

ORBITER MASS PROPERTIES

Miss Seq No.	STS No.	Orb. OV	Notes	Lift-off Weight,lb			Pre-Deorbit burn Weight,lb			Entry interface Weight,lb			Mach 3 Weight,lb			Landing Weight,lb			Ferry Weight,lb		
				CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z
1	1	102		219440.7			202769.9			196868.7			195942.7			195472.7			197023		
				1125.2	0.2	379.7	1108.4	0.1	376.1	1099	0.2	373.1	1096.7	0.2	372.4	1098.1	0.2	369.6	1120.7	0.3	371
2	2	102		230938.9			215530.2			206842.5			204355.5			204262.5			206455		
				1120.6	0.1	379.8	1106.1	0.3	377.1	1100.5	0.2	373.8	1096.6	0.2	372.3	1098.1	0.2	369.7	1116	0.1	372.7
3	3	102		235556.1			214949.6			208790.2			207349.2			207072.9			211200		
				1119.2	-0.5	379.4	1106.3	-0.5	376.1	1097.9	-0.5	373.3	1095.4	-0.5	372.4	1096.9	-0.5	369.8	1117.8	-0.4	373.5
4	4	102		241772			218163.6			211184			209140.5			208946.8			214526		
				1122.2	-0.3	381.8	1106.6	-0.5	377.7	1096.2	-0.5	374.5	1092.9	-0.5	373.3	1094.4	-0.5	370.7	1114.5	-0.4	375
5	5	102		247112.9			209890.1			203775.9			202642.7			202480.3			205727		
				1116.3	1.1	379.7	1105	1	374.5	1096.6	1	371.6	1094.8	1	371	1096.3	1	368.3	1118.4	1	371.9
6	6	99		256928.1			197427.8			191384.2			190627.2			190330.2			191966		
				1127.8	0.5	382.9	1111.2	0.3	374.6	1101.2	0.3	371.5	1099.7	0.4	370.9	1101.2	0.4	368	1131.4	0.4	371.9
7	7	99		249362.7			211737			204983.4			204340.4			204043.4			204576		
				1123.6	-0.2	381.2	1102	-0.6	376.5	1091.3	-0.6	373.3	1089.8	-0.6	372.8	1091.2	-0.6	370.1	1119.6	-0.6	373.6
8	8	99		242912.3			212911			205243.4			204141.4			203945.4			205874		
				1124.5	0.2	382	1098.2	-0.1	376.7	1092.5	-0.1	373.8	1090.4	-0.1	373	1091.9	-0.1	370.4	1119.4	-0.2	374.3
9	9	102		247807.3			227648			221143.4			220288.4			220027.4			219910		
				1109.7	-0.1	379	1097	0	376.6	1087.3	-0.1	373.7	1085.8	-0.1	373.2	1087.1	-0.1	370.7	1113.4	0	374.1
10	41B	99	a	250482.7			209746.1			202966.5			201528.5			201238.5					
				1124.5	0.2	381.5	1101.4	1.2	375.8	1090.7	1.3	372.6	1087.9	1.3	371.6	1089.3	1.3	368.8			
11	41C	99		208206.4			198072.8			197169.8			196975.8			198830					
				1113.4	0.2	383.4	1117.4	-0.1	376.5	1101.8	-0.1	371.6	1100	-0.1	371	1101.6	-0.1	368.2	1130.9	-0.1	372.4
12	41D	103		263477.4			211075.1			203382.5			202316.5			201674.5			202366		
				1118	0	382.8	1100	-0.1	376.6	1093.4	-0.2	373.5	1090.7	-0.1	372.6	1091.7	-0.2	369.6	1121.8	-0.2	373.8

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 STS-1 and subsequent mission.

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				CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z
13	41G	99	a	242790.8			209799.7			203651.1			202829.1			202266.1					
				1119	-0.1	381.7	1093.5	-0.2	374.6	1085.4	-0.2	371.9	1083.7	-0.2	371.3	1084.8	-0.1	368.4			
14	51A	103	a	263324.6			215715.3			209163.7			207982.7			207505.7					
				1120.9	-0.1	382.6	1090.2	-0.2	375.2	1083.4	-0.2	372.5	1081.4	-0.2	371.8	1082.6	-0.1	369.1			
15	51C	103	a,b																		
16	51D	103	a	250891.6			209102.8			199742.2			198167.2			198014.2					
				1126.5	-0.1	381.7	1110.6	-0.2	377	1095.8	-0.1	372.5	1092.7	-0.1	371.3	1094.3	-0.1	368.6			
17	51B	99		247291.3			226859			214787.4			213795.4			213499.4			213363		
				1114.2	-0.2	381.4	1096.7	-0.3	378	1085.7	-0.3	373.4	1084.1	-0.3	372.8	1085.4	-0.3	370.3	1114.8	-0.2	373.8
18	51G	103		256421.9			213105			205624.4			204321.4			204169.4			204387		
				1109.6	0.2	379.6	1091.5	-0.2	375.2	1084.3	0	372.2	1082.1	0	371.4	1083.7	0	368.8	1114.2	0	372.9
19	51F	99		252628.9			225398			218227.4			216894.4			216735.4			217564.7		
				1111.6	-0.4	381.8	1091.1	-0.5	376.3	1082.3	-0.6	373.4	1079.8	-0.6	372.5	1081.3	-0.6	370	1109.5	-0.5	373.9
20	51I	103		262309.7			207794.8			197824.4			196856.4			196674.4			197259.3		
				1121.3	0.5	382.5	1110	0.2	376.7	1094.4	0.2	371.9	1092.4	0.3	371.3	1094.2	0.3	368.5	1124.9	0.3	372.7
21	51J	104	b																191623		
22	61A	99		243762.5			223317.8			215255.4			214325.4			214171.4			214138.3		
				1109	-0.1	380.4	1091.8	-0.4	377.1	1085.5	-0.4	374.2	1083.8	-0.4	373.6	1085.2	-0.4	371.1	1116.4	-0.3	374.5
23	61B	104		261610.1			213335.8			206187.4			205880.4			205732.4			205682.3		
				1110.3	0	379.3	1096.9	-0.1	375.3	1085.8	-0.2	372	1084.4	-0.1	371.5	1085.9	-0.1	368.9	1118	-0.1	373.2
24	61C	102		256003			221485.8			211194.4			210325.4			210161.4			210430		
				1110.3	0.4	380.3	1096.1	0.4	375.7	1085.2	0.4	371.4	1083.6	0.4	370.9	1085.1	0.4	368.3	1114.9	0.5	373.2

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				CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z
25	51L	99	c	268829.6																	
				1119.1	-0.2	384															
26	26	103		254606.5			202676.3			194985.3			194347.3			194184.3			193936		
				1118.4	0.3	380.6	1104.7	0.1	374.6	1097.9	0.2	371.4	1096.6	0.2	371	1098.3	0.2	368.2	1131.8	-0.1	372
27	27	104	b				200752.5			192095.3			191105.3			190956.3			191337.7		
							1107.9	-0.9	374.6	1095.2	-0.9	370.3	1093.4	-0.9	369.7	1095.1	-0.9	366.8	1127.1	-0.9	370.8
28	29	103		256357.6			202517.6			195531.6			194939.6			194789.6			194710		
				1116.4	0.6	380.8	1104.1	0.5	374.6	1095.1	0.5	371.4	1093.7	0.5	370.9	1095.3	0.5	368.1	1128.6	0.3	372
29	30	104		261118.9			201074.6			193349.6			192557.6			192459.6			193031		
				1123.4	0.5	382.6	1106.8	0.4	374.5	1098.7	0.4	371.1	1097.3	0.4	370.6	1099.1	0.4	367.8	1130.7	0.2	371.7
30	28	102	b				207482.2			201294.2			200331.2			200214.2			200509.7		
							1096.7	-0.1	373.1	1089.7	-0.1	370.4	1087.8	-0.1	369.7	1089.4	-0.1	367	1120.5	-0.2	370.8
31	34	104		257569.2			204439.2			196784.2			196112.2			195954.2			195804		
				1114.2	0.4	380.8	1101.8	0.2	375	1094.5	0.3	371.7	1093.1	0.2	371.2	1094.7	0.3	368.5	1128.2	0.1	372.3
32	33	103	b				203006.2			195185.2			194463.2			194282.2			195242.7		
							1106.2	0	375.1	1094.1	0.1	371.1	1093.2	0.1	370.8	1094.8	0.1	368	1124.7	0.1	371.8
33	32	102		255994			241970.2			229892.2			228523.2			228335.2			227868.7		
				1131.3	-0.9	381.4	1096.3	-0.9	378.6	1080.8	-0.9	373.8	1078.2	-0.9	372.9	1079.6	-0.9	370.5	1108.8	-0.8	373.8
34	36	104	b				193208.2			188059.2			187316.2			187200.2			187944.7		
							1105.2	0.1	373.1	1096.2	0.2	370.4	1094.7	0.2	369.8	1096.4	0.2	366.9	1128.9	0.1	370.8
35	31	103		249109.2			202753.2			190566.2			189309.2			189118.2			189691.7		
				1114.8	-0.5	384.2	1107.2	-1	376.4	1090	-1	370.5	1087.9	-1	369.7	1089.7	-1	366.6	1125.1	-1	370.3
36	41	103		259593.9			204007.2			197986.2			196982.2			196869.2			197369.7		
				1115.2	-0.1	381.4	1100.4	-0.5	374.7	1090.4	-0.5	371.8	1089.4	-0.4	371.2	1091.2	-0.4	368.3	1124.4	-0.5	372

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				CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z
37	38	104	a	196781.2			191862.2			191409.2			191091.2								
							1106.3	0.2	372.8	1098.1	0.2	370.3	1096.2	0.2	369.9	1098.6	0.2	366.7			
38	35	102		256385.6			236566.2			226613.2			225531.2			225329.2			223330.7		
				1106.4	-0.5	378.1	1092.5	-0.5	375.4	1080.8	-0.5	371.4	1079.1	-0.5	370.8	1080.5	-0.4	368.4	1114.7	-0.3	371.6
39	37	104		255824			201055.2			191569.2			190266.2			190098.2			190023.7		
				1116.5	-0.3	381.7	1103	-0.6	375.4	1089.6	-0.6	370.9	1087.4	-0.6	370	1089.2	-0.6	367	1124.2	-0.6	370.6
40	39	103	a	247373.4			218919.2			212806.2			211673.2			211512.2					
				1111.1	0	382.5	1091	-0.4	376.8	1082.2	-0.3	374.1	1080.3	-0.4	373.5	1082	-0.4	370.8			
41	40	102		251970.3			235196.2			227709.2			226737.2			226535.2			225326.7		
				1100.2	-0.1	376.4	1089.5	-0.2	374.9	1081.1	-0.2	371.9	1079.6	-0.2	371.4	1080.9	-0.2	369	1112.9	-0.1	372.2
42	43	104	a	259374.7			203898.2			197472.2			196353.2			196088.5					
				1113.9	-0.2	380.4	1099.5	-0.3	374.2	1088.8	-0.3	371	1087.4	-0.3	370.3	1089.7	-0.3	367.3			
43	48	103		240062.6			204685.2			193665.2			192925.2			192780.2			193583.7		
				1125.5	-0.9	381.9	1113.1	-0.9	375.9	1097.4	-1	370.6	1096	-1	370	1097.8	-0.9	367	1130.2	-0.9	371.3
44	44	104		259904			204165.2			196229.2			195047.2			194818.2			194087.1		
				1116.2	0	381	1102.6	-0.2	374.4	1092.4	-0.2	370.7	1090.8	-0.2	370	1092.5	-0.2	367	1128.6	-0.1	371.1
45	42	103		243494.1			227227.2			219459.2			218159.2			218089.2			216224.7		
				1104.8	-0.1	378.3	1091.4	-0.3	376.6	1082.3	-0.3	373.4	1080.6	-0.3	372.8	1082.2	-0.3	370.1	1115.6	-0.2	373.1
46	45	104	a	233652			215275.2			206495.2			205672.3			205588.2					
				1113.1	-0.3	377.6	1100.3	-0.5	375.2	1086.3	-0.5	371	1085.4	-0.4	370.5	1087.2	-0.4	367.7			
47	49	105		256392.3			209002.2			202094.2			201400.2			201235.2			199831.2		
				1119.5	-0.3	383.9	1096.7	-0.6	375	1085.8	-0.7	371.7	1084.4	-0.6	371.2	1086.2	-0.6	368.3	1122.7	-0.5	371.9
48	50	102	a	257338.6			236634.2			227587.2			225865.2			225615.2					
				1106	-0.5	378.8	1089.7	-0.6	375.9	1079.8	-0.7	372.4	1077.7	-0.7	371.6	1079.1	-0.7	369			

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				CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z
49	46	104	a	256026.3			216581.2			210995.2			209851.2								
				1113.8	-0.3	382.4	1087.1	-0.5	374.8	1080.2	-0.5	372.4	1078.2	-0.5	371.7	1079.6	-0.5	368.9			
50	47	105	a	244645.2			228709.2			221374.2			220325.2			220195.2					
				1103.9	-0.4	379.1	1091.1	-0.5	377.5	1085.4	-0.5	374.9	1083.7	-0.5	374.3	1085.3	-0.5	371.7			
51	52	102	a	250399.4			223297.2			217359.2						215979.2					
				1109.5	-0.3	377.5	1090.3	-0.4	373.5	1084.5	-0.4	371.1	1082.6	-0.4	370.4	1084.3	-0.3	367.7			
52	53	103		243944.4			201376.2			194826.2			194028.2			193851.2			193848.3		
				1112.3	0.1	380.7	1100.2	0	373.9	1090.4	0.1	370.5	1089.5	0	370.2	1091.3	0.1	367.1	1125.3	0.2	370.8
53	54	105	a	259764.2			205293.6			198296.6			197481.2			197353.2					
				1115.7	0.3	381.2	1101.4	0.2	375	1093.5	0.2	371.9	1091.6	0.2	371.3	1093.4	0.2	368.4			
54	56	103	a	237213			217922.2			209229.2			208052.2			207946.2					
				1109.5	-0.3	379.3	1098.3	-0.5	376.9	1086.3	-0.5	373.4	1084.6	-0.4	372.5	1086.3	-0.4	369.7			
55	55	105		255441.8			236094.2			228546.6			227484.2			227209.2			226360.2		
				1101.6	-0.6	377.5	1089	-0.6	375.4	1080.1	-0.6	372.4	1078.4	-0.6	371.9	1079.7	-0.6	369.2	1111.8	-0.5	372.3
56	57	105	a,d	252710.1						226573.5			225019.5			224906.5					
				1112.6	-0.1	382.9				1083	-0.2	375.2	1080.9	-0.2	374.6	1082.5	-0.2	372			
57	51	103	a,d	261486.6						208048.5			207042.5			206931.5					
				1116.5	-0.6	381.5				1086.6	-0.8	373.5	1084.7	-0.7	373.1	1086.5	-0.7	370.3			
58	58	102	d	256097						230447.7			229480.7			229368.7			229953.7		
				1103.4	-0.4	378				1080	-0.5	373	1078.8	-0.5	372.7	1080.4	-0.5	370.2	1107.9	-0.6	373.7
59	61	105	a,d	250279.1						213640.5			212946.5			212835.5					
				1113.5	-0.1	381.6				1080.2	0	372.2	1078.8	0.1	371.9	1080.5	0.07	369.2			
60	60	103	a,d	245767.5						217583.5			216662.5			216594.5					
				1104.8	-0.7	380.2				1081.2	-0.9	374.1	1079.6	-0.9	373.7	1081.3	-0.9	371.1			

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				CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z
61	62	102	a,d	256584.1						229091.2			228360.2			228250.2					
				1107.4	-0.6	379.2				1084	-0.7	373.5	1182.6	-0.6	373.2	1084.1	-0.6	370.6			
62	59	105	d	246851						222698			221931			221865			222734		
				1095.8	-0.5	378.7				1090.9	-0.4	374.7	1079.6	-0.4	374.5	1081.2	-0.4	371.9	1109.1	-0.6	375.5
63	65	102	a	258584			237613			230624			229410			229307					
				1104.2	-0.2	378.8	1087.4	-0.6	375.6	1080.7	-0.6	373.1	1079	-0.6	373	1080.1	-0.6	370			
64	64	103		240884			221336			213510			212565			212141			212251		
				1105.5	-0.5	379.5	1090.1	-0.7	376.8	1083.7	-0.8	373.5	1082	-0.8	373.1	1083.9	-0.7	370.4	1117.1	-0.5	373.8
65	68	105		247136			228874			222752			221460			221571			221390		
				1099.1	-0.5	378.5	1087.8	-0.4	376.8	1080.1	-0.4	374.3	1078.1	-0.4	373.7	1080.3	-0.4	371.4	1112.2	-0.4	374.6
66	66	104		243089			221520			212378			211434			211327			210966		
				1113	-0.1	379.5	1096.8	-0.1	375.9	1085.9	-0.1	371.9	1084.3	-0.1	371.6	1086	-0.1	368.9	1120.1	0	372.4
67	63	103	a	247555			224130			213717			212772			212646					
				1111.1	-0.2	382.2	1095.7	-0.5	378.4	1081.4	-0.6	373.9	1079.7	-0.5	373.5	1079.3	-0.5	373.6			
68	67	105		256293			231034			218563			217568			217481			216663		
				1118	0	381.5	1101.4	0	377.5	1084.1	0	372.1	1082.5	0	371.6	1083.1	0	371.9	1117.9	0	372.9
69	71	104	a	248856.8			227051.7			217202			215036.6			214879.4					
				1110.1	-0.3	380.4	1094.1	-0.2	377.1	1081.9	-0.2	372.4	1080.1	0	372.1	1081	-0.2	369.4			
70	70	103	a	258798			205687.5			197482.7			196725.9			196574.8					
				1120.2	0.1	380.8	1106.6	0.1	375.1	1099	0.1	371.5	1097.6	-0.1	371.2	1099.4	0.1	368.2			
71	69	105	a	256644.9			229422.3			220383			219494.4			219377					
				1112.6	0.2	383.3	1092.9	0.4	378.4	1082.2	0.05	374.7	1080.5	0.4	374.3	1081.3	0.4	371.6			
72	73	102	a	257017.5			239035.7			231578			230621.7			230469.3					
				1101.3	-0.6	377.2	1089.3	-0.5	375.8	1081.9	-0.5	372.9	1080.5	-0.5	372.6	1082	-0.5	370			

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STS-1 and subsequent mission.

ORBITER MASS PROPERTIES

Miss Seq No.	STS No.	Orb. OV	Notes	Lift-off Weight,lb			Pre-Deorbit burn Weight,lb			Entry interface Weight,lb			Mach 3 Weight,lb			Landing Weight,lb			Ferry Weight,lb		
				CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z
73	74	104	a	248266.2			215856.9			204058.7			203101.9			202950.9					
				1113	0.1	381.7	1113.4	0.7	370.4	1080.8	0.2	371.5	1078.8	0.2	371	1080.5	0.2	368.2			
74	72	105	a	247320.5			226239.4			218151.1			217394.2			217243.4					
				1117.6	-0.1	381.7	1090.5	0	376.2	1081.9	0	372.9	1080.6	0	372.6	1082.2	0.1	369.9			
75	75	102	a	261250.1			240782.4			229357.8			228601.1			228449.9					
				1106	-0.4	379.9	1092.6	-0.3	377.5	1079.7	-0.3	373	1078.4	-0.3	372.7	1079.9	-0.3	370.2			
76	76	104		246337.3			220475.9			211094.8			210143			209993.4			210600.3		
				1109.7	-0.2	379.7	1095.8	0	375.8	1083.4	0	371.6	1081.7	0	371.2	1083.3	0	368.4	1113.5	-0.1	372.4
77	77	105	a	254890.5			233219.3			222936.2			221979.5			221828.4					
				1106.4	-0.1	380.4	1094.6	-0.1	377.6	1081.8	-0.1	373.4	1080.3	-0.1	373	1081.8	-0.1	370.4			
78	78	102	a	256144.6			238077.2			229652.9			228696.3			228545.4					
				1102.7	-0.4	377.2	1088.9	-0.2	375.6	1081.9	-0.2	372.5	1080.5	-0.2	372.1	1082	-0.2	369.5			
79	79	104	a	249327.5			225654.4			216359.8			215177.8			215026.5					
				1109.2	0	379.8	1094.2	0.1	376	1081.2	0.1	371.9	1079.4	0.1	371.4	1081	0.2	368.7			
80	80	102	a	260935.2			238607			228516.3			227534.4			227383.2					
				1106.5	-0.3	381	1091.2	-0.4	377.7	1080.2	-0.4	373.8	1078.4	-0.4	373.4	1079.9	-0.4	370.9			
81	81	104	a	249935.7			225432.8			216042.8			214861.6			214710.6					
				1110.7	0	379.6	1079.1	0.2	376.1	1082.7	0.3	371.8	1080.8	0.3	371.3	1082.5	0.3	368.6			
82	82	103	a	251238.1			221530			214393.2			213636.6			213485.7					
				1112.8	-0.1	381.2	1087.2	0.1	374.6	1079.2	0.1	371.6	1077.9	0.1	371.3	1079.5	0.1	368.5			
83	83	102	a,d	259143.6			240257.2			231584.3			230507.6			230276.3					
				1102.1	-0.3	378.2	1088.5	-0.2	376.8	1081.7	-0.2	373.7	1079.9	-0.2	373.3	1081.3	-0.2	370.5			
84	84	104	a	249462.2			224584.2			214653.8			213697.9			213547.2					
				1109.1	0.1	379.7	1094.6	0.3	375.9	1080	0.3	371.4	1078.4	0.3	371	1080	0.4	368.3			

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 STS-1 and subsequent mission.

ORBITER MASS PROPERTIES

Miss Seq No.	STS No.	Orb. OV	Notes	Lift-off Weight,lb			Pre-Deorbit burn Weight,lb			Entry interface Weight,lb			Mach 3 Weight,lb			Landing Weight,lb			Ferry Weight,lb		
				CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z
85	94	102	a	260248.6			240407.8			231591			230514.5			230283.5					
				1102.1	-0.2	378.1	1088.6	-0.2	376.3	1080.2	-0.3	373.1	1079.6	-0.3	372.6	1080	-0.2	370.1			
86	85	103	a	249695.6			228129.5			220185.2			219228.6			219077					
				1102.7	0	379.5	1088.5	0.1	376.8	1079.9	0.1	373.6	1078.4	0.1	373.2	1079.9	0.1	370.6			
87	86	104	a	252035.4			225501			215616.7			214660			214509					
				1109.8	0.3	379.8	1094.5	0.3	376.1	1080.6	0.3	371.3	1079	0.3	371.3	1080.6	0.3	368.5			
88	87	102	a	260799			241095.5			231017.1			230260.7			230110					
				1104	-0.2	379	1090.6	-0.1	376.9	1079.8	-0.1	373	1078.6	0.1	372.7	1080.1	0	370.1			
89	89	105	a	252316			226971.4			217909			216953			216802					
				1108.1	0.1	380	1093.5	0.2	376.1	1081.3	0.2	372.2	1079.8	0.2	371.8	1081.4	0.2	369.1			
90	90	102	a	262357			239492.6			232451.9			231493			231342.5					
				1103.7	-0.5	377.9	1086.3	-0.5	374.8	1080.1	-0.5	372.2	1078.7	-0.5	371.8	1080.2	-0.5	369.3			
91	91	103	a	259653			236965.9			227125			226168.8			226017					
				1107.4	-0.2	380.5	1094.2	-0.2	377.6	1081.7	-0.2	373.5	1080.1	-0.2	373.1	1081.6	-0.2	370.6			
92	95	103	a	265855			0			229316			228455			228388					
				0	0	0	0	0	0	1078.6	-0.5	0	1076.8	0	0	1079.5	0	0			
93	88	105	a	264026			0			201982			201538			201492					
				0	0	0	0	0	0	1085.4	-0.9	0	1084.3	0	0	1086.2	0	0			
94	96	103	a	262278			232711.5			222031.9			221556.2			222475.6					
				1112	-0.8	381.4	1093.8	-0.9	376.5	1080.8	-0.9	372	1079.8	-0.9	371.9	1081.5	-0.9	369.3			
95	93	102	a	270138			209822.7			202958.1			202481.1			202400.3					
				1120.7	0.1	380.9	1102.2	0	373.7	1098.3	0	370.9	1097.3	0	370.8	1099.1	0	370.8			
96	103	103	a	248159			0			213136			0			212311					
				1114.3	-0.1	381.3	0	0	0	1082	0	372.1	1081	0	0	1082.4	0	0			

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ORBITER MASS PROPERTIES

Miss Seq No.	STS No.	Orb. OV	Notes	Lift-off Weight,lb			Pre-Deorbit burn Weight,lb			Entry interface Weight,lb			Mach 3 Weight,lb			Landing Weight,lb			Ferry Weight,lb		
				CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z
97	99	105	a	256739			0			225625			0			225038					
				1104.7	0.2	381.4	0	0	0	1079.3	0.4	374.8	1078.4	0.4	0	1080	0	0			
98	101	102	a	0			0			226670			0			226131			0		
				0	0	0	0	0	0	1083.2	-0.2	372.5	1082.2	-0.2	0	1083.4	0	0	0	0	0
99	106	104		262242			231564.2			221163.1			220686.3			220605.2			0		
				1110.7	-0.3	380.5	1093.6	-0.4	376	1079.5	-0.4	371.5	1078.5	-0.4	371.3	1080.2	-0.4	368.7	0	0	0
100	92	103		257746.9			214406.3			204603.9			204127.1			204045.9			204989.2		
				1109.1	-0.3	390.8	1091.5	-0.1	375.3	1078.3	-0.2	370.8	1077.3	-0.2	370.6	1079.1	-0.1	367.8	1109.9	-0.2	371.8
101	97	105		260834.5			208275.6			198475.3			198000			197919.3			0		
				1101.9	-0.3	382.8	1095.2	0	375.8	1086.2	0	371.6	1085.1	0	371.4	1086.9	0	368.5	0	0	0
102	98	104		258995.2			208745.1			199468			198992.6			198911.9			0		
				1104.9	-0.4	381	1091.9	-6	374.5	1082.3	-0.6	370.5	1081.2	-0.6	370.3	1083	-0.6	367.4	0	0	0
103	102	103		166290.6			230160.9			220680.9			220204.1			220123.1			0		
				1114	0	382.9	1092	-0.6	372.7	1081.9	-0.6	372.7	1081	-0.6	372.6	1082.7	-0.6	370	0	0	0
104	100	105		264695.2			232072			221324.2			220848.9			220768.3			221562.9		
				1109.6	-0.6	382	1092.5	-0.7	377	1083.1	-0.7	373	1082.2	-0.7	372.8	1083.8	-0.7	370.2	1112.5	-0.8	373.9
105	104	104		262867.2			221072.1			207981			207505.4			207424.6					
				1112.6	-0.2	381.8	1095.6	-0.2	376.1	1080.9	-0.3	370.4	1079.9	-0.3	370.2	1081.7	-0.3	367.5			
106	105	103		259730			230485.8			221510.6			221033.6			220952.5			0		
				1110.4	-0.5	381	1092.1	-0.3	376.6	1083	-0.4	373	1082	-0.3	372.9	1083.7	-0.3	370.2	0	0	0
107	108	105		258646.7			234462.3			222861.7			222384.7			222303.6					
				1112.6	-0.3	382.9	1083.3	-0.6	377	1083.1	-0.1	373.3	1082.2	-0.1	373.2	1083.8	0	370.6			
108	109	102		260346.8			234462.3			222200.1			221723.4			221642.3					
				1114.3	-0.9	380.8	1099.8	-0.6	377	1084.7	-0.7	371.9	1083.7	-0.7	371.7	1085.4	-0.7	369.1			

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ORBITER MASS PROPERTIES

Miss Seq No.	STS No.	Orb. OV	Notes	Lift-off Weight,lb			Pre-Deorbit burn Weight,lb			Entry interface Weight,lb			Mach 3 Weight,lb			Landing Weight,lb			Ferry Weight,lb		
				CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z
109	110	104		264769.4			210580.3			200927.6			200451.1			200370.1					
				1110.4	-0.7	381.8	1098.5	-0.6	374.2	1087	-0.6	369.8	1086	-0.6	369.6	1087.8	-0.6	366.8			
110	111	105		263960.4			228937			219409.4			218932.4			218851.3			219975.2		
				1112.3	-0.5	383.1	1096.9	-0.7	377.6	1084.2	-0.8	373.5	1083.3	-0.8	373.4	1084.9	-0.7	370.7	1113.5	-0.8	374.4
111	112	104		265853.4			212008			201898.5			201422.8			201342.6					
				1110.6	-0.3	382.92	1099.9	0.5	374.2	1086.8	-0.6	369.5	1085.8	-0.6	369.3	1087.6	-0.6	366.4			
112	113	105		265886.2			212497.9			202158			201682.3			201601.6					
				1109.6	-0.4	383.2	1098.7	-0.4	374.4	1088.7	-0.5	369.9	1087.7	-0.5	369.7	1089.5	-0.5	366.8			
113	107	102		265166			240080.5			234477											
				1104.1	-0.6	378.4	1085.4	-0.6	374.5	1078.9	-0.6	372									
114	114	103		267951			228172			226845			226374			226293			0		
				1111.4	-0.2	382.9	1083	-0.1	374.6	1086.4	-0.1	374.6	1085.5	-0.1	374.4	1087.1	-0.1	371.8	0	0	0
115	121	103		267024			227571			226267			225797			225715			0		
				1113.2	-0.3	383.6	1081.1	-0.4	374.7	1084.4	-0.4	374.7	1083.5	-0.4	374.5	1085.2	-0.4	371.8	0	0	0
116	115	104		270634			200874			199502			199034			198952			0		
				1111.1	-0.7	383.7	1079.9	-0.5	370.7	1083.9	-0.5	370.6	1082.8	-0.5	370.4	1084.8	-0.5	367.3	0	0	0
117	116	103		265339			227134			225991			225526			225445			0		
				1109.5	-0.5	381.7	1076.5	-0.3	372.8	1079.2	-0.3	372.8	1077.9	-0.3	372.6	1079.6	-0.3	369.9	0	0	0
118	117	104		270516.8			229214.4			199761.5			199399.5			199328.5					
				1110.99	-0.50	383.44	1113.77	-0.38	81.30	1085.80	-0.24	71.05	1084.89	-0.22	370.93	1086.86	-0.2	367.87			
119	118	105		266790.0			249570.6			222095.5			221666.5			221589.5					
				1111.59	-0.64	382.04	1104.18	-0.58	81.06	1079.43	-0.47	72.03	1078.19	-0.46	371.90	1080.00	-0.4	369.15			
120	120	103		268178.2			230591.1			203346.5			202893.5			202838.5					
				1114.64	0.08	382.33	1109.34	-0.28	80.87	1082.62	-0.13	71.26	1081.64	-0.12	371.11	1083.58	-0.1	368.10			

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ORBITER MASS PROPERTIES

Miss Seq No.	STS No.	Orb. OV	Notes	Lift-off Weight,lb			Pre-Deorbit burn Weight,lb			Entry interface Weight,lb			Mach 3 Weight,lb			Landing Weight,lb			Ferry Weight,lb		
				CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z
121	122	104		267070.3			214706.7			206837.7			206366.3			206286.3			206564.2		
				1110.8	-0.2	382.7	1087.6	-0.4	375.3	1078.6	-0.4	372.0	1077.5	-0.4	371.8	1079.3	-0.4	369.8	1109.7	-0.4	372.9
122	123	105		266257.2			216487.9			208219.9			207748.4			207668.5			No Ferry Req		
				1112.1	0.1	381.7	1090.2	-0.3	374.7	1080.3	-0.3	371.1	1079.3	-0.3	370.9	1081.1	-0.3	367.9			
123	124	103		269180.0			211491.9			203787.0			203315.4			203235.5			No ferry requ		
				1109.9	-0.3	381.1	1097.1	-0.4	373.3	1088.7	-0.5	369.9	1087.7	-0.5	369.7	1089.6	-0.5	366.7			
124	126	105		267017			230604.8			221894.3			221422.8			221342.9			221605.2		
				1115.9	-0.4	382.8	1095.7	-0.3	376.9	1087.7	-0.3	373.6	1086.7	-0.3	373.4	1088.5	-0.3	370.7	1116.8	-0.3	374.5
125	119	103		266677.2			210272.6			201765.5			201293.9			201214.0			No Ferry Req		
				1110.1	-0.7	382.5	1092.9	-0.3	374.5	1082.9	-0.3	370.7	1081.9	-0.3	370.5	1083.8	-0.3	367.4			
126	125	104		263998.3			233089.3			226471.8			226000.3			225920.4			226538.1		
				1109.9	0.0	381.0	1086.0	0.2	374.7	1078.8	0.2	372.1	1077.8	0.2	371.9	1079.5	0.2	369.2	1106.9	0.1	372.8
127	127	105		264027.5			224910.5			215485.1			215013.6			214933.8			No Ferry Req		
				1110.1	-0.4	380.4	1098.6	-0.2	374.6	1089.4	-0.2	370.7	1088.5	-0.2	370.6	1090.2	-0.2	367.7			
128	128	103		267717.6			231505.0			223411.0			222939.5			222859.6			223111.9		
				1117.2	0.0	382.7	1097.3	-0.4	376.9	1089.0	-0.4	373.7	1088.1	-0.4	373.5	1089.9	-0.4	370.8	1117.9	-0.5	374.6
129	129	104		266311.2			215175.0			205969.8			205498.2			205418.2			No Ferry Req		
				1109.8	0.1	383.0	1092.9	0.4	374.5	1083.4	0.4	370.6	1082.4	0.4	370.4	1084.3	0.4	367.4			
130	130	105		267658.7			201655.5			201604.5			201137.5			201084.5					
				1114	-0.36	382.93	1083.97	-0.44	71.30	1083.32	-0.43	71.28	1082.79	-0.43	371.11	1084.75	-0.4	368.07			
131	131	103		266801.2			233633.4			225331.1			224859.4			224779.6			225055.2		
				1413.9	0.2	419.7	1097.9	-0.2	377.2	1089.4	-0.2	374.0	1088.5	-0.2	373.8	1090.2	-0.2	371.1	1118.0	-0.3	374.8
132	132	104		263146.8			238330.1			210783.5			210433.5			210369.5					
				1113.88	-0.06	380.35	1106.76	-0.28	80.46	1081.99	-0.05	71.31	1081.02	-0.04	371.20	1082.88	-0.0	368.29			

a = KSC landing
b = NA/DOD = Not Available/Department of Defense Mission
c = Vehicle destroyed at approximately 73 seconds
d = Computations not available

Source: JSC/VF Orbiter Mass Properties Summary,
STS-1 and subsequent mission.

ORBITER MASS PROPERTIES

Miss Seq No.	STS No.	Orb. OV	Notes	Lift-off Weight,lb			Pre-Deorbit burn Weight,lb			Entry interface Weight,lb			Mach 3 Weight,lb			Landing Weight,lb			Ferry Weight,lb		
				CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z	CGX	Y	Z
133	133	103		268461.1			232205			205524.5			205074.5			205003.5			No ferry		
				1111.75	0.12	383.45	1116.18	-0.40	82.07	1083.54	-0.48	71.75	1082.44	-0.47	371.58	1084.34	-0.4	368..62			
134	134	105		268764.4			233984.7			205057.5			204531.5			204462.5					
				1113.07	-0.31	382.94	1110.27	-0.50	81.78	1081.54	-0.29	71.60	1080.36	-0.27	371.42	1082.32	-0.2	368.43			

a = KSC landing
 b = NA/DOD = Not Available/Department of Defense Mission
 c = Vehicle destroyed at approximately 73 seconds
 d = Computations not available

Source: JSC/VF Orbiter Mass Properties Summary,
 STS-1 and subsequent mission.