zeppelin a better airship than its ancestors. The craft's skin is Tedlar foil and polyester textile, weatherproof fabrics that give the company the option of not having to keep the zeppelins in a hangar. Modern materials give the new breed a big advantage over last century's zeppelins, the cotton-based skin of which would suck up a lot of water, making the dirigibles heavier and sometimes rupturing during flight - forcing daring midflight repairs.

The new ship's aluminum and carbon fiber-strengthened plastic frame has a triangular geometry, making the helium-filled dirigible more compact and lighter by volume than its progenitors. Dirigibles also have a big advantage over blimps, famous for hovering over U.S. football games. If a blimp were to lose gas, the skeletonless airship could crumple and become unsteerable. A dirigible's frame allows it to be steered even when deflated.

The prototype Zeppelin NT has completed more than 800 hours of test flights in Germany. Initially, it and a twin to rollout this spring will be confined to German airspace; indeed, dirigible tours will not stray far from Lake Constanze. But the company hopes to launch flights to other countries after getting regulatory approval.

The dirigibles will be used for advertising, and Zeppelin Luftschifftechnik is exploring other markets,

including measuring airborne pollutants. The airships could also provide a vibration-free and steerable platform for scientists. "A plane is too quick for some instruments," says Markus Quante of the Institute for Atmospheric Physics in Geesthacht. He studies how greenhouse gases move through the atmosphere. "Our particle detectors work much better at low speed, and they are very complex instruments, so you need an operator at their side," he says. "You can't do this in a balloon."

Taking a different tack is CargoLifter, a Berlin-based company that hopes to revive dirigibles as titanic airborne mules. "We're really creating a new industry," says Charles H. W. Edwards, president of Cargo-Lifter's U.S. holding company. Edwards predicts his firm will have more demand than it can handle for the 50 airships it hopes to build over the next 15 years. Major customers could include the heavy machine and construction industries, oil-exploration firms, and humanitarian missions. Gigantic machines, such as turbines or air liquefiers, are usually moved from factory to customer by truck for shipment out of a port or an airport. "A ship has to end [its journey] at the wharf," says Edwards, and not every airport can handle a cargo jet. So a truck often must complete the journey. "We can go point to point," he says. Like a flying crane, CargoLifter's CL 160 - still on the drawing board - would be able to grab its freight - up to 160 tons, equal to 27 full-grown African elephants - while hovering and without disassembling it.

But CargoLifter still must obtain regulatory clearances from air traffic authorities. The cumbersome airships might be excluded from airspace near airports, and regulators have not yet decided whether to treat the CL 160 as a plane or as a container ship, which would affect the number of hours that crews would be allowed to work and thus the duration of CL 160 flights. The uncertainty hasn't stopped CargoLifter from building a hangar at a former Russian military airport 60 kilometers south of Berlin for a prototype it hopes to fly in 2003. Potential competitors are popping up: The U.K.'s Advanced Technologies Group has recently tested a model of a jumbo dirigible designed to carry 1000 tons.

Experts are thrilled that these anachronisms may find a place in the modern world. Within 5 years, predicts Schäfer, German skies will be filled with dirigibles.