

Weight Calculations

Item #	Name	# of Pieces	Wt/Piece	Product	Dist from FP	Product
1	Frames	2	168	336	$19.55 \times 4 = 6,614$	
2	"	2	"	"	24.94	9,378
3	"	2	"	"	31.5	10,583
4	"	2	"	"	35.1	12,758
5	"	2	"	"	44.6	14,993
6	"	2	"	"	52.5	17,638
7	"	2	"	"	59.1	19,843
8	"	2	"	"	65.6	22,048
9	"	2	"	"	73.5	24,694
10	"	2	"	"	81.4	27,340
11	"	2	"	"	90.6	30,427
12	"	2	"	"	98.4	33,072
13	"	2	"	"	106.3	35,719
14	"	2	"	"	112.9	37,923
15	"	2	"	"	119.4	40,128
16	"	"	"	"	124.7	41,892
17	Girders, Port	1	1329.6	1329.6	67.6	89,566
18	" , Stbd	1	"	"	"	"
19	" , Center	1	"	"	"	"
20	Deck Beams	1	15.3	15.3	17.06	261
21	"	"	19.4	19.4	22.3	433
22	"	"	23.5	23.5	26.9	632
Σ				9,423		455,003

Weight Calculations

Item #	Name	# of Pieces	Wt/Piece	Product	Dist. from FP	Product
23	Deck Beam	1	28.8	28.8	31.5	907
24	"	"	29	29	32.4	938
25	"	"	29.4	29.4	35.1	1,031
26	"	"	31.1	31.1	36.7	1,143
27	"	"	33.5	33.5	38.1	1,275
28	"	"	35.2	35.2	39.4	1,386
29	"	"	37.0	37.0	40.7	1,505
30	"	"	38.8	38.8	42.1	1,635
31	"	"	38.8	38.8	44.0	1,706
32	"	"	40.5	40.5	45.3	1,834
33	"	"	40.5	40.5	47.2	1,913
34	"	"	42.9	42.9	48.6	2,083
35	"	"	44.6	44.6	50.5	2,257
36	"	"	46.2	46.2	51.8	2,395
37	"	"	47.0	47.0	53.8	2,529
38	"	"	48.6	48.6	55.1	2,679
39	"	"	133.2	133.2	57.1	7,609
40	"	"	66.5	66.5	58.4	3,884
41	"	"	68.6	68.6	60.0	4,119
42	"	"	68.6	68.6	61.7	4,230
43	"	"	70.6	70.6	63.3	4,471
44	"	"	70.6	70.6	65.0	4,586
Σ				1,090		50,105

Weight Calculations

Item #	Name	# of Pieces	wt/Piece	Product	Dist from TP	Product
45	Deck Beam	1	74.7	74.7	66.6 ft.	4,975
46	"	"	74.7	74.7	68.2	5,098
47	"	"	75.7	75.7	70.0	5,290
48	"	"	75.7	75.7	71.5	5,415
49	"	"	76.0	76.0	73.2	5,561
50	"	"	77.8	77.8	74.8	5,820
51	"	"	77.8	77.8	76.4	5,948
52	"	"	77.8	77.8	78.1	6,075
53	"	"	"	77.8	79.7	6,203
54	"	"	"	77.8	81.4	6,330
55	"	"	"	77.8	82.7	6,433
56	"	"	"	77.8	84.3	6,560
57	"	"	76.8	76.8	85.0	6,602
58	"	"	"	76.8	87.6	6,728
59	"	"	74.7	74.7	89.2	6,666
60	"	"	"	74.7	90.9	6,789
61	"	"	71.6	71.6	92.5	6,625
62	"	"	"	71.6	94.2	6,742
63	"	"	68.6	68.6	95.8	6,572
64	"	"	"	68.6	97.4	6,685
65	"	"	62.4	62.4	99.1	6,183
66	"	"	"	62.4	100.7	6,285
				1629.6		135,585

Weight Calculations

Item #	Name	# of Pieces	Wt/Piece	Product	Dist. from FP	Product
67	Deck Beam	1	58.3 lbs	58.3	102.4 ft	5,968
68	"	"	"	58.3	104.0	6,064
69	"	"	53.2	53.2	105.6	5,620
70	"	"	46.5	46.5	107.3	4,989
71	"	"	43.2	43.2	108.9	4,706
72	"	"	"	43.2	110.6	4,777
73	"	"	40.5	40.5	112.2	4,545
74	"	"	"	40.5	113.9	4,611
75	"	"	35.1	35.1	115.2	4,042
76	"	"	27.0	27.0	121.7	3,287
77	Pillar Stanchions	2	14	28	34.1	955
78	"	"	"	28	40.7	1,139
79	"	"	"	28	48.6	1,360
80	"	"	"	28	56.4	1,580
81	"	"	"	28	64.3	1,801
82	"	"	"	28	69.6	1,948
83	Backing Timbers	2	511.5	1,023	2.6	2,660
84	"	"	"	1,023	140.4	143,657
85	Decking	1	7,257	7,257	72.5	526,206
86	Girder Hold Downs	3		222.8	74.1	16,521
87	"	"	"	222.8	74.1	16,521
88	Large Pillars	2	143	286	34.1	9,754
<hr/>						
Σ				10,248		772,716

Weight Calculations

Item #	Name	# of Pieces	wt/Piece	Product	Dist. from FP	Product
89	Large Pillars	2	143	286.4	40.7	11,652
90	"	"	"	286.4	48.6	13,907
91	"	"	"	286.4	56.4	16,162
92	"	"	"	286.4	64.3	18,418
93	"	"	"	286.4	69.6	19,921
94	"	"	"	286.4	76.1	21,800
95	"	"	"	286.4	77.8	22,270
96	"	"	"	286.4	79.4	22,740
97	"	"	"	286.4	81.0	23,210
98	"	"	"	286.4	82.7	23,680
99	"	"	"	286.4	84.6	24,244
100	"	"	"	286.4	86.3	24,714
101	"	"	"	286.4	87.9	25,183
102	"	"	"	286.4	89.6	25,653
103	"	"	"	286.4	91.2	26,123
104	"	"	"	286.4	93.2	26,687
105	"	"	"	286.4	94.8	27,157
106	"	"	"	286.4	96.5	27,627
107	"	"	"	286.4	98.1	28,096
108	"	"	"	286.4	99.7	28,566
109	"	"	"	286.4	101.7	29,130
110	"	"	"	286.4	103.4	29,600
Σ				6,300.8		504,900

Weight Calculations

Item #	Name	# of Items	Wt/piece	Product	Dist from FP	Product
111	Large Pillars	2	143	286.4	105	30,070
112	Small Pillars	2	23.2	46.4	18.4	853
113	"	"	"	46.4	19.9	926
114	"	"	"	46.4	21.3	989
115	"	"	"	46.4	23.0	1,066
116	"	"	"	46.4	24.6	1,142
117	Pillar Supports	2	381.3	762.6	90.7	69,183
118	Deckhouse Panels	5	-	1589	90.7	144,122
119	"	"	"	1589	"	144,122
120	Deckhouse Bhd	1	655.9	655.9	76.4	50,142
121	"	"	"	655.9	82.7	54,230
122	"	"	"	655.9	105.0	68,964
123	Deckhouse Caps.	1	232.3	232.3	69.6	16,158
124	"	"	"	"	"	16,158
125	Inner Caps	4	-	388.4	90.7	35,236
126	Hemp			2,000	70.51	141,020
127	Battens	300	.36	2,652	70.51	186,993
128	Stem Post	1	855	855	1.31	1,122
129	Stem Post	1	530.3	530.3	138.5	73,424
130	Hull (see attached sheet)		44,261	44,261	70.51	3,120,970
Σ				57,578		4,156,690
	are of station w/ Simpson's rule			37,372		

Weight Calculation Summary

Page No.	Σ Weights	Σ Weight \times Arm.
1	9,423	655,003
2	1,090	56,108
3	1,629.6	135,585
4	10,248	772,716
5	6,300.8	504,900
6	57,578	4,156,690
$\Sigma_3 = 86,270$		$\Sigma_4 = 6,281,000$

Longitudinal Center of Gravity = $\frac{\Sigma_4}{\Sigma_3} = 72.81$ ft. aft of FP
 = 1.6 ft aft of STA 6

$\Delta = \frac{\Sigma_3}{2240} = 38.513$ tons

Draft for ^{displacement} $\Delta = 38.513$ tons $\cong 3.2$ ft.

LEB at 3.2 ft = $0.695 \times -7.12314 = 4.95$ ft fwd of STA 6

Trimming Moment = 565,119 ft-lbs. (252.8 ft-tons)

MTI at T = 3.2 ft = $0.31 \times 17.7752 = 5.51$ tons.

Trim = 45.8 in

LCF at T = 3.2 ft = $0.57 \times -7.28889 = 4.15$ ft. fwd of STA 6

Item #	Name & Remarks	No. of Pieces	f ³ per piece	piece wght at 48 lb per f ³	Distance from FP in m.	Item	Name & Remarks	No. of Pieces	f ³ per piece	weight	Distance from FP
1	frames w/ stanchions	2	2.6	168	6.	38	deck Beams (cont)	1	1.01	48.6	16.8
2		2		"	7.6	39	"	1	2.77	133.2	17.4
3		2		"	9.6	40		1	1.36	66.5	17.8
4		2		"	11.6	41		1	1.42	68.6	18.3
5					13.6	42		1	1.42	68.6	18.8
6					16.	43		1	1.47	70.6	19.3
7					18.	44		1	1.47	70.6	19.8
8					20.	45		1	1.55	74.7	20.3
9					20.4	46		1	1.55	74.7	20.8
10					21.8	47		1	1.57	75.7	21.3
11					27.6	48		1	1.57	75.7	21.8
12					30	49		1	1.58	76.0	22.3
13					32.4	50		1	1.62	77.8	22.8
14					34.4	51		1	1.62	77.8	23.3
15					36.4	52		1	1.62	77.8	23.8
16		2	2.6	168	38.	53		1	1.62	77.8	24.3
17	girders Port	1	27.7	1329.6	9.2 → 32m	54		1	1.62	77.8	24.8
18	" Starboard	1	27.7	1329.6	9.2 → 32	55		1	1.62	77.8	25.2
19	" center	1	"	"	9.2 → 32	56		1	1.62	77.8	25.7
20	deck beams	1	.32	15.3	5.2	57		1	1.60	76.8	26.2
21	" "	1	.40	19.4	6.8	58		1	1.60	76.8	26.7
22		1	.49	23.5	8.2	59		1	1.55	74.7	27.2
23		1	.60	28.8	9.6	60		1	1.55	74.7	27.7
24		1	.60	29.	9.86	61		1	1.49	71.6	28.2
25		1	.61	29.4	10.69	62		1	1.49	71.6	28.7
26		1	.64	31.1	11.2	63		1	1.42	68.6	29.2
27		1	.69	33.5	11.60	64		1	1.42	68.6	29.7
28		1	.73	35.2	12.	65		1	1.30	62.4	30.2
29		1	.77	37	12.40	66		1	1.30	62.4	30.7
30		1	680	338	12.84	67		1	1.21	58.3	31.2
31		1	.80	38.8	13.4	68		1	1.21	58.3	31.7
32		1	.84	40.5	13.8	69		1	1.11	53.2	32.2
33		1	.84	40.5	14.4	70		1	.97	46.5	32.7
34		1	.89	42.9	14.8	71		1	.90	43.2	33.2
35		1	.93	44.6	15.4	72		1	.90	43.2	33.7
36		1	.96	46.2	15.8	73		1	.84	40.5	34.2
37		1	980	47.0	16.4	74	deck Beams	1	.84	40.5	34.7

Item #	Name & Remarks	No. of pieces	f ³	weight	Distance from FP
75	Deck beams	1	.73	35.1	35.1
76	" "	1	.56	270	37.1
77	Pillar (1 each P+S) stanchions	2	.14	14.	10.4
78	" "	2	.14	14.	12.4
79	" "	2	.14	14.	14.8
80	" "	2	.14	14.	17.2
81	" "	2	.14	14.	19.6
82	" "	2	.14	14.	21.2
83	Backing Timbers P+S	2	each 10.6	10.23	.8
84	" "	2	each 10.6	10.23	42.8
85	Decking (calculated as one unit)	1	151.2	7257	46.396
86	Girders hold downs (P)	3	4.64	222.8	10-35.2
87	" " " (S)	3	4.64	222.8	10-35.2
88	large Pillar (P+S)	2	each 2.98	286.38	10.4
89	" " (P+S)	2	each 2.98	286.38	12.4
90	" " "	2	each 2.98	286.38	14.8
91	" " "	2	each 2.98	286.38	17.2
92				286.38	19.6
93				286.38	21.2
94				286.38	23.2
95				286.38	23.7
96				286.38	24.2
97				286.38	24.7
98				286.38	25.2
99				286.38	25.8
100				286.38	26.3
101				286.38	26.8
102				286.38	27.3
103				286.38	27.8
104				286.38	28.4
105				286.38	28.9
106				286.38	29.4
107				286.38	29.9
108				286.38	30.4
109				286.38	31.
110				286.38	31.5
111	large Pillar (P+S)	2	each 2.98	286.38	32.0

Item #	Name & Remarks	No. of pieces	f ³	weight	Distance from FP
112	small Pillars (P+S)	2	.96	46.4	5.60
113	" " "	2	.96	46.4	6.08
114	" " "	2	.96	46.4	6.5
115	" " "	2	.96	46.4	7.0
116	" " "	2	.96	46.4	7.5
117	pillar supports (PS)	2	15.88	762.6	23.3 → 32.04
118	Deckhouse panels (5 each side)	5	33	1589	23.3 → 32.04
119		5	33	1589	as above
120	Deckhouse bulkheads	31	13.6	655.9	23.3
121	" "	1	13.6	655.9	25.2
122	" "	1	13.6	655.9	32.0
123	Deckhouse caps (outer) (P+S)	1	4.89	232.3	10.4-32
124	" " (S) (on center)	1	4.84	232.3	as above 23.3 → 32.04
125	Deckhouse caps inner	4	each 2.02	388.4	32.04
126	Henry (Half grass)	5000m	@ .4 lbs	2000	Through out
127	Battens	300	each .36	2652	"
128	Stem post	1	17.8	855	.4
129	stern "	1	11.0	530.3	42.2
130					
131					

26.5 X 5 quantity "well seasoned" = 35 lb per cubic foot
 (2.4 x 20) ~~1.8 x 20~~
 in Metric (15.75 kg)
 Branches 48 lbs or 21.6 kg per cubic foot

ladders???

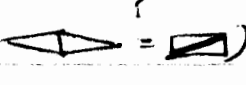
16 Pilars - ~~24~~ 8 cm X 18 cm X 4.8 meters
 15, 17, 24, 29, 34, 40, 45, 51, 56, 62, 69, 75, 81, 86, 91, 95
 6m, 7.6, 9.6, 11.6, 13.6, 16, 18, 20, 24, 22.4, 24.8, 27.6, 30, 32.4, 34.4, 36.4, 38. from FP

16 Stanchions - calculate cylinder diam 11 cm X 1.6 meters sp
 4.4 X 10.4 X 87.3 = 27 m³ shipage 26.5 X .657 = 17%
 3 girders - 11 X 26 X 26.2 m ~~117 X 41 = 48~~ shipage
 66 country small ends green timber

58 deck beams 11 X 11 X 4.4 m (average) every 28 cm
 4.4

12 pillar stanchions 8 cm X 80 cm (cylinder)
 26, 31, 37, 43, 49, 53
 10.4, 12.4, 14.8, 17.2, 19.6, 21.2 from FP

4 backing timbers 60 cm X 12 m X 4.4 m (2) @ 8 m from FP
 (2) @ 42.8 m " "

decking 3.5 cm X 120 square meters (21 X 5.6) 

2 Medera cylinder 8 cm X 25.2 meters 20 m from FP -> aft

48 large pillars 8 cm X 2.4 m (cylinder) (2 each) at
 2 each at 10, 4, 12.4, 14.8, 17.2, 19.6, 21.2, 23.2, 23.7, 24.2, 24.7, 25.2, 25.8, 26.3,
 26.8, 27.3, 27.8, 28.4, 28.9, 29.4, 29.9, 30.48
 31., 31.5, 32.04 from FP

10 small pillars 4 cm X 1.76 m cylinders ~~5.6 from FP~~
 5.6, 6.08, 6.5, 7.04, 7.5 from FP

② pillar supports = figure eight 23.3 → 32.04 from FP
10 cm x 4.6 m

② "side ^{deckhouse} panels 25x6.3 9.2 x 2.5 = ~~46~~ ^{x2 sides} (46) sq meters at 4 cm thickness }
3 deckhouse bulkheads (3.0 m x 2.5) or 9.5 sq m at 4 cm }
23.3 → 32.04 from FP
23.3, 25.2, 32 from FP

outer caps 5 cm x 12 cm x 22 m x 2 sides 10.4 → 32.04 from FP

4 inner caps 5 cm x 12 cm x 9.2 m 23.3 → 32.04 from FP

temp? 5,000 m of 2cm(?) haffa grass = 5/8 temp?

battens?

stem & stem posts

4

377 ^{13/64}
3.2

1 cm = .4 inches

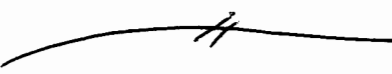
circle area (πr^2) X altitude = Volume

meter
distance from
FP

16 frames w/ stations
items # 1-16

8 cm x 18 x 480

Item	1	Station	2.6 f ³	192" inches (or 16')	6.
2.8	2	5.3	2.6 f ³	432 + 124.8 lbs	7.6
	3	24.6 X 5.3 = 1.9 f ³	"	432 + 124.8	9.6
	4		"	43.2	11.6
	5		"	168.0	13.6
	6		"		16.
	7		"		18.
	8		"		20.
	9		"		22.4
	10		"		24.8
	11		"		27.6
	12		"		30
	13		"		32.4
	14		"		34.4
	15		"		36.4
	16		"		38.



	17	girder	27.7 f ³ or	1329.6 lbs	P	9.2 → 32m
	18	"		"	S	32.2-32m
	19	"		" = .32 f ³	center line	32.2-32m
5 deck beams	20	deck beams	4.2" X 4.2" X 2.6'	1.78 f³	15.3 lbs	32.2-32m
	21	"	4.2 X 4.2 X 3.3'	.40	19.4	5.2m
	22	"	" " X 4'	.49	23.5	6.8m
req * ↓	23	"	" " X 4.9'	.60	28.8 lbs	8.2
	24				29.0 "	9.6m
	25		5.0	.64	39.4	9.86
	26		5.3	.64	31.1	10.68m
	27		5.7	.69	33.5	11.2
	28		6.0	.73	35.2	11.80
	29		6.3	.77	37.0	12.40
	30		6.6	.80	38.8	12.84m

89	large Pillars (24 pairs) (cont)	(P+S)	286.38 lbs per pair	16.8
90			"	17.2
91				19.6
2				21.2
3				23.2
4				23.7
5				24.2
6				24.7
7				25.2
8				25.8
9				26.3
100				26.8
1				27.3
2				27.8
3				28.4
4				28.9
5				29.4
6				29.9
7				30.4
8				31
9				31.5
110			286.38	32.04
111	5 pairs of small pillars (P+S)	(P+S)	$2.0'_{\text{area}} \times 5.8' = .96 \text{ f}^3$ or 46.46 lbs	5.6
2				6.08
3				6.5
4				7.0
115				7.5
2	pillar supports	$12.5'_{\text{area}} \times 15.18'$	15.88 f^3 or 762.6 lbs	23.3 →
116	(P+S)			32.04
117	two deckhouse side panels (P+S)	$9.2 \text{ m} \times 2.5 \text{ m} = 23 \text{ m}^2$ or $27.6 \text{ yd}^2 \times 1.6' = 397 \text{ f}^2$ or 33 f^3 or 1,589 lbs each		
			3178 lbs	23.3 → 32 m
3	deckhouse bulkheads	$9.5 \text{ m}^2 = 11.4 \text{ yds}^2$ or $102.6 \text{ f}^2 \times 1.6'$	655.9	23.3
118		164 f^2 or 13 f^3	655.9 lbs	25.2
119			655.9	32.00
120				

~~2 Outer caps~~

121 } 2 outer caps (each) 2' X 4.8" X 72.6' 4.84 f³ or 232.32 10.4 → 32.04
 122 } ~~12 = 50.0~~ 232.32 " "

123 } 4 inner caps (each) 2' X 4.8" X 30.36' 2.02 f³ or 97.1 23.3 → 32.0
 124 } 97.1 " "
 125 } 97.1 " "
 126 } 97.1 " "

127 hemp ~~1/2" per m .29 X 5000 = 1450 lbs~~
~~5/8 " " .40 X 5000 2000 lbs~~ throughout

128 300 battens (?) 150 cylinders 8cm x 2m
~~3.0~~ 8.0 X 6.6' = .36 f³ 17.6 X 150
 or 2652.6 throughout

129 stem post 3.12 m X 44 cm or
 130 stem post 2.6 m X 40 cm
 17.6" or ~~243.1" area~~ X 10.36' 17.8 f³ or 855 lbs 40cm from FT
 16" or ~~200.9" area~~ X 7.92' 11.0 f³ 530.3 42.2 from FT

53.3 54.6
~~57.8~~ 48.1
~~52.4~~ 49.0

43.6 45.9
~~41.6~~ ~~42~~

38.5 5.7, 5.9
~~39.7~~
 41, 42.2 6, 6.2

~~33.5~~
~~34.7~~

distance
 from EP
 in meters

(deck beams

Items

31	4.2 X 4.2 X 6.6 m	.80	38.8 lbs	13.4 m
32		6.9	40.5	13.8 "
33		6.9	40.5	14.4 m
34		7.3	42.9 lbs	14.8 "
35		7.6	44.6	15.4
36		7.8	46.2	15.8
37		8.	47.0	16.4
38		8.2	48.6	16.8
39	4.2 X ^{11.2} X	8.5	77.7 133.2	17.4
40	4.8 X 4.8 X	8.6	66.5	17.8 17.8
1		8.9	68.6	18.3
2		8.9	68.6	18.8
3		9.2	70.6	19.3
4		9.2	70.6	19.8
5		9.7	74.7	20.3
6		9.7	74.7	20.8
7		9.8	75.7	21.3
8		9.8	75.7	21.8
9		9.8	76.0	22.3
50		10.1	77.8	22.8
1		"	77.8	23.3
2		"	77.8	23.8
3		"	77.8	24.3
4		"	77.8	24.8
5		"	77.8	25.2
6		"	77.8	25.7
7		10.0	76.8	26.2
8		"	76.8	26.7
9		9.7	74.7	27.2
60		9.7	74.7	27.7
1		9.3	71.6	28.2
2		"	71.6	28.7
3		8.9	68.6	29.2
4		8.9	68.6	29.7
5		8.1	62.4	30.2
6		"	"	30.7
7		7.6	58.3	31.2

Wide beam -

$$\left(\frac{l \times w \times h}{144} = f^3 \right)$$

cabin beams

m m m

					m from FP
← 4.8" X 4.8" X 7.6'		1.21 f ³	58.3 lbs		31.7
9 " " 6.9		1.1	53.2		32.2
70 4.5 X 4.5 X 6.9		.97	46.5		32.7
1 " " 6.4		.9	43.2		33.2
2 " " 6.4		.9	43.2		33.7
3 " " 6.0		.84	40.5		34.2
4 " " 6.0		.84	40.5		34.7
5 " " 5.2		.73	35.1		35.1
6 " " 4.8		.56	33.0		39.1

5.04

3.2" X 32" cylinder area

12 pillar stations (in pairs) P+S

78	14.	10.4
79	14.	12.4
80	14.	14.8
81	14.	19.2
82	14.	29.6
	14.	21.2

Backing timbers (in pairs) P+S	9 24 X 4.8 X 13.3'	10.6 f ³ = 511 lbs X 2 = 1023 lbs	.8 m
	90 83		
	91 84	1023 lbs	42.8m

decking	43 14.8 X 144 sq yards or 1296 f ² X 1.4 = 1814.4 ÷ 12 = 151.2 f ³	151.2 X 48 = 7257 lbs	4.6 → 6
	44 85		39.6 m
	6		

2 meade (1 each P+S)	8.04" X 83.16"	area 12 = 447.28, 4.64 f ³ 222.86 X 2 = 445.72 lbs	10. → 35.2m
	86		

large pillars (P+S)	7.92' = 48	2.98	143 X 2 = 286.38	19.4
	4.52			12.4
	87			
	88			