

The new Zeppelin takes to the sky

For a long time the Zeppelins seemed to be a distant memory. But the huge and elegant lighter-than-air vehicles are back. And they aren't lighter than air anymore.

Die Luftschiffahrt hat große und kleine Katastrophen erlebt. Sei es in Lakehurst oder in Brand bei Berlin. Dem Zeppelin, dem einen und echten, konnte das nichts anhaben. Jung wie nie feiert er am Bodensee seine Wiederauf-erstehung.

The word Zeppelin recalls memories of giant silver glittering *airships*, of silent *hovering* and luxurious travel. The word also recalls memories of a fireball, not only destroying the Zeppelin Hindenburg in Lakehurst on 6 May 1937 but also ending the era of airships for a long time.

However, the idea of such airships continued to *stir* the minds of engineers. One of the recent *attempts* to bring the flying cigars back into the sky was the Cargolifter, an airship larger than the Hindenburg and able to carry loads of 160 tons around the world. The concept of a flying heavy load crane and even more the fascination of a Zeppelin reborn attracted private and corporate investors alike. The start was highly promising. A model named Joey, big enough to carry a pilot, was built as well as the world's largest free-standing hangar near Berlin, with space for two Cargolifters or 14 Boeing 747 airliners. But that was as far as it went. Today, the company is in *receivership*.

However, there have been others *pursuing* the Zeppelin concept. In Friedrichshafen on Lake Constance in southern Germany, two companies joined forces to build a new Zeppelin airship. They are the old Zeppelin company, which today distributes Caterpillar heavy construction machinery and builds silos, and ZF, a world leading transmission manufacturer. Both *descendants* of Graf Zeppelins empire of companies, they refounded the Zeppelin Luftschifftechnik to build what is now the largest operating airship in the world, the Zeppelin NT. Serial production has started and, according to the company, there is international interest from investors and operators.

Old dreams and new ideas

With a length of 75 meters and a height of 17.4 meters the new Zeppelin is only 1/3 the size of its famous *ancestor* and looks similar to the well-known *Blimps*. But it is a modern,

The Zeppelin NT in flight



<i>aft</i>	Heck
<i>airship</i>	Luftschiff
<i>ancestor</i>	Vorfahr
<i>attempt</i>	Bemühung, Versuch
<i>Blimp</i>	Prallluftschiff
<i>bow</i>	Bug
<i>carbon fibre</i>	Kohlefaser
<i>contrary to</i>	im Gegensatz zu
<i>descendant</i>	Nachfahr
<i>envelope</i>	Hülle
<i>fin</i>	Seitenflosse, Leitwerk
<i>framework</i>	Tragwerk
<i>gondola</i>	Gondel
<i>hover, to</i>	schweben
<i>in receivership</i>	beim Konkursverwalter
<i>Lake Constance</i>	Bodensee
<i>pursue, to</i>	verfolgen
<i>rigid</i>	steif
<i>semi-rigid</i>	halbstarr
<i>spar</i>	Holm
<i>stir, to</i>	bewegen
<i>triangular</i>	dreieckig
<i>truss</i>	Fachwerk, Rahmengerippe



The Zeppelin NT has a semi-rigid structure. Only three horizontal spars run from bow to aft and are connected by vertical triangular trusses. This triangular framework allows the engines to be moved away from the gondola to the side of the envelope.

(Bilder: M. Meier)

Ein guter Ausgangspunkt für englischsprachige Zeppelin-seiten ist www.airship.net

agile aircraft. NT stands for the new technologies introduced in its design - a light-weight inner structure and a modern control system.

Contrary to the classic Zeppelins, which were rigid airships with an outer framework as a supporting structure, and the Blimps, more or less cigar shaped balloons with fins and a gondola, the Zeppelin NT has a semi-rigid structure. The principle of this design is not

new. Airships as old as Pole explorer Umberto Nobile's Norge and as new as the Cargo-lifter were semi-rigid, having a keel supporting gondola, engines and fins with a soft envelope on top. This makes the airship light but stable enough for precise steering. What is new is a reduced outer framework. Only three horizontal spars run from bow to aft connected by vertical triangular trusses. This ultra light framework made of carbon fibre ►

Mehr Informationen zum Zeppelin NT und Flugbuchungen unter www.zeppelinflug.de.

and aluminium gives the airship its basic shape over which the envelope is pulled and filled with 8000 m³ of Helium. The triangular framework allows the noisy engines to be moved away from the gondola to the side of the envelope.

But noise was not the only reason for this move. The side engines are an important part of the control system: Pointing forward during normal flight their rotors can be turned upward by 90 degrees and the blades *pitched* for positive or negative *thrust*. A third rotor on the aft points backward or down and a fourth, fixed one, acts as a *tail rotor*. All rotors are linked by a computer-controlled fly-by-wire-system and give the Zeppelin NT a manoeuvrability comparable to that of a helicopter, including hovering, turning on the spot or vertical takeoff and landing.

Especially the landing has been *improved*. Crowds of people are no longer needed to catch the airship ropes and *cling* to them with all their weight. A ground crew of three is enough and their main *task* is to connect a small *ladder* to the gondola for the passengers to *embark* and *disembark*. No ropes and towers are needed. This is due to the fact that the Zeppelin NT is heavier than air. Leaving a static weight of about 300 kilograms avoids the necessity to *dive* for landing and makes it easier to control the airship during landing and takeoff. While the airship is hovering, the weight is compensated by the downward rotor thrust and, once in flight, by the *updraft* created by the slightly asymmetric envelope, which acts like an *aerofoil*.

to those for small passenger airplanes. This relative independence from the weather and the low operating costs make the airship very *suitable* for air *survey* or use as a temporary *relay station*. But especially on *scenic* flights the Zeppelin NT is a strong *competitor* to the airplane. No cabin *crammed* with seats and *porthole*-like windows. Instead, the *spacious* gondola offers broad comfortable leather chairs and a panoramic window for each of the 12 passengers. No noisy engines for super fast travelling. Instead, there is only a *soothing* humming while the airship floats above the landscape slowly enough to enjoy the view. ■

<i>aerofoil</i>	<i>Tragfläche</i>
<i>cling, to</i>	<i>festhalten</i>
<i>competitor</i>	<i>Wettbewerber</i>
<i>cram, to</i>	<i>vollstopfen</i>
<i>disembark, to</i>	<i>aussteigen</i>
<i>dive, to</i>	<i>tauchen</i>
<i>embark, to</i>	<i>einsteigen</i>
<i>hinge, to</i>	<i>um ein Gelenk drehen</i>
<i>impose, to</i>	<i>auflegen</i>
<i>improve, to</i>	<i>verbessern</i>
<i>ladder</i>	<i>Leiter</i>
<i>offset</i>	<i>versetzt</i>
<i>pitch, to</i>	<i>verdrehen, anstellen</i>
<i>porthole</i>	<i>Bullauge</i>
<i>relay station</i>	<i>Umsetzer</i>
<i>scenic</i>	<i>malerisch</i>
<i>soothe, to</i>	<i>beruhigen</i>
<i>spacious</i>	<i>geräumig</i>
<i>suitable</i>	<i>geeignet</i>
<i>survey</i>	<i>Überwachung</i>
<i>tail rotor</i>	<i>Heckrotor</i>
<i>task</i>	<i>Aufgabe</i>
<i>thrust</i>	<i>Schub</i>
<i>updraft</i>	<i>Auftrieb</i>

The art of air travel

Its efficient control system and solid structure makes the Zeppelin NT also quite resistant to high wind speeds and bad weather conditions, only *imposing* flight limitations similar

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The tail of the new Zeppelin NT showing the two aft rotors. The fixed rotor (offset to left) acts as a tail rotor while the other hinges to provide vertical or horizontal thrust.

