Appendix 5
Characteristics of Rigid Airships

Airship	*Type*	*First flight*	*Gas capacity (cu m)*	*Gas capacity later (cu m)*	*Engines*	*Total max power (cv)*	*Length (m)*	*Diamet (m)*	*Spacing of main frames (m)*	*Gas cells*	*Empty weight (kg)*	*Typical gross lift (kg)*	*Empty weight as percentage of gross lift*	*Maximum speed (m/s)*	*Maximum range (km)*	*Crew/passengers*	*Main structural material*	*Number built*	*Remarks*
Schwarz No.2		3.11.97	3,700	–	1 Daimler P1896	12	47.5	*	3.5	1	3,560	4,300	82.8	7.5		1	Aluminium	1	Crashed on first flight
Zeppelin LZ1	a	2.7.00	11,300	–	2 Daimler N1899	28	128.0	11.7	8.0	17	10,300	13,100	78.6	7.8	280	5	Zn-Al Alloy	1	
Zeppelin LZ2	b	17.1.06	10,400	12,200	2 Daimler H4L	160	128.0	11.7	8.0	16	9,250	12,050	76.6	11.0	1,100	7	Zn-Al Alloy	2	
Zeppelin LZ4	c	20.6.08	15,000	–	2 Daimler J4	210	136.0	13.0	8.0	17	12,750	17,400	73.3	13.5	1,450	11/14	Zn-Al Alloy	2	
Zeppelin LZ6	d	25.8.09	15,000	16,000	2 Daimler J4L	230	136.0	13.0	8.0	17	13,550	17,400	77.9	13.5	2,000	7/10	Zn-Al Alloy	1	Later 3 engines
Zeppelin LZ7 *Deutschland*	e	19.6.10	19,300	–	3 Daimler J4F	360	148.0	14.0	8.0	18	15,600	22,400	69.6	16.7	1,600	8/20	Zn-Al Alloy	2	
Vickers No.1		(22.5.11)o	18,800	–	2 Wolseley	320	156.0	14.6	Var	17	19,900	20,500	91.3	(18.8)	(1,750)	22/–	Duralumin	1	Did not fly
Zeppelin LZ10 *Schwaben*	f	26.6.11	17,800	16,550	3 Maybach A-Z	435	140.0	14.0	8.0	17	13,600	20,650	65.9	21.0	1,450	8/20	Zn-Al Alloy	3	
Schütte-Lanz S.L.1	'a'	17.10.11	20,500	–	2 Daimler J8L	480	131.0	18.4	12.0	7	19,300	23,800	81.1	19.7	1,060	12/–	Wood	1	
Zeppelin LZ11 *Viktoria-Luise*	g	14.2.12	18,700	–	3 Maybach B-Y	450	148.0	14.0	8.0	18	15,150	21,700	69.8	21.0	1,100	8/25	Zn-Al Alloy	2	
Zeppelin LZ14 (L1)	h	7.10.12	22,470	19,500	3 Maybach B-Y	540	158.0	14.9	8.0	18	17,900	26,100	68.5	21.2	2,300	20/–	Zn-Al Alloy	6	
Zodiac 13 Spiess		4.13	12,800	16,400	2 Chenu	420	113.0	13.5	9.0	14		12,875		18.0	1,560	7/–	Wood	1	At first 1 engine
Zeppelin LZ18 (L2)	i	9.9.13	27,000	–	4 Maybach C-X	840	158.0	16.6	8.0	18	20,250	31,350	64.6	21.0	2,100	23/–	Zn-Al Alloy	1	
Zeppelin LZ21 (ZVI)	k	10.11.13	20,870	–	3 Maybach C-X	540	148.0	14.9	8.0	17	15,450	24,250	63.6	20.5	1,900	18/–	Zn-Al Alloy	1	
Zeppelin LZ22 (ZVII)	l	8.1.14	22,140	–	3 Maybach C-X	540	156.0	14.9	8.0	18	16,850	25,700	65.5	20.0	1,900	18/–	Zn-Al Alloy	2	
Schütte-Lanz S.L.2 (S.L.II)	'b'	28.2.14	25,000	27,000	4 Maybach C-X	720	144.0	18.2	12.0	15	21,000	29,000	72.4	24.5	2,100	19/–	Wood	1	
Zeppelin LZ24 (L3)	m	11.5.14	22,470	–	3 Maybach C-X	540	158.0	14.9	8.0	18	16,900	26,100	64.7	23.4	2,200	16/–	Zn-Al Alloy	12	
Zeppelin LZ26 (ZXII)	n	14.12.14	25,000	–	3 Maybach C-X	540	161.2	16.0	10.0	15	16,800	29,000	57.9	22.5	3,300	18/–	Duralumin	1	
Schütte-Lanz S.L.3	'c'	4.2.15	32,410	–	4 Maybach C-X	840	153.1	19.7	9.0	17	24,400	37,600	64.9	23.5	2,500	19/–	Wood	3	
Zeppelin LZ36 (L9)	o	8.3.15	24,900	–	3 Maybach C-X	540	161.4	16.0	10.0	15	17,800	28,900	61.6	23.6	3,300	16/–	Duralumin	2	
Zeppelin LZ38 (L10)	p	3.4.15	31,900	35,800	4 Maybach C-X	720	163.5	18.7	10.0	15	20,800	37,000	56.3	26.7	4,300	18/–	Duralumin	22	
Schütte-Lanz S.L.6	'd'	19.9.15	35,130	–	4 Maybach C-X	840	162.1	19.7	9.0	18	24,900	40,700	61.2	25.8		16/–	Wood	2	
Zeppelin LZ59 (L20)	q	21.12.15	35,800	–	4 Maybach H-S-Lu	960	178.5	18.7	10.0	18	23,650	41,550	57.0	26.5	4,300	16/–	Duralumin	12	
Schütte-Lanz S.L.8	'e'	30.3.16	35,130	38,780	4 Maybach H-S-Lu	960	174.0	20.1	9.0	18	22,000	40,750	54.1	26.9		16/–	Wood	10/12	
Zeppelin LZ62 (L30)	r	28.5.16	55,000	55,200	6 Maybach H-S-Lu	1440	198.0	23.9	10.0	19	31,400	63,800	49.1	28.7	7,400	17/–	Duralumin	17	
Vickers No.9		27.11.16	25,180	–	4 Maybach C-X	600	161.5	16.2	9.1	17	27,100	27,470	92.8	20.1	2,600	14/–	Duralumin	1	Later 3 engines
Zeppelin LZ91 (L42)	s	22.2.17	55,500	–	5 Maybach H-S-Lu	1200	196.5	23.9	10.0	18	28,100	64,500	43.6	27.7	10,400	23/–	Duralumin	2	
Zeppelin LZ93 (L44)	t	1.4.17	55,800	–	5 Maybach H-S-Lu	1200	196.5	23.9	10.0	18	26,900	64,750	41.6	28.9	11,500	23/–	Duralumin	2	
Zeppelin LZ95 (L48)	u	22.5.17	55,800	–	5 Maybach H-S-Lu	1200	196.5	23.9	10.0	18	25,750	64,750	39.8	29.9		19/–	Duralumin	5	
Zeppelin LZ100 (L53)	v	8.8.17	56,000	–	5 Maybach H-S-Lu	1200	196.5	23.9	15.0	14	25,000	65,000	38.5	29.9	13,500	19/–	Duralumin	10	
Schütte-Lanz S.L.20	'f'	10.9.17	56,000	–	5 Maybach H-S-Lu	1200	198.3	22.9	10.0	19	27,100	65,000	41.7	28.5		16/–	Wood	3	
Vickers No.23		19.9.17	28,250	–	4 Rolls-Royce Eagle	1000	163.1	16.2	9.1	18	27,000	30,790	82.3	23.2	3,050	16/–	Duralumin	4	Later 3 engines
Zeppelin LZ102 (L57)	w	26.9.17	68,500	–	5 Maybach H-S-Lu	1200	226.5	23.9	15.0	16	27,400	79,500	34.5	28.6	16,000	22/–	Duralumin	2	
Admiralty R27 (23X class)		29.6.18	28,050	–	4 Rolls-Royce Eagle	1200	164.3	16.2	9.1	18	25,000	30,575	76.6	24.6	1,700	16/–	Duralumin	2	
Zeppelin LZ112 (L70)	x	1.7.18	62,200	68,500	7 Maybach Mb IVa	1715	211.1	23.9	15.0	15	24,700	72,200	34.2	36.4	12,000	30/–	Duralumin	3	Later 6 engines
Admiralty R31		1.8.18	43,975	–	6 Rolls-Royce Eagle	1800	187.3	20.1	12.0	20	31,200	47,935	61.1	31.8	3,200	21/–	Wood	2	Later 5 engines
Admiralty R33		6.3.19	55,460	–	5 Sunbeam Maori IV	1250	196.0	24.0	10.0	19	36,900	64,450	57.3	26.8	7,750	23/–	Duralumin	2	
Zeppelin LZ120 *Bodensee*	y	20.8.19	20,000	22,550	4 Maybach Mb IVa	980	120.8	18.7	10.0	12	13,200	23,200	56.9	36.8	1,700	16/21	Duralumin	2	
Vickers R80	*	19.7.20	35,680	–	4 Maybach Mb IVa	980	162.0	21.3	10.0	15	22,000	38,890	53.1	26.8	10,300	20/–	Duralumin	1	
Admiralty R36		1.4.21	60,030	–	5 3 Sunbeam Cossack and 2 Maybach Mb IVa	1540	205.0	24.0	10.0	20	53,400	65,430	76.6	29.1	12,500	28/50	Duralumin	1	With passenger cabin
RAW R38 (ZR-2)		23.6.21	77,600	–	6 Sunbeam Cossack	2100	211.8	26.0	15.0	14	36,700	84,585	40.8	29.5	10.500	30/–	Duralumin	1	
NAF ZR-1 *Shenandoah*		4.9.23	60,915	–	6 Packard 1A-1551	1800	207.3	24.0	10.0	20	35,100	64,740†	53.4	28.0	4,200	23/–	Duralumin	1	Later 5 engines
Zeppelin LZ126 *Los Angeles*		27.8.24	70,000	–	5 Maybach VL1	2000	200.0	31.9	15.0	13	42,200	81,300	52.0	32.7	12,500	28/20	Duralumin	1	Later helium-filled
Zeppelin LZ127 *Graf Zeppelin*		18.9.28	75,000	–	5 Maybach VL2	2650	236.6	30.5	15.0	16	67,100	87,000	77.1	35.6	10,000	36/20	Duralumin	1	Blaugas fuel
Metalclad ZMC-2		19.8.29	5,720	–	2 Wright J-5 Whirlwind	440	45.5	16.0		1	4,135	6,175†	67.1	27.7	1,100	3/–	Dural and Alclad	1	
RAW R101		14.10.29	141,540	156,000	5 Beardmore Tornado III	2925	222.9	40.0	Var	16	91,440	154,280	67.8	31.3	8,600	48/50	Dural and Steel	1	
AGC R100		16.12.29	146,060	–	6 Rolls-Royce Condor IIIB	4020	216.1	40.5	12.2	15	106,600	159,205	62.8	36.3	10,200	37/100	Duralumin	1	
Goodyear-Zeppelin ZRS4 *Akron*		25.9.31	193,970	–	8 Maybach VL2	4560	239.3	40.5	22.5	12	111,000	209,200†	53.1	37.6	11,000	60/–	Duralumin	2	
Zeppelin LZ129 *Hindenburg*		4.3.36	200,000	–	4 Daimler-Benz DB 602	4200	245.0	41.2	15.0	16	130,000	232,000	56.1	37.5	16,500	40/50	Duralumin	2	

* Oval section: 14 m by 12 m
o Did not fly. Date of leaving shed
† Helium

NOTES

1 Most published data on airships are unreliable and often contradictory. The figures in the above table are taken from what appears to be the most reliable source in each case and, as far as possible, are mutually consistent.

2 The capacities quoted are intended to be for 100 per cent inflation of the lifting gas cells. However there are usually wide discrepancies in recorded figures for gas capacities. This is because of confusion with 'nominal capacity' (usually 95 per cent of full) and with the air volume of the hull. There are also frequent errors of conversion to and from metric units.

3 'Typical gross lift' is a notional figure derived from gas capacity in each case. It is calculated on the assumption of 1,160 kg of lift per 1,000 cu m of hydrogen or 1,070 kg of lift per 1,000 cu m of helium, as the case may be.

4 Sometimes there were quite important differences between individual airships in one class. In general the table gives details of the first airship in each class only. Alternative gas capacities are quoted for cases where 'stretched' or 'cut-down' variants are known to have existed, either as originally built or produced by modification.

5 The figures for maximum range in the table are, unfortunately, almost certainly not all comparable. This is partly because figures were often quoted for fuel tankages which included fuel carried in ballast tanks, which was not a normally acceptable operating practice.

6 Performance and load-carrying capabilities of airships are more sensitive to operating conditions, pilot technique, weather and climate than are heavier-than-air craft. Thus, for example, the disposable lift of R101 would have been reduced from its average value in Britain by no less than 11 tons (30 per cent) in the summer months in India. There were different operating philosophies in relation to the use of dynamic lift. Zeppelin pilots apparently tended to keep their ships more in static equilibrium than some others; that is to say they made less use of the upward or downward force resulting from flying nose up or nose down. Use of dynamic lift had a serious adverse effect on speed.