Detailed Technical Drawings
of the

Graf Zeppelin
D-LZ130

A set of Technical Drawings of the Passenger Airship Graf Zeppelin (II)
Scale is 1/200 except as otherwise noted

Drawings by David Fowler
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FRONT ELEVATION
REAR ELEVATION

The Graf Zeppelin (II)

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CONTROL GONDOLA

ENGINE CAR (FORWARD)

4 Engine Cars
Forward Engine Cars mounted 4° outward from ship's axis
Aft Engine Cars mounted at 3° outward from ship's axis

Engine specifications:
Daimler Benz LOF 6 diesel
V16, 4 valve per cylinder
770 kW (1050 hp) maximum at 1500 rpm
690 kW (940 hp) cruising at 1350 rpm
225 g/kWh (0.37 lbs./hp/h) fuel consumption (cruising)
Engine Car (Detail)

Engine specifications:
Daimler Benz LOF 6 diesel
V16, 4 valve per cylinder

Exhaust cooling system to reclaim water for ballast.
Stage 1: Cool Water Jacket (temperature in = 400˚C, temperature out = 50˚C)
Stage 2: Cooling Radiator (temperature in = 50˚C, temperature out = 20˚C)
Final: Water is condensed and separated from the exhaust in collector (baffles) and transferred to ballast water tanks and bladders within the airship.

4 Engine Cars
Forward Engine Cars mounted 2° outward from ship’s axis
Aft Engine Cars mounted at 1° outward from ship’s axis

Scale 1/50
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Main Rings

Gas Vent

Maneuvering Valve

Pressure Relief Valve

Ventilation Shaft

"Stub" Keel for Engine Car Access

Access Ways to Engine Cars

Engine Car 1, Engine Car 2

Bulkhead Bracing Wires

Axial Corridor

Hull Fabric Covering

Keel Corridor

FEET 0 10 20 30 40 50
METERS 0 5 10 15

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Main Rings

- Gas Vent
- Pressure Relief Valve
- Maneuvering Valve
- Bulkhead Bracing Wires
- Keel Corridor
- Axial Corridor
- Ladder Shaft to Axial Corridor
- Hull Fabric Covering

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Main Rings

- Bulkhead Bracing Wires
- Hull Fabric Covering
- Axial Corridor
- Keel Corridor
- "Stub" Keel for Engine Car Access
- Engine Car 3
- Engine Car 4
- Bridge
- Access Ways to Engine Cars

Feet: 0 10 20 30 40 50
Meters: 0 5 10 15

The Graf Zeppelin (II)
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The Graf Zeppelin (II) © 2009 by David Fowler
Main Rings

Bulkhead Bracing Wires

Axial Corridor

Control Gondola

Pneumatic Landing Wheel

Gas Vent

Maneuvering Valve

Pressure Relief Valve

Ventilation Shaft

Hull Fabric Covering

Keel Corridor

Ventilation Shaft

Pressure Relief Valve

Maneuvering Valve

Gas Vent

Hull Fabric Covering

Keel Corridor

Main Rings

Bulkhead Bracing Wires

Axial Corridor

Control Gondola

Pneumatic Landing Wheel

Gas Vent

Maneuvering Valve

Pressure Relief Valve

Ventilation Shaft

Hull Fabric Covering

Keel Corridor

The Graf Zeppelin (II)

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Main Rings

Keel Corridor

Bulkhead Bracing Wires

Axial Corridor

Feet

Meters

0 10 20 30 40 50

0 5 10 15

Observation Platform

Ladder

Hull Fabric Covering

Mooring Platform

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Intermediate Rings

Gas Cell (made from "Goldbeater's Skin")
Axial Corridor
Tube through Gas Cell for Axial Corridor

178 (looking aft)

Ring 198 is a typical Intermediate Ring

198

Fabric Hull Cover

Intermediate Rings 237 and 241 are 18 sided. Longitudinal girders create 36 apices.

237

Passenger Area

Extent of LZ-129 "Hindenburg" Passenger Area

Pantry on "A" Deck

Passenger "B" Deck

"C" Deck Passenger Cabin

Keel Corridor

Kitchen on "C" Deck

Traveler's Room

Passenger "B" Deck

Keel Corridor

Girders create 36 apices.

Feet 0 10 20 30 40 50
Meters 0 5 10 15

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Main Ring construction of the Tail Fins is braced through the hull to the opposing Fin by the Tail Fin Cruciform Structure. Main Ribs constructed using triangular girders; Intermediate ribs constructed using flat girders. Tests showed that most of the stress was on the leading edge of the fin, so the intermediate ribs were reduced in number from the center to the trailing edge to save weight.
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Gas Vent
Intermediate Ring
Main Ring
Gas Cell Cord Netting*
Circumferential Wires*
Gas Cell Wire Netting*
Diagonal Shear Wires
Longitudinal Wires*
Axial Corridor
"Stub" Keel for Engine Car Access
"Stub" Keel for Engine Car Access

* wiring and netting extend throughout entire frame, but are omitted in other cells for clarity.

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Gas Cell No.
Frame No.

VI  GAS CELL NO.  VII  VIII  IX  X  XI
FRAME NO.  92  107  123.5  140  156.5

FEET  0  10  20  30  40  50
METERS  0  5  10  15
* the axial corridor extends the length of the airship, but is omitted for clarity where it would obscure other details.
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Explanation of Letters on Longitudinal Cross Section and Plan Views

- **a1**: Fuel Oil Barrels (2,500 liters) (28)
- **a2**: Fuel Oil Valve Barrels (2,500 liters) (4)
- **a3**: Fuel Oil Operation Barrels (800 liters) (4)
- **a4**: Fuel Oil Barrels (1,250 liters) (4)
- **b1**: Fuel Oil Barrels (850 liters) (2)
- **b2**: Lubrication Oil Barrels (600 liters) (6)
- **c1**: Lubrication Oil Barrels (380 liters) (4)
- **c2**: Drinking Water Barrels (2,500 liters)
- **ci**: Passenger Drinking Water Barrels (200 Liters) (2)
- **d1**: Fresh Water Barrels (2,500 liters) (2)
- **e1**: Waste Water Barrels (2,500 liters) (2)
- **e2**: Barrels for Recovered Ballast Water (2,500 liters) (9)
- **f1**: Barrels for Recovered Ballast Water (2,000 liters) (2)
- **g1**: Double Ballast Bags (500 liters) (4)
- **h1**: Coolant Water Barrels (400 liters) (4)
- **i1**: Baggage Room (500 kg) (2)
- **i2**: Spare Parts Storage Room (500 kg) (2)
- **i3**: Food and Storage Room (500 kg) (2)
- **i4**: Food/Storage Room (250 kg) (2)
- **i5**: Engineer's Room
- **o1**: Exhaust
- **p1**: Washroom and Toilet
- **q1**: Workshop
- **r1**: Access Way to Engine Cars (4)
- **s1**: Access Ways to Ballast Bags (4)
- **t1**: Maneuvering Valve (14)
- **u1**: Pressure Relief Valve (14)
- **v1**: Gas Valve (7)
- **w1**: Ventilation Shaft (3)
- **x1**: Ladder Shafts (5)
- **y1**: Anchor Cones (2)

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