

KEY
TO THE DEVELOPMENT
OF
THE SUPER-AIRSHIP
LUFTFAHRZEUGBAU SCHUETTE - LANZ
MANNHEIM-RHEINAU
GERMANY
1909 - 1930

DEVELOPMENT OF THE SUPER-AIRSHIP
PAST, PRESENT AND FUTURE

A SUCCINCT STATEMENT OF FACTS - AUTHORITIES AND SUPPORTING DATA.
PATENT STATUS - HISTORY, LEGAL AND TECHNICAL OPINIONS.

The following pages are excerpts from this report and contain the specifications for both Schutte-Lanz and Zeppelin airships.

COLLATED AND EDITED
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ANALYSIS OF ZEPPELIN POST WAR AIRSHIPS - 1923-1930

STATICS - Showing low USEFUL LOAD Efficiencies

Published Data	"LOS ANGELES"		"GRAF ZEPPELIN"		"SERNANDOAH"	"ZEPPELIN LZ-96"
	U.S.Navy 1929	Zeppelein Co. 1924	Goodyear 1930	Zeppelein Co. 1929	U.S.Navy 1924	German Navy L-49 1918
	(Helium)	(Hy.-He.)	(Hydrogen)	(Hydrogen)	(Helium)	(Hydrogen)
Geometric Vol.	2,599,110	-	-	3,877,500	2,289,861	-
Nominal Vol.	2,470,000	2,471,000	3,700,000	3,708,000	2,115,174	1,969,740
Length Ft.	658-4	656	776	776.2	680-2	645
Diameter Ft.	90-3	90.7	100	100.1	73-9	78.7
Horse-power	2000	2000	2750	2550	1500	1200
Speed Knots	65.7	68	70	69	51	57
Gross Lift	154,322	172,970 Hy 154,357 He	258,000	262,000	129,000	137,882 Hy 127,063 He
Weight - Ship	92,616	82,587	168,000	122,000	80,226	52,654
Useful Load	61,706	101,200 Hy 71,770 He	90,000	140,000	48,774	85,228 Hy 74,409 He
Ballast	17,500	17,500	12,000	12,000	14,300	12,400
Crew, Stores	7,700	7,700	6,000	6,000	6,000	4,000
Fuel, Oil	36,506	76,000 Hy 46,570 He	72,000	88,000	28,474	68,828 Hy 58,009 He
Passengers	-	-	-	4,000	-	-
Pay Load	-	-	-	30,000	-	-
Radius	4,000	6,745	6,100	9,000	3,980	9,790 Hy 8,170 He
Hours	66	112	101	150	66	163 136
Weight - Ship	60%	47.6% Hy 53.6% He	65%	53.4%	62.2%	38% Hy 41% He
Useful Load	40%	52.4% Hy 46.4% He	35%	46.6%	37.8% He	62% Hy 59% He

AIRSHIP DESIGNS - 1918-1930 - COMPARATIVE ANALYSIS

Schütte-Lanz - Zeppelin - British - United States

<u>1918-1930</u>	<u>Capacity</u> Cu. Ft.	<u>Length</u>	<u>Diam.</u>	<u>H.P.</u>	<u>Speed</u> Miles	<u>Gross Lift</u> (Hydrogen)	<u>Useful</u> <u>Load</u>	<u>Radius</u> <u>F. Speed</u>	<u>Radius</u> <u>Cruising</u>	<u>Remarks</u>
<u>Schütte-Lanz</u>										
SL-23	2,252,140	662	83	2240	76	157,659	101,200 Hy	5180	6583	1918 - Navy
SL-24	2,753,400	761	83	2240	72	192,738	132,900	6205	7878	1918 "
SL-25	1,059,000	469	69	1200	75	76,890	34,584	3847	4834	1920 Commercial
SL-26	1,482,600	594	69	1200	66	107,600	56,122	5828	7446	1922 "
SL-27	2,259,200	663	83	2400	80	163,768	82,368	5180	6583	" "
SL-28	2,753,400	761	83	2400	75	199,914	105,639	6205	7878	" "
SL-29	3,353,500	751	97	3000	80	223,314	122,254	6313	7985	" "
SL-30	5,295,000	899	115	3900	70	383,790	193,050	7392	9389	" "
SL-31 - US Navy	6,415,775	784	134	4800	84	397,252 He	214,597 He	8286	12663	1928-US Navy
<u>Zeppelin</u>										
LZ-112 (L-70)	2,195,660	694	78	2030	80	153,650 Hy	96,800 Hy	2800	4000	
LZ-113 (L-71)	"	"	"	1740	"	"	"	"	"	
LZ-114 (L-72)	"	"	"	1740	"	"	"	"	"	
LZ-120 -Bodensee	794,250	426	61	960	78	55,598	25,300	--	--	
LZ-126 -Los Angeles	2,470,000	658	191	2000	72	158,000 He	41,770 He	2800	4000	US Navy-Helium
LZ-127 -Graf Zepp.	3,700,000	776	100	2750	78	258,000 Hy	90,000 Hy	--	6125	German-Hydrogen
LZ-128	5,287,500	813	132	4800	76	370,125 "	--	--	--	--
British R-100	5,000,000	709	133	4200	80	349,440 Hy	143,360 Hy	3600	6010	British-Hydrogen
" R-101	5,500,000	777	133	4200	75	365,750 Hy	135,030 Hy	3600	6010	" "
USZRS-4 - "AKRON"	6,500,000	785	133	4480	84	403,000 He	182,000 He	6120	9180	US Navy-Helium

RELATIVE MERITS OF AIRSHIPSSCHÜTTE-LANZ (SL) 1911-1918 - ZEPPELIN (LZ) 1900-1918

(This data correlated from Official United States and British Records, German Technical publications, Zeppelin publications and information and Schütte-Lanz Records, publications and information.)

<u>1900-1909</u>	<u>Speed</u> <u>Miles</u>	<u>Flights</u>	<u>Endurance</u> <u>Flight</u>	<u>Altitude</u>	<u>H.P.</u>	<u>Gross</u> <u>Lift</u>	<u>Useful</u> <u>Load</u>	<u>Capacity</u> <u>Cu. Ft.</u>	<u>Remarks</u>
<u>Zeppelin</u>									
LZ-1	18	3	80 M	2906	29	24,922	--	398,890	1900-1901 - Abandoned
LZ-2	24	2	58 M	2788	170	24,922	6,160	398,890	1905-1906 - Dismantled
LZ-3 (Army Z-1)	26	37	12 hrs.	3608	220	30,160	6,390	430,860	March 1909 - Army Z-1
LZ-4	28	8	12 "	3936	200	37,065	9,900	529,500	1908 - Destroyed on trial flight.
LZ-5 (Army Z-2)	28	10	26 "	4592	200	37,065	9,900	529,500	May 26, 1909 - Army Z-2
LZ-6	34	33	23 "	3936	370	37,065	9,680	564,800	Oct. 1909 - Rejected by Army Competition with Parseval P-1 and M-2 - Non-rigids.

(Foregoing Zeppelin Airships were prior to Schütte-Lanz identity with the Art.)

<u>Comparative</u>	<u>Speed</u> <u>Miles</u>	<u>Flights</u>	<u>Endurance</u> <u>Flight</u>	<u>Altitude</u>	<u>H.P.</u>	<u>Gross</u> <u>Lift</u>	<u>Useful</u> <u>Load</u>	<u>Capacity</u> <u>Cu. Ft.</u>	<u>Remarks</u>
<u>1909-1911</u>									
Schütte-Lanz SL-1	43	85	37 hrs.	5740	480	50,655	9,900	723,650	1911 - Army SL-1
Zeppelin LZ-3	26	37	12 "	3608	220	30,160	6,380	430,860	1909 " Z-1
" LZ-5	28	10	26 "	4592	200	37,065	9,900	529,500	1910 " Z-2
<u>Superiority</u>									
SL-1 vs. LZ-3	65%	--	208%	31%	118%	64%	55%	90%	
" " LZ-5	65%	--	25%	25%	140%	36%	0	36%	

	Speed Miles	Flights	Endurance Flight	Altitude	H.P.	Gross Lift	Useful Load	Capacity Cu. Ft.	Remarks
<u>1911-1914</u>									
Schütte-Lanz SL-2	55	80	40 hrs.	11,808	840	67,593	22,880	970,750	Feb. 1914 - Army SL-2
Zeppelin LZ-25	45	13	12 "	9,180	630	55,598	19,800	794,250	July 1914 - Army Z-9
Superiority SL-2	23%	--	223%	29%	32%	21%	15%	22%	
<u>1915</u>									
Schütte-Lanz SL-3	53	105	46 hrs.	15,744	840	80,308	29,040	1,147,250	Feb. 1915 - Army SL-3
Zeppelin LZ-38	55	18	13 "	13,120	630	70,400	33,000	1,129,600	April 1915 - " LZ-38
Superiority SL-3	-4%	--	253%	20%	33%	12%	-19%	0	
<u>1916</u>									
Schütte-Lanz SL-8	63	76	28 hrs.	17,056	960	95,832	41,140	1,349,640	March 1916 - Navy SL-8
Zeppelin LZ-51	57	43	17 "	12,464	960	88,462	38,500	1,263,740	Oct. 1915 - Army LZ-81
Superiority SL-8	4%	--	60%	37%	--	8%	7%	8%	
<u>1917</u>									
Schütte-Lanz SL-20	63	140	34 hrs.	26,240	1200	138,376	78,100	1,976,800	Sept. 1917 - Navy SL-20
Zeppelin LZ-91	66	65	30 "	20,336	1220	137,882	85,800	1,969,740	June 1917 - " LZ-42
Superiority SL-20	-4%	--	13%	20%	-2%	--	8%	--	
<u>1918</u>									
Schütte-Lanz SL-24	73	0	0	26,240	2240	192,738	132,900	2,753,400	Oct. 1918-No trial-Destroyed by French after Armistice.
Zeppelin LZ-104	63	18	95 hrs.	23,288	1200	169,650	114,400	2,418,050	Oct. 1917 - Navy LZ-59
Superiority SL-24	15%	0	--	--	86%	18%	13%	13%	No endurance comparison

SCHÜTTE-LANZ AIRSHIP DEVELOPMENT 1908-1930

(This data correlated from information obtained from United States and British Records, German Technical Publications, and Schütte-Lanz Records, publications and information. The official Military and Naval Records of Airship Operations not released by the German Government.)

<u>Builder Number</u>	<u>Name</u>	<u>Capacity Cu. Ft.</u>	<u>Length</u>	<u>Diam.</u>	<u>H.P.</u>	<u>Knots</u>	<u>Gross Lift</u>	<u>Useful Load</u>	<u>In Service</u>
<u>1908-11</u>									
SL-1	Schütte	723,650	430	60	480	38	50,655	9,900	10/17/11 - 7/17/13
<u>1913-14</u>									
SL-2	Army SL-2	882,500	472	60	720	47	61,775	17,600	2/28/14 - 1/10/16
SL-2		970,750	512	60	840	48	67,953	22,880	4/25/15 - 12/15/15
<u>1914-15</u>									
SL-3	Navy SL-3	1,147,250	502	65	840	46	80,308	29,040	2/ 4/15 - 5/ 1/16
SL-4	" SL-4	"	"	"	"	"	"	30,800	4/25/15 - 12/15/15
SL-5	Army SL-5	"	"	"	"	"	"	31,460	6/ /15 - 7/ 7/15
SL-6	Navy SL-6	1,239,030	532	65	840	50	86,730	34,760	9/19/15 - 11/18/15
SL-7	Army SL-7	"	"	"	"	"	"	"	9/ 3/15 - 3/ 3/17
<u>1915-16</u>									
SL-8	Navy SL-8	1,349,640	571	66	960	52	95,832	41,140	3/30/16 - 11/20/17
SL-9	" SL-9	"	"	"	"	50	"	43,560	5/24/16 - 3/30/17
SL-10	Army SL-10	"	"	"	"	49	"	47,300	5/17/16 - 7/28/16
SL-11	" SL-11	"	"	"	"	50	"	46,200	8/ 2/16 - 9/ 3/16
SL-12	Navy SL-12	"	"	"	"	45	"	46,200	11/ 9/16 - 12/28/16
SL-13	Army SL-13	"	"	"	"	49	"	45,100	10/19/16 - 2/ 8/17
SL-14	Navy SL-14	"	"	"	"	50	"	45,100	8/28/16 - 5/11/17
SL-15	Army SL-15	"	"	"	"	52	"	47,300	11/ 9/16 - 8/ 1/17
SL-16	" SL-16	"	"	"	"	52	"	47,300	1/18/17 - 8/ /17
SL-17	" SL-17	"	"	"	"	52	"	47,300	3/27/17 - 3/ /17
SL-18	" SL-18	"	"	"	"	52	"	47,300	2/ 8/17
SL-19	" SL-19	"	"	"	"	52	"	47,300	-

DEVELOPMENT 1908-1930 - Cont'd.

		<u>Capacity</u>	<u>Length</u>	<u>Diam.</u>	<u>H.P.</u>	<u>Knots</u>	<u>Gross</u>	<u>Useful</u>	<u>In Service</u>
<u>Name</u>		<u>Cu. Ft.</u>					<u>Lift</u>	<u>Load</u>	
<u>1916-17</u>									
SL-20	Navy SL-20	1,976,800	650	75	1200	55	138,376	78,100	9/10/17 - 1/5/18
SL-21	Army F-2	"	"	"	"	55	"	79,200	11/26/17 - 2/ /18
SL-22	Navy SL-22	"	"	"	"	55	"	82,500	6/5/18 - 6/ /20
<u>1918</u>									
SL-23	Navy SL-23	2,252,140	662	83	2240	66	157,650	101,200	Oct.1918 - Not completed end of War.
SL-24	Navy SL-24	2,753,400	761	83	2240	63	192,738	132,900	Oct.1918 - Completed. No trial. Destroyed by French after Armistice.

SCHÜTTE-LANZ AIRSHIPS - DESIGNS - DEVELOPED 1918-1920-1922-1928

<u>1918-1930</u>	<u>Capacity</u>	<u>Length</u>	<u>Diam.</u>	<u>H.P.</u>	<u>Miles</u>	<u>Gross</u>	<u>Useful</u>	<u>Radius</u>	<u>Radius</u>	<u>Remarks</u>
	<u>Cu. Ft.</u>					<u>Lift</u>	<u>Load</u>	<u>F.Speed</u>	<u>Cruising</u>	
<u>Schütte-lanz</u>										
SL-23	2,252,140	662	83	2240	76	157,659 Hy	101,200	5180	6583	1918 - Navy
SL-24	2,753,400	761	83	2240	72	192,738	132,900	6205	7878	1918 - "
SL-25	1,059,000	469	69	1200	75	76,890	34,584	3847	4834	1920 - Commercial
SL-26	1,482,600	594	69	1200	66	107,600	56,122	5828	7446	1922 - "
SL-27	2,259,200	663	83	2400	80	163,768	82,368	5180	6583	" "
SL-28	2,753,400	761	83	2400	75	199,914	105,639	6205	7878	" "
SL-29	3,353,500	751	97	3000	80	223,314	122,254	6313	7985	" "
SL-30	5,295,000	899	115	3900	70	383,790	193,050	7392	9389	" "
SL-31	US Navy 6,415,775	784	134	4800	84	397,252 He	214,597	8286	12663	1928 - US Navy

ZEPPELIN AIRSHIP DEVELOPMENT 1898-1930

(This data correlated from information obtained from United States and British Records, German Technical publications and Zeppelin publications and information. The Official Military records of airship operations not released by the German Government.)

Builder Number	Name	Capacity Cu. Ft.	Length	Diam.	HP.	Knots	Gross Lift	Useful Load	Flights	Raids	Scouts	L I F E	
												From	To
1898 - 1900	Zepplin LZ-1	398,890	419	37	29	16	24,922	-	3	-	-	1/2/1900	Spg.1901
1905	Zepplin LZ-2	398,890	419	37	170	21	24,922	6160	2	-	-	11/30/05	1/17/06
1906	Army Z-1	398,890 430,860	419 446	37 37	170 220	21 23	24,922 30,160	6160 6380	- 100	-	-	9/10/06	Fall 1913
1908	Zepplin LZ-4	529,500	446	43	200	24	37,065	9900	8	-	-	6/20/08	8/5/08
1909	Army Z-2	529,500	446	43	200	24	37,065	9900	10	-	-	5/26/09	4/10/10
LZ-6	Zepplin LZ-6	529,500	446	43	230	25	37,065	9680					
	REJECTED	564,800	472	43	370	30	39,536	9680	36	-	-	8/25/09	9/14/10
1910	DELAG Deutschland	681,290	485	46	360	30	47,690	14,300	7	-	-	6/19/10	6/28/10

AIRCRAFT DEVELOPMENT 1898-1930

Year	Name	Capacity Cu. Ft.	Length	Diam.	HP.	Knots	Gross Lift	Useful Load	Flights	Raids	Scouts	L I F E		
												From	To	
<u>1911</u>														
	DELAG													
LZ-8	Ersatz	681,290	485	46	360	30	47,690	14,300	22	-	-	3/30/11	-	5/6/11
LZ-10	Schwaben	628,340	459	46	420	40	43,984	13,640	382	-	-	6/26/11	-	6/28/12
LZ-9	Army Z-2	593,040	433)					9,900						
		628,340	459)	46	420	40	43,984	13,200	15	-	-	10/2/11	-	8/1/14
<u>1912</u>														
LZ-11	"Viktoria Luise	660,110	489	46	420	40	46,080	14,080	489	-	-	2/12/11	-	Fall/15
LZ-13	Hanza	660,110	459	46	420	40	46,208	14,080	399	-	-	7/30/12	-	8/ /16
LZ-12	Army Z-3	628,340	459	46	420	40	43,984	13,640	36	-	-	3/ 2/12	-	8/ /16
LZ-14	Navy L-1	786,275	518	49	495	40	55,039	19,800	74	-	-	10/7/12	-	9/ 9/13
<u>1913</u>														
LZ-15	Army Z-1	688,350	466	49	495	40	48,185	15,400	-	-	-	1/ 6/13	-	3/19/13
LZ-16	Army Z-4	688,350	466	49	495	40	48,185	15,400	545	8	188	3/14/13	-	Fall /16
LZ-17	DELAG "Sachen"	688,350	459	49	495	40	48,185	15,400	-	-	-	5/ 3/13	-	Fall /16
		736,710	485	49	495	37	51,590	16,500	419	-	-			
LZ-18	Navy L-2	953,100	518	54	660	40	68,717	24,200	10	-	-	9/ 9/13	-	10/17/13
LZ-19	Army Z-1**	688,350	459	49	495	39	48,185	15,400	-	-	-	6/ 6/13	-	6/13/14
LZ-20	Army Z-5	688,350	485	49	495	40	48,185	15,400	-	-	-			
		736,710	485	49	495	37	51,590	16,500	22	1	6	7/ 8/13	-	8/27/14
LZ-21	Army Z-6	736,710	485	49	495	39	51,590	15,400	7	1	-	11/10/13	-	8/ 6/14
<u>1914</u>														
LZ-22	Army Z-7	781,542	512	49	525	40	54,708	17,600	25	1	-	1/ 8/14	-	8/23/14
LZ-23	Army Z-8	781,542	512	49	525	39	54,708	17,600	11	1	-	2/21/14	-	8/23/14
LZ-24	Navy L-3	794,250	518	49	630	41	55,598	19,800	141	1	26	5/11/14	-	2/ 2/15
LZ-25	Army Z-9	794,250	518	49	630	41	55,598	19,800	13	2	-	7/29/14	-	10/ 8/14

(Before War)

MENT - From August 1, 1914

Beginning of WAR.

Number	Name	Capacity Cu. Ft.	Length	Diam.	HP.	Knots	Gross Lift	Useful Load	Flights	Raids	Scouts	L I F E	
												From	To
<u>1914-15</u>													
LZ-26	Army Z-12	882,500	529	52	630	42	61,775	24,200	127	11	-	12/14/14-	8/ 8/17
LZ-36	Navy L- 9	"	"	"	"	"	"	"	103	8	44	3/ 3/15-	9/16/16
LZ-39	Army LZ-39	"	"	"	"	"	"	22,000	24	6	-	4/25/15-	12/12/15
LZ-27	Navy L- 4	794,250	518	49	630	41	54,708	19,800	50	1	11	8/28/15-	2/17/15
LZ-28	Navy L- 5	"	"	"	"	"	"	"	95	2	50	9/28/14-	8/ 6/15
LZ-29	Army Z-10	"	"	"	"	"	"	"	8	2	-	10/13/14-	3/13/15
LZ-30	Army Z-11	"	"	"	"	"	"	"	9	-	-	11/14/14-	5/20/15
LZ-31	Navy L- 6	"	"	"	"	"	"	"	90	2	34	2/ 3/14-	9/19/16
LZ-32	Navy L- 7	"	"	"	"	"	"	"	165	2	77	11/20/15-	5/ 4/16
LZ-33	Navy L- 8	"	"	"	"	"	"	"	21	1	-	12/17/14-	3/ 5/15
LZ-34	Army LZ-34	"	"	"	"	"	"	"	19	2	-	1/ 6/15-	5/21/15
LZ-35	Army LZ-35	"	"	"	"	"	"	"	8	2	-	1/11/15-	4/13/15
LZ-37	Army LZ-37	"	"	"	"	"	"	"	8	1	-	2/28/15-	6/ 7/15
LZ-38	Army LZ-38	1,129,600	536	61	630	48	70,400	33,000	18	5	-	4/ 3/15-	6/ 7/15
LZ-40	Navy L-10	"	"	"	840	50	"	35,200	29	9	10	5/15/15-	9/ 3/15
LZ-41	Navy L-11	"	"	"	"	"	"	"	394	15	39	6/ 7/15-	11/24/17
LZ-42	Army LZ-72	"	"	"	"	"	"	30,800	156	-	-	6/15/15-	2/16/17
LZ-43	Navy L-12	"	"	"	"	"	"	35,200	14	1	5	6/22/15-	8/10/15
LZ-44	Army LZ-74	"	"	"	"	"	"	"	19	2	-	7/ 8/15-	10/ 8/15
LZ-45	Navy L-13	"	"	"	"	"	"	"	159	14	50	7/24/15-	12/11/17
LZ-46	Navy L-14	"	"	"	"	"	"	"	526	16	52	8/10/15-	July-19
LZ-47	Army LZ-77	"	"	"	870	"	"	"	26	6	-	8/24/15-	2/21/16
LZ-48	Navy L-15	"	"	"	960	52	"	"	35	3	8	9/11/15-	4/ 1/16
LZ-49	Army LZ-79	"	"	"	"	"	"	"	13	3	-	8/ 2/15-	1/30/16
LZ-50	Navy L-16	"	"	"	"	"	"	"	250	16	36	9/23/15-	10/19/17
LZ-52	Navy L-18	"	"	"	"	"	"	"	4	-	-	11/ 4/15-	11/17/15
LZ-53	Navy L-17	"	"	"	"	"	"	"	80	13	33	10/21/15-	12/28/16
LZ-54	Navy L-19	"	"	"	"	"	"	"	14	1	-	11/11/15-	2/ 2/16

Name	Capacity Cu. Ft.	Length	Diam.	HP.	Knots	Gross Lift	Useful Load	Flights	Raids	Scouts	L I F E	
											From	To
LZ-51 Army LZ-81	(1,129,600 (1,263,740	536 585	61 61	960 960	52 50	70,400 88,462	35,200 38,500	43	3	1	10/ 1/15-	9/27/16
LZ-55 " LZ-85	"	"	"	"	"	"	"	21	6	-	9/12/15-	5/ 5/16
LZ-56 " LZ-86	"	"	"	"	"	"	"	48	7	-	10/10/15-	9/ 4/16
LZ-57 " LZ-87	"	"	"	"	"	"	"	95	3	125	12/ 6/15-	7/28/17
LZ-58 " LZ-88	"	"	"	"	"	"	"	65	3	149	11/14/15-	9/14/17
LZ-59 Navy L-20	"	"	"	"	"	"	"	19	3	6	12/21/15-	5/ 3/16
LZ-60 Army LZ-90	"	"	"	"	"	"	"	26	4	-	1/ 1/16-	10/ 7/16
LZ-61 Navy L-21	"	"	"	"	"	"	"	74	9	23	11/ 1/15-	11/28/16
LZ-63 Army LZ-93	"	"	"	"	"	"	"	53	3	-	2/23/15-	Aug. '17
LZ-64 Navy L-22	"	"	"	"	"	"	"	-	-	-	3/ 4/16-	5/14/17
LZ-65 Army LZ-95	"	"	"	"	"	"	"	4	-	-	1/21/16-	2/22/16
LZ-66 Navy L-23	"	"	"	"	"	"	"	99	4	58	4/ 8/16-	8/16/17
LZ-67 Army LZ-97	"	"	"	"	"	"	39,600	52	4	-	4/ 4/16-	7/ 5/17
LZ-68 " LZ-98	"	"	"	"	"	"	"	71	1	15	4/28/16-	Aug. '17
LZ-69 Navy L-24	"	"	"	"	"	"	"	44	6	22	5/20/16-	12/28/16
LZ-71 Army LZ-101	"	"	"	"	"	"	"	37	6	15	6/29/16-	Sept. '17
LZ-73 " LZ-103	"	"	"	"	"	"	"	24	1	-	8/ 8/16-	Aug. '17
LZ-77 " LZ-107	"	"	"	"	"	"	"	35	1	-	10/16/16-	July '17
LZ-81 " LZ-111	"	"	"	"	"	"	"	21	-	-	12/20/16-	Aug. '17
LZ-62 Navy L-30	1,941,500	649	78	1440	54	135,905	63,800	123	11	36	5/28/16-	Belgium
LZ-72 " L-31	"	"	"	"	53	"	66,000	19	7	2	7/13/16-	10/ 2/16
LZ-74 " L-32	"	"	"	"	"	"	"	13	2	2	8/ 6/16-	9/ 9/16
LZ-75 " L-37	"	"	"	"	"	"	"	70	4	20	11/27/16-	Japan
LZ-76 " L-33	"	"	"	"	"	"	"	11	-	-	9/ 1/16-	9/24/16
LZ-78 " L-34	"	"	"	"	"	"	68,200	11	2	5	9/24/16-	11/28/16
LZ-79 " L-41	"	"	"	"	"	"	"	-	-	-	2/15/17-	July '19
LZ-80 " L-35	"	"	"	"	"	"	"	88	3	17	9/13/16-	Sept. '18
LZ-82 " L-36	"	"	"	"	"	"	70,400	20	1	3	11/ 2/16-	2/ 7/17
LZ-83 Army LZ-113	"	"	"	"	55	135,905	71,500	-	-	-	2/22/17-	France

ZEPPELIN AIRSHIP DEVELOPMENT - From August 1, 1914

Builder Number	Name	Capacity Cu. Ft.	Length	Diam.	HP.	Knots	Gross Lift	Useful Load	Flights	Raids	Scouts	L I F E	
												From	To
<u>1917-18</u>													
LZ-84	Navy	L-38.	1,941,500	649	78	1440	55	135,905	71,500	-	-	-	10/23/16-12/29/16
LZ-85	"	L-45	"	"	"	"	"	"	"	26	3	14	4/ 2/17-10/20/17
LZ-86	"	L-39	"	"	"	"	"	"	"	23	1	3	12/13/16- 3/17/17
LZ-87	"	L-47	"	"	"	"	"	"	"	45	5	19	5/ 1/17- 1/ 5/18
LZ-88	"	L-40	"	"	"	"	"	"	"	29	2	7	1/ 3/17- 6/17/17
LZ-89	"	L-50	"	"	"	"	"	"	"	19	2	5	6/ 9/17-10/20/17
LZ-90	Army	LZ-120	"	"	"	"	"	"	"	-	-	-	1/13/17 - Italy
LZ-91	Navy	L-42	1,959,150	644	78	1220	54	137,140	80,300	65	5	27	2/21/17-July '19
LZ-92	"	L-43	"	"	"	"	"	"	"	14	2	6	3/ 3/17- 8/14/17
LZ-93	"	L-44	1,969,740	"	"	"	56	137,882	82,500	26	5	9	4/ 1/17-10/20/17
LZ-94	"	L-46	"	"	"	"	"	"	"	36	4	18	4/24/17- 1/ 5/18
LZ-95	"	L-48	"	"	"	"	57	"	85,800	10	1	4	5/23/17- 8/17/17
LZ-96	"	L-49	"	"	"	"	"	"	"	15	1	2	6/13/17-10/20/17
LZ-97	"	L-51	"	"	"	"	"	"	"	20	2	4	7/ 6/17- 1/ 5/17
LZ-98	"	L-52	"	"	"	"	"	"	"	-	-	-	7/ 4/17-Aug. '19
LZ-99	"	L-54	"	"	"	"	"	"	"	52	-	17	8/13/17- 8/19/18
LZ-100	"	L-53	1,976,800	645	"	1200	58	138,376	88,000	53	4	21	8/ 8/17- 8/11/18
LZ-101	"	L-55	"	"	"	"	"	"	"	12	2	1	9/ 1/17-10/20/17
LZ-103	"	L-56	"	"	"	"	"	"	"	-	-	-	9/24/17-Aug. '19
LZ-105	"	L-58	"	"	"	"	60	"	"	14	-	3	9/29/17- 2/5/ 18
LZ-106	"	L-61	"	"	"	"	"	"	"	32	2	11	12/12/17-Italy
LZ-107	"	L-62	"	"	"	"	"	"	"	20	2	2	2/19/17- 5/10/18
LZ-108	"	L-60	"	"	"	"	"	"	"	32	2	11	12/18/17- 7/19/18
LZ-109	"	L-64	"	"	"	"	"	"	"	29	1	10	3/11/18-England
LZ-110	"	L-63	"	"	"	"	"	"	"	39	5	14	3/14/18-July '19
LZ-111	"	L-65	"	"	"	"	"	"	"	29	1	10	4/17/18-July '19
LZ-102	"	L-57	2,418,050	743	"	"	55	169,280	114,400	4	-	-	9/26/17-10/ 7/17
LZ-104	"	L-59	"	"	"	"	"	"	"	18	2	2	10/10/17- 4/ 7/18
LZ-112	"	L-70	2,195,660	694	"	2030	70	153,650	96,800	7	2	-	7/ 1/18- 8/ 5/18

ZEPPELIN AIRSHIP DEVELOPMENT - From August 1, 1914

<u>Builder</u>	<u>Capacity</u>					<u>Gross</u>	<u>Useful</u>				<u>L I F E</u>		
<u>Number</u>	<u>Name</u>	<u>Cu. Ft.</u>	<u>Length</u>	<u>Diam.</u>	<u>HP.</u>	<u>Knots</u>	<u>Lift</u>	<u>Load</u>	<u>Flights</u>	<u>Raids</u>	<u>Scouts</u>	<u>From</u>	<u>To</u>
LZ-113	Navy L-71	2,195,660	694	78	1740	70	153,650	96,800	-	-	-	7/19/18-	England
LZ-114	" L-72	"	"	"	"	"	"	"	-	-	-	8/20/19-	(France (12/22/23
LZ-120	Bodensee	794,250	426	61	960	68	55,598	25,300	103	-	-	8/ 8/14-	Italy
LZ-121	Nordstern	"	"	"	"	"	"	"	-	-	-	12/ 1/19-	France
LZ-126	Los Angeles	2,470,000	658	91	2000	66	154,322	61,706 (He)	-	-	-	10/15/24-	U. S.
LZ-127	Graf Zeppelin	3,700,000	776	100	2750	68	259,000	90,000 (Hy)	-	-	-	10/11/28	