

# FEDERATION SHIP CONSTRUCTION MANUAL



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## Cover Art:

This beautifully rendered scene is courtesy of Lee Stringer, award winning graphic artist and visual effects wizard! To view more of Lee's work, just turn on your TV or visit [leestringer.com](http://leestringer.com).

Computer Control Type	System Mass (mt)	Appropriate Ship Classes	SS Requirement	Maximum WDF Allowed	Avail.	Cost (MCr)	Date Entered Service
L-12	50	I-II	0.1	2	LLL/90	4	2236
L-12A	30	I-IV	0.1	None	LLL/100	2	2242
L-13	450	I-IX	0.3	5	LLL/88	11	2241
L-13A	250	I-XIV	0.2	None	LLL/100	4	2247
L-14	1050	II-XII	0.5	10	LLL/85	17	2242
L-14A	550	II-XIV	0.3	None	LLL/100	6	2266
M-1	2900	IV-XV	0.9	30	LLL/82	48	2243
M-1A	1500	III-XX	0.5	None	LLL/99	16	2267
M-2	3800	VI-XII	1.1	40	LLL/74	60	2244
M-2A	2000	IV-XX	0.7	None	LLL/98	20	2268
M-3	4700	VIII-XV	1.5	50	LLL/60	71	2245
M-3A	2350	IV-XX	1.2	None	LLL/96	24	2269
M-3B	5000	VI-XV	1.6	90	RRR/30	140	2301
M-4	5750	IX-XVII	2.0	70	LLL/42	52	2252
M-4A	2900	IV-XX	1.7	None	LLL/90	61	2269
M-4B	5900	VII-XVII	2.1	110	RRR/28	170	2305
M-6	6000	X-XX	2.0	90	LLL/20	150	2269
M-6A	6100	IX-XVII	2.1	130	RRR/30	200	2272
M-7	11500	IX-XX	3.0	150	None	230	2280
M-7A	11500	X-XX	3.1	180	RRR/18	276	2288
M-7B	11500	XII-XIX	3.1	190	RRR/12	283	2310
M-8	12000	XI-XIX	3.4	210	RRR/09	323	2284
M-8A	12000	XIII-XX	3.5	220	RRR/08	343	2312
M-8B	14250	XII-XX	4.9	240	RRR/31	368	2331
M-9	15000	XIV-XX	4.0	250	RRR/30	387	2320

Computer Control Type	System Mass (mt)	Appropriate Ship Classes	SS Requirement	Maximum WDF Allowed	Avail.	Cost (MCr)	Date Entered Service
M-9A	18300	XII-XX	6	260	RRR/29	399	2338
M-9B	17850	XIII-XX	6.1	300	RRR/26	460	2343
M-10	22500	XIV-XX	7.4	320	RRR/19	491	2347
M-11	23250	XIV-XX	7.6	330	RRR/18	506	2350
M-12	23850	XIV-XX	7.9	340	RRR/17	521	2352
M-12a	19650	XIV-XX	6.4	325	RRR/19	498	2359
M-13	26100	XIV-XX	8.5	370	RRR/14	567	2355
M-14	27450	XV-XX	9	390	RRR/6	598	2357
M-15	29550	XV-XX	9.7	420	RRR/3	644	2359
M-16	32400	XVII-XX	10.6	460	RRR/2	705	2360
I-1	370	III-VI	0.2	10	LLL/89	18	2329
I-2	1550	IV-XV	1.2	50	LLL/51	90	2331
I-3	2475	V-XX	1.7	75	RRR/43	122	2332
I-3a	2845	VI-XX	1.9	85	RRR/42	161	2341
I-4	3250	VI-XX	2.3	100	RRR/41	163	2334
I-4a	4360	VII-XX	2.9	130	RRR/40	233	2342
I-5	4950	VIII-XX	3.4	150	RRR/38	245	2336
I-5a	5540	IX-XX	3.9	170	RRR/32	304	2346
I-6	6500	X-XX	4.6	200	RRR/31	327	2338
I-6a	7055	XI-XX	4.9	215	RRR/28	376	2350
I-7	7830	XI-XX	5.5	240	RRR/26	447	2340
I-7a	8200	XII-XX	5.7	250	RRR/25	408	2351
I-8	9160	XII-XX	6.4	280	RRR/23	519	2342
I-8a	9530	XIII-XX	6.6	290	RRR/22	474	2354
I-9	10860	XIV-XX	7.5	330	RRR/18	590	2345
I-9a	11820	XIV-XX	8.2	360	RRR/17	662	2362
I-9b	12595	XIV-XX	8.8	385	RRR/15	629	2371
I-10	13150	XV-XX	9.1	400	RRR/12	733	2352
I-10a	14110	XV-XX	9.8	430	RRR/10	702	2368
I-10b	14480	XV-XX	10	440	RRR/8	805	2370
I-11	15810	XVI-XX	10.9	480	RRR/7	880	2362
I-11a	16030	XVI-XX	11.2	490	RRR/5	800	2375
I-12	16400	XVI-XX	11.4	500	RRR/3	817	2370
I-12a	18320	XVII-XX	12.8	560	RRR/1	915	2381
I-13	19650	XVIII-XX	13.7	600	RRR/1	980	2372

WARP DRIVES

Warp Engine Type	Mass (mt) Per Drive	Power Units Available				Computer Control Required				Stress Column (Eng/SS)				Superstructure Per Drive	Availability	Cost				Year
		Single	Dual	Tri	Quad	Single	Dual	Tri	Quad	Single	Dual	Tri	Quad			Single	Dual	Tri	Quad	
FWA-1	2400	6	8	6	7	L-12	L-14	M-1	M-1	F/G	G/K	H/L	I/M	0.2	RRR/81	2.4	5.3	7.9	10.6	2241
FWA-2	2400	8	9	8	9	L-12	L-14	M-1	M-1	H/L	J/M	K/N	L/O	0.2	RRR/80	3	6.6	9.9	13.2	2251
FWB-1	18000	9	14	9	11	L-14	M-1	M-2	M-3	L/M	M/O	N/P	O/Q	1.4	RRR/77	36	79	119	158	2241
FWB-2	18000	12	16	11	16	L-14	M-1	M-2	M-3	L/N	M/O	N/P	O/Q	1.4	RRR/74	42	93	139	184	2258
FWC-1	60000	14	20	13	18	L-14	M-3	M-4	M-6a	N/L	O/M	P/N	Q/O	4.8	RRR/72	240	528	792	1056	2244
FWC-2	60000	20	12	18	23	M-1	M-4	M-6	M-6a	M/K	N/M	O/N	P/O	4.8	RRR/68	264	581	872	1161	2245
FWD-1	50000	10	18	9	14	L-14	M-2	M-3	M-4	K/F	L/G	M/H	N/I	4	RRR/65	200	440	660	880	2247
FWD-2	50000	16	8	15	21	M-1	M-3	M-4	M-4	L/F	M/G	N/H	O/I	4	RRR/63	227	500	750	998	2257
FWE-1	40000	8	13	8	9	L-13	M-1	M-3	M-6	F/I	G/K	H/L	I/M	3.2	RRR/57	123	270	406	541	2245
FWE-2	40000	12	20	11	15	L-13	M-2	M-4	M-6a	F/J	G/K	H/L	I/M	3.2	RRR/57	135	300	446	594	2253
FWF-1	62000	18	34	17	23	M-1	M-4	M-6	M-6a	F/K	G/L	H/M	I/N	5	RRR/49	248	575	819	1091	2254
FWF-2	62000	34	26	31	39	M-3	M-6a	M-7	M-7a	G/L	H/M	I/N	J/O	5	RRR/39	273	600	901	1201	2291
FWG-1	50000	20	22	21	30	M-1	M-6	M-6a	M-6a	C/D	D/F	E/G	F/H	4	RRR/38	303	668	1000	1333	2270
FWG-2	58000	22	38	22	25	M-1	M-4	M-6	M-6a	G/L	H/K	I/L	J/M	4.4	RRR/40	328	700	1083	1443	2271
FWG-3	67280	38	10	35	43	M-3	M-6a	M-7	M-7a	E/H	F/I	G/J	H/K	4.9	RRR/35	356	783	1175	1566	2287
FWH-1	4000	10	12	9	12	L-12	L-14	M-1	M-2	P/Q	Q/R	Q/R	R/R	0.3	RRR/80	4.2	9	13.8	18.5	2243
FWH-2	30000	12	5	11	14	L-14	M-2	M-3	M-4	Q/R	R/S	Q/R	R/R	5.6	RRR/90	104	228	344	457	2299
FWI-1	1000	5	38	5	6	L-12	L-13	L-14	M-1	N/P	O/Q	P/R	Q/R	0.3	RRR/99	1.8	3	6	7	2272
FWJ-1	78000	38	42	35	43	M-3	M-7	M-7a	M-8	D/F	E/G	F/H	G/I	6.2	RRR/42	449	987	1482	1975	2287
FWJ-2	83000	42	36	38	48	M-4	M-7a	M-8	M-8	D/F	F/H	G/I	H/J	6.2	RRR/40	478	1051	1578	2103	2300
FWK-1	70000	36	20	33	41	M-3	M-7	M-7a	M-8	G/F	H/H	I/I	J/J	6.4	RRR/46	406	893	1340	1786	2293
FWL-1	50480	20	25	18	23	M-2	M-6	M-6a	M-6a	D/E	E/F	F/G	G/H	3	RRR/28	313	688	1033	1377	2297
FWL-2	50480	25	32	23	29	M-3	M-6a	M-7	M-7a	D/E	E/F	F/G	G/H	4.1	RRR/50	354	778	1169	1557	2298
FWM-1	75000	32	34	29	36	M-3	M-7	M-7a	M-8	E/F	F/H	G/I	H/J	5.6	RRR/38	432	950	1426	1900	2308
FWM-2	75000	34	44	31	39	M-4	M-7a	M-8	M-8	E/F	G/H	H/I	I/J	5.6	RRR/46	469	1031	1548	2063	2318
FMWA	300	2	3	2	3	L-12	L-12	L-12	L-12	A/A	A/A	B/B	C/C	0.1	LLL/99	0.5	721	2	2	2250
FMWB	350	3	4	3	4	L-13	L-13	L-13	L-13	A/A	A/A	B/B	C/C	0.2	LLL/98	0.7	1	3	3	2263
FMWC	400	4	5	4	5	L-14	L-14	L-14	L-14	B/B	B/B	C/C	D/D	0.3	LLL/95	1	1	4	4	2284
FSLA	6350	8	12	8	8	L-12	L-12	L-13	M-1	-/-	-/-	-/-	-/-	0.1	LLL/96	7	2	24	30	2230
FSLB	10625	12	5	12	12	L-14	L-14	M-1	M-2	-/-	-/-	-/-	-/-	0.1	LLL/78	22	15	73	96	2250
FSLC	7500	5	5	5	5	L-13	L-13	M-1	M-1	-/-	-/-	-/-	-/-	0.1	LLL/89	8	48	27	35	2260

WARP DRIVES

Warp Engine Type	Mass (mt) Per Drive	Power Units Available				Computer Control Required				Stress Column (Eng/SS)				Superstructure Per Drive	Availability	Cost				Year
		Single	Dual	Tri	Quad	Single	Dual	Tri	Quad	Single	Dual	Tri	Quad			Single	Dual	Tri	Quad	
FWN-1	82500	40	46	36	45	M-4	M-7	M-7	332	E/F	E/F	F/G	G/H	6.7	RRR/33	495	1089	1634	2178	2332
FWN-2	82500	42	50	38	47	M-4	M-7A	M-7a	337	E/F	E/F	F/G	G/H	6.7	RRR/44	557	1225	1839	2450	2333
FWN-3	82500	45	45	41	51	M-4	M-7A	M-9	251	E/F	E/F	F/G	G/H	6.7	RRR/27	625	1375	2063	2750	2334
FWO-1	84125	41	48	37	46	M-4	M-7A	M-8	299	G/I	G/I	H/J	I/K	6.9	RRR/31	505	1111	1667	2222	2334
FWO-2	84125	44	52	40	49	M-4	M-7A	M-9a	322	G/I	G/I	H/J	I/K	6.9	RRR/29	568	1249	1875	2499	2336
FWP-1	97000	47	58	43	53	M-4	M-7A	M-8	348	D/F	D/F	E/G	F/H	8.1	RRR/25	582	1280	1921	2560	2335
FWP-2	97000	53	54	48	60	M-6	M-8	M-8b	421	D/F	D/F	E/G	F/H	8.1	RRR/19	679	1493	2241	2987	2338
FWQ-1	100900	49	60	45	55	M-4	M-8	M-8a	364	D/E	D/E	E/F	F/G	8.4	RRR/22	727	1599	2400	3198	2336
FWR-1	110000	54	68	49	62	M-6	M-8	M-10	341	F/G	F/G	G/H	H/I	9.3	RRR/19	792	1742	2614	3484	2337
FWR-2	110000	62	66	56	70	M-6	M-8a	M-8b	449	F/G	F/G	G/H	H/I	9.3	RRR/20	825	1815	2723	3630	2339
FWS-1	120350	60	70	54	68	M-6	M-8a	M-8b	382	D/F	D/F	E/G	F/H	10.2	RRR/28	867	1907	2862	3814	2340
FWS-2	120350	64	76	58	72	M-6	M-8a	M-9	550	D/F	D/F	E/G	F/H	10.2	RRR/11	903	1986	2980	3973	2343
FWT-1	140000	69	50	63	77	M-6A	M-9	M-14	495	D/E	D/E	E/F	F/G	11.7	RRR/7	1008	2217	3327	4435	2341
FWU-1	80750	45	55	41	51	M-4	M-7A	M-9	322	D/F	D/F	E/G	F/H	9.5	RRR/29	646	1421	2132	2842	2342
FWV-1	88825	50	60	45	56	M-4	M-8	M-8	276	D/F	D/F	E/G	F/H	10.5	RRR/26	667	1467	2202	2934	2344
FWW-1	96900	54	38	49	61	M-6	M-8	M-11	330	D/F	D/F	E/G	F/H	11.4	RRR/18	732	1610	2416	3220	2345
FWX-1	61500	34	48	31	40	M-3	M-6A	M-8	253	D/F	D/F	E/G	F/H	7.3	RRR/28	373	820	1231	1641	2348
FWY-1	77520	44	54	40	49	M-4	M-7A	M-9a	340	D/F	D/F	E/G	F/H	9.3	RRR/33	582	1280	1921	2560	2350
FWY-2	77520	50	60	45	55	M-4	M-8	M-8a	350	F/H	F/H	G/I	H/J	9.3	RRR/22	640	1408	2112	2816	2352
FWY-3	77520	55	66	50	61	M-6	M-8	M-10	514	F/H	F/H	G/I	H/J	9.3	RRR/17	718	1579	2370	3159	2354
FWY-4	77520	60	18	54	68	M-6	M-8a	M-9	550	F/H	F/H	G/I	H/J	9.3	RRR/12	756	1663	2495	3326	2356
FNWD-1a	30000	16	20	15	19	M-1	M-4	M-6	93	D/E	D/E	E/F	F/G	2.5	RRR/58	90	198	297	396	2335
FNWD-1b	30000	18	23	17	21	M-1	M-4	M-6	100	D/E	D/E	E/F	F/G	2.5	RRR/37	99	217	327	435	2341
FNWD-2a	38500	21	27	19	24	M-1	M-6	M-6	173	C/D	C/D	D/E	E/F	3.2	RRR/27	289	635	954	1271	2340
FNWD-2b	38500	25	30	23	28	M-2	M-6	M-6a	153	C/D	C/D	D/E	E/F	3.2	RRR/30	318	699	1050	1399	2342
FNWD-3a	48000	27	34	25	31	M-2	M-6A	M-6a	154	D/E	D/E	E/F	F/G	3.9	RRR/24	360	792	1188	1584	2341
FNWD-3b	48000	31	40	28	35	M-3	M-6A	M-6a	167	D/E	D/E	E/F	F/G	3.9	RRR/23	396	871	1307	1742	2353
FNWD-4a	65800	36	44	33	42	M-3	M-7	M-8	324	B/C	B/C	C/D	D/E	5.5	RRR/27	527	1159	1740	2318	2343
FNWD-4b	65800	40	47	36	46	M-4	M-7	M-7a	293	B/C	B/C	C/D	D/E	5.5	RRR/22	658	1447	2172	2895	2349
FNWD-4c	65800	43	54	39	49	M-4	M-7A	M-8	347	B/C	B/C	C/D	D/E	5.5	RRR/20	724	1592	2390	3185	2355
FNWD-5a	68900	48	60	44	55	M-4	M-8	M-7b	443	C/D	C/D	D/E	E/F	6.4	RRR/24	689	1515	2274	3031	2348
FNWD-5b	68900	54	66	49	61	M-6	M-8	M-9	475	C/D	C/D	D/E	E/F	6.4	RRR/12	758	1667	2502	3335	2350
FNWD-5c	68900	62	70	56	67	M-6	M-8a	M-11	379	C/D	C/D	D/E	E/F	6.4	RRR/9	814	1790	2687	3581	2357
FNWD-6a	115000	63	80	57	71	M-6	M-8a	M-12	392	C/D	C/D	D/E	E/F	9.5	RRR/8	1380	3036	4554	6072	2365
FNWD-6b	115000	72	90	65	82	M-6A	M-9a	M-15	641	C/E	C/E	D/F	E/G	9.5	RRR/5	1725	3795	5693	7590	2366
FNWD-6c	115000	82	90	74	92	M-6A	M-10	M-16	681	D/E	D/E	E/F	F/G	9.5	RRR/2	1898	4175	6264	8351	2369
FXMW-1	37000	25	40	23	29	M-2	M-6A	M-6a	130	B/C	B/C	C/D	D/E	3.8	RRR/5	278	611	918	1223	2370
FXMW-2	37000	36	31	33	41	M-3	M-7	M-8	215	B/C	B/C	C/D	D/E	3.8	RRR/4	306	673	1010	1346	2373
FXMW-3	37000	28	31	26	32	M-2	M-6A	M-7	145	B/C	B/C	C/D	D/E	3.8	RRR/3	328	721	1083	1443	2375

Ship Class	1/3	1/2	1/1		2/1			3/1		4/1	5/1
I	FWA-1 26 7/9	FWA-1 17 7/9 FWA-2 23 7/9	FWA-1 8.5 7/9 FWA-2 11.5 7/9	FMWA 3 2/3	FMWA 1.5 2/2						
II	FWA-1 26 7/9	FWA-1 17 7/9	FWA-1 8.5 7/9 FWA-2 11.5 7/9		FWA-1 4 6/8 FWA-2 6 7/9	FWH-1 7 5/6					
III			FWB-1 13 6/7 FWB-2 17 6/7		FWA-2 6 7/9 FWB-2 8.5 5/6	FWH-1 7 5/6					
IV			FWB-1 13 6/7 FWB-2 17 6/7	FNWD-1a 22.5 8/10 FNWD-1b 25.5 8/10	FWB-2 8.5 5/6		FWH-1 5 4/5				
V			FWD-1 14 7/9 FWD-2 23 7/9 FNWD-1a 22.5 8/10		FWB-1 6.5 5/6 FWB-2 8.5 5/6 FWE-1 6 7/9	FWL-1 14.5 8/10 FWL-2 18 8/10 FNWD-1b 12.5 8/9	FNWD-2a 15 9/10 FNWD-3a 19 9/10 FNWD-3b 22 9/10	FWE-2 4 7/9 FWL-1 9.5 8/9 FWL-2 12 8/9	FNWD-2b 11.5 9/10		FWG-1 6 8/10
VI			FNWD-1a 22.5 8/10		FWC-1 10 8/10 FWC-2 14 7/9 FWD-1 7 7/9 FWD-2 11.5 6/8 FWE-1 6 7/9 FWL-1 14.5 8/10	FWL-2 18 8/10 FNWD-1b 12.5 8/9 FNWD-2a 15 9/10 FNWD-3a 19 9/10 FNWD-3b 22 9/10 FXMW-1 17.5 8/10	FWC-1 7 8/10 FWD-1 5 6/8 FWD-2 7.5 6/8 FWE-2 6 7/9 FWF-2 16.5 6/8 FWG-3 18.5 8/10	FWK-1 17.5 8/9 FWL-1 9.5 8/9 FWL-2 12 8/9 FWM-1 15.5 8/9 FWM-2 16.5 8/9 FWX-1 16 9/10	FNWD-2b 11.5 9/10 FNWD-3a 12.5 8/10 FNWD-3b 14.5 8/10 FXMW-2 17 8/10 FXMW-3 13 8/10	FWF-1 6.5 6/8 FWG-3 14 8/9 FWK-1 13 7/9 FWM-2 12.5 7/9 FWX-1 12 8/10	FWG-1 6 8/10 FWX-1 9.5 8/9

Ship Class	2/1		3/1			4/1				5/1		6/1
VII	FWC-2	FWC-1	FWJ-1	FWN-1	FNWD-3a	FWC-1	FWM-1	FWU-1	FNWD-4a	FWG-1	FNWD-5a	FNWD-5b
	14	7	18.5	19	19	5	11.5	16	17	6	17	15
	7/9	8/10	9/10	8/9	8/10	7/9	7/9	8/9	9/10	8/10	8/10	8/10
	FWE-1	FWD-1	FWK-1	FWN-2	FNWD-3b	FWF-1	FWM-2	FWV-1	FNWD-4b	FWO-2	FNWD-5b	FNWD-5c
	6	5	17.5	20	22	6.5	12.5	17.5	19	12.5	19	17.5
	7/9	6/8	8/9	8/10	8/10	6/8	7/9	8/10	9/10	8/10	9/10	8/10
	FWL-1	FWD-2	FWL-1	FWO-1	FXMW-1	FWG-3	FWN-2	FWY-1	FNWD-5a	FWY-1	FNWD-5c	
	14.5	7.5	9.5	19.5	11.5	14	15	15.5	22.5	12.5	22	
	8/10	6/8	8/9	9/10	8/9	8/9	8/9	9/10	9/10	8/10	9/10	
	FNWD-1a	FWE-2	FWL-2	FNWD-1a	FXMW-2	FWJ-1	FWN-3	FWY-2		FWY-2		
	11	6	12	7.5	17	14	16	17.5		14		
	8/9	7/9	8/9	7/9	8/10	8/10	8/9	9/10		8/10		
	FNWD-1b	FWF-2	FWM-1	FNWD-1b	FXMW-3	FWJ-2	FWO-1	FWY-3		FWY-4		
	12.5	16.5	15.5	8.5	13	15.5	14.5	19.5		17		
	7/9	6/8	8/9	7/8	8/10	9/10	8/10	9/10		8/10		
	FXMW-1	FWG-3	FWM-2	FNWD-2a		FWK-1	FWO-2	FNWD-2b		FNWD-4c		
17.5	18.5	16.5	15		13	15.5	11.5		15			
8/10	8/10	8/9	8/10		7/9	9/10	8/10		8/10			
VIII	FWC-2	FWC-1	FWL-1	FNWD-1b		FWC-1	FWL-2	FWP-1	FWY-2	FWG-1	FWY-4	FNWD-5b
	9.5	7	9.5	8.5		5	9	16.5	17.5	6	17	15
	6/8	8/10	8/9	7/8		7/9	7/9	8/9	9/10	8/10	8/10	8/10
	FXMW-1	FWD-1	FWL-2	FNWD-2a		FWE-2	FWM-1	FWP-2	FWY-3	FWO-2	FNWD-4c	FNWD-5c
	17.5	5	12	15		4	11.5	18.5	19.5	12.5	15	17.5
	8/10	6/8	8/9	8/10		7/9	7/9	8/9	9/10	8/10	8/10	8/10
	FXMW-3	FWD-2	FWM-1	FNWD-3a		FWF-1	FWM-2	FWQ-1	FNWD-2b	FWP-1	FNWD-5a	
	20	7.5	15.5	19		6.5	12.5	17.5	11.5	13	17	
	9/10	6/8	8/9	8/10		6/8	7/9	8/9	8/10	7/9	8/10	
		FWE-1	FWM-2	FNWD-3b		FWG-3	FWN-1	FWR-1	FNWD-3a	FWR-1	FNWD-5b	
		4	16.5	22		14	14	19	12.5	15	19	
		7/9	8/9	8/10		8/9	7/9	7/9	8/9	7/8	9/10	
		FWF-2	FWN-1	FXMW-1		FWJ-1	FWN-2	FWU-1	FNWD-4a	FWR-2	FNWD-5c	
		16.5	19	11.5		14	15	16	17	17.5	22	
		6/8	8/9	8/9		8/10	8/9	8/9	9/10	7/9	9/10	
		FWG-3	FWN-2	FXMW-2		FWJ-2	FWN-3	FWV-1	FNWD-4b	FWU-1		
	18.5	20	17		15.5	16	17.5	19	12.5			
	8/10	8/10	8/10		9/10	8/9	8/10	9/10	7/9			
	FWJ-1	FWO-1	FXMW-3		FWK-1	FWO-1	FWW-1	FNWD-5a	FWY-1			
	18.5	19.5	13		13	14.5	19	22.5	12.5			
	9/10	9/10	8/10		7/9	8/10	7/9	9/10	8/10			
	FWK-1	FNWD-1a			FWL-1	FWO-2	FWY-1		FWY-2			
	17.5	7.5			7.5	15.5	15.5		14			
	8/9	7/9			7/9	9/10	9/10		8/10			



Ship Class	3/1		4/1				5/1			6/1		
IX	FWE-1	FNWD-1a	FWC-1	FWL-1	FWP-1	FWY-3	FWF-1	FWS-1	FNWD-3a	FWG-1		
	4	7.5	5	7.5	16.5	19.5	5	17	9.5	5		
	7/9	7/8	7/9	7/9	8/9	9/10	5/7	8/9	7/9	7/9		
	FWF-2	FNWD-1b	FWD-2	FWL-2	FWP-2	FNWD-2a	FWJ-1	FWS-2	FNWD-4b	FWY-2		
	16.5	8.5	6	9	18.5	10	11	18	14	11.5		
	6/8	7/8	5/7	7/9	8/9	8/9	8/9	8/9	8/10	8/9		
	FWK-1	FNWD-2a	FWE-2	FWM-1	FWQ-1	FNWD-2b	FWN-3	FWU-1	FNWD-4c	FNWD-5b		
	17.5	15	4	11.5	17.5	11.5	12.5	12.5	15	15		
	8/9	8/10	6/8	7/9	8/9	8/10	7/9	7/9	8/10	8/10		
	FWL-1	FNWD-3b	FWF-2	FWM-2	FWR-1	FNWD-3a	FWO-2	FWV-1	FNWD-5a	FNWD-5c		
	9.5	22	12.5	12.5	19	12.5	12.5	14	17	17.5		
	8/9	8/10	6/7	7/9	7/9	8/9	8/10	8/9	8/10	8/10		
	FWL-2	FXMW-1	FWG-3	FWN-1	FWU-1	FNWD-4a	FWP-1	FWY-1	FNWD-5b			
	12	11.5	14	14	16	17	13	12.5	19			
	8/9	8/9	8/9	7/9	8/9	9/10	7/9	8/10	9/10			
	FWN-1	FXMW-2	FWJ-1	FWN-2	FWV-1	FNWD-4b	FWP-2	FWY-2	FNWD-6c			
	19	17	14	15	17.5	19	15	14	23			
	8/9	8/10	8/10	8/9	8/10	9/10	7/9	8/10	9/10			
	FWN-2	FXMW-3	FWJ-2	FWN-3	FWW-1	FNWD-6a	FWR-1	FWY-3				
	20	13	15.5	16	19	22.5	15	15.5				
8/10	8/10	9/10	8/9	7/9	9/10	7/8	8/10					
FWO-1		FWK-1	FWO-1	FWY-1	FXMW-2	FWR-2	FWY-4					
19.5		13	14.5	15.5	12.5	17.5	17					
9/10		7/9	8/10	9/10	8/9	7/9	8/10					
X	FXMW-1		FWE-2	FWM-1	FWV-1	FXMW-3	FWF-1	FWN-3	FWS-2	FNWD-3a	FWG-1	FNWD-5b
	11.5		4	11.5	17.5	10	5	12.5	18	9.5	5	15
	8/9		6/8	7/9	8/10	8/9	5/7	7/9	8/9	7/9	7/9	7/9
	FXMW-2		FWF-2	FWN-1	FWW-1		FWF-2	FWO-2	FWT-1	FNWD-4a	FWO-2	FNWD-5c
	17		12.5	14	19		10	12.5	19.5	12.5	10	17.5
	8/10		6/7	7/9	7/9		5/7	8/10	8/9	8/10	8/9	8/10
	FXMW-3		FWG-3	FWN-2	FWY-3		FWG-3	FWP-1	FWU-1	FNWD-4b	FWR-2	
	13		14	15	19.5		11	13	12.5	14	14.5	
	8/10		8/9	8/9	9/10		7/9	7/9	7/9	8/10	7/8	
			FWJ-1	FWN-3	FNWD-2a		FWJ-1	FWP-2	FWV-1	FNWD-5a	FWU-1	
			14	16	10		11	15	14	17	10.5	
			8/10	8/9	8/9		8/9	7/9	8/9	8/10	7/8	
			FWJ-2	FWO-1	FNWD-3a		FWJ-2	FWQ-1	FWY-1	FNWD-6b	FWY-2	
			15.5	14.5	12.5		12.5	14	12.5	20.5	11.5	
			9/10	8/10	8/9		8/10	7/9	8/10	9/10	8/9	
		FWK-1	FWP-1	FNWD-3b		FWL-1	FWR-1	FWY-2	FNWD-6c	FWY-4		
		13	16.5	14.5		6	15	14	23	14		
		7/9	8/9	8/9		7/8	7/8	8/10	9/10	8/9		
		FWL-1	FWP-2	FNWD-6a		FWM-2	FWR-2	FWY-3		FNWD-4c		
		7.5	18.5	22.5		10	17.5	15.5		12		
		7/9	8/9	9/10		7/8	7/9	8/10		8/9		
		FWL-2	FWQ-1	FXMW-2		FWN-2	FWS-1	FNWD-2b		FNWD-5a		
		9	17.5	12.5		12	17	8.5		13.5		
		7/9	8/9	8/9		7/9	8/9	8/9		8/9		

Ship Class	3/1	4/1		5/1			6/1			7/1	
XI	FXMW-1	FWE-2	FNWD-3b	FWF-2	FWM-2	FWS-1	FNWD-3a	FWO-2	FNWD-5b	FWY-4	
	11.5	4	14.5	10	10	17	9.5	10	15	12	
	8/9	6/8	8/9	5/7	7/8	8/9	7/9	8/9	8/10	7/9	
	FXMW-2	FWF-2	FXMW-1	FWG-2	FWN-1	FWS-2	FNWD-3b	FWR-2	FNWD-5c	FNWD-5c	
	17	12.5	8.5	5	11	18	11	14.5	17.5	14.5	
	8/10	6/7	7/9	4/6	7/8	8/9	7/9	7/8	8/10	8/9	
	FXMW-3	FWJ-1	FXMW-2	FWG-3	FWN-2	FWT-1	FNWD-4a	FWU-1	FNWD-6b		
	13	14	12.5	11	12	19.5	12.5	10.5	17		
	8/10	8/10	8/9	7/9	7/9	8/9	8/10	7/8	8/10		
		FWJ-2	FXMW-3	FWJ-1	FWN-3	FWU-1	FNWD-4b	FWY-2	FNWD-6c		
		15.5	10	11	12.5	12.5	14	11.5	19.5		
		9/10	8/9	8/9	7/9	7/9	8/10	8/9	8/10		
		FWK-1		FWJ-2	FWO-2	FWV-1	FNWD-5a	FWY-4			
		13		12.5	12.5	14	17	14			
		7/9		8/10	8/10	8/9	8/10	8/9			
		FWN-2		FWK-1	FWP-1	FWW-1	FNWD-6a	FNWD-4a			
		15		10.5	13	15	18	10			
		8/9		7/8	7/9	7/8	8/10	8/9			
		FWO-1		FWL-1	FWP-2	FWY-1	FNWD-6b	FNWD-4b			
		14.5		6	15	12.5	20.5	11			
	8/10		7/8	7/9	8/10	9/10	8/9				
	FWP-1		FWL-2	FWQ-1	FWY-2		FNWD-4c				
	16.5		7.5	14	14		12				
	8/9		7/8	7/9	8/10		8/9				
	FNWD-3a		FWM-1	FWR-1	FWY-3		FNWD-5a				
	12.5		9.5	15	15.5		13.5				
	8/9		7/8	7/8	8/10		8/9				
XII		FWK-1		FWF-2	FWN-1	FWS-1	FNWD-3a	FWG-2	FWS-1	FNWD-4a	FWY-2
		13		10	11	17	9.5	5	14	10	10
		7/9		5/7	7/8	8/9	7/9	4/6	7/9	8/9	7/9
		FWO-1		FWG-3	FWN-2	FWS-2	FNWD-3b	FWJ-1	FWS-2	FNWD-4b	FWY-4
		14.5		11	12	18	11	9.5	15	11	12
		8/10		7/9	7/9	8/9	7/9	7/9	7/9	8/9	7/9
		FXMW-1		FWJ-1	FWN-3	FWT-1	FNWD-4a	FWL-1	FWU-1	FNWD-4c	FNWD-5a
		8.5		11	12.5	19.5	12.5	5	10.5	12	11
		7/9		8/9	7/9	8/9	8/10	9/8	7/8	8/9	6/8
		FXMW-2		FWJ-2	FWP-1	FWV-1	FNWD-4b	FWL-2	FWV-1	FNWD-5a	FNWD-5b
		12.5		12.5	13	14	14	6.5	11.5	13.5	12.5
		8/9		8/10	7/9	8/9	8/10	9/8	7/9	7/8	7/8
		FXMW-3		FWK-1	FWP-2	FWW-1	FNWD-6a	FWO-2	FWY-1	FNWD-5b	FNWD-5c
		10		10.5	15	15	18	10	10	15	14.5
		8/9		7/8	7/9	7/8	8/10	8/9	8/9	7/9	6/8
			FWM-1	FWQ-1	FWY-1	FNWD-6b	FWQ-1	FWY-2	FNWD-6b		
			9.5	14	12.5	20.5	11.5	11.5	17		
			7/8	7/9	8/10	9/10	7/8	8/9	8/10		
			FWM-2	FWR-1	FWY-3		FWR-2	FNWD-3a	FNWD-6c		
			10	15	15.5		14.5	7.5	19.5		
			7/8	7/8	8/10		7/8	7/8	8/10		

Ship Class	5/1			6/1				7/1		8/1	
XIII	FWJ-1	FWP-1	FWY-3	FWF-2	FWM-2	FWS-1	FNWD-4a	FWM-1	FNWD-5a		
	11	13	15.5	8.5	8.5	14	10	6.5	11		
	8/9	7/9	8/10	5/6	6/8	7/9	8/9	6/7	6/8		
	FWJ-2	FWP-2	FNWD-4a	FWG-2	FWO-2	FWS-2	FNWD-4b	FWR-1	FNWD-5b		
	12.5	15	12.5	5	10	15	11	11	12.5		
	8/10	7/9	8/10	4/6	8/9	7/9	8/9	6/7	7/8		
	FWK-1	FWQ-1		FWG-3	FWP-1	FWT-1	FNWD-4c	FWU-1	FNWD-5c		
	10.5	14		9.5	11	16	12	9	14.5		
	7/8	7/9		7/8	7/8	7/9	8/9	6/8	6/8		
	FWN-1	FWS-1		FWJ-1	FWP-2	FWU-1	FNWD-5a	FWY-2	FNWD-6c		
	11	17		9.5	12.5	10.5	13.5	10	16.5		
	7/8	8/9		7/9	7/8	7/8	7/8	7/9	8/9		
	FWN-2	FWT-1		FWJ-2	FWQ-1	FWV-1	FNWD-6a	FWY-4			
	12	19.5		10.5	11.5	11.5	15	12			
	7/9	8/9		8/9	7/8	7/9	8/9	7/9			
	FWN-3	FWW-1		FWK-1	FWR-1	FWY-1	FNWD-6b	FNWD-4b			
	12.5	15		9	12.5	10	17	9.5			
7/9	7/8		6/8	6/8	8/9	8/10	7/9				
FWO-1	FWY-1		FWM-1	FWR-2	FWY-2	FNWD-6c	FNWD-4c				
11.5	12.5		8	14.5	11.5	19.5	10				
8/9	8/10		6/8	7/8	8/9	8/10	7/9				
XIV	FWO-1			FWF-2	FWN-1	FWR-1	FWY-3	FWG-2	FWR-1	FNWD-4b	FWY-4
	11.5			8.5	9.5	12.5	13	4	11	9.5	10.5
	8/9			5/6	6/8	6/8	8/9	4/6	6/7	7/9	7/8
	FWP-1			FWG-3	FWN-2	FWR-2	FNWD-4a	FWJ-2	FWU-1	FNWD-4c	FNWD-5b
	13			9.5	10	14.5	10	9	9	10	11
	7/9			7/8	7/8	7/8	8/9	7/9	6/8	7/9	6/8
	FWT-1			FWJ-1	FWN-3	FWS-1	FNWD-5a	FWM-1	FWV-1	FNWD-5a	FNWD-5c
	19.5			9.5	10.5	14	13.5	6.5	10	11	12.5
	8/9			7/9	7/8	7/9	7/8	6/7	7/8	6/8	6/7
	FWW-1			FWJ-2	FWP-1	FWS-2	FNWD-6a	FWO-2	FWY-1	FNWD-5b	
	15			10.5	11	15	15	8.5	8.5	12.5	
7/8			8/9	7/8	7/9	8/9	7/9	7/9	7/8		
FWY-3			FWK-1	FWP-2	FWT-1	FNWD-6b	FWP-1	FWY-2	FNWD-6b		
15.5			9	12.5	16	17	9.5	10	14.5		
8/10			6/8	7/8	7/9	8/10	6/8	7/9	8/9		
			FWM-2	FWQ-1	FWY-1	FNWD-6c	FWP-2	FNWD-4a	FNWD-6c		
			8.5	11.5	10	19.5	10.5	8.5	16.5		
			6/8	7/8	8/9	8/10	6/8	7/9	8/9		
XV	FWO-1			FWM-2	FWP-2	FWS-2		FWG-2	FWP-2	FWY-2	FWY-2
	11.5			8.5	12.5	15		4	10.5	10	8.5
	8/9			6/8	7/8	7/9		4/6	6/8	7/9	7/8
	FWW-1			FWN-1	FWQ-1	FWT-1		FWJ-1	FWQ-1	FNWD-6b	FWY-4
	15			9.5	11.5	16		8	10	14.5	10.5
	7/8			6/8	7/8	7/9		7/8	6/8	8/9	7/8
				FWN-2	FWR-1	FWY-3		FWJ-2	FWR-1	FNWD-6c	
				10	12.5	13		9	11	16.5	
			7/8	6/8	8/9		7/9	6/7	8/9		
			FWN-3	FWR-2	FNWD-6a		FWO-2	FWR-2			
			10.5	14.5	15		8.5	12.5			
			7/8	7/8	8/9		7/9	6/8			
			FWP-1	FWS-1			FWP-1	FWY-1			
			11	14			9.5	8.5			
			7/8	7/9			6/8	7/9			

Ship Class	5/1	6/1		7/1			8/1
XVI	FWW-1	FWR-2	FNWD-6a	FWG-2	FWR-2	FNWD-6a	FNWD-6c
	15	14.5	15	4	12.5	12.5	14.5
	7/8	7/8	8/9	4/6	6/8	7/9	7/9
		FWS-1		FWQ-1	FWS-1	FNWD-6b	
	14		10	12	14.5		
	7/9		6/8	7/8	8/9		
	FWT-1		FWR-1	FWS-2	FNWD-6c		
	16		11	13	16.5		
	7/9		6/7	7/8	8/9		
XVII		FWT-1		FWQ-1	FWS-1	FNWD-6a	FWG-2
		16		10	12	12.5	3.5
		7/9		6/8	7/8	7/9	3/5
		FWW-1		FWR-1	FWS-2	FNWD-6b	FWR-2
		12.5		11	13	14.5	11
		6/8		6/7	7/8	8/9	6/7
	FNWD-6a		FWR-2	FWT-1		FNWD-6c	
	15		12.5	14		14.5	
	8/9		6/8	7/8		7/9	
XVIII				FWS-1			FWG-2
				12			3.5
				7/8			3/5
				FWT-1			FWS-2
				14			11
				7/8			6/8
				FNWD-6b			FWT-1
				14.5			12
			8/9			6/8	
						FNWD-6b	
						12.5	
						7/9	
						FNWD-6c	
						14.5	
						7/9	
XIX				FNWD-6a			FWT-1
				12.5			12
				7/9			6/8
							FNWD-6b
							12.5
						7/9	
						FNWD-6c	
						14.5	
						7/9	

Ship Class	1/1	2/1		3/1		4/1		5/1	6/1
I	FMWA 6 2/3	FMWA 3 2/2							
II	FWA-1 17 7/9 FWA-2 23 7/9	FWA-1 6 6/8 FWA-2 11.5 6/8	FWH-1 11.5 6/8	FWA-1 6 6/8 FWH-1 9 5/6					
III	FWA-1 17 7/9 FWA-2 23 7/9	FWA-2 11.5 6/8 FWA-2 11.5 6/8	FWH-1 11.5 6/8	FWH-1 9 5/6 FWH-1 9 5/6			FWA-1 4 5/7		
IV		FWA-2 11.5 6/8		FWH-1 9 5/6			FWH-1 7 4/5		
V		FWB-1 13 7/8	FWB-2 20 8/9	FWB-1 8.5 6/7	FWB-2 13 7/8	FWB-2 10 6/7	FWH-1 7 4/5		
VI				FWB-1 8.5 6/7 FWB-2 13 7/8	FNWD-1a 17 9/10 FNWD-1b 19 9/10	FWB-2 10 6/7 FWH-1 7 4/5		FWB-2 8 5/6	
VII				FWE-1 7.5 7/9 FWE-2 12 7/9	FNWD-1a 17 9/10 FNWD-1b 19 9/10	FWB-2 10 6/7 FNWD-2a 16 8/10	FNWD-2b 19 8/10	FWB-2 8 5/6	
VIII		FWD-2 26 6/8		FWD-1 11.5 7/9 FWE-1 7.5 7/9 FWE-2 12 7/9	FWL-1 19.5 8/10 FNWD-1a 17 9/10 FNWD-1b 19 9/10	FWE-1 5.5 6/8 FWE-2 9 6/8 FWL-2 18 8/10	FNWD-2a 16 8/10 FNWD-2b 19 8/10	FWB-2 8 5/6 FNWD-3a 17 9/10 FNWD-3b 19 9/10	FWB-2 6.5 4/5
IX		FWD-2 26 6/8		FWD-1 11.5 7/9 FWD-2 17 5/7 FWE-1 7.5 7/9 FWE-2 12 7/9 FWL-1 19.5 8/10	FNWD-1a 17 9/10	FWE-1 5.5 6/8 FWE-2 9 6/8 FWF-2 24.5 7/9 FWG-2 15.5 8/9 FWL-1 14.5 8/9	FWL-2 18 8/10 FNWD-1a 12.5 8/10 FNWD-1b 14 8/10 FNWD-2a 16 8/10 FNWD-2b 19 8/10	FWF-2 19.5 7/8 FWL-2 14.5 8/9 FNWD-2b 15 8/9 FNWD-3a 17 9/10	FWB-2 6.5 4/5 FNWD-3b 16 8/10 FNWD-4a 19 9/10

Ship Class	2/1	3/1	4/1	5/1	6/1	7/1	8/1	9/1					
X	FWD-2	FWC-1	FWC-2	FWL-1	FWE-1	FWB-2	FWM-2	FNWD-5a	FNWD-5b				
	26	15	14	14.5	4.5	6.5	14	19	19				
	6/8	7/9	6/8	8/9	6/7	4/5	7/9	8/10	8/10				
		FWD-2	FWD-1	FWX-1	FWG-3	FWK-1			FNWD-5c				
		17	8.5	27	22	17.5			20.5				
		5/7	6/8	8/10	8/10	8/10			8/10				
		FWL-1	FWE-1	FNWD-1a	FWL-2	FWM-2							
		19.5	5.5	12.5	14.5	16.5							
		8/10	6/8	8/10	8/9	8/10							
			FWE-2	FNWD-1b	FWM-1	FNWD-3a							
			9	14	18.5	14							
			6/8	8/10	8/10	8/10							
			FWF-1	FNWD-2a	FNWD-2b	FNWD-3b							
			14	16	15	16							
			6/8	8/10	8/9	8/10							
			FWF-2	FNWD-2b	FXMW-2	FNWD-4a							
			24.5	19	22.5	19							
			7/9	8/10	9/10	9/10							
			FWG-1	FXMW-1		FNWD-4b							
			18.5	20		20.5							
		8/10	9/10		9/10								
		FWG-2			FXMW-3								
		15.5			22								
		8/9			9/10								
XI		FWC-1	FWC-1	FWL-1	FWD-1	FWX-1	FWJ-1	FNWD-3b	FWJ-2	FWY-1	FWY-3	FWY-4	
		15	11.5	14.5	7	21.5	18.5	16	17.5	19.5	19	18.5	
		7/9	6/8	8/9	6/7	8/9	8/10	8/10	8/10	9/10	9/10	9/10	
		FWD-2	FWD-2	FNWD-1a	FWE-1	FNWD-1b	FWK-1	FNWD-4a	FWM-2	FNWD-4c	FNWD-5b		
		17	13	12.5	4.5	11	17.5	19	14	19	19		
		5/7	4/6	8/10	6/7	8/9	8/10	9/10	7/9	9/10	8/10		
			FWE-2	FNWD-1b	FWF-2	FNWD-2b	FWM-1	FNWD-4b	FWN-1	FWU-1	FNWD-5c		
			9	14	19.5	15	15.5	20.5	17.5	17.5	20.5		
			6/8	8/10	7/8	8/9	7/9	9/10	8/9	8/9	8/10		
			FWF-1	FNWD-2a	FWG-3	FXMW-2	FWM-2	FXMW-3	FWN-2	FWY-2			
			14	16	22	22.5	16.5	22	18.5	19			
			6/8	8/10	8/10	9/10	8/10	9/10	8/9	9/10			
			FWG-1	FXMW-1	FWL-2		FNWD-2b		FWO-1	FNWD-4c			
			18.5	20	14.5		12.5		18	16.5			
			8/10	9/10	8/9		7/9		9/10	8/10			
		FWG-2		FWM-1		FNWD-3a		FWO-2	FNWD-5a				
		15.5		18.5		14		19.5	19				
		8/9		8/10		8/10		9/10	8/10				

Ship Class	4/1	5/1	6/1	7/1	8/1	9/1	10/1			
XII	FWD-2	FWD-1	FWL-2	FWE-1	FWJ-2	FNWD-4a	FWN-2	FNWD-4c	FWP-2	FWP-2
	13	7	14.5	4	17.5	16	16	16.5	18	16.5
	4/6	6/7	8/9	5/6	8/10	8/10	7/9	8/10	8/10	8/9
	FWE-2	FWE-1	FWX-1	FWJ-1	FWM-2	FNWD-4b	FWN-3	FNWD-5a	FWW-1	FWY-4
	9	4.5	21.5	18.5	14	17.5	17.5	19	19	18.5
	6/8	6/7	8/9	8/10	7/9	8/10	8/9	8/10	8/10	9/10
	FWF-1	FWE-2	FNWD-1a	FWK-1	FWN-1	FNWD-4c	FWO-2		FWY-3	FNWD-5c
	14	7.5	10	17.5	17.5	19	17		19	18.5
	6/8	6/7	8/9	8/10	8/9	9/10	8/10		9/10	8/9
	FWG-1	FWF-1	FNWD-1b	FWM-1	FWO-1		FWP-1		FNWD-5a	
	18.5	11.5	11	15.5	18		18.5		17	
	8/10	5/7	8/9	7/9	9/10		8/10		8/9	
	FWG-2	FWF-2	FNWD-2a	FNWD-1a	FWY-1		FWU-1		FNWD-5b	
	15.5	19.5	13	8.5	19.5		17.5		19	
	8/9	7/8	8/9	7/9	9/10		8/9		8/10	
	FWL-1	FWG-1	FXMW-2	FNWD-2b	FNWD-3a		FWV-1			
	14.5	15	22.5	12.5	12		19.5			
	8/9	7/9	9/10	7/9	8/9		8/10			
	FXMW-1	FWG-3		FXMW-3	FNWD-3b		FWY-2			
	20	22		22	13.5		19			
9/10	8/10		9/10	8/9		9/10				
XIII	FWD-2	FWD-2	FWX-1	FWD-1	FNWD-2b	FWJ-2	FWM-2	FWV-1	FWN-3	FWP-2
	13	10	21.5	5.5	12.5	17.5	12.5	19.5	15.5	16.5
	4/6	4/5	8/9	5/6	7/9	8/10	6/8	8/10	7/9	8/9
		FWE-2	FWX-1	FWE-1	FXMW-3	FWM-2	FWN-1	FWY-2	FWR-1	FWR-2
		7.5	21.5	4	22	14	15.5	19	19	19
		6/7	8/9	5/6	9/10	7/9	7/9	9/10	8/9	8/9
		FWF-1	FNWD-1a	FWG-3		FWY-1	FWN-2	FNWD-4a	FWW-1	FWW-1
		11.5	10	18.5		19.5	16	14	19	17
		5/7	8/9	8/9		9/10	7/9	8/9	8/10	8/9
		FWF-2	FNWD-1b	FWJ-1		FNWD-3a	FWO-1	FNWD-4c	FWY-3	FWY-4
		16.5	11	18.5		12	16	16.5	19	18.5
		6/8	8/9	8/10		8/9	8/10	8/10	9/10	9/10
		FWG-1	FNWD-2a	FWK-1		FNWD-3b	FWO-2	FNWD-5a	FNWD-4c	FNWD-5c
		15	13	17.5		13.5	17	19	14.5	18.5
		7/9	8/9	8/10		8/9	8/10	8/10	8/9	8/9
		FWG-2	FXMW-1	FWL-2		FNWD-4a	FWP-1		FNWD-5a	
		12.5	16	12		16	18.5		17	
		7/8	8/10	7/9		8/10	8/10		8/9	
		FWL-1	FXMW-2	FWM-1		FNWD-4b	FWQ-1		FNWD-5b	
		11.5	22.5	15.5		17.5	19		19	
	7/9	9/10	7/9		8/10	8/9		8/10		
	FWL-2		FNWD-1a			FWU-1				
	14.5		8.5			17.5				
	8/9		7/9			8/9				

Ship Class	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1			
XIV	FWD-2	FWD-1	FNWD-1a	FWJ-2	FWM-2	FWN-2	FNWD-5a	FWP-2	FWP-2			
	10	5.5	8.5	17.5	12.5	14.5	17	16.5	15			
	4/5	5/6	7/9	8/10	6/8	7/8	8/9	8/9	7/9			
	FWE-2	FWD-2	FNWD-2b	FWK-1	FWN-1	FWN-3	FNWD-5b	FWR-2	FNWD-6b			
	7.5	8.5	12.5	15	15.5	15.5	19	19	20.5			
	6/7	3/4	7/9	8/9	7/9	7/9	8/10	8/9	8/10			
	FWF-1	FWE-1	FXMW-1	FWY-1	FWO-1	FWO-1		FWW-1				
	11.5	4	13	19.5	16	14		17				
	5/7	5/6	8/9	9/10	8/10	8/9		8/9				
	FWG-1	FWE-2	FXMW-2	FNWD-3a	FWQ-1	FWO-2		FWY-3				
	15	6	19	12	19	15		17				
	7/9	5/6	8/10	8/9	8/9	8/9		8/10				
	FWG-2	FWF-2	FXMW-3	FNWD-3b	FWV-1	FWP-1		FWY-4				
	12.5	16.5	22	13.5	19.5	16.5		18.5				
	7/8	6/8	9/10	8/9	8/10	8/9		9/10				
	FWL-1	FWG-3		FNWD-4a	FWY-2	FWQ-1		FNWD-5c				
	11.5	18.5		16	19	17		18.5				
	7/9	8/9		8/10	9/10	7/9		8/9				
	FNWD-1b	FWJ-1		FNWD-4b	FNWD-3a	FWR-1		FNWD-6a				
	11	18.5		17.5	10.5	19		20				
	8/9	8/10		8/10	7/9	8/9		8/10				
	FNWD-2a	FWK-1			FNWD-3b	FWU-1						
	13	17.5			12	15.5						
8/9	8/10			7/9	7/9							
	FWL-2			FNWD-4a	FWV-1							
	12			14	17							
	7/9			8/9	8/9							
	FWM-1			FNWD-4b	FWW-1							
	15.5			15.5	19							
	7/9			8/9	8/10							
	FWX-1			FNWD-4c	FNWD-4c							
	18			16.5	14.5							
	7/9			8/10	8/9							
XV	FWG-2	FWD-1	FWJ-1	FWD-2	FWJ-2	FWN-1	FNWD-4b	FWN-3	FNWD-5b	FWP-2	FWY-4	FNWD-6c
	12.5	5.5	18.5	7.5	15.5	13.5	13.5	14	17	15	15.5	19.5
	7/8	5/6	8/10	2/3	8/9	7/8	7/9	7/8	8/9	7/9	8/9	8/10
	FNWD-2a	FWD-2	FWK-1	FWE-1	FWM-2	FWN-2	FNWD-4c	FWP-2	FNWD-5c	FWR-2		
	13	8.5	17.5	3	12.5	14.5	14.5	16.5	18.5	17.5		
	8/9	3/4	8/10	4/5	6/8	7/8	8/9	8/9	8/9	7/9		
		FWE-2	FWL-1	FWJ-2	FWQ-1	FWO-1	FNWD-5a	FWR-1	FNWD-6a	FWS-2		
		6	9.5	17.5	19	14	17	17	20	18		
		5/6	7/8	8/10	8/9	8/9	8/9	7/9	8/10	8/10		
		FWF-1	FWL-2	FWK-1	FNWD-3a	FWO-2	FNWD-5b	FWR-2		FWT-1		
		9.5	12	15	10.5	15	19	19	19.5	19.5		
		5/6	7/9	8/9	7/9	8/9	8/10	8/9	7/9	7/9		
		FWF-2	FWX-1	FWM-1	FNWD-3b	FWP-1		FWS-1		FWU-1		
		16.5	18	13.5	12	16.5		18.5		12.5		
		6/8	7/9	6/8	7/9	8/9		8/10		6/8		
		FWG-1	FNWD-2b	FWX-1	FNWD-4a	FWQ-1		FWU-1		FWY-4		
	12	12.5	15.5	14	17		14		17			
	6/8	7/9	7/8	8/9	7/9		7/8		8/10			
	FWG-3		FWY-1	FNWD-4b	FWV-1		FWW-1		FNWD-6b			
	18.5		19.5	15.5	17		17		20.5			
	8/9		9/10	8/9	8/9		8/9		8/10			
			FNWD-3b	FNWD-4c	FWY-2		FWY-3					
			13.5	16.5	17		17					
			8/9	8/10	8/10		8/10					



Ship Class	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1		
XVI	FWG-2	FWE-2	FWD-2	FWX-1	FWM-2	FWN-1	FWP-2	FWY-4	FNWD-6c		
	12.5	6	7.5	13.5	11	12.5	15	15.5	19.5		
	7/8	5/6	2/3	6/8	6/7	6/8	7/9	8/9	8/10		
		FWF-1	FWE-1	FWY-1	FWN-1	FWN-2	FWR-1				
		9.5	3	17	13.5	13	15.5				
		5/6	4/5	8/10	7/8	6/8	7/8				
		FWG-1	FWF-2	FNWD-3a	FWN-2	FWN-3	FWR-2				
		12	14	10.5	14.5	14	17.5				
		6/8	6/7	7/9	7/8	7/8	7/9				
		FWJ-1	FWG-1	FNWD-3b	FWO-1	FWO-2	FWS-1				
		18.5	10.5	12	14	13.5	17				
		8/10	5/7	7/9	8/9	7/9	8/9				
		FWL-1	FWG-3	FNWD-4b	FWO-2	FWP-1	FWS-2				
		9.5	15.5	15.5	15	14.5	18				
		7/8	7/9	8/9	8/9	7/9	8/10				
			FWJ-1		FWQ-1	FWS-1	FWT-1				
			15.5		17	18.5	19.5				
			8/9		7/9	8/10	7/9				
			FWK-1		FWV-1	FWU-1	FWU-1				
			15		17	14	12.5				
			8/9		8/9	7/8	6/8				
			FWL-2		FWY-2	FWW-1	FWY-4				
			10.5		17	17	17				
			7/8		8/10	8/9	8/10				
			FWM-1		FNWD-4a	FWY-3	FNWD-5b				
			13.5		12.5	17	15.5				
			6/8		7/9	8/10	7/9				
			FWX-1		FNWD-4b	FNWD-5a	FNWD-5c				
			15.5		13.5	15	17				
			7/8		7/9	7/9	7/9				
		FWJ-2		FNWD-4c	FNWD-5b	FNWD-6a					
		15.5		14.5	17	18					
		8/9		8/9	8/9	8/9					
		FWM-2		FNWD-5a		FNWD-6b					
		12.5		17		20.5					
		6/8		8/9		8/10					
XVII		FWG-2	FWD-2	FWG-3	FWM-2	FWN-1	FNWD-4c	FWP-2	FNWD-5b	FWP-2	FNWD-6c
		10.5	7.5	14	11	12.5	13	15	15.5	13.5	19.5
		6/7	2/3	7/8	6/7	6/8	7/9	7/9	7/9	7/8	8/10
			FWE-1	FWJ-1	FWN-1	FWN-2	FNWD-5a	FWR-1	FNWD-5c	FWY-4	
			3	14	13.5	13	15	15.5	17	15.5	
			4/5	7/9	7/8	6/8	7/9	7/8	7/9	8/9	
			FWE-2	FWJ-2	FWN-2	FWN-3	FNWD-5b	FWR-2	FNWD-6a		
			5	15.5	14.5	14	17	17.5	18		
			4/5	8/9	7/8	7/8	8/9	7/9	8/9		
			FWF-2	FWK-1	FWO-1	FWO-1		FWS-1	FNWD-6b		
			14	13	14	12.5		17	20.5		
			6/7	7/9	8/9	7/9		8/9	8/10		
			FWG-1	FWX-1	FWQ-1	FWO-2		FWS-2			
			10.5	13.5	17	13.5		18			
			5/7	6/8	7/9	7/9		8/10			
			FWJ-1	FWY-1	FWV-1	FWP-1		FWT-1			
			15.5	17	17	14.5		19.5			
			8/9	8/10	8/9	7/9		7/9			
			FWK-1		FWY-2	FWQ-1		FWU-1			
			15		17	15		12.5			
		8/9		8/10	7/8		6/8				
		FWL-1		FNWD-4a	FWS-1		FWW-1				
		8.5		12.5	18.5		15.5				
		6/8		7/9	8/10		7/9				
		FWL-2		FNWD-4b	FWU-1		FWY-3				
		10.5		13.5	14		15.5				
		7/8		7/9	7/8		8/9				
		FWM-1		FNWD-5a	FWV-1		FWY-4				
		13.5		17	15.5		17				
		6/8		8/9	7/9		8/10				

Ship Class	6/1	7/1	8/1	9/1	10/1		11/1		12/1		13/1	14/1	
XVIII	FWG-2	FWE-2	FWG-3	FWJ-2	FWN-1	FNWD-4c	FWO-2	FWY-3	FWP-2		FWP-2	FNWD-6c	
	10.5	5	14	13.5	12.5	13	12	15.5	15		12.5	18	
	6/7	4/5	7/8	7/9	6/8	7/9	7/8	8/9	7/9		6/8	8/9	
		FWF-2	FWJ-1	FWK-1	FWN-2	FNWD-5a	FWP-1	FNWD-5b	FWR-2				
		14	14	11.5	13	15	13.5	15.5	16				
		6/7	7/9	7/8	6/8	7/9	7/8	7/9	7/8				
			FWJ-2	FWM-2	FWN-3		FWP-2	FNWD-5c	FWS-2				
			15.5	11	14		15	17	16.5				
			8/9	6/7	7/8		7/9	7/9	8/9				
			FWK-1	FWQ-1	FWO-1		FWR-1	FNWD-6a	FWT-1				
			13	17	12.5		15.5	18	18				
			7/9	7/9	7/9		7/8	8/9	7/8				
			FWM-1	FWY-2	FWP-1		FWS-1	FNWD-6b	FWY-4				
			11.5	17	14.5		17	20.5	15.5				
			6/7	8/10	7/9		8/9	8/10	8/9				
		FWX-1	FNWD-4a	FWQ-1		FWU-1							
		13.5	12.5	15		12.5							
		6/8	7/9	7/8		6/8							
		FWY-1	FNWD-4b	FWV-1		FWW-1							
		17	13.5	15.5		15.5							
		8/10	7/9	7/9		7/9							
XIX	FWG-2	FWE-2	FWJ-1	FWG-3	FWN-1	FNWD-4c	FWN-3	FWV-1	FWO-2	FWT-1	FWP-2	FNWD-6c	
	10.5	5	14	12.5	12.5	13	12.5	14	11	18	12.5	18	
	6/7	4/5	7/9	6/8	6/8	7/9	6/8	7/8	6/8	7/8	6/8	8/9	
			FWK-1	FWJ-1	FWN-2	FNWD-5a	FWO-2	FWW-1	FWP-1	FWY-4			
			13	12.5	13	15	12	15.5	12	15.5			
			7/9	7/8	6/8	7/9	7/8	7/9	6/8	8/9			
			FWM-1	FWJ-2	FWO-1		FWP-1	FWY-3	FWP-2	FNWD-6b			
			11.5	13.5	12.5		13.5	15.5	13.5	19			
			6/7	7/9	7/9		7/8	8/9	7/8	8/9			
			FWY-1	FWK-1	FWQ-1		FWR-1	FNWD-5b	FWR-1				
			17	11.5	15		15.5	15.5	14				
			8/10	7/8	7/8		7/8	7/9	6/8				
				FWM-2	FNWD-4a		FWS-1	FNWD-5c	FWR-2				
				11	11		17	17	16				
				6/7	7/8		8/9	7/9	7/8				
			FWY-2	FNWD-4b		FWU-1	FNWD-6a	FWS-2					
			17	12.5		12.5	18	16.5					
			8/10	7/8		6/8	8/9	8/9					
XX	FWG-2	FWE-2	FWY-1	FWJ-1	FWJ-2		FWO-1		FWN-3	FWT-1	FWP-2	FNWD-6c	
	10.5	5	17	12.5	12.5		11.5		11.5	18	12.5	18	
	6/7	4/5	8/10	7/8	7/8		7/8		6/7	7/8	6/8	8/9	
				FWY-2	FWN-1		FWS-1		FWO-2	FWW-1	FWR-2		
				17	12.5		17		11	14	14.5		
				8/10	6/8		8/9		6/8	7/8	6/8		
					FWN-2		FVV-1		FWP-1	FWY-4			
					13		14		12	15.5			
					6/8		7/8		6/8	8/9			
					FWQ-1		FWY-3		FWR-1	FNWD-6a			
					15		15.5		14	16.5			
					7/8		8/9		6/8	7/9			
									FWS-2	FNWD-6b			
									16.5	19			
									8/9	8/9			

Ship Class	2/1	3/1	4/1	5/1	6/1	7/1					
II	FWA-1 15 7/9 FWA-2 17 7/9	FWA-1 10 7/8 FWA-2 11.5 7/8	FWH-1 14 6/8	FWA-2 8.5 6/8							
III	FWA-1 15 7/9	FWA-1 10 7/8 FWA-2 11.5 7/8	FWH-1 14 6/8	FWA-1 7.5 6/8 FWA-2 8.5 6/8							
IV		FWA-1 10 7/8	FWH-1 10.5 6/7	FWA-1 7.5 6/8 FWA-2 8.5 6/8							
V		FWB-1 14 7/8	FWB-2 18.5 8/9	FWB-1 10.5 6/8	FWB-2 14 7/9						
VI		FWB-1 14 7/8		FWB-1 10.5 6/8	FWB-2 14 7/9						
VII		FWH-2 17 6/8		FWB-1 10.5 6/8 FWB-2 14 7/9	FNWD-1a 17 9/10 FNWD-1b 19 9/10	FWB-1 8.5 6/7 FWB-2 11 7/8	FNWD-1a 13.5 8/10				
VIII		FWH-2 17 6/8		FWB-1 10.5 6/8 FWH-2 13 6/7	FNWD-1a 17 9/10 FNWD-1b 19 9/10	FWB-1 8.5 6/7 FWB-2 11 7/8	FNWD-1a 13.5 8/10 FNWD-1b 15 8/10				
IX		FWE-1 13 7/9 FWE-2 17 7/9	FWH-2 17 6/8	FWE-1 9.5 7/8 FWE-2 13 7/8	FWH-2 13 6/7 FNWD-2b 21.0 9/10	FWB-1 8.5 6/7 FNWD-1a 13.5 8/10	FNWD-1b 15 8/10 FNWD-2b 17.5 8/10	FWB-1 7 5/7 FWB-2 9 6/8			
X		FWD-1 14 7/9 FWE-1 13 7/9		FWE-1 9.5 7/8 FWE-2 13 7/8 FWH-2 13 6/7	FNWD-2b 21.0 9/10	FWD-2 15.5 6/8 FWL-1 17 9/10 FNWD-1a 13.5 8/10	FNWD-1b 15 8/10 FNWD-2b 17.5 8/10	FWB-1 7 5/7 FWB-2 9 6/8 FWG-1 18.5 8/10	FWL-1 14 8/10 FNWD-1b 12.5 8/9 FNWD-3a 18.5 9/10	FWB-2 8 6/7 FNWD-3b 18 9/10	
XI				FWD-1 10.5 7/8 FWE-1 9.5 7/8 FWE-2 13 7/8 FWH-2 13 6/7		FWD-2 15.5 6/8 FWE-2 10 6/8 FWH-2 10 5/7 FWL-1 17 9/10	FNWD-1a 13.5 8/10 FNWD-1b 15 8/10 FNWD-2b 17.5 8/10	FWB-1 7 5/7 FWG-1 18.5 8/10 FWL-1 14 8/10 FWL-2 18 9/10	FNWD-1a 11 8/9 FNWD-1b 12.5 8/9 FNWD-2b 15 8/9 FNWD-3a 18.5 9/10	FWB-1 6 5/6 FWB-2 8 6/7 FWG-1 16 8/9 FWL-2 15 8/10	FNWD-3b 18 9/10

Ship Class	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1
XII	FWC-1	FWC-2	FWD-2	FWB-1	FWB-2	FNWD-4b					
	15	17	13	6	7	18.5					
	7/9	6/8	6/7	5/6	5/7	8/10					
	FWE-1	FWD-1	FWE-2	FWG-1	FWF-2	FNWD-4c					
	9.5	8.5	8.5	16	18	20					
	7/8	6/8	6/7	8/9	7/8	9/10					
	FWE-2	FWD-2	FWF-1	FWG-2	FNWD-3a						
	13	15.5	14	14.5	13.5						
	7/8	6/8	6/7	7/9	8/9						
	FWH-2	FWE-1	FWG-1	FWL-2	FNWD-3b						
	13	7.5	18.5	15	16						
	6/7	6/8	8/10	8/10	8/10						
		FWE-2	FWG-2	FWX-1	FNWD-4a						
		10	17	20	18.5						
		6/8	8/9	9/10	9/10						
		FWF-1	FWL-1	FNWD-3a	FNWD-4b						
		17	14	15.5	20.5						
		6/8	8/10	8/10	9/10						
		FWH-2	FWL-2	FNWD-3b							
		10	18	18							
		5/7	9/10	9/10							
		FWL-1	FNWD-1a								
		17	11								
	9/10	8/9									
	FNWD-2b	FNWD-1b									
	17.5	12.5									
	8/10	8/9									
		FNWD-2b									
		15									
		8/9									
		FNWD-3a									
		18.5									
		9/10									
XIII		FWC-1	FWC-2	FWG-1	FWB-1	FWB-2	FNWD-4b	FNWD-5b	FNWD-5b	FNWD-5c	FNWD-5c
		12	14	16	5.5	6	16.5	20.5	18.5	20	18.5
		7/8	6/7	8/9	4/6	5/6	8/9	9/10	8/10	9/10	8/10
		FWD-1	FWD-2	FWG-2	FWF-2	FWF-2	FNWD-4c				
		8.5	13	14.5	18	16	18				
		6/8	6/7	7/9	7/8	6/8	8/10				
		FWE-1	FWE-2	FWL-1	FWG-1	FWG-3	FNWD-5a				
		7.5	8.5	12	14	18	20				
		6/8	6/7	8/9	7/9	8/10	9/10				
		FWE-2	FWF-1	FWL-2	FWM-1	FWK-1					
		10	14	15	17	17					
		6/8	6/7	8/10	9/10	9/10					
		FWF-1	FWG-2	FWX-1	FWX-1	FWM-1					
		17	17	20	17.5	15					
		6/8	8/9	9/10	8/10	8/10					
		FWH-2	FWL-1	FNWD-3a	FNWD-3a	FNWD-4b					
		10	14	15.5	13.5	18.5					
		5/7	8/10	8/10	8/9	8/10					
		FNWD-2b	FNWD-1a	FNWD-3b	FNWD-3b	FNWD-4c					
		17.5	11	18	16	20					
		8/10	8/9	9/10	8/10	9/10					
			FNWD-1b		FNWD-4a						
			12.5		18.5						
		8/9		9/10							
		FNWD-2b		FNWD-4b							
		15		20.5							
		8/9		9/10							

Ship Class	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1		
XIV	FWC-1	FWC-2	FWD-2	FWF-2	FWF-2	FWX-1	FWU-1	FWV-1	FWY-2	FWY-4	FNWD-5c	
	12	14	11	18	16	15.5	18.5	19	17.5	19	18.5	
	7/8	6/7	5/7	7/8	6/8	8/9	8/10	9/10	8/10	9/10	8/10	
	FWD-1	FWD-2	FWF-1	FWG-1	FWG-3	FWY-1	FWY-1	FWY-2	FWY-3	FNWD-5c		
	8.5	13	12	14	18	20	18	19	19	20		
	6/8	6/7	5/7	7/9	8/10	9/10	8/10	9/10	9/10	9/10		
	FWE-1	FWE-1	FWG-1	FWM-1	FWJ-1	FNWD-3b	FNWD-4b	FNWD-5a	FNWD-5b			
	7.5	6.5	16	17	18	14	16.5	18	18.5			
	6/8	6/7	8/9	9/10	9/10	8/9	8/9	8/10	8/10			
	FWE-2	FWE-2	FWG-2	FWM-2	FWK-1	FNWD-4a	FNWD-4c	FNWD-5b				
	10	8.5	14.5	18	17	16.5	18	20.5				
	6/8	6/7	7/9	9/10	9/10	8/10	8/10	9/10				
	FWH-2	FWF-1	FWL-1	FWN-1	FWM-1	FNWD-4b	FNWD-5a					
	10	14	12	20.5	15	18.5	20					
	5/7	6/7	8/9	9/10	8/10	8/10	9/10					
		FWG-2	FWL-2	FWX-1	FWM-2							
		17	15	17.5	16							
		8/9	8/10	8/10	8/10							
		FWH-2	FWX-1	FNWD-3a	FWN-2							
		8.5	20	13.5	19.5							
		5/6	9/10	8/9	9/10							
		FWL-1	FNWD-1a	FNWD-3b	FWN-3							
		14	9.5	16	20.5							
		8/10	7/9	8/10	9/10							
		FNWD-2b	FNWD-1b	FNWD-4a	FWO-1							
		15	11	18.5	19							
		8/9	7/9	9/10	9/10							
		FNWD-2b		FWO-2								
		13		20								
		7/9		9/10								
		FNWD-3a		FWU-1								
		15.5		20.5								
		8/10		9/10								
XV	FWE-1	FWC-1	FWC-2	FWG-1	FWF-2	FWU-1	FWG-3	FNWD-4c	FWP-1	FWP-2	FWR-2	FNWD-5c
	7.5	10	12	14	16	20.5	16	18	17.5	18.5	20	18.5
	6/8	6/8	5/7	7/9	6/8	9/10	8/9	8/10	8/10	8/10	9/10	8/10
		FWD-1	FWD-2	FWL-2	FWG-3	FWY-1	FWJ-1	FNWD-5a	FWP-2	FWV-1	FWY-2	
		7	11	13.5	18	20	16	20	20	17.5	16	
		6/7	5/7	8/9	8/10	9/10	8/10	9/10	9/10	8/10	8/9	
		FWE-1	FWF-1	FWM-1	FWJ-1	FNWD-4a	FWJ-2	FWQ-1	FWY-2	FWY-3		
		6.5	12	17	18	16.5	18	18.5	17.5	17.5		
		6/7	5/7	9/10	9/10	8/10	9/10	8/10	8/10	8/10		
		FWE-2	FWG-1	FWM-2	FWK-1	FNWD-4b	FWK-1	FWR-1	FWY-3	FWY-4		
		8.5	16	18	17	18.5	15.5	20.5	19	19		
		6/7	8/9	9/10	9/10	8/10	8/10	9/10	9/10	9/10		
		FWF-1	FWG-2	FWN-1	FWM-1		FWM-2	FWV-1	FNWD-5b	FNWD-5c		
		14	14.5	19	15		14.5	19	18.5	20		
		6/7	7/9	9/10	8/10		8/9	9/10	8/10	9/10		
		FWH-2	FWL-1	FNWD-4a	FWM-2		FWP-1	FWW-1				
		8.5	12	18.5	16		19.5	20.5				
		5/6	8/9	9/10	8/10		9/10	9/10				
		FWL-1	FWL-2		FWN-2		FWQ-1	FWY-2				
		14	15		19.5		20.5	19				
		8/10	8/10		9/10		9/10	9/10				
					FWN-3		FWU-1	FNWD-4c				
					20.5		18.5	16				
					9/10		8/10	8/9				
					FWO-1		FWY-1	FNWD-5a				
					19		18	18				
					9/10		8/10	8/10				
				FWO-2		FNWD-4b	FNWD-5b					
				20		16.5	20.5					
				9/10		8/9	9/10					

Ship Class	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1	15/1		
XVI	FWC-1	FWC-2	FWD-2	FWF-2	FWG-3	FWQ-1	FWM-2	FNWD-5a	FWP-2	FWP-2	FWR-2	FNWD-6b
	10	12	9.5	16	16	20.5	13	18	18.5	17	18.5	20
	6/8	5/7	5/6	6/8	8/9	9/10	7/9	8/10	8/10	8/9	8/10	9/10
	FWD-1	FWD-1	FWF-1	FWG-1	FWJ-1	FWU-1	FWP-1	FNWD-5b	FWR-1	FWR-2	FWY-3	
	7	6	10.5	12.5	16	18.5	17.5	20.5	18.5	20	16.5	
	6/7	5/7	5/6	7/8	8/10	8/10	8/10	9/10	8/10	9/10	8/9	
	FWE-1	FWD-2	FWG-1	FWJ-1	FWJ-2	FWY-1	FWP-2		FWV-1	FWS-1	FWY-4	
	6.5	11	14	18	18	18	20		17.5	19	18	
	6/7	5/7	7/9	9/10	9/10	8/10	9/10		8/10	9/10	8/10	
	FWE-2	FWF-1	FWG-2	FWM-1	FWK-1	FNWD-4b	FWQ-1		FWW-1	FWS-2	FNWD-5c	
	8.5	12	13	15	15.5	16.5	18.5		18.5	20.5	18.5	
	6/7	5/7	7/8	8/10	8/10	8/9	8/10		8/10	9/10	8/10	
		FWG-2	FWL-2	FWM-2	FWM-1	FNWD-4c	FWR-1		FWY-2	FWY-2	FNWD-6a	
		14.5	13.5	16	13.5	18	20.5		17.5	16	18.5	
		7/9	8/9	8/10	8/9	8/10	9/10		8/10	8/9	8/10	
		FWH-2	FWN-1	FWN-2	FWM-2		FWU-1		FWY-3	FWY-3		
		7	19	19.5	14.5		17		19	17.5		
		4/6	9/10	9/10	8/9		8/9		9/10	8/10		
		FWL-1		FWN-3	FWO-1		FWV-1		FNWD-5a	FWY-4		
		12		20.5	17		19		16.5	19		
	8/9		9/10	8/10		9/10		8/9	9/10			
XVII	FWC-1	FWD-1	FWC-2	FWF-2	FWF-2	FWY-1	FWJ-2		FWP-1	FWP-2	FWR-2	FNWD-5c
	10	6	10.5	16	14.5	18	16		16	17	18.5	17
	6/8	5/7	5/6	6/8	6/7	8/10	8/10		8/9	8/9	8/10	8/9
	FWE-1	FWD-2	FWD-2	FWG-1	FWG-3	FNWD-4b	FWK-1		FWP-2	FWR-1	FWS-2	FNWD-6b
	6.5	11	9.5	12.5	16	16.5	14		18.5	17	19	20
	6/7	5/7	5/6	7/8	8/9		8/9		8/10	8/9	8/10	9/10
	FWE-2	FWE-1	FWF-1	FWM-1	FWJ-1		FWM-2		FWR-1	FWR-2	FWT-1	
	8.5	5.5	10.5	15	16		13		18.5	20	20.5	
	6/7	5/7	5/6	8/10	8/10		7/9		8/10	9/10	9/10	
		FWF-1	FWG-1	FWM-2	FWK-1		FWP-1		FWV-1	FWS-1	FWY-3	
		12	14	16	15.5		17.5		17.5	19	16.5	
		5/7	7/9	8/10	8/10		8/10		8/10	9/10	8/9	
		FWG-2	FWG-2	FWN-1	FWM-1		FWP-2		FWW-1	FWS-2	FWY-4	
		14.5	13	17	13.5		20		18.5	20.5	18	
		7/9	7/8	8/10	8/9		9/10		8/10	9/10	8/10	
		FWL-1	FWL-1		FWM-2		FWQ-1		FWY-2	FWV-1	FNWD-5c	
		12	10.5		14.5		18.5		17.5	16	18.5	
		8/9	7/9		8/9		8/10		8/10	8/9	8/10	
			FWL-2		FWN-2		FWU-1		FNWD-4c	FWW-1	FNWD-6a	
			13.5		17.5		17		15	17	18.5	
		8/9		8/10		8/9		7/9	8/9	8/10		
				FWN-3		FWY-1		FNWD-5a	FWY-2			
				18.5		16.5		16.5	16			
				8/10		8/9		8/9	8/9			
				FWO-1		FNWD-4b		FNWD-5b	FWY-3			
				17		15		18.5	17.5			
				8/10		7/9		8/10	8/10			
				FWO-2		FNWD-4c			FNWD-5b			
				18		16			17			
				8/10		8/9			8/9			
				FWU-1		FNWD-5a			FNWD-6a			
				18.5		18			20			
				8/10		8/10			9/10			

Ship Class	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1	15/1				
XVIII	FWC-1	FWC-2	FWG-1	FWF-2	FWO-2	FWG-3	FWY-1	FWP-1	FNWD-5b	FWP-1	FWR-2	FWR-2	
	8.5	10.5	12.5	14.5	18	15	16.5	16	18.5	15	18.5	17	
	6/7	5/6	7/8	6/7	8/10	7/9	8/9	8/9	8/10	7/9	8/10	8/9	
	FWE-1	FWD-1	FWM-1	FWG-3	FWU-1	FWJ-1	FNWD-4b	FWP-2		FWP-2	FWS-1	FNWD-5c	
	5.5	5.5	15	16	18.5	15	15	18.5		17	18	17	
	5/7	5/6	8/10	8/9	8/10	8/9	7/9	8/10		8/9	8/10	8/9	
	FWF-1	FWD-2	FWN-1	FWJ-1	FWY-1	FWJ-2	FNWD-4c	FWQ-1		FWR-1	FWS-2	FNWD-6b	
	12	9.5	17	16	18	16	16	17		17	19	20	
	5/7	5/6	8/10	8/10	8/10	8/10	8/9	8/9		8/9	8/10	9/10	
	FWL-1	FWF-1	FWX-1	FWK-1	FNWD-4a	FWK-1	FNWD-5a	FWR-1		FWV-1	FWT-1		
	12	10.5	15.5	15.5	15	14	18	18.5		16	20.5		
	8/9	5/6	8/9	8/10	8/9	8/9	8/10	8/10		8/9	9/10		
	FNWD-2b	FWG-1	FNWD-3b	FWM-1	FNWD-4b	FWM-2		FWV-1		FWW-1	FWY-3		
	13	14	14	13.5	16.5	13		17.5		17	16.5		
	7/9	7/9	8/9	8/9	8/9	7/9		8/10		8/9	8/9		
		FWG-2	FNWD-4a	FWM-2		FWP-1		FWW-1		FWY-2	FWY-4		
		13	16.5	14.5		17.5		18.5		16	18		
		7/8	8/10	8/9		8/10		8/10		8/9	8/10		
		FWL-1		FWN-2		FWP-2		FWY-2		FNWD-5b	FNWD-5c		
		10.5		17.5		20		17.5		17	18.5		
		7/9		8/10		9/10		8/10		8/9	8/10		
		FWX-1		FWN-3		FWQ-1		FNWD-4c		FNWD-6a	FNWD-6a		
		17.5		18.5		18.5		15		20	18.5		
		8/10		8/10		8/10		7/9		9/10	8/10		
		FNWD-3a		FWO-1		FWU-1		FNWD-5a					
		13.5		17		17		16.5					
		8/9		8/10		8/9		8/9					
	XIX		FWC-1	FWC-2	FWF-2		FWG-3	FWU-1	FWJ-2		FWP-1	FWP-2	FWR-2
			7.5	9.5	14.5		15	17	15		15	15.5	17
			5/7	4/6	6/7		7/9	8/9	8/9		7/9	7/9	8/9
		FWD-1	FWG-1	FWJ-1		FWJ-1	FWY-1	FWP-1		FWP-2	FWR-1	FWS-2	
		5.5	12.5	16		15	16.5	16		17	16	18	
		5/6	7/8	8/10		8/9	8/9	8/9		8/9	7/9	8/9	
		FWD-2	FWL-2	FWM-1		FWK-1	FNWD-4b	FWP-2		FWR-1	FWR-2	FWT-1	
		9.5	12	13.5		14	15	18.5		17	18.5	19	
		5/6	7/9	8/9		8/9	7/9	8/10		8/9	8/10	8/10	
		FWF-1	FWM-1	FWM-2		FWM-2		FWQ-1		FWR-2	FWS-1	FWY-3	
		10.5	15	14.5		13		17		20	18	15	
		5/6	8/10	8/9		7/9		8/9		9/10	8/10	7/9	
		FWG-2	FWX-1	FWN-1		FWN-2		FWU-1		FWV-1	FWS-2	FNWD-5c	
		13	15.5	15.5		15.5		15.5		16	19	17	
		7/8	8/9	8/9		8/9		7/9		8/9	8/10	8/9	
		FWL-1	FNWD-3b	FWY-1		FWN-3		FWV-1		FWW-1	FWY-3	FNWD-6b	
		10.5	14	18		17		17.5		17	16.5	20	
		7/9	8/9	8/10		8/9		8/10		8/9	8/9	9/10	
		FNWD-3a		FNWD-3b		FWO-1		FNWD-4c		FWY-2	FWY-4		
		13.5		12.5		15.5		15		16	18		
	8/9		7/9		8/9		7/9		8/9	8/10			
			FNWD-4a		FWO-2		FNWD-5a			FNWD-5c			
			15		16.5		16.5			18.5			
			8/9		8/9		8/9			8/10			

Ship Class	8/1	9/1	10/1	11/1	12/1	13/1	14/1	15/1			
XX	FWD-2	FWC-1	FWF-2	FWG-3	FWO-1	FWJ-2	FWP-1	FNWD-5b	FWP-2	FWR-2	FNWD-5c
	9.5	6.5	14.5	15	15.5	15	15	17	15.5	17	17
	5/6	5/6	6/7	7/9	8/9	8/9	7/9	8/9	7/9	8/9	8/9
	FWF-1	FWC-2	FWM-1	FWJ-1	FWO-2	FWU-1	FWQ-1		FWR-1	FWS-1	FNWD-6b
	10.5	9.5	13.5	15	16.5	15.5	15.5		16	16.5	20
	5/6	4/6	8/9	8/9	8/9	7/9	7/9		7/9	8/9	9/10
	FWG-2	FWD-1	FWN-1	FWK-1	FWY-1	FNWD-4c	FWV-1		FNWD-5b	FWS-2	
	13	4.5	15.5	14	16.5	15	16		16	18	
	7/8	4/6	8/9	8/9	8/9	7/9	8/9		7/9	8/9	
	FWL-1	FWG-1		FWM-2	FNWD-4a		FWW-1		FNWD-6a	FWT-1	
	10.5	12.5		13	13.5		17		18.5	19	
	7/9	7/8		7/9	7/9		8/9		8/10	8/10	
		FWL-2		FWN-2	FNWD-4b		FWY-2			FWY-3	
		12		15.5	15		16			15	
		7/9		8/9	7/9		8/9			7/9	
		FWX-1		FWN-3			FNWD-5a			FWY-4	
		15.5		17			15			16.5	
		8/9		8/9			7/9			8/9	



Ship Class	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1
II	FWA-1 13 7/9									
III		FWA-1 10 7/8 FWA-2 11.5 7/8 FWH-1 14 6/8								
IV		FWH-1 14 6/8	FWA-1 8 6/8 FWH-1 11.5 6/7							
V			FWA-2 9 6/8 FWH-1 11.5 6/7							
VI		FWB-1 14 7/8		FWH-1 9.5 5/7						
VII		FWB-1 14 7/8 FWB-2 18.5 8/9								
VIII		FWB-2 18.5 8/9	FWB-1 11.5 6/8							
IX		FWH-2 17 6/8	FWB-1 11.5 6/8 FWB-2 15 7/9 FNWD-1a 24 8/10	FNWD-1b 21.5 8/10						
X			FWB-2 15 7/9 FWH-2 13.5 6/7	FWB-1 9.5 6/7 FNWD-1a 20 8/9 FNWD-1b 21.5 8/10		FXMW-1 22.5 9/10	FXMW-3 22 9/10		FXMW-2 23 9/10	
XI	FWE-1 17 7/9	FWE-2 17 7/9	FWH-2 13.5 6/7	FWB-1 9.5 6/7 FWB-2 12.5 5/7 FNWD-1a 20 8/9	FNWD-1b 18.5 8/9 FNWD-2a 21 8/10	FNWD-2b 22 8/10	FXMW-1 20 8/10	FXMW-3 20 8/10	FXMW-2 23 9/10	FXMW-2 21 8/10

Ship Class	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1	15/1
XII	FWE-1	FWE-2	FWB-2	FWB-1	FNWD-3a	FNWD-2b	FNWD-3b	FXMW-3	FXMW-2	FXMW-2		
	13	13.5	12.5	8	24	19.5	22	18	21	19.5		
	7/8	7/8	7/8	5/7	8/10	8/9	9/10	8/9	8/10	8/9		
		FWH-2	FNWD-1a	FNWD-1b			FXMW-1					
	13.5	20	18.5	8/9		18						
	6/7	8/9	8/9	FNWD-2a		8/9						
				21								
				8/10								
XIII	FWD-1	FWE-1	FWD-2	FWB-1	FWG-1	FNWD-2b	FXMW-1	FNWD-3b	FXMW-3	FXMW-2	FXMW-2	
	14	10	17	8	18.5	19.5	18	20	16.5	19.5	18	
	7/9	6/8	6/8	5/7	8/10	8/9	8/9	8/10	7/9	8/9	7/9	
		FWE-2		FWB-2	FNWD-2a	FNWD-3a						
		13.5		10.5	18.5	21.5						
		7/8		6/8	8/9	8/9						
	FWH-2		FWL-1									
	13.5		16									
	6/7		9/10									
			FNWD-1a									
			17									
			7/9									
			FNWD-1b									
			18.5									
			8/9									
XIV		FWC-1	FWD-2	FWB-2	FWB-1	FNWD-2b	FXMW-1	FWK-1	FNWD-3b	FNWD-4c	FXMW-2	FNWD-5a
		16	17	10.5	7	19.5	18	18.5	18.5	23	18	23
		7/9	6/8	6/8	5/6	8/9	8/9	9/10	8/9	8/10	7/9	8/10
		FWD-1	FWH-2	FWC-2	FWG-1	FNWD-3a		FWX-1	FNWD-4b			
		11.5	11.5	16	18.5	21.5		22	23.5			
		7/8	5/7	6/8	8/10	8/9		9/10	9/10			
		FWE-1		FWF-1	FWG-2			FNWD-4a	FXMW-3			
		10		16	17			23	16.5			
		6/8		6/8	8/9			9/10	7/9			
		FWE-2		FWL-1	FWL-2			FXMW-1				
	13.5		16	18			16.5					
	7/8		9/10	9/10			7/9					
			FNWD-1a	FNWD-2a								
			17	18.5								
			7/9	8/9								
			FNWD-1b									
			18.5									
			8/9									
XV		FWC-1	FWD-2	FWC-2	FWB-2	FWG-2	FWM-1	FWF-2	FWG-3	FWN-1	FWN-3	FNWD-5a
		16	17	16	9	15	18	17.5	18	21.5	23	23
		7/9	6/8	6/8	6/7	7/9	9/10	7/8	8/10	8/10	8/10	8/10
		FWD-1	FWH-2	FWF-1	FWG-1		FNWD-2b	FWK-1	FWJ-1	FWN-2	FWU-1	
		11.5	11.5	16	18.5		17.5	18.5	18	22.5	23	
		7/8	5/7	6/8	8/10		7/9	9/10	9/10	8/10	9/10	
		FWE-1		FNWD-1a	FWL-1		FNWD-3a	FXMW-1	FWX-1	FNWD-4b	FNWD-4c	
		10		17	14		19	16.5	20	21.5	21.5	
		6/8		7/9	8/10		7/9	7/9	8/10	8/10	8/9	
					FWL-2					FXMW-3	FXMW-2	
				18					15	18		
				9/10					7/8	7/9		
				FNWD-1b								
				16								
				7/9								
				FNWD-2a								
				18.5								
				8/9								

Ship Class	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1	15/1	15/1
XVI	FWD-1	FWC-1	FWC-2	FWF-1	FWG-1	FWG-2	FWF-2	FWG-3	FWJ-2	FWN-1	FWU-1	
	11.5	13	16	14	16.5	13.5	17.5	18	18.5	20	21.5	
	7/8	7/8	6/8	6/7	8/9	7/8	7/8	8/10	9/10	8/9	8/10	
	FWE-1	FWE-2	FWD-2	FWL-1	FWL-2	FWM-1	FWK-1	FWJ-1	FWO-1	FWN-2	FWY-2	
	10	11.5	14.5	14	16	18	18.5	18	22	21	23	
	6/8	6/8	6/7	8/10	8/10	9/10	9/10	9/10	8/10	8/9	9/10	
	FWE-2			FNWD-1a	FNWD-1b	FNWD-2b	FWM-2	FNWD-4a	FWX-1	FWN-3	FNWD-4c	
	13.5			15	14.5	17.5	17.5	21	18.5	23	20	
	7/8			7/8	7/8	7/9	9/10	8/10	8/9	8/10	7/9	
					FNWD-2a	FNWD-3a	FXMW-1		FNWD-3b	FWO-2	FXMW-2	
					16.5	19	16.5		17	22	17	
					7/9	7/9	7/9		7/9	8/10	7/8	
	XVII	FWD-1	FWC-1	FWD-2	FWC-2	FWG-1	FWG-2	FWF-2	FWK-1	FWG-3	FWN-1	FWO-2
11.5		13	14.5	14	16.5	13.5	17.5	17	16	20	20.5	17
7/8		7/8	6/7	6/7	8/9	7/8	7/8	8/10	8/9	8/9	8/9	7/8
		FWE-1		FWF-1	FWL-2	FWM-1	FWM-2	FXMW-1	FWJ-1	FWN-2	FWP-1	
		8.5		14	16	18	17.5	15	16	21	22	
		6/7		6/7	8/10	9/10	9/10	7/8	8/10	8/9	9/10	
		FWE-2		FWL-1	FNWD-1b	FNWD-2b			FWJ-2	FWN-3	FWQ-1	
		11.5		14	14.5	17.5			18.5	23	23	
		6/8		8/10	7/8	7/9			9/10	8/10	9/10	
		FWH-2		FNWD-1a	FNWD-2a	FNWD-3a			FWX-1	FWO-1	FWU-1	
		11.5		15	16.5	19			18.5	20.5	21.5	
		5/7		7/8	7/9	7/9			8/9	8/9	8/10	
XVIII			FWC-1	FWH-2	FWC-2	FWG-1	FWL-2	FWG-2	FWF-2	FWG-3	FWJ-2	FWN-1
		13	10	14	16.5	14	12.5	16	16	17	19	21.5
		7/8	5/6	6/7	8/9	8/9	6/8	6/8	8/9	8/10	7/9	8/10
		FWD-1		FWD-2	FWL-1		FWM-1	FWK-1	FWJ-1	FWX-1	FWN-2	FWY-1
		9.5		13	12.5		16.5	17	16	17.5	19.5	20.5
		6/8		5/7	8/9		8/10	8/10	8/10	7/9	7/9	8/10
		FWE-1		FWF-1	FNWD-1b		FWM-2	FXMW-1		FNWD-3b	FWN-3	FNWD-4b
		8.5		14	14.5		17.5	15		15.5	21.5	19
		6/7		6/7	7/8		9/10	7/8		7/8	8/9	7/9
		FWE-2		FNWD-1a	FNWD-2a		FNWD-2b			FNWD-4a	FWO-1	FNWD-4c
		11.5		15	16.5		16			18	19	20
		6/8		7/8	7/9		7/8			7/9	7/9	7/9
							FNWD-3a			FXMW-3	FWO-2	FXMW-2
						17.5			14	20.5	17	
						7/8			6/8	8/9	7/8	
										FWP-1		
										22		
										9/10		

Ship Class	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1	14/1	15/1	15/1
XIX	FWD-1	FWC-1	FWC-2	FWF-1	FWG-1	FWG-2	FWF-2	FWG-3	FWG-3	FNWD-3b	FWN-1	FNWD-4a
	9.5	11.5	14	12.5	15	12.5	16	16	14	15.5	19	17
	6/8	6/8	6/7	5/7	7/9	6/8	6/8	8/9	7/9	7/8	7/9	7/8
	FWE-2	FWE-1	FWD-2	FWL-1	FWL-2	FWM-1	FWK-1		FWJ-1	FXMW-3	FWN-2	FNWD-4b
	11.5	7	13	12.5	14	16.5	17		14	14	19.5	19
	6/8	5/7	5/7	8/9	8/9	8/10	8/10		8/9	6/8	7/9	7/9
					FNWD-2a	FNWD-2b	FWM-2		FWJ-2		FWN-3	FXMW-2
					14.5	16	16		17		21.5	17
					7/8	7/8	8/10		8/10		8/9	7/8
						FNWD-3a	FXMW-1		FWX-1		FWO-1	
XX	FWD-1	FWE-1	FWC-1	FWC-2	FWL-1	FWG-1	FWF-2	FWG-3	FWG-3	FNWD-3b	FWN-3	FNWD-4b
	9.5	7	10	12.5	11.5	13.5	16	16	14	15.5	21.5	19
	6/8	5/7	6/7	5/7	7/9	7/8	6/8	8/9	7/9	7/8	8/9	7/9
		FWE-2		FWD-2	FNWD-2a	FWL-2	FWG-2		FWJ-1		FWX-1	
		10		11.5	14.5	13	11.5		14		16	
		6/7		5/6	7/8	7/9	6/7		8/9		7/8	
				FWF-1		FNWD-2b	FWK-1		FWJ-2		FNWD-4a	
				12.5		16	17		17		17	
				5/7		7/8	8/10		8/10		7/8	
						FNWD-3a	FWM-1					
					17.5	15						
					7/8	8/9						
						FWM-2						
						16						
						8/10						

IMPULSE DRIVES

Impulse Engine Type	Mass (MT)	Power Units Available	Control Computer Type	Appropriate Ship Class	Superstructure	Availability	Cost (MCr)	Year
FIA-1	150	1	L-12	I-I	0.1	RRR/88	1	2236
FIA-2	150	2	L-12	I-II	0.1	RRR/86	1	2236
FIA-3	150	3	L-12	I-III	0.1	RRR/83	2	2236
FIB-1	200	2	L-12	III-VII	0.1	RRR/83	1	2241
FIB-2	200	4	L-12	III-VIII	0.1	RRR/82	2	2241
FIB-3	200	6	L-13	V-IX	0.1	RRR/80	3	2241
FIC-1	255	1	L-12	III-VI	0.1	RRR/76	1	2242
FIC-2	255	3	L-12	V-IX	0.1	RRR/74	2	2242
FIC-3	255	6	L-13	VII-XI	0.1	RRR/70	3	2242
FID-1	315	2	L-12	IV-VII	0.1	RRR/70	2	2256
FID-2	315	4	L-12	VII-XII	0.1	RRR/65	3	2256
FID-3	315	8	L-13	X-XX	0.1	RRR/63	4	2256
FIE-1	350	4	L-12	VI-VIII	0.1	RRR/64	3	2261
FIE-2	350	8	L-13	VII-XII	0.1	RRR/60	4	2261
FIE-3	350	16	M-1	XI-XX	0.1	RRR/57	5	2261
FIF-1	438	12	L-14	VII-XI	0.1	RRR/55	4	2268
FIF-2	438	16	M-1	IX-XIII	0.1	RRR/50	5	2268
FIF-3	438	20	M-1	XI-XX	0.1	RRR/46	7	2268
FIG-1	1060	24	M-2	X-XIII	0.1	RRR/47	10	2272
FIG-2	1060	32	M-3	XII-XV	0.1	RRR/40	18	2272
FIG-3	1060	40	M-4	XIV-XV	0.1	RRR/32	34	2272
FIH-1	2000	28	M-4	XI-XVI	0.1	RRR/20	28	2281
FIH-2	2000	36	M-4	XII-XVIII	0.1	RRR/18	36	2290
FIH-3	2000	44	M-4	XV-XX	0.1	RRR/07	44	2301
FII-1	575	15	M-1	VI-XI	0.1	RRR/41	22	2330
FII-2	575	18	M-1	VII-XII	0.1	RRR/40	27	2330
FII-3	575	20	M-1	VII-XI	0.1	RRR/39	30	2331
FII-4	575	21	M-1	VII-XII	0.1	RRR/38	31	2332
FII-5	575	22	M-1	VIII-XIV	0.1	RRR/37	33	2335
FII-6	575	23	M-1	IX-XV	0.1	RRR/34	35	2336
FII-7	575	24	M-1	VIII-XIV	0.1	RRR/33	36	2339
FII-8	575	25	M-2	VIII-XVI	0.1	RRR/31	38	2342
FII-9	575	26	M-2	IX-XVI	0.1	RRR/25	39	2344
FII-10	575	28	M-2	X-XVII	0.1	RRR/22	42	2350
FIJ-1	630	25	M-2	VIII-XV	0.1	RRR/33	37	2337
FIJ-2	630	27	M-2	IX-XVI	0.1	RRR/27	41	2339
FIJ-3	630	30	M-2	XII-XVI	0.1	RRR/20	45	2341
FIJ-4	630	32	M-2	X-XV	0.1	RRR/19	48	2343
FIJ-5	630	33	M-3	XIII-XVIII	0.1	RRR/18	49	2345
FIJ-6	630	34	M-3	XII-XV	0.1	RRR/16	51	2347
FIJ-7	630	35	M-3	XIV-XVII	0.1	RRR/15	52	2349
FIJ-8	630	36	M-3	XV-XVIII	0.1	RRR/14	54	2351
FIJ-9	630	38	M-3	XIII-XVII	0.1	RRR/12	57	2353
FIJ-10	630	39	M-3	XVI-XIX	0.1	RRR/10	59	2355

IMPULSE DRIVES CONT.

Impulse Engine Type	Mass (MT)	Power Units Available	Control Computer Type	Appropriate Ship Class	Superstructure	Availability	Cost (Mcr)	Year
FIK-1	960	35	M-3	XIII-XV	0.1	RRR/19	53	2340
FIK-2	960	36	M-3	XIV-XVI	0.1	RRR/17	54	2342
FIK-3	960	38	M-3	XV-XVII	0.1	RRR/14	57	2344
FIK-4	960	40	M-3	XIV-XVIII	0.1	RRR/11	60	2346
FIK-5	960	41	M-4	XV-XVIII	0.1	RRR/10	62	2348
FIK-6	960	42	M-4	XVI-XIX	0.1	RRR/9	63	2350
FIK-7	960	43	M-4	XVII-XX	0.1	RRR/8	64	2352
FIK-8	960	44	M-4	XV-XIX	0.1	RRR/7	66	2354
FIK-9	960	46	M-4	XVII-XX	0.1	RRR/5	69	2356
FIK-10	960	48	M-4	XVIII-XX	0.1	RRR/4	72	2358
FIL-1	1040	44	M-4	XIV-XVIII	0.1	RRR/12	66	2355
FIL-2	1040	46	M-4	XVI-XIX	0.1	RRR/11	69	2357
FIL-3	1040	48	M-4	XVII-XX	0.1	RRR/10	72	2359
FIL-4	1040	55	M-4	XVI-XIX	0.1	RRR/9	82	2361
FIL-5	1040	56	M-4	XVII-XIX	0.1	RRR/7	84	2363
FIL-6	1040	57	M-6	XVIII-XX	0.1	RRR/6	86	2365
FIL-7	1040	58	M-6	XVII-XX	0.1	RRR/5	87	2367
FIL-8	1040	59	M-6	XVIII-XX	0.1	RRR/4	89	2369
FIL-9	1040	60	M-6	XIX-XX	0.1	RRR/3	90	2371
FIL-10	1040	62	M-6	XIX-XX	0.1	RRR/2	93	2373
FIM-1	2350	58	M-6	XVII-XX	0.1	RRR/4	87	2364
FMIA	10	1	L-12	I-I	0.1	RRR/92	1	2261
FMIB	20	2	L-12	I-I	0.1	RRR/90	1	2265
FMIC	30	3	L-12	I-I	0.1	RRR/89	1.5	2270

Ship Class	1/3	1/2	1/1	2/1	3/1	4/1	5/1	6/1					
I	FIA-1 4	FIA-1 3 FIA-2 6	FIA-1 1.5 FIA-2 3	FIA-3 4 FMIA 1	FIA-3 2 FMIA 1								
II	FIA-1 4	FIA-1 3 FIA-2 6	FIA-1 1.5 FIA-2 3	FIA-3 4	FIA-3 2	FIA-3 1.5							
III			FIA-3 4 FIC-1 1.5		FIA-3 2 FIB-1 1.5 FIB-2 3	FIB-3 4 FIC-1 1	FIB-2 2 FIB-3 3 FIC-1 1	FIB-2 1.5 FIB-3 2					
IV			FIC-1 1.5		FIB-1 1.5 FIB-2 3 FIB-3 4	FIC-1 1 FID-1 1.5	FIB-2 2 FIB-3 3 FIC-1 1	FID-1 1 FIB-2 1.5 FIB-3 2 FID-1 1					
V			FIC-1 1.5		FIB-1 1.5 FIB-2 3 FIB-3 4	FIC-1 1 FIC-2 2 FID-1 1.5	FIB-2 2 FIB-3 3 FIC-1 1	FIC-2 1.5 FIB-3 2 FIC-2 1	FID-1 1 FIC-2 1 FID-1 1				
VI			FII-1 21		FIB-1 1.5 FIB-2 3 FIB-3 4 FIC-1 1 FIC-2 2	FID-1 1.5 FIE-1 3 FIE-2 6 FII-1 10.5	FIB-2 2 FIB-3 3 FIC-1 1 FIC-2 1.5 FID-1 1	FIE-1 2 FIE-2 4 FII-1 7 FIC-2 1 FIE-1 1.5	FIB-2 1.5 FIB-3 2 FIC-2 1 FID-1 1 FIE-1 1.5	FII-1 5 FIC-2 1 FID-1 1 FIE-1 1			
VII					FIB-1 1.5 FIB-2 3 FIB-3 4 FIC-2 2 FIC-3 4 FID-1 1.5	FIE-1 3 FIE-2 6 FII-1 10.5 FII-2 12.5 FII-3 14	FIB-2 2 FIB-3 3 FIC-2 1.5 FIC-3 3 FID-1 1 FIE-1 2	FIE-2 4 FII-1 7 FII-2 8.5 FII-3 9.5 FII-4 10 FIE-1 1.5	FIB-2 1.5 FIB-3 2 FIC-2 1 FIC-3 2 FID-1 1 FIE-1 1.5	FIE-2 3 FII-1 5 FII-2 6 FII-3 7 FII-4 7.5	FIC-2 1 FIC-3 2 FID-1 1 FIE-1 1 FIE-2 2 FII-1 4	FII-3 5.5 FII-4 6 FID-1 1 FIE-1 1 FIE-2 2 FII-1 4	
VIII					FIB-2 3 FIB-3 4 FIC-2 2 FIC-3 4 FIE-1 3 FIE-2 6 FIF-1 8.5		FIB-3 3 FIC-2 1.5 FIC-3 3 FID-1 1 FID-2 2 FIE-1 2 FIE-2 2 FIE-2 2 FIE-2 2 FIE-2 2 FIF-1 4 FIF-1 4	FIF-2 7.5 FII-1 7 FII-2 8.5 FII-3 9.5 FII-5 10 FII-7 11 FIE-2 4 FIF-1 4	FIB-3 2 FIC-2 1 FIC-3 2 FID-2 1.5 FIE-1 1.5 FIE-2 3 FIF-1 4 FIF-1 4	FII-2 6 FII-3 7 FII-4 7.5 FII-5 7.5 FII-7 8.5 FII-8 8.5 FIJ-1 8.5	FIC-2 1 FIC-3 2 FID-2 1 FIE-1 1 FIE-2 2 FIF-1 3.5 FII-1 4 FII-3 5.5	FII-4 6 FII-5 6 FII-7 6.5 FII-8 7	FID-2 1 FIE-2 2 FIF-1 3 FII-1 3.5 FII-4 5 FII-5 5

Ship Class	2/1	3/1	4/1	5/1	6/1	7/1	8/1	9/1	10/1						
IX	FIC-2 2	FIB-3 3	FII-3 9.5	FIB-3 2	FII-3 7	FIC-2 1	FII-4 6	FID-2 1							
	FIC-3 4	FIC-2 1.5	FII-5 10	FIC-2 1	FII-4 7.5	FIC-3 2	FII-5 6	FIE-2 2							
	FIE-2 6	FIC-3 3	FII-7 11	FIC-3 2	FII-5 7.5	FID-2 1	FII-6 6.5	FIF-1 3							
	FIF-1 8.5	FID-2 2	FII-8 11.5	FID-2 1.5	FII-6 8	FIE-2 2	FII-7 6.5	FIH-1 6.5							
		FIE-2 4	FII-9 12	FIE-2 3	FII-7 8.5	FIF-1 3.5	FII-8 7	FII-1 3.5							
		FIF-1 6	FIJ-1 11.5	FIF-1 4	FII-8 8.5	FIF-2 4.5	FII-9 7	FII-4 5							
		FIF-2 7.5	FIJ-2 12.5	FIF-2 6	FII-9 9	FIH-1 8	FIJ-2 7.5	FII-5 5							
		FIH-1 13		FIH-1 10	FIJ-1 8.5	FII-1 4		FII-6 5							
		FII-1 7		FII-1 5	FIJ-2 9.5	FII-2 5		FII-7 5.5							
		FII-2 8.5		FII-2 6		FII-3 5.5		FII-9 6							
	X	FIC-3 4	FIC-3 3	FIC-3 2	FIC-3 7.5	FII-5 2	FIC-3 2	FII-5 6	FID-2 1	FII-5 5	FIH-1 5.5	FIJ-4 6.5	FII-1 2.5	FII-1 2	
			FID-2 2	FID-2 1.5	FID-2 8	FII-6 1	FID-2 6.5	FII-6 6.5	FIE-2 2	FII-6 5	FIH-1 3				
			FIE-2 4	FIE-2 3	FIE-2 8.5	FII-7 2	FIE-2 6.5	FII-7 6.5	FIF-1 3	FII-7 5.5	FIH-1 3.5				
			FIF-1 6	FIF-1 4	FIF-1 8.5	FII-8 4	FIF-1 3.5	FII-8 7	FIF-2 4	FII-8 5.5	FIH-1 4				
			FIF-2 7.5	FIF-2 6	FIF-2 9	FII-9 9	FIF-2 4.5	FII-9 7	FIG-1 6	FII-9 6	FIH-1 4				
		FIG-1 13.5	FIG-1 8.5	FIG-1 10	FII-10 10	FIG-1 7	FII-10 8	FIH-1 6.5	FII-10 6.5	FIH-1 4					
			FIH-1 10	FIJ-1 8.5	FIJ-1 8	FIH-1 7	FIJ-1 7	FII-1 3.5	FIJ-2 6	FIH-1 4.5					
			FII-2 6	FIJ-2 9.5	FIJ-2 7.5	FII-2 5	FIJ-2 7.5	FII-2 4	FIJ-3 7	FIH-1 4.5					
			FII-3 7	FIJ-3 10.5	FIJ-3 5.5	FII-3 8.5	FIJ-3 4.5	FIJ-3 7.5	FIJ-4 5	FIH-1 5					
			FII-4 6	FIJ-4 11	FIJ-4 6	FII-4 9	FIJ-4 9	FII-4 5	FII-10 5.5	FIH-1 5.5					
XI			FIC-3 3	FIC-3 2	FIC-3 7	FII-3 2	FIC-3 5.5	FII-3 5.5	FID-2 1	FII-5 5	FIG-1 5	FIJ-9 5	FII-1 2.5	FII-1 2	FII-1 2
			FID-2 2	FID-2 1.5	FID-2 7.5	FII-5 1	FID-2 6	FII-5 6	FIE-2 2	FII-6 5	FIH-1 5.5	FIJ-10 5.5	FIH-1 3.5	FIJ-4 3	
			FIE-2 4	FIE-2 3	FIE-2 8.5	FII-7 2	FIE-2 6.5	FII-6 6.5	FIE-3 4	FII-7 5.5	FIH-2 7	FIJ-3 6	FIH-1 4		
			FIE-3 7.5	FIE-3 6	FII-10 10	FIE-3 4.5	FII-7 6.5	FII-7 6.5	FIF-1 3	FII-8 5.5	FIH-1 3	FIJ-4 6.5	FIH-1 4.5		
			FIF-1 6	FIF-1 4	FIJ-1 8.5	FIJ-1 3.5	FII-8 7	FII-8 7	FIF-2 4	FII-9 6	FIH-1 3.5				
		FIF-2 7.5	FIF-2 6	FIJ-2 9.5	FIJ-2 4.5	FII-9 7	FII-9 7	FIG-1 6	FII-10 6.5	FIH-1 4					
		FIG-1 13.5	FIG-1 7	FIJ-3 10.5	FIJ-3 6	FII-10 8	FIJ-3 8	FIH-1 6.5	FIJ-2 6	FIH-1 4					
			FIG-1 8.5	FIJ-4 11	FIJ-4 7	FIG-1 7	FIJ-1 7	FIH-2 8.5	FIJ-3 7	FIH-1 4					
			FIH-1 10		FIH-1 8	FIJ-2 7.5	FIJ-2 4	FII-2 7.5	FIJ-4 4.5	FIH-1 4.5					
			FIH-2 12.5		FIH-2 10	FIJ-3 8.5	FIJ-3 4.5	FII-3 4.5	FIJ-4 4.5	FIH-1 4.5					
			FII-2 6		FII-2 5	FIJ-4 9	FIJ-4 9	FII-4 5	FII-8 5	FIH-1 5					



Ship Class	4/1	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1					
XII	FID-2 1.5	FID-2 1	FII-5 6	FID-3 2	FII-7 5.5	FID-3 2	FII-9 5	FIH-2 6		FIH-3 6.5	FIH-3 6					
	FID-3 3	FID-3 2	FII-6 6.5	FIE-2 2	FII-8 5.5	FIG-1 5	FII-10 5.5	FIH-3 7.5		FIH-3 3	FII-4 3					
	FIE-2 3	FIE-2 2	FII-7 6.5	FIE-3 4	FII-9 6	FIH-1 5.5	FIJ-3 6	FII-3 3.5								
	FIE-3 6	FIE-3 4.5	FII-8 7	FIF-2 4	FII-10 6.5	FIH-2 7	FIJ-4 6.5	FII-4 3.5								
	FIF-2 6	FIF-2 4.5	FII-9 7	FIG-1 6	FIJ-2 6	FIH-3 8.5	FIJ-6 6.5	FII-5 3.5								
	FIF-3 7	FIF-3 6	FII-10 8	FIG-2 7.5	FIJ-3 7	FII-2 3.5		FII-6 4								
	FIG-1 8.5	FIG-1 7	FIJ-1 7	FIH-1 6.5	FIJ-4 7.5	FII-3 4		FII-7 4								
	FIG-2 13.5	FIG-2 9	FIJ-2 7.5	FIH-2 8.5	FIJ-6 8	FII-4 4		FII-9 4.5								
	FIH-1 10	FIH-1 8	FIJ-3 8.5	FII-2 4		FII-5 4		FII-10 5								
	FII-2 6	FIH-2 10	FIJ-4 9	FII-3 4.5		FII-6 4.5		FIJ-6 6								
	FIJ-1 8.5	FII-2 5	FIJ-6 9.5	FII-5 5		FII-7 4.5										
	FIJ-2 9.5	FII-3 5.5		FII-6 5		FII-8 5										
	XIII	FIH-3 6	FID-3 2	FIJ-6 9.5	FID-3 2	FII-9 6	FID-3 2	FII-9 5	FIG-1 5	FIJ-5 5.5	FIH-2 5.5	FIH-3 6				
			FIE-3 4.5	FIJ-9 10.5	FIE-3 4	FII-10 6.5	FIF-2 3	FII-10 5.5	FIG-2 5.5	FIJ-6 6	FIH-3 6.5					
			FIF-2 4.5	FIK-1 10	FIF-2 4	FIJ-1 5.5	FIG-1 5	FIJ-2 5.5	FIH-1 5	FIJ-9 6.5	FII-5 3					
			FIF-3 6		FIG-1 6	FIJ-2 6	FIG-2 6.5	FIJ-3 6	FIH-2 6		FII-6 3.5					
			FIG-1 7		FIG-2 7.5	FIJ-3 7	FIH-1 5.5	FIJ-4 6.5	FIH-3 7.5		FII-7 3.5					
			FIG-2 9		FIH-1 6.5	FIJ-4 7.5	FIH-2 7	FIJ-5 6.5	FII-5 3.5		FII-9 4					
			FIH-1 8		FIH-2 8.5	FIJ-5 7.5	FIH-3 8.5	FIJ-6 6.5	FII-6 4		FII-10 4					
		FIJ-1 7		FII-5 5	FIJ-6 8	FII-5 4	FIJ-9 7.5	FII-7 4		FIJ-5 5						
		FIJ-2 7.5		FII-6 5	FIJ-9 9	FII-6 4.5		FII-8 4								
		FIJ-3 8.5		FII-7 5.5	FIK-1 8	FII-7 4.5		FII-9 4.5								
		FIJ-4 9		FII-8 5.5		FII-8 5		FII-10 5								
XIV			FID-3 2	FIJ-9 10.5	FID-3 2	FIJ-6 8	FID-3 2	FIJ-2 5.5	FIG-2 5.5	FIJ-5 5.5	FIH-2 5.5	FIH-3 6	FIH-3 5.5	FIH-3 5	FIH-3 4.5	FIH-3 4
			FIE-3 4.5	FIK-1 10	FIE-3 4	FIJ-7 8	FIF-2 3	FIJ-3 6	FIH-1 5	FIJ-6 6	FII-5 3	FII-5 3	FII-6 2.5			
		FIF-3 6	FIK-2 10	FIG-2 7.5	FIJ-9 9	FIG-1 5	FIJ-4 6.5	FIH-2 6	FIJ-7 6	FII-6 3.5	FII-6 3	FII-7 3				
		FIG-2 9	FIK-4 11	FIG-3 9.5	FIK-1 8	FIG-2 6.5	FIJ-5 6.5	FII-5 3.5	FIJ-9 6.5	FII-7 3.5	FII-7 3					
		FIG-3 13.5	FIL-1 12.5	FIH-1 6.5	FIK-2 8.5	FIH-1 5.5	FIJ-6 6.5	FII-6 4	FIK-4 7	FII-8 3.5	FII-8 3.5					
		FIH-1 8	FIM-1 16.5	FIH-2 8.5	FIK-4 9.5	FIH-2 7	FIJ-7 7	FII-7 4	FIM-1 10	FII-9 4	FII-9 3.5					
		FIJ-1 7		FIJ-1 5.5	FIL-1 10	FII-5 4	FIJ-9 7.5	FII-8 4		FII-10 4	FII-10 4					
		FIJ-2 7.5		FIJ-2 6	FIM-1 13.5	FII-8 5	FIK-2 7	FII-9 4.5		FIJ-3 4.5	FIJ-5 4.5					
		FIJ-4 9		FIJ-3 7		FII-9 5	FIK-4 8	FII-10 5		FIJ-5 5						
		FIJ-7 10		FIJ-4 7.5		FII-10 5.5	FIM-1 11.5	FIJ-3 5		FIJ-6 5						

Ship Class	5/1	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1	15/1				
XV	FID-3	FID-3	FIK-1	FID-3	FIJ-8	FIF-2	FIJ-6	FIH-2	FIK-3	FIH-3	FIH-3	FIH-3	FIH-3	FII-6	FII-6
	2	2	8	2	7	2	6	5.5	6	6	5.5	5	4.5	2	1.5
	FIE-3	FIE-3	FIK-2	FIF-2	FIJ-9	FIG-2	FIJ-7	FII-8	FIK-4	FII-6	FII-6	FII-6	FII-6		
	4.5	4	8.5	3	7.5	5.5	6	3.5	6	3	2.5	2.5	2.5		
	FIF-3	FIG-2	FIK-3	FIG-1	FIK-2	FIH-1	FIJ-8	FII-9	FIK-5	FII-8	FII-8				
	6	7.5	9	5	7	5	6	4	6.5	3.5	3				
	FIG-2	FIG-3	FIK-4	FIG-2	FIK-3	FIH-2	FIJ-9	FII-10	FIM-1	FIH-9	FIH-9				
	9	9.5	9.5	6.5	7.5	6	6.5	4	9	3.5	3				
	FIH-1	FIH-1	FIK-5	FIH-1	FIK-4	FII-8	FIK-3	FIJ-3		FII-10	FII-10				
	8	6.5	9.5	5.5	8	4	6.5	4.5		4	3.5				
	FIJ-1	FIH-2	FIK-8	FIH-2	FIK-5	FII-9	FIK-4	FIJ-5		FIJ-3	FIJ-5				
	7	8.5	10	7	8	4.5	7	5		4	4				
	FIJ-2	FIJ-1	FIL-1	FIJ-2	FIK-8	FII-10	FIK-5	FIJ-6		FIJ-5	FIJ-6				
	7.5	5.5	10	5.5	8.5	5	7	5		4.5	4				
	FIJ-4	FIJ-2	FIM-1	FIJ-3	FIM-1	FIJ-3	FIK-8	FIJ-7		FIJ-6					
	9	6	13.5	6	11.5	5	7.5	5.5		4.5					
	FIK-2	FIJ-4		FIJ-4		FIJ-4	FIM-1	FIJ-8		FIJ-8					
10	7.5		6.5		5.5	10	5.5		5						
FIL-1	FIJ-7		FIJ-7		FIJ-5		FIJ-9		FIJ-9						
12.5	8		7		5.5		6		5						
XVI	FIF-3	FIF-3		FID-3		FIF-3	FIK-8	FIF-3	FIK-8	FIH-2	FIH-2	FIH-3	FIH-3	FII-9	FII-9
	6	5		2		3	7.5	2.5	6.5	5	4.5	5	4.5	2.5	2
		FIG-3		FIE-3		FIH-1	FIL-2	FIH-1	FIM-1	FIH-3	FIH-3	FII-8	FIH-9		
		9.5		3		5	8	4	9	6	5.5	2.5	2.5		
		FIH-1		FIF-3		FIH-2	FIL-4	FIH-2		FII-8	FII-8	FII-9			
		6.5		4		6	9.5	5.5		3.5	3	3			
		FIJ-2		FIH-1		FIJ-2	FIM-1	FII-8		FII-9	FII-9	FII-10			
		6		5.5		4.5	10	3.5		3.5	3	3			
		FIJ-10		FIJ-2		FIJ-5		FII-10		FII-10	FII-10				
		9		5.5		5.5		4		4	3.5				
		FIK-2		FIJ-7		FIJ-7		FIJ-5		FIJ-5	FIJ-5				
		8.5		7		6		5		4.5	4				
		FIK-6		FIJ-10		FIJ-8		FIJ-7		FIJ-7	FIJ-8				
		10		7.5		6		5.5		5	4.5				
		FIL-1		FIK-2		FIJ-9		FIJ-8		FIJ-8	FIJ-9				
		10		7		6.5		5.5		5	4.5				
		FIL-2		FIK-5		FIJ-10		FIJ-9		FIJ-9	FIK-3				
	10.5		8		6.5		6		5	4.5					
	FIL-4		FIK-6		FIK-2		FIJ-10		FIK-3	FIK-4					
	13		8.5		6		6		5	5					
			FIK-8		FIK-3		FIK-3		FIK-4						
			8.5		6.5		6		5.5						
			FIL-2		FIK-4		FIK-4		FIK-5						
			9		7		6		5.5						
			FIL-4		FIK-5		FIK-5		FIK-8						
			11		7		6.5		6						
			FIM-1		FIK-6		FIK-6		FIM-1						
			11.5		7.5		6.5		8						

IMPULSE ENGINE MPR CONT.

Ship Class	6/1	7/1	8/1	9/1	10/1	11/1	12/1	13/1	14/1	15/1						
XVII	FIG-3 9.5	FID-3 2	FIL-3 9.5	FIF-3 3	FIL-3 8.5	FIF-3 2.5	FIK-7 6.5	FIH-2 5	FIK-4 5.5	FIH-2 4.5	FIK-5 5	FIH-3 5	FIH-3 4.5	FIJ-7 3	FIJ-7 2.5	
	FIH-1 6.5	FIE-3 3	FIL-4 11	FIH-1 5	FIL-4 9.5	FIH-1 4	FIK-8 6.5	FIH-3 6	FIK-5 5.5	FIH-3 5.5	FIK-9 5.5	FII-10 3	FII-10 3			
	FIK-7 10	FIF-3 4	FIL-5 11	FIH-2 6	FIL-5 10	FIH-2 5.5	FIK-9 7	FII-10 4	FIK-6 6	FII-10 3.5	FIM-1 7.5	FIJ-5 3.5	FIJ-7 3.5			
	FIL-1 10	FIH-1 5.5	FIL-7 11.5	FIJ-8 6	FIL-7 10	FIJ-5 5	FIL-2 7	FIJ-5 4.5	FIK-8 6	FIJ-5 4		FIJ-7 4	FIJ-9 4			
	FIL-3 11	FIJ-10 7.5		FIJ-10 6.5	FIM-1 10	FIJ-8 5.5	FIL-4 8.5	FIJ-7 5	FIK-9 6.5	FIJ-7 4.5		FIJ-9 4.5				
	FIL-4 13	FIK-6 8.5		FIK-6 7.5		FIJ-10 6	FIL-7 9	FIJ-8 5	FIM-1 8	FIJ-8 4.5	FIJ-8 4.5	FIK-3 4.5				
	FIL-5 13	FIK-7 8.5		FIK-7 7.5		FIK-4 6	FIM-1 9	FIJ-9 5		FIJ-9 4.5	FIJ-9 4.5	FIK-4 4.5				
		FIL-1 8.5		FIK-8 7.5		FIK-5 6.5		FIJ-10 5.5		FIK-3 5.5	FIK-3 4.5	FIK-5 4.5				
		FIL-2 9		FIL-2 8		FIK-6 6.5		FIK-3 5		FIK-4 5	FIK-4 5	FIK-9 5				
	XVIII	FIG-3 9.5	FID-3 2	FIL-8 12	FIF-3 3	FIL-7 10	FIF-3 2.5	FIL-5 8.5	FIH-2 5	FIL-7 8	FIH-2 4.5	FIK-10 6	FIH-2 4	FIH-3 4.5	FIH-3 4	FIK-9 4
		FIL-5 13	FIE-3 3		FIK-6 7.5	FIL-8 10.5	FIH-2 5.5	FIL-6 9	FIJ-8 5	FIM-1 8	FIH-3 5.5	FIM-1 7.5	FIH-3 5	FIJ-5 3.5	FIJ-5 3	FIJ-5 3
			FIF-3 4		FIK-7 7.5		FIJ-8 5.5	FIL-7 9	FIJ-10 5.5		FIJ-5 4		FIJ-5 3.5	FIK-4 4	FIK-9 4.5	FIK-9 4.5
			FIK-6 8.5		FIK-8 7.5		FIJ-10 6	FIL-8 9	FIK-4 5.5		FIJ-8 4.5		FIJ-8 4	FIK-5 4.5	FIK-10 4.5	FIK-10 4.5
			FIL-1 8.5		FIL-1 7.5		FIK-6 6.5	FIM-1 9	FIK-5 5.5		FIJ-10 5		FIJ-10 4.5	FIK-9 5		
			FIL-2 9		FIL-2 8		FIK-7 6.5		FIK-6 6		FIK-4 5		FIK-4 4.5	FIK-10 4.5		
		FIL-3 9.5		FIL-3 8.5		FIK-8 6.5		FIK-7 6		FIK-5 5		FIK-5 4.5				
		FIL-4 11		FIL-4 9.5		FIL-2 7		FIK-8 6		FIK-7 5.5		FIK-9 5				
		FIL-5 11		FIL-5 10		FIL-3 7.5		FIK-9 6.5		FIK-8 5.5		FIK-10 5.5				
		FIL-6 11.5		FIL-6 10		FIL-4 8.5		FIL-2 6.5		FIK-9 5.5		FIM-1 6.5				
XIX		FIL-5 13	FIF-3 4		FID-3 2		FIF-3 2.5		FIH-2 5	FIL-8 8	FIH-2 4.5		FIH-2 4	FIH-3 4.5	FIH-3 4	FIK-9 4
			FIL-5 11		FIE-3 2		FIH-2 5.5		FIJ-8 5	FIL-9 8.5	FIH-3 5.5		FIH-3 5	FIJ-8 3.5	FIJ-10 3.5	FIJ-10 3.5
					FIF-3 3		FIK-6 6.5		FIK-6 6	FIM-1 8	FIJ-8 4.5		FIJ-8 4	FIJ-10 4	FIK-9 4.5	FIK-9 4.5
					FIK-6 7.5		FIK-7 6.5		FIK-7 6		FIJ-10 5		FIJ-10 4.5	FIK-9 5	FIK-10 4.5	FIK-10 4.5
					FIL-2 8		FIL-2 7		FIK-8 6		FIK-6 5		FIK-7 5	FIK-10 5	FIK-10 5	FIL-10 6
				FIL-3 8.5		FIL-3 7.5		FIL-2 6.5		FIK-7 5.5		FIK-8 5	FIK-8 6.5	FIL-10 6.5		
				FIL-4 9.5		FIL-4 8.5		FIL-3 6.5		FIK-8 5.5		FIK-9 5	FIK-9 6	FIM-1 6		
				FIL-5 10		FIL-5 8.5		FIL-4 7.5		FIK-9 5.5		FIK-10 5.5	FIK-10 5.5			
				FIL-6 10		FIL-6 9		FIL-5 8		FIL-7 7.5		FIL-9 7	FIL-9 7			
				FIL-8 10.5		FIL-7 9		FIL-6 8		FIL-9 7.5		FIL-10 7	FIL-10 7			
						FIL-8 9		FIL-7 8		FIM-1 7.5		FIM-1 6.5	FIM-1 6.5			

IMPULSE ENGINE MPR CONT.

Ship Class	6/1	7/1	8/1	9/1		10/1		11/1		12/1		13/1	14/1	15/1
XX	FIL-5 13	FIL-5 11	FID-3 2	FIF-3 2.5	FIL-6 9	FIF-3 2	FIL-7 8	FIK-6 5	FIL-9 7.5	FIK-6 5	FIL-9 7	FIK-8 4.5	FIK-9 4.5	FIK-9 4
			FIE-3 2	FIK-6 6.5	FIL-8 9	FIK-6 6	FIL-8 8	FIK-7 5.5	FIM-1 7.5	FIK-7 5	FIL-10 7	FIK-9 5	FIK-10 4.5	
			FIF-3 3.5	FIK-7 6.5		FIK-7 6	FIM-1 8	FIK-8 5.5		FIK-8 5	FIM-1 6.5	FIK-10 5	FIL-10 6	
			FIL-2 8	FIL-2 7		FIL-2 6.5		FIK-9 5.5		FIK-9 5		FIL-9 6.5		
			FIL-6 10	FIL-3 7.5		FIL-3 6.5		FIL-7 7.5		FIK-10 5.5		FIL-10 6.5		
						FIL-6 8		FIL-8 7.5		FIL-7 6.5		FIM-1 6		

Shield Generator Type	Mass (MT)	Control Computer Type	Shield Efficiency Rating	Superstructure	Avail.	Cost (MCr)	Year
FSA	110	L-12	1	0.2	LRL/92		2239
FSB	140	L-13	2	0.9	LRL/72		2246
FSC	160	L-12	1	0.2	LRL/90		2243
FSD	175	L-14	2	1.0	LRL/71		2246
FSE	230	L-13	1	0.5	LRL/86		2244
FSF	235	M-1	2	1.8	LRL/69		2247
FSG	265	L-13	1	0.6	LRL/84		2245
FSH	305	M-1	2	1.9	LRL/64		2246
FSI	510	M-3	3	1.0	LRL/50		2248
FSJ	300	L-14	1	1.1	LRL/79		2252
FSK	380	M-2	2	2.8	LRL/62		2252
FSL	575	M-3	3	1.8	LRL/48		2253
FSM	330	L-14	1	1.0	LRL/77		2255
FSN	415	M-2	2	2.9	LRL/60		2255
FSO	615	M-4	3	3.1	LRL/46		2255
FSP	845	M-6	4	2.1	LRL/43		2269
FSQ	1,245	M-7A	4	4.5	RRR/31		2292
FSR	1,875	M-8	3	4.8	RRR/12		2296
FSS	1,060	M-6	4	2.5	RRR/26		2284
FST	3,350	M-9	4	5.2	RRR/19		2337
FSU	2,960	M-8a	4	5.6	RRR/15		2354
FSV	3,440	M-9	4	6.3	RRR/12		2365
FSW	3,240	M-9	3	7.6	RRR/10		2376
FSX	5,510	M-15	3	8.7	RRR/7		2380
FSY	4,740	M-13	4	12.7	RRR/5		2381
FNSA	730	M-3	2	2.6	LRL/87		2330
FNSB	800	M-4	2	2.8	LRL/76		2330
FNSC	860	M-4	2	3.1	LRL/75		2330
FNSD	930	M-4	2	3.3	LRL/64		2330
FNSE	780	M-3	3	2.8	LRL/61		2330
FNSF	920	M-4	3	3.3	LRL/58		2331
FNSG	1,050	M-6	3	3.7	LRL/56		2331
FNSH	1,180	M-6	3	4.2	LRL/52		2332
FNSI	1,310	M-6a	3	4.7	LRL/50		2333
FNSJ	1,440	M-6a	3	5.2	LRL/47		2333
FNSK	1,660	M-6a	4	5.9	RRR/56		2334
FNSL	1,890	M-7	4	6.8	RRR/45		2335
FNSM	2,130	M-7a	4	7.6	RRR/40		2340
FNSN	2,090	M-7a	5	7.5	RRR/21		2347
FNSO	2,510	M-8	5	9.0	RRR/19		2358
FNSP	2,920	M-8a	5	10.5	RRR/18		2359
FNSQ	3,350	M-9	5	10.7	RRR/16		2360
FNSR	4,180	M-10	5	10.9	RRR/12		2368
FNSS	5,430	M-15	5	11.4	RRR/8		2369
FNST	5,850	M-16	5	12.9	RRR/6		2370
FNSU	6,280	I-9	5	14.5	RRR/4		2372
FNSV	8,360	I-12	5	18.9	RRR/1		2380

Ship Class	1/1						1/2									
	FSA	FSC	FSE	FSG	FSJ	FSM	FSB	FSD	FSF	FSH	FSK	FSN	FNSA	FNSB	FNSC	FNSD
I	12	14	14	15	16	16	14	15	15	16	16	16	22	24	26	28
I	17	20	20	21	23	23	10	10.5	10.5	11.5	11.5	11.5	15.5	17	18.5	20
II	11	12	13	14	15	16	11	12	14	16	16	16	22	24	26	28
II	16	17	19	20	21	23	8	8.5	10	11.5	11.5	11.5	15.5	17	18.5	20
III	10	11	12	13	14	16	9	10	14	15	16	16	22	24	26	28
III	14	16	17	19	20	23	6.5	7	10	10.5	11.5	11.5	15.5	17	18.5	20
IV	9	10	11	12	14	16	8	9	13	15	16	16	22	24	26	28
IV	13	14	16	17	20	23	5.5	6.5	9.5	10.5	11.5	11.5	15.5	17	18.5	20
V	8	9	11	12	13	15	6	8	12	14	16	16	22	24	26	28
V	11	13	16	17	19	21	4.5	5.5	8.5	10	11.5	11.5	15.5	17	18.5	20
VI	7	9	10	11	13	14	6	7	10	13	16	16	22	24	26	28
VI	10	13	14	16	19	20	4.5	5	7	9.5	11.5	11.5	15.5	17	18.5	20
VII	6	8	9	10	12	13	5	7	10	13	16	16	22	24	26	28
VII	9	11	13	14	17	19	3.5	5	7	9.5	11.5	11.5	15.5	17	18.5	20
VIII	5	7	9	10	11	12	5	6	9	12	16	16	22	24	26	28
VIII	7	10	13	14	16	17	3.5	4.5	6.5	8.5	11.5	11.5	15.5	17	18.5	20
IX	3	6	8	10	11	12	4	6	8	12	15	16	22	24	25	27
IX	5	9	11	14	16	17	3	4.5	5.5	8.5	10.5	11.5	15.5	17	18	19
X	1	5	8	9	10	11	4	5	8	11	14	16	22	23	25	27
X	1	7	11	13	14	16	3	3.5	5.5	8	10	11.5	15.5	16	18	19
XI	-	4	7	9	10	11	3	5	7	10	14	16	21	23	25	27
XI	-	6	10	13	14	16	2.5	3.5	5	7	10	11.5	15	16	18	19
XII	-	3	6	8	9	10	2	4	6	9	13	16	21	23	25	27
XII	-	5	9	11	13	14	1.5	3	4.5	6.5	9.5	11.5	15	16	18	19
XIII	-	1	5	7	8	9	1	3	4	8	12	15	21	23	25	27
XIII	-	1	7	10	11	13	0.5	2.5	3	5.5	8.5	10.5	15	16	18	19
XIV	-	-	3	5	6	8	-	1	2	6	11	14	21	23	25	27
XIV	-	-	5	7	9	11	-	0.5	1.5	4.5	8	10	15	16	18	19
XV	-	-	1	2	3	5	-	-	-	3	7	12	21	23	25	27
XV	-	-	1	3	5	7	-	-	-	2.5	5	8.5	15	16	18	19
XVI	-	-	-	1	2	3	-	-	-	1	6	11	21	23	25	27
XVI	-	-	-	1	3	5	-	-	-	0.5	4.5	8	15	16	18	19
XVII	-	-	-	-	1	2	-	-	-	-	5	9	21	23	25	27
XVII	-	-	-	-	1	3	-	-	-	-	3.5	6.5	15	16	18	19
XVIII	-	-	-	-	-	1	-	-	-	-	4	8	21	23	25	27
XVIII	-	-	-	-	-	1	-	-	-	-	3	5.5	15	16	18	19
XIX	-	-	-	-	-	-	-	-	-	-	3	7	21	23	25	27
XIX	-	-	-	-	-	-	-	-	-	-	2.5	5	15	16	18	19
XX	-	-	-	-	-	-	-	-	-	-	2	6	21	23	25	27
XX	-	-	-	-	-	-	-	-	-	-	1.5	4.5	15	16	18	19

SHIELD POINT RATIO (SPR)

Ship Class	3/1											
	FSI	FSL	FSO	FSR	FSW	FSX	FNSE	FNSF	FNSG	FNSH	FNSI	FNSJ
I	16	16	16	40	74	90	18	22	25	28	31	35
I	7.5	7.5	7.5	19.5	35	42.5	8.5	10.5	12	13	15	16.5
II	16	16	16	40	74	90	18	22	25	28	31	35
II	7.5	7.5	7.5	19.5	35	42.5	8.5	10.5	12	13	15	16.5
III	16	16	16	40	74	90	18	22	25	28	31	35
III	7.5	7.5	7.5	19.5	35	42.5	8.5	10.5	12	13	15	16.5
IV	16	16	16	40	73	90	18	22	25	28	31	35
IV	7.5	7.5	7.5	19.5	34.5	42.5	8.5	10.5	12	13	15	16.5
V	16	16	16	40	73	90	18	22	25	28	31	35
V	7.5	7.5	7.5	19.5	34.5	42.5	8.5	10.5	12	13	15	16.5
VI	15	16	16	40	73	90	18	22	25	28	31	35
VI	7	7.5	7.5	19.5	34.5	42.5	8.5	10.5	12	13	15	16.5
VII	14	16	16	40	73	90	18	22	25	28	31	34
VII	7	7.5	7.5	19.5	34.5	42.5	8.5	10.5	12	13	15	16
VIII	13	16	16	40	73	90	18	22	25	28	30	34
VIII	6.5	7.5	7.5	19.5	34.5	42.5	8.5	10.5	12	13	14	16
IX	12	15	16	40	73	90	18	22	25	27	30	34
IX	5.5	7	7.5	19.5	34.5	42.5	8.5	10.5	12	13	14	16
X	11	14	16	40	72	90	18	22	24	27	30	34
X	5	7	7.5	19.5	34	42.5	8.5	10.5	11.5	13	14	16
XI	11	14	16	40	72	90	18	21	24	27	30	34
XI	5	7	7.5	19.5	34	42.5	8.5	10	11.5	13	14	16
XII	10	13	15	40	72	90	18	21	24	27	30	34
XII	4.5	6.5	7	19.5	34	42.5	8.5	10	11.5	13	14	16
XIII	10	12	14	40	72	90	17	21	24	27	30	34
XIII	4.5	5.5	7	19.5	34	42.5	8	10	11.5	13	14	16
XIV	9	11	12	40	72	90	17	21	24	27	30	34
XIV	4	5	6.5	19.5	34	42.5	8	10	11.5	13	14	16
XV	6	7	8	38	71	88	17	21	24	27	30	34
XV	3	3.5	4.5	18.5	33.5	41.5	8	10	11.5	13	14	16
XVI	4	6	7	38	71	86	17	21	24	27	30	34
XVI	2	3	3.5	18.5	33.5	40.5	8	10	11.5	13	14	16
XVII	2	5	6	36	71	84	17	21	24	27	30	34
XVII	1	2.5	3	17.5	33.5	40	8	10	11.5	13	14	16
XVIII	-	4	5	36	71	82	17	21	24	27	30	34
XVIII	-	2	2.5	17.5	33.5	39	8	10	11.5	13	14	16
XIX	-	3	4	34	71	78	17	21	24	27	30	33
XIX	-	1.5	2	15.5	33.5	37	8	10	11.5	13	14	15.5
XX	-	2	3	34	70	76	17	21	24	27	30	33
XX	-	1	1.5	15.5	33	36	8	10	11.5	13	14	15.5

SHIELD POINT RATIO (SPR)

Ship Class	4/1										5/1								
	FSP	FSQ	FSS	FST	FSU	FSV	FSY	FNSK	FNSL	FNSM	FNSN	FNSO	FNSP	FNSQ	FNSR	FNSS	FNST	FNSU	FNSV
I	16	30	20	45	50	58	80	29	34	38	26	32	36	42	54	68	74	78	100
I	5.5	11	7.5	16	18	20.5	28.5	10.5	12	13.5	7.5	9	10	12	15.5	19	21	22	28.5
II	16	30	20	45	50	58	80	29	34	38	26	32	36	42	54	68	74	78	100
II	5.5	11	7.5	16	18	20.5	28.5	10.5	12	13.5	7.5	9	10	12	15.5	19	21	22	28.5
III	16	30	20	45	50	58	80	29	34	38	26	32	36	42	54	68	74	78	100
III	5.5	11	7.5	16	18	20.5	28.5	10.5	12	13.5	7.5	9	10	12	15.5	19	21	22	28.5
IV	16	30	20	45	50	58	80	29	34	38	26	32	36	42	54	67	73	77	99
IV	5.5	11	7.5	16	18	20.5	28.5	10.5	12	13.5	7.5	9	10	12	15.5	19	21	22	28
V	16	30	20	45	50	57	80	29	34	38	26	32	36	42	53	67	73	77	99
V	5.5	11	7.5	16	18	20	28.5	10.5	12	13.5	7.5	9	10	12	15	19	21	22	28
VI	16	30	20	45	50	57	80	29	34	38	26	32	36	41	53	67	73	77	99
VI	5.5	11	7.5	16	18	20	28.5	10.5	12	13.5	7.5	9	10	11.5	15	19	21	22	28
VII	16	30	20	45	50	57	80	29	33	37	26	32	35	41	53	67	73	77	99
VII	5.5	11	7.5	16	18	20	28.5	10.5	12	13	7.5	9	10	11.5	15	19	21	22	28
VIII	16	30	20	45	50	57	80	28	33	37	26	31	35	41	53	67	73	77	98
VIII	5.5	11	7.5	16	18	20	28.5	10	12	13	7.5	9	10	11.5	15	19	21	22	28
IX	16	30	20	45	50	57	80	28	33	37	25	31	35	41	53	67	73	76	98
IX	5.5	11	7.5	16	18	20	28.5	10	12	13	7	9	10	11.5	15	19	21	21.5	28
X	16	30	20	45	50	57	80	28	33	37	25	31	35	41	53	66	72	76	98
X	5.5	11	7.5	16	18	20	28.5	10	12	13	7	9	10	11.5	15	19	20.5	21.5	28
XI	16	30	20	45	50	57	80	28	33	37	25	31	35	41	53	66	72	76	98
XI	5.5	11	7.5	16	18	20	28.5	10	12	13	7	9	10	11.5	15	19	20.5	21.5	28
XII	16	30	20	45	50	56	80	28	33	37	25	31	35	41	53	66	72	76	97
XII	5.5	11	7.5	16	18	20	28.5	10	12	13	7	9	10	11.5	15	19	20.5	21.5	27.5
XIII	16	30	20	45	50	56	79	28	33	37	25	31	35	41	52	66	72	76	97
XIII	5.5	11	7.5	16	18	20	28	10	12	13	7	9	10	11.5	15	19	20.5	21.5	27.5
XIV	15	30	20	44	50	56	78	28	33	37	25	31	35	41	52	66	72	75	97
XIV	5	11	7.5	15.5	18	20	28	10	12	13	7	9	10	11.5	15	19	20.5	21	27.5
XV	14	28	20	44	50	56	78	28	33	37	25	31	35	41	52	66	71	75	97
XV	5	10.5	7.5	15.5	18	20	28	10	12	13	7	9	10	11.5	15	19	20	21	27.5
XVI	13	28	20	44	50	56	78	28	33	37	25	31	35	40	52	65	71	75	96
XVI	4.5	10.5	7.5	15.5	18	20	28	10	12	13	7	9	10	11.5	15	18.5	20	21	27
XVII	12	26	20	44	50	56	78	28	33	36	25	31	35	40	52	65	71	75	96
XVII	4	9.5	7.5	15.5	18	20	28	10	12	13	7	9	10	11.5	15	18.5	20	21	27
XVIII	11	26	19	44	50	56	78	28	33	36	25	31	34	40	52	65	71	75	96
XVIII	3.5	9.5	7	15.5	18	20	28	10	12	13	7	9	9.5	11.5	15	18.5	20	21	27
XIX	10	24	19	44	49	55	77	28	32	36	25	31	34	40	52	65	71	74	96
XIX	3	8.5	7	15.5	17.5	19.5	27.5	10	11.5	13	7	9	9.5	11.5	15	18.5	20	21	27
XX	9	24	19	44	49	55	76	28	32	36	25	30	34	40	51	65	70	74	95
XX	2.5	8.5	7	15.5	17.5	19.5	27	10	11.5	13	7	8.5	9.5	11.5	14.5	18.5	20	21	27



BEAM WEAPONS (PHASER)

Beam Weapon Type	Mass (mt)	Damage	+3	+2	+1	Maximum Range	Firing Chart	WDF	Superstructure (Single/Bank)	Avail	Cost (MCr)	Year
FH-1	250	2	(-)	(-)	(-)	8	F	0.5	0.5 / 0.8	RRR/82	38	2254
FH-2	375	3	(-)	(-)	(1-10)	10	H	1.3	0.6 / 0.9	RRR/78	56	2255
FH-3	625	5	(1-10)	(11-17)	(18-20)	20	W	5.8	0.8 / 1.2	RRI/47	94	2255
FH-4	375	3	(-)	(1-8)	(9-14)	14	Q	2.6	0.7 / 1.1	RRI/63	56	2256
FH-5	500	4	(-)	(1-8)	(9-16)	16	R	3.1	0.8 / 1.2	RRI/60	75	2256
FH-6	300	3	(-)	(1-7)	(8-13)	13	N	2.3	1.2 / 1.8	RRI/65	45	2259
FH-7	400	4	(-)	(1-8)	(9-14)	14	Q	3.2	1.4 / 2.1	RRI/59	60	2260
FH-8	500	5	(-)	(1-10)	(11-18)	18	T	4.3	1.6 / 2.4	RRI/52	75	2261
FH-9	600	6	(-)	(1-12)	(13-22)	22	X	6.0	1.7 / 2.5	RRI/50	90	2262
FH-10	420	7	(1-10)	(11-17)	(18-20)	20	W	7.3	2.0 / 3.0	RRI/45	63	2264
FH-11	600	10	(1-10)	(11-17)	(18-24)	24	Y	10.7	2.2 / 3.2	RRI/38	90	2268
FH-12	360	6	(-)	(1-9)	(10-16)	16	R	4.9	1.0 / 1.5	RRI/58	58	2270
FH-13	620	8	(1-5)	(6-12)	(13-18)	18	T	6.5	1.8 / 2.7	RRI/50	65	2271
FH-14	760	12	(-)	(1-10)	(11-18)	18	T	8.8	2.2 / 3.8	RRI/36	114	2284
FH-15	650	12	(1-5)	(6-12)	(13-18)	18	T	9.2	2.5 / 4.2	RRI/36	98	2298
FH-16	500	4	(1-10)	(11-17)	(18-24)	24	Y	5.4	0.9 / 1.3	RRI/45	75	2301
FH-17	600	6	(1-10)	(11-17)	(18-24)	24	Y	7.2	1.8 / 2.6	RRI/42	90	2302
FH-18	625	12	(1-10)	(11-17)	(18-24)	24	Y	12.7	2.2 / 3.2	RRI/36	95	2315
FH-19	750	14	(1-10)	(11-17)	(18-24)	24	Y	14.3	2.8 / 4.2	RRI/34	113	2320
FH-20	675	14	(1-14)	(15-19)	(20-24)	24	Y	14.6	3.1 / 4.9	RRI/34	102	2330

BEAM WEAPON (PHASER CANNON/MEGA-PHASER)

Beam Weapon Type	Mass (mt)	Damage	+3	+2	+1	Maximum Range	Firing Chart	WDF	Superstructure (Single/Bank)	Avail	Cost (MCr)	Year
FMH-1	215	10	(1-4)	(5-9)	(10-15)	15	K	5.8	1.0 / 2.0	III/01	64	2269
FMH-2	320	12	(1-3)	(4-8)	(9-12)	12	L	6.9	1.5 / 2.3	III/01	96	2269
FMH-3	418	14	(1-6)	(7-10)	(11-14)	14	O	9.6	1.7 / 2.9	III/01	126	2271
FMH-4	512	16	(1-8)	(9-14)	(15-18)	16	S	12.8	1.9 / 3.6	III/01	156	2274
FMH-5	660	15	(1-10)	(11-17)	(18-20)	20	W	14.7	2.0 / 3.7	III/01	200	2275
FMH-6	570	18	(1-5)	(7-12)	(13-18)	18	P	12.2	2.2 / 4.0	III/01	172	2280
FMH-7	520	16	(1-3)	(4-9)	(10-14)	14	Q	10.9	2.4 / 4.5	III/01	158	2281
FMH-8	430	20	(1-8)	(9-14)	(15-18)	16	S	15.4	2.6 / 4.7	III/01	132	2282
FMH-9	420	25	(1-5)	(6-12)	(13-18)	18	T	18.8	2.8 / 5.1	III/01	128	2298
FMH-10	475	28	(1-10)	(11-16)	(17-21)	21	V	22.6	3.2 / 5.6	III/01	146	2301
FMH-11	760	30	(1-7)	(8-15)	(16-22)	22	X	26.8	3.5 / 5.8	III/01	232	2304
FMH-12	870	35	(1-14)	(15-19)	(20-24)	24	Y	34.8	3.9 / 6.1	III/01	266	2310
FMH-13	470	24	(1-3)	(4-6)	(7-18)	18	T	17.8	3.0 / 5.4	III/01	144	2297
FMH-14	900	36	(1-4)	(4-7)	(8-18)	18	T	26.0	4.4 / 6.6	III/01	274	2325
FMH-15	950	42	(1-8)	(9-14)	(15-24)	24	Y	40.7	4.7 / 7.0	III/01	292	2330

BEAM WEAPON (COLLIMATED PHASER)

Beam Weapon Type	Mass (mt)	Damage	+3	+2	+1	Maximum Range	Firing Chart	WDF	Superstructure (Single/Bank)	Avail	Cost (MCr)	Year
FNH-1	255	6	(1-15)	(16-18)	(19-20)	20	W	6.5	0.8 / 1.2	RRI/42	38	2331
FNH-2	279	5	(1-9)	(10-17)	(18-24)	24	Y	6.1	0.8 / 1.2	RRI/43	42	2331
FNH-3	390	7	(1-9)	(10-17)	(18-24)	24	Y	7.8	1.1 / 1.7	RRI/40	59	2332
FNH-4	340	8	(1-15)	(16-18)	(19-20)	20	W	8.0	1.0 / 1.5	RRI/40	51	2332
FNH-5	383	9	(1-15)	(16-18)	(19-20)	20	W	8.8	1.2 / 1.8	RRI/39	58	2333
FNH-6	660	14	(1-7)	(8-14)	(15-20)	20	U	10.5	2.2 / 3.3	RRI/34	100	2333
FNH-7	378	10	(1-10)	(11-15)	(16-20)	20	W	9.3	1.4 / 2.1	RRI/38	57	2334
FNH-8	446	8	(1-9)	(10-17)	(18-24)	24	Y	8.6	1.2 / 1.8	RRI/40	67	2334
FNH-9	438	12	(1-7)	(8-15)	(16-20)	20	W	10.7	1.3 / 2.0	RRI/36	66	2335
FNH-10	502	9	(1-9)	(10-17)	(18-24)	24	Y	9.5	1.4 / 2.1	RRI/39	76	2335
FNH-11	475	13	(1-7)	(8-15)	(16-20)	20	W	11.4	1.4 / 2.1	RRI/35	72	2336
FNH-12	613	11	(1-9)	(10-17)	(18-24)	24	Y	11.2	1.7 / 2.6	RRI/37	93	2337
FNH-13	692	13	(1-14)	(15-20)	(21-24)	24	Y	13.2	2.3 / 3.5	RRI/35	105	2338
FNH-14	700	15	(1-7)	(8-14)	(15-20)	20	U	11.2	2.3 / 3.5	RRI/33	106	2338
FNH-15	548	15	(1-7)	(8-15)	(16-20)	20	W	12.9	1.6 / 2.4	RRI/33	83	2338
FNH-16	660	16	(1-8)	(9-15)	(16-21)	21	V	12.4	2.5 / 3.8	RRI/32	100	2339
FNH-17	804	16	(1-8)	(9-16)	(17-24)	24	Y	15.4	2.6 / 3.9	RRI/32	122	2339
FNH-18	799	15	(1-14)	(15-20)	(21-24)	24	Y	14.9	2.6 / 3.9	RRI/33	121	2340
FNH-19	852	16	(1-14)	(15-20)	(21-24)	24	Y	15.8	2.8 / 4.2	RRI/32	129	2341
FNH-20	700	17	(1-8)	(9-15)	(16-21)	21	V	13.1	2.6 / 3.9	RRI/31	106	2341
FNH-21	854	17	(1-8)	(9-16)	(17-24)	24	Y	16.3	2.8 / 4.2	RRI/31	129	2342
FNH-22	720	18	(1-10)	(11-17)	(18-20)	20	W	15.4	2.8 / 4.2	RRI/30	109	2342
FNH-23	905	18	(1-8)	(9-16)	(17-24)	24	Y	17.1	2.9 / 4.4	RRI/30	137	2343
FNH-24	760	19	(1-10)	(11-17)	(18-20)	20	W	16.1	2.9 / 4.4	RRI/30	115	2343
FNH-25	955	19	(1-8)	(9-16)	(17-24)	24	Y	18.0	3.1 / 4.7	RRI/30	145	2344
FNH-26	930	20	(-)	(1-12)	(13-22)	22	X	16.5	3.1 / 4.7	RRI/29	141	2344
FNH-27	980	21	(-)	(1-12)	(13-22)	22	X	17.3	3.3 / 5.0	RRI/28	148	2346
FNH-28	970	20	(-)	(-)	(1-22)	24	Y	17.9	2.1 / 3.2	RRI/29	147	2348
FNH-29	1019	21	(-)	(-)	(1-22)	24	Y	18.8	2.3 / 3.5	RRI/28	154	2349
FNH-30	1110	22	(1-10)	(11-17)	(18-24)	24	Y	20.7	3.9 / 5.9	RRI/28	168	2351
FNH-31	1160	23	(1-10)	(11-17)	(18-24)	24	Y	21.5	4.0 / 6.0	RRI/27	176	2352
FNH-32	1210	24	(1-10)	(11-17)	(18-24)	24	Y	22.4	4.2 / 6.3	RRI/26	183	2354
FNH-33	1260	25	(1-10)	(11-17)	(18-24)	24	Y	23.3	4.4 / 6.6	RRI/26	191	2355
FNH-34	1310	26	(1-10)	(11-17)	(18-24)	24	Y	24.1	4.6 / 6.9	RRI/25	198	2355
FNH-35	1360	27	(1-10)	(11-17)	(18-24)	24	Y	25.0	4.7 / 7.1	RRI/24	206	2356
FNH-36	1410	28	(1-10)	(11-17)	(18-24)	24	Y	25.8	4.9 / 7.4	RRI/23	214	2358
FNH-37	1460	29	(1-10)	(11-17)	(18-24)	24	Y	26.7	5.1 / 7.7	RRI/23	221	2359
FNH-38	1510	30	(1-10)	(11-17)	(18-24)	24	Y	27.5	5.3 / 8.0	RRI/22	229	2360
FNH-39	1760	35	(1-10)	(11-17)	(18-24)	24	Y	31.8	6.1 / 9.2	RRI/19	267	2367
FNH-40	2010	40	(1-10)	(11-17)	(18-24)	24	Y	36.1	7.0 / 10.5	RRI/17	305	2372

BEAM WEAPON (LASER)

Beam Weapon Type	Mass (mt)	Damage	+3	+2	+1	Maximum Range	Firing Chart	WDF	Superstructure (Single/Bank)	Avail	Cost (MCr)	Year
FL-1	500	2	(-)	(-)	(-)	6	D	0.4	0.8 / 1.2	LLL/98	75	2201
FL-2	610	2	(-)	(-)	(-)	8	F	0.5	0.9 / 1.3	LLL/98	91	2210
FL-3	680	2	(-)	(-)	(1-4)	10	G	0.7	1.2 / 1.8	LLL/96	102	2213
FL-4	740	3	(-)	(-)	(1-4)	10	G	1.0	1.5 / 2.3	LLL/94	111	2221
FL-5	820	2	(-)	(1-4)	(5-7)	10	H	1.1	2.0 / 3.0	LLL/92	123	2228
FL-6	930	3	(-)	(1-4)	(5-7)	10	H	1.4	2.4 / 3.6	LLL/90	139	2232

MISSILE WEAPON (PHOTON TORPEDO)

Missile Type	Mass (mt)	Power to Arm	Damage	Range	Firing Chart	WDF	Superstructure	Availability	Cost (Mcr)	Year
FP-1	200	1	10	12	L	4.4	1.3	RRI/67	30	2255
FP-2	120	1	6	10	H	2.0	0.9	RRI/75	18	2256
FP-3	100	1	6	6	D	1.2	0.8	RRI/78	15	2256
FP-4	240	1	20	16	S	12.5	2.0	RRI/32	36	2259
FP-5	200	1	16	16	R	9.5	1.8	RRI/45	30	2260
FP-6	160	1	12	14	O	6.7	1.8	RR/57	24	2265
FP-7	210	1	8	16	R	4.8	0.8	RRI/60	32	2271
FP-8	250	1	10	16	S	6.3	1.1	RRI/52	38	2294
FP-9	300	1	28	16	R	16.7	2.2	RRI/12	45	2297
FP-10	390	1	34	14	Q	18.6	3.6	RRI/10	59	2331
FP-11	324	1	30	16	S	18.8	3.0	RRI/11	49	2332
FP-12	513	1	38	16	S	23.8	4.7	RRI/9	77	2338
FP-13	163	1	23	18	P	12.6	1.5	RRI/14	24	2339
FP-14	170	1	24	16	R	14.3	1.6	RRI/13	26	2339
FP-15	177	1	25	18	T	15.9	1.6	RRI/13	27	2340
FP-16	184	1	26	14	Q	14.2	1.7	RRI/13	28	2341
FP-17	191	1	27	14	Q	14.8	1.8	RRI/12	29	2343
FP-18	208	1	28	16	S	17.5	1.9	RRI/12	31	2344
FP-19	215	1	29	16	R	17.3	2.0	RRI/12	32	2345
FP-20	223	1	30	18	T	19.1	2.1	RRI/11	33	2346
FP-21	281	1	32	14	O	16.6	2.6	RRI/11	42	2347
FP-22	213	1	35	16	R	20.8	2.0	RRI/10	32	2350
FP-23	316	1	36	16	S	22.5	2.9	RRI/10	47	2355
FP-24	149	1	22	14	Q	12.0	1.4	RRI/14	22	2356
FP-25	76	1	14	16	R	8.3	0.7	RRI/17	11	2356
FP-26	97	1	18	14	O	9.3	0.9	RRI/15	15	2357
FP-27	350	1	37	16	R	22.0	3.2	RRI/9	53	2357
FP-28	135	1	25	16	R	14.9	1.2	RRI/13	20	2357
FP-29	81	1	12	16	S	7.5	0.7	RRI/18	12	2358
FP-30	675	1	40	18	T	25.5	6.2	RRI/9	101	2359
LYFP-AX1	176	1	12	16	R	7.1	0.4	RRI/18	26	2335
LYFP-AX2	205	1	14	16	S	8.8	0.5	RRI/17	31	2360
LYFP-AX3	234	1	16	18	T	10.2	0.5	RRI/16	35	2364

MISSILE WEAPON (QUANTUM TORPEDO)

Missile Type	Mass (mt)	Power to Arm	Damage	Range	Firing Chart	WDF	Superstructure	Availability	Cost (Mcr)	Year
FQT-1	2,925	4	50	14	Q	27.4	6.7	RRI/6	439	2360
FQT-2	3,218	4	55	14	O	28.4	7.4	RRI/5	483	2361
FQT-3	3,510	4	60	13	N	29.3	8.1	RRI/3	527	2363
FQT-4	3,803	4	65	14	M	30.9	8.7	RRI/3	571	2364
FQT-5	4,095	5	70	14	O	36.3	9.4	RRI/3	614	2365
FQT-6	4,388	5	75	14	Q	41.1	10.1	RRI/2	658	2367
FQT-7	4,680	5	80	13	Q	43.8	10.7	RRI/2	702	2368
FQT-8	4,973	5	85	14	P	46.5	11.4	RRI/2	746	2369
FQT-9	5,265	5	90	10	Q	49.3	12.1	RRI/2	790	2371
FQT-10	5,850	6	100	14	O	51.8	13.4	RRI/1	878	2372

MASS DRIVER WEAPON (ACCELERATOR CANNON)

Missile Type	Mass (mt)	Power to Arm	Damage	Range	Firing Chart	WDF	Superstructure	Availability	Cost (Mcr)	Year
FAC-1	480	3	8	8	F	1.5	0.6	RRI/52	72	2201
FAC-2	660	4	10	10	G	2.4	1.4	RRI/46	99	2203
FAC-3	840	4	12	10	H	2.9	2.0	RRI/40	126	2219

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