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LZ 130 Graf Zeppelin II

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(Redirected from [LZ 130 Graf Zeppelin](#))

This page is about the second airship, for other meanings, see [Graf Zeppelin](#)

The ***Graf Zeppelin II*** (Deutsche Luftschiff Zeppelin #130; Registration: **D-LZ 130**) was the last of the great [German rigid airships](#) built by the [Zeppelin Luftschiffbau](#) during the [period between the World Wars](#), the second and final ship of the *[Hindenburg class](#)* named in honor of [Paul von Hindenburg](#). The airship, which made just 30 flights over 11 months in 1938-39 before being scrapped in 1940, was the second zeppelin to carry the name "Graf Zeppelin" (after the [LZ 127](#)) and thus is often referred to as ***Graf Zeppelin II***.

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Design and development [edit]

Main article: [Hindenburg-class airship](#)

The *Graf Zeppelin II* was originally designed to be nearly identical to the *Hindenburg*, and use [hydrogen](#) as lifting gas. After the *Hindenburg* disaster, however, [Hugo Eckener](#) vowed never to use hydrogen alone in a passenger airship again. The only source of helium in large enough quantities was in the [United States](#), so Eckener went to [Washington, D.C.](#) to lobby for helium for his airships. He visited [President Roosevelt](#) himself, who promised to supply helium, but only for peaceful purposes. After the [annexation of Austria](#) in March 1938, U.S. Secretary of the Interior [Harold Ickes](#) refused to supply helium, and the *Graf Zeppelin II* was ultimately filled with hydrogen.

The design of LZ-130 incorporated a few improvements over the design of the [LZ 129 Hindenburg](#). Initially, the engine cars were designed to have same pusher configuration as the *Hindenburg's*, but as construction continued the engine pods were completely redesigned, using diesel engines powering tractor propellers. In later flights, the airship used three-bladed propellers on its rear engines; first installed on the aft-port engine car. Unlike the wooden propellers of the *Hindenburg*, which had problems with moisture absorption causing imbalance, these three-bladed propellers were made of plastic wood and individual blades were assembled onto a main hub. The engines had a water recovery system which captured the exhaust of the engines, recovering [water vapor](#) present in the exhaust gases and condensing it for storage in tanks aboard the airship, to compensate for the fuel's weight lost during flight.

Expecting helium to become available, the passenger decks were also completely redesigned to accommodate 40 passengers, compared to the *Hindenburg's* 72. The restaurant was moved to the middle of the quarters and the promenade windows were half a panel lower. The cabins would be more spacious and had better lighting compared to those of the *Hindenburg*; four of these were luxury cabins. The 16 gas cells were lightened and one was made of lightweight [silk](#) instead of [cotton](#). The tail fins were slightly smaller and the rigging was redesigned. Other redesigns included the gas vent hoods, gondola and the landing wheel installation. On the nose cone there were just two windows, as with the *Hindenburg's* original design (in the *Hindenburg* more windows were later fitted after its test flights). The German investigation on the *Hindenburg* Disaster pointed to problems with conductivity on the *Hindenburg's* outer skin. As a result, the doping solution for the outer fabric covering was also changed, bronze and graphite were added to prevent flammability and also improved the outer covering's electrical conductivity. These changes were little-known and politically suppressed in fear of embarrassment for such a design flaw.

Construction time line [edit]

23 June 1936 - The keel of the airship was laid and the main rings were fastened onto the roof of the hangar.

14 February 1937 - The nose cone was installed. In the same month, the fabric was also applied over the framework.

6 May 1937 - The [LZ 129 Hindenburg](#) bursts into flames and crashes while landing at Lakehurst, NJ, killing 35 out of 97 people on board and one member of the ground crew.

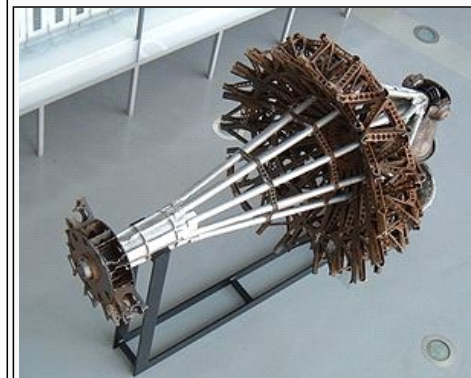
15 August 1938 - Inflation began on gas cells.

20 August 1938 - Engines and electrical connections are tested.

22 August 1938 - The radio communication system is tested.

14 September 1938 the ship was christened and flew the first time. Unlike the christening of the *Hindenburg*, only Zeppelin Company officials

Graf Zeppelin



The bow of LZ 130 in the [Zeppelin Museum Friedrichshafen](#)

Other name(s)	<i>Graf Zeppelin II</i>
Type	<i>Hindenburg-class</i> airship
Manufacturer	Luftschiffbau Zeppelin
Construction number	LZ 130
Manufactured	1936-38
Registration	D-LZ130
First flight	14 September 1938
In service	1938-40
Flights	30
Fate	Broken up April 1940
Preserved at	Zeppelin Museum Friedrichshafen (bow)

and [Hermann Göring](#) were present; no other government representatives came to the christening to congratulate Eckener. The speech was held by Dr. Eckener.

14 November 1938 - By the time the *Graf Zeppelin II* was completed, it was obvious that the ship would never serve its intended purpose as a passenger liner; the lack of a supply of inert helium was one cause. The [Reich Air Ministry](#) permitted the *Graf Zeppelin* to fly for one year until 1 September 1939 "without any transportation of passengers and outside from tropical areas".

Operational history [edit]

In total, the Graf Zeppelin made thirty flights:

Flights 1 to 7 [edit]

- 14 September 1938 - The maiden voyage took place immediately after the christening of the ship under the command of Dr. Hugo Eckener. The ship took off from Friedrichshafen at 7:50 AM with 74 people mainly Air Ministry, and Zeppelin Company officials on board. Also onboard were the builders, technicians and engineers of the airship. The engines were only started after the airship reached a height of approximately 100 m. The *Graf Zeppelin* flew across [Munich](#), [Augsburg](#) and [Ulm](#) and returned to Friedrichshafen at 1:30 PM, travelling a total of 925 kilometres. Hugo Eckener described the trip as "satisfying" and "successful."
- 17–18 September 1938 - The second trip was a 26-hour test trip under the command of Dr. Hugo Eckener and Captain [Hans von Schiller](#) with a total of 85 persons on board. It started at 8:08 AM on 17 September 1938. The morning was spent over the [Bodensee](#) with different measurements. At noon the ship flew north towards [Stuttgart](#) at 12:15 and [Frankfurt am Main](#) at 13:15, and then towards [Eisenach](#) and [Eisleben](#). Towards evening [Berlin](#) was reached. After many circuits at low altitude the Graf started towards [Hamburg](#). Over the outer-[Elbe](#)-estuary in the [Wadden Sea](#) further calibrations and tests were made. Afterwards it flew a direct course over [Minden](#) towards Frankfurt am Main and then towards [Bodensee](#). There, the airship had to fly a large loop over Friedrichshafen, because the airfield lay in fog. At 10:17, LZ 130 landed after covering 2,388 km, and shortly before 11 o'clock was brought back into the Löwenthaler hangar.
- 22 September 1938 - The third trial flight; 8:13 - 19:30 1215-km loop over [Munich](#) and [Vienna](#) and back again.
- 25 September 1938 - Launch approx. 11:00 under Captain Hans von Schiller (duration approx. 7 h, 764 km, 40 crew members, 34 passengers and technicians). Tests at high altitude were made. Almost the whole trip took place at an altitude of about 2,000 m, without needing to valve much gas. Further atmospheric-electrical tests were made.
- 27 September 1938 - eleven hours of trip duration, on behalf of the [Reich Air Ministry](#) (RLM). At the airport and airship-port *Rhein-Main* a radio beacon was set up. The idea was to attempt a *Funkbeschickung* (a calibration of the direction-finding equipment). Hazy air hindered the attempts despite good weather conditions. The calibration did not succeed perfectly - these problems arose even at later attempts. There were also first successes with the *Ballastwassergewinnungsanlage* (a water recovery system to save ballast). Three and a half tonnes of ballast water could be saved and the engines ran quieter because of the sound-absorbing effect of the device.
- 28 September 1938 - Further test flight on behalf of the RLM under Captain Sammt. Among other things, the test was intended to investigate whether electrostatic charges caused the Hindenburg disaster. Therefore it was especially flown during thunderstorms. Flights during normal weather conditions brought no useful results. The ship was flown into the stormfront slack (gas cells under-expanded), to prevent the over-pressure valves releasing hydrogen. The trip lasted nearly 26 hours; covering over 2,500 km. The ballast water recovery system fulfilled the engineers' expectations by producing about nine tons of water.
- 31 October 1938 launch around 2:15 under the command of Captain Sammt. This was simultaneously the last inspection flight and the transfer flight to *Flug- und Luftschiffhafen Frankfurt am Main* (the airship port at Frankfurt am Main). It landed after nearly 25 hours, covering over 2,100 km around 15:10. The airship and the crew were welcomed by [Gaulleiter](#) Sprenger at the new home port. After this trip LZ 130 on 14 November 1938 received the *Luftschiff-Zulassungsschein* (airship registration document). Thus it was certified for air traffic and registered in the German *Luftfahrzeugrolle* (aircraft register), however with the restriction of no carriage of passengers.

Flight 8 - *Sudetenlandfahrt* [edit]

See also: [Sudetenland#Sudeten Crisis](#)

8. "**Sudetenlandfahrt**" ("[Sudetenland](#) journey") also known as the *Sudetendeutsche Freiheitsfahrt* 1938, was made at the behest of the [Reich Ministry for Public Enlightenment and Propaganda](#) (*Reichsministerium für Volksaufklärung und Propaganda* or *Propagandaministerium*). After the popular vote resulted in a large majority for Hitler and the [National Socialist Party](#) many propaganda channels were used - including a Zeppelin flight over the *befreiten Gebiete* ("liberated regions"). On board were 62 crew members and 7 passengers, among them military officers. Taking off on 2 December 1938, LZ130 arrived over Reichenberg (present-day [Liberec](#)), capital of [Sudetenland](#) (a German-speaking area in Czechoslovakia), timed to match Hitler's visit. Small parachutes were thrown out with swastika flags and handbills carrying the text "*Dein JA dem Führer!*" ("Your YES for the leader"). LZ 130's loudspeakers played music and National Socialist propaganda for the forthcoming December 4 elections. Afterwards LZ 130 flew to the Reichenberg airfield and dropped 663 kg of postally cacheted souvenir mails. Worsening weather hindered further flight, and after some time it was decided to turn back. After the ship left the Sudetenland, it came into low cloud and snow showers. It started to ice up. Later, the propellers blew broken-off ice shards through the ship's outer envelope. However, the crew immediately repaired the damage. The Zeppelin landed without problem in gusty winds at 17:46 and was brought into the [airship hangar](#).



Flights 9 to 23 [edit]

- 13 January 1939 launched at 9:08, commanded by captain Sammt, different tests were performed. Duration: 7 hours and 523 km
- 13 April 1939 Among other things, radio- and [spy basket](#) tests were performed. In a flight lasting approximately 30 hours it covered nearly 2,700 km (1,700 mi)
- 15 June 1939 Duration: 28 hours; 2,800 km
- and 13. *Meiningenfahrt* 2 July 1939 ; 18:40 landing at [Meiningen](#) airfield, flew back to Frankfurt am Main at 19:22.
- and 15. *Leipzigfahrt* (Leipzig trip) 9 July 1939; among other things landing in [Leipzig](#)-Mockau airfield with post office delivery
16. *Nordseefahrt* (North Sea trip) 12 July 1939. Launch: 22:25

17. and 18. *Görlitzfahrt* (*Görlitz* trip) launch: 16 August 1939 00:34 under captain Sammt

19. 20., and 21. *Bielefeld-Münster-Fahrt* (*Bielefeld-Münster* trip)

22. and 23.:To *Kassel*

Flight 24 - *Spionage* [edit]

24. The *Spionage* ("espionage trip") of 2 to 4 August 1939, taking over 48 hours and covering 4,203 km (2,612 mi), was the longest trip the LZ 130 made. The main goal was to secretly collect information on the British *Chain Home* radar system.^[1] To do this the airship flew northwards close to the British east coast up to the *Shetland Isles* and back. As well as the 45 crew, 28 personnel engaged in the measurements were carried. Lifting off was around 20:53 on 2 August 1939, it overflew *Hildesheim* at 23:38, seen by very few people.^[1]

According to the memoirs of Albert Sammt, *Mein Leben für den Zeppelin* (translation: "My life for the zeppelin") in the chapter *Mit LZ 130 Graf Zeppelin auf Funkhorch- und Funkortungsfahrt* ("with the LZ 130 Graf Zeppelin on the radio-listening and radiolocation trip") a radio-measuring *spy basket* was used. He flew the LZ 130 up Britain's east coast stopping the engines at *Aberdeen* pretending they had engine failure in order to investigate strange antenna masts. They drifted freely westwards over land and saw for the first time the new *Supermarine Spitfires*, which were then photographed as they circled the airship.^[2]

On their return journey, as they neared Frankfurt on the evening of 4 August they were warned by radio that landing was not yet possible. At first they suspected an aeroplane had crashed at the site, but on overflying saw nothing amiss. They turned and flew towards the *Rhön Mountains* and on asking, were informed "landing before dusk not possible". They decided to return to Frankfurt and speak directly with the landing team (*Landemannschaft*) using their *Very high frequency* transmitter, so that they would not be overheard by the French and so that they could speak in *Swabian German* to Beurle, the landing team leader.^[2]

Beurle informed them they must not land yet because the British had lodged a diplomatic protest over their actions and a British delegation was at the airfield, with agreement of the German government, to inspect the ship. They were under suspicion. Beurle told them to wait while they thought of something.^[2]

Shortly, the LZ 130 received instructions. They were to hide all the equipment on the ship and not to land at the usual well-lit landing point where a landing team was waiting, but to land at the other end where the "real" landing team was waiting. Once they had landed there, the technicians were to get off and they would be replaced by a unit of *Sturmabteilung*.

The British delegation waiting at the usual landing place were told that, due to the weather, the airship had to land at another part of the airfield. By the time the British reached the airship, the spy crew was on a bus on their way to their hotel. Although they searched the ship, the British found nothing suspicious on the ship nor in the decoy SA-crew.^[2]

Dr. Breuning explained that the trip's results were negative, and not because the British radar was switched off, as Churchill wrote in his memoirs. The German General Martini used a strong, impulsive, broadband radio transmission for determining the "radio-weather", the best wavelengths to use for radio. These impulses severely disturbed the highly sensitive receivers in the 10-12 metre waveband. Dr. Ernst Breuning wrote that he repeatedly requested Martini to stop transmitting during the spy trips, to no avail. This made it impossible for the LZ 130 to investigate the very wavebands the British were using.^[2]

Flights 25 to 30 [edit]

25. and 26. *Würzburgfahrt* (*Würzburg* trip) 5 August 1939^[*citation needed*]

27. and 28. *Egerfahrt* (*Eger* trip) 13 August 1939

29 and 30. The last trip, the so-called *Essen/Mülheim-Fahrt* (*Essen/Mülheim* trip), took place on 20 August 1939. The departure and destination was *Frankfurt am Main* with an intermediate stop at *Essen/Mülheim Airport*, commanded by *Albert Sammt*. This trip (landing at 21:38) meant the end of large airship transport.

Graf Zeppelin II in color [edit]

Along with the *Hindenburg*, which was photographed in construction and flight in 1936 and its burning wreckage in 1937, the *Graf Zeppelin II* is the only zeppelin that has been photographed in color. The archives of the *Zeppelin Museum Friedrichshafen* also has a yearbook featuring color photographs of both airships taken by Captain Hans von Schiller, and many other color photographs of the airship also exist.^[3] The LZ 130 is the only Zeppelin that has ever been filmed in color.^[*citation needed*] Color footage was shot by *Harold G. Dick* of the ship over *Friedrichshafen*. A 2001 documentary, *Hindenburg Disaster: Probable Cause* showed the footage but it was mistaken for color footage of the *Hindenburg*.

The end of the Zeppelins [edit]

In April 1940, *Hermann Göring* issued the order to scrap both *Graf Zeppelins* and the unfinished framework of LZ 131, since the metal was needed for other aircraft. By April 27, work crews had finished cutting up the airships. On May 6, the enormous airship hangars in *Frankfurt* were leveled by explosives, three years to the day after the *destruction of the Hindenburg*.

Specifications (LZ129 Hindenburg class) [edit]

Note: The *LZ130 Graf Zeppelin II* was similar in most respects

Data from ^[4]

General characteristics

- **Crew:** ca. 40
- **Capacity:** ca. 50 (later 72) passengers / 102,000 kg (224,872 lb) disposable load
- **Length:** 245 m (803 ft 10 in)
- **Diameter:** 41.2 m (135 ft 2 in)
- **Volume:** 200,000 m³ (7,100,000 cu ft) gas capacity
- **Empty weight:** 130,000 kg (286,601 lb)
- **Fuel capacity:** 65,000 kg (143,300 lb)
- **Useful lift:** 232,000 kg (510,000 lb) typical gross lift
- **Powerplant:** 4 × *Daimler-Benz DB 602* V-16 liquid-cooled diesel piston engines, 890 kW (1,200 hp) each

Performance

- **Maximum speed:** 135 km/h (84 mph; 73 kn)
- **Range:** 16,500 km (10,253 mi; 8,909 nmi) at 37.5 milliseconds (0.14 km/h)

See also [edit]

- Buoyancy compensator (aviation)

Related lists

- List of Zeppelins

Notes [edit]

- ↑ ^{*a b*} Schütz, Michael. *Zeppeline über Hildesheim* , Hildesheim city archive. Last accessed 2008-08-02
- ↑ ^{*a b c d e*} Sammt 1988
- ↑ Andreas Krug. *www.luftschiff.de Photos*
- ↑ Brooks, Peter W. (1992). *Zeppelin: Rigid Airships 1893 1940* (1st ed.). London: Putnam & Company Ltd. pp. 174– 185. ISBN 0 85177 Check |isbn= value (help).

References [edit]

- *Sammt, Albert. *Mein Leben für den Zeppelin (in German)*. Verlag Pestalozzi Kinderdorf Wahlwies, 1988, pp. 167– 168. ISBN 3-921583-02-0. (Extract covering LZ 130's spying trip from 2 to 4 August 1939.*

External links [edit]

- Technical drawing of the LZ 130
- eZEP.de — The webportal for Zeppelin mail and airship memorabilia
- Zeppelin Study Group — Research group for airship memorabilia and Zeppelin mail
- Graf Zeppelin - Maiden Flight 19 September 1938 British Pathe Free Preview of maiden flight, Film ID: 981.27



VTE	Aircraft produced or designed by Luftschiffbau Zeppelin
Lighter-than-air	LZ1 LZ2 LZ3 LZ4 LZ5 LZ6 LZ7 LZ8 LZ9 LZ10 LZ11 LZ12 LZ13 LZ14 LZ15 LZ16 LZ17 LZ18 LZ19 LZ20 LZ21 LZ22 LZ23 LZ24 LZ25 LZ26 LZ27 LZ28 LZ29 LZ30 LZ31 LZ32 LZ33 LZ34 LZ35 LZ36 LZ37 LZ38 LZ39 LZ40 LZ41 LZ42 LZ43 LZ44 LZ45 LZ46 LZ47 LZ48 LZ49 LZ50 LZ51 LZ52 LZ53 LZ54 LZ55 LZ56 LZ57 LZ58 LZ59 LZ60 LZ61 LZ62 LZ63 LZ64 LZ65 LZ66 LZ67 LZ68 LZ69 (LZ70 not built) LZ71 LZ72 LZ73 LZ74 LZ75 LZ76 LZ77 LZ78 LZ79 LZ80 LZ81 LZ82 LZ83 LZ84 LZ85 LZ86 LZ87 LZ88 LZ89 LZ90 LZ91 LZ92 LZ93 LZ94 LZ95 LZ96 LZ97 LZ98 LZ99 LZ100 LZ101 LZ102 LZ103 LZ104 LZ105 LZ106 LZ107 LZ108 LZ109 LZ110 LZ111 LZ112 LZ113 LZ114 (LZ115–LZ119 not built) LZ120 LZ121 (LZ122–LZ125 not built) LZ126 LZ 127 Graf Zeppelin (LZ128 not built) LZ 129 Hindenburg LZ130 (LZ131–LZ132 not built)
Heavier-than-air	C.I C.II L 1 Rammer Fliegende Panzerfaust ZSO 523
	List of Zeppelins
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