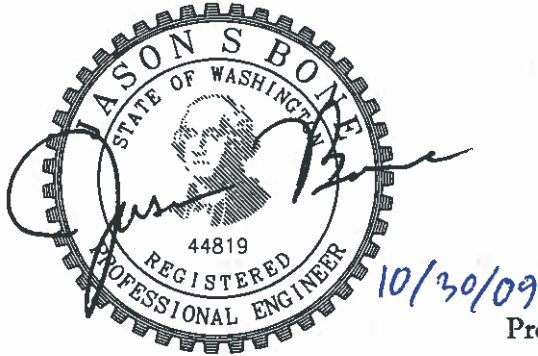


# ALASKA CLASS FERRY

## Preliminary Weight Estimate



Prepared for: Alaska Marine Highway System • Ketchikan, AK

Ref: 06137-005-833-1

Rev. -

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**PREPARED BY**

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**GENERAL NOTES**

1. This document is NOT intended for submittal to a regulatory agency.
2. For parametrically estimated systems and components: (a) the total weights and centers of gravity have been updated, however (b) many of the system descriptions, deck labels, components, and quantities have not been updated. See the Procedure section of the report for further explanation.

**REVISIONS**

REV	DESCRIPTION	DATE	APPROVED
-	Initial issue	10/30/09	JSB 44819

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## PURPOSE

The purpose of this report is to estimate the light ship weight and center of gravity location for the subject vessel. The subject vessel is the ALASKA CLASS FERRY, 350 ft long x 74 ft wide x 24 ft deep. The subject vessel is to be owned and operated by the Alaska Marine Highway System.

## PROCEDURE

The weight is estimated by Ship Work Breakdown Structure (SWBS) groups. The SWBS 100 structure group represents a significant portion of the weight (~75%) and is estimated in detail.

Systems (i.e. main engine exhaust system) and components (line items) that are a small percentage of the total weight have been parametrically estimated. The data included in this preliminary weight estimate is imported from other contract design level weight estimates and scaled. These systems and components are often scaled by an appropriate factor such as main engine horsepower. The total weights and centers of gravity of these systems and components have been updated. However many of the system descriptions, deck labels, components, and quantities have not been updated. The contract design stage weight estimate will update these details.

The parametric estimates are based on the WSF NEW 64-AUTO FERRY (References 1 and 2) and the WSF 144 (Reference 3) weight estimates.

A weight and vertical center of gravity (VCG) margin is added to each SWBS 1-digit group based on Reference 4. The weight and VCG margins included account for:

1. Prediction errors associated with the estimating technique.
2. Unknowns at the time the prediction is made.
3. Anticipated relatively minor changes in the Owner's Requirements or design specification.

The included margins do not account for weight growth over the vessel's service life. A service life margin is included in the stability analysis.

The SWBS 100 structure group weight is estimated to a point midway between preliminary and contract design. The preliminary scantling calculations report (Reference 2) selects all major structural members and has been used to estimate this group in detail. A weight margin halfway between the recommended preliminary and contract design margins are applied (Reference 4).

The remaining SWBS groups are at a preliminary design stage and therefore the preliminary design margins from Reference 4 are selected.

The VCG margins are selected to match the weight margins because the VCG estimate is based on the same level of data detail as the weight estimate.

EPA Tier 4 may begin requiring a SCR system, including a urea tank, in the 2014 to 2016 timeframe. This system would likely be heavier than the currently required exhaust silencers. The weight of a SCR system rather than exhaust silencers is included in this weight estimate.

## **GIVEN AND ASSUMED PARAMETERS**

### **Reference Origin**

Longitudinal locations are referenced from frame 0, positive aft. Vertical locations are referenced from the baseline at the molded low point of the keel, positive upward. Transverse locations are measured from centerline, positive to starboard.

### **Ice Class Structure**

The SWBS 100 structure group includes the weight of steel necessary for hull strengthening to meet ABS DO ice class requirements. The owner may or may not choose to elect this option.

## **CONCLUSIONS**

The estimated light ship weight and centers of the subject vessel are shown below. The calculation of these values is included in the Calculations section of this report.

Light ship weight:	3,269	long tons
VCG:	30.55	ft above baseline
LCG:	163.70	ft aft of frame 0
TCG:	0.49	ft stbd of centerline

Included in the above estimate is the weight of the additional structure necessary to meet ABS DO ice class requirements. This weight of this additional steel is 19 long tons.

## **REFERENCES**

1. NEW 64-AUTO FERRY Weight Estimate, 9200-750-833-1, Rev. -, EBDG, 09/23/08.
2. NEW 64-AUTO FERRY Weight Estimate, 7099-001-07, Rev. C, GPA, 03/06/09.
3. NEW 144-AUTO FERRY Weight Estimate, 9000-660-100-03, Rev. -, EBDG, 02/28/06.
4. Design Margin Management and Procedures For U.S. Navy Small Craft, Asset Inc., December 1977.
5. ALASKA CLASS FERRY Preliminary Scantling Calculations Report, 06137-005-061-1, Rev. -, 10/28/09.
6. ALASKA CLASS FERRY General Arrangements, 06137-005-101-1P1, Rev. 1, as of 10/15/09.



**CALCULATIONS**

<b>VESSEL WEIGHT ESTIMATE</b>						
Description	Qty.	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	% of Subtotal w/ No Margins
STRUCTURE		4,952,039 (2,210.73LT)	163.50	0.73	28.08	73%
MACHINERY		388,327 (173.36LT)	206.38	-1.30	11.80	6%
ELECTRICAL		100,436 (44.84LT)	138.30	0.81	30.14	1%
ELECTRONICS & IC		25,048 (11.18LT)	152.18	0.00	44.36	0%
AUXILIARY SYSTEMS		590,177 (263.47LT)	142.94	0.02	26.11	9%
OUTFIT		736,261 (328.69LT)	163.55	0.20	39.01	11%
<b>SUBTOTAL W/ NO MARGINS</b>		<b>6,792,288</b> <b>(3,032.27LT)</b>	<b>163.76</b>	<b>0.49</b>	<b>28.26</b>	
<b><u>WEIGHT MARGINS</u></b>						
STRUCTURE	6.5%	321,883	163.50	0.73	28.08	
PROPULSION	9.0%	34,949	206.38	-1.30	11.80	
ELECTRICAL	12.0%	12,052	138.30	0.81	30.14	
ELECTRONICS	12.0%	3,006	152.18	0.00	44.36	
AUXILIARY	12.0%	70,821	142.94	0.02	26.11	
OUTFIT	12.0%	88,351	163.55	0.20	39.01	
<b>SUBTOTAL (WEIGHT MARGINS)</b>		<b>531,063</b> <b>(237.08LT)</b>	<b>163.76</b>	<b>0.49</b>	<b>28.26</b>	
<b><u>VCG MARGINS</u></b>						
STRUCTURE	6.5%				1.83	
PROPULSION	9.0%				1.06	
ELECTRICAL	12.0%				3.62	
ELECTRONICS	12.0%				5.32	
AUXILIARY	12.0%				3.13	
OUTFIT	12.0%				4.68	
<b><u>SUBTOTAL W/ WEIGHT AND VCG MARGINS</u></b>						
STRUCTURE		5,273,921	163.50	0.73	29.91	
MACHINERY		423,277	206.38	-1.30	12.86	
ELECTRICAL		112,488	138.30	0.81	33.76	
ELECTRONICS & IC		28,054	152.18	0.00	49.68	
AUXILIARY SYSTEMS		660,998	142.94	0.02	29.25	
OUTFIT		824,612	163.55	0.20	43.69	
<b>VESSEL WEIGHT WITH MARGINS</b>		<b>7,323,350</b> <b>(3,269.35 LT)</b>	<b>163.70</b>	<b>0.49</b>	<b>30.55</b>	

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
<b>HULL STRUCTURE</b>								
<b>110.1 Keel</b>								
Flat of Bottom - 3/4" PL	911	30.60	27,877	178.58	0.00	2.77	C	
<b>110.1 Shell Plating</b>								
Bottom Plating Fwd of Fr 50 - 1/2"	2690	20.40	54,866	51.04	0.00	4.08	C	Areas from Rhino
Bottom Frames Fwd of Fr 50 - 5x3x3/8" L	1156	9.80	11,334	51.04	0.00	4.08	C	Bulb is included
Bottom Plating Aft of Fr 50 - 1/2"	11497	20.40	234,543	212.92	0.00	6.17	C	Areas from Rhino
Bottom Frames Aft of Fr 50 - 5x3x3/8" L	4740	9.80	46,453	212.92	0.00	6.17	C	Bulb is included
Center Brackets - 3/8" PL	2066	15.30	31,602	176.67	0.00	4.60	C	
Center Girder - 1/2"	1309	20.40	26,710	176.67	0.00	4.60	C	
Girder 7'1-1/2" O.C. - 1/2"	2355	20.40	48,035	176.67	0.00	4.60	C	Copied from Center Grdr
Girder 10'6" O.C. - 1/2"	2355	20.40	48,035	176.67	0.00	4.60	C	Copied from Center Grdr
Margin Plate - 1/2"	1090	20.40	22,236	163.00	0.00	4.00	C	
Floors (at Transverse Web Frames) - 3/8"	2495	15.30	38,166	182.25	0.00	5.78	C	Based on Frame 80
Floors (in Machinery Spaces) - 3/8"	6680	15.30	102,207	172.00	0.00	3.88	C	
Side Plating Fwd of Fr 50 - 1/2"	4900	20.40	99,958	53.00	0.00	17.50	C	
Side Frames Fwd of Fr 50, Lower - 7x4x1/2" L	1053	17.90	18,857	53.00	0.00	17.50	C	
Side Frames Fwd of Fr 50, Upper - 7x4x3/8" L	1053	13.60	14,327	53.00	0.00	17.50	C	
Side Frame Brackets Fwd of Fr 50- 1/4" PL	1096	10.20	11,176	53.00	0.00	23.25	C	
Side Stringer Fwd - 20x3x3/8" flg	200	29.33	5,865	50.00	0.00	15.50	C	
Side Trans Web Frs Fwd of Fr 50 - 28x6x7/16" flg	175	50.58	8,851	53.00	0.00	17.50	C	
Side Web Frame Brackets Fwd of Fr 50- 1/4" PL	222	10.20	2,264	53.00	0.00	23.25	C	
Side Plating Aft of Fr 50 - 1/2"	6768	20.40	138,069	193.92	0.00	16.50	C	
Side Frames Aft of Fr 50, Lower - 7x4x1/2" L	1395	17.90	24,974	193.92	0.00	16.50	C	
Side Frames Aft of Fr 50, Upper - 7x4x3/8" L	1395	13.60	18,974	193.92	0.00	16.50	C	
Side Frame Brackets Aft of Fr 50- 1/4" PL	2395	10.20	24,430	193.92	0.00	23.25	C	
Side Stringer Aft - 20x3x3/8" flg	456	29.33	13,372	213.00	0.00	15.50	C	
Side Trans Web Frs Aft of Fr 50 - 28x6x7/16" flg	455	50.58	23,012	193.92	0.00	16.50	C	
Side Web Frame Brackets Aft of Fr 50- 1/4" PL	577	10.20	5,887	193.92	0.00	23.25	C	
<b>110.1 Ice Classing</b>								
(-) Bottom Frames Fwd of Fr 50 - 5x3x3/8" L	-1156	9.80	-11,334	51.04	0.00	4.08	C	
Bottom Frames Fwd of Fr 50 - 7x4x3/8" L	2313	13.60	31,457	51.04	0.00	4.08	C	
(-) Side Stringer Fwd - 20x3x3/8" flg	-200	29.33	-5,865	50.00	0.00	15.50	C	

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
Side Stringer Fwd - 28x3/4 web w/6x3/4" flg	200	86.70	17,340	50.00	0.00	15.50	C	
(-) Side Transverse Web Frames Fwd of Fr 50 - 28x6x7/16" flg	-175	50.58	-8,851	53.00	0.00	17.50	C	
Side Transverse Web Frames Fwd of Fr 50 - 28x3/4 web w/6x3/4	175	86.70	15,173	53.00	0.00	17.50	C	
(-) Car Deck Beams Fwd - 7x4x1/2" L	-2458	17.90	-43,989	62.58	0.00	23.75	C	
Car Deck Beams Fwd - 8x4x1/2" L	2458	19.60	48,167	62.58	0.00	23.75	C	
<b>110.1 Guard Plating</b>								
FR 0 to Stem - 3/4" PL	1201	30.60	36,751	198.69	0.00	23.00	C	Area from Rhino WSF64 PL thickness
<b>Shell Appendages</b>								
<u>Skeg</u>	14586		0					
Skeg Bottom - 3/4" PL	296	30.60	9,068	231.40	0.00	0.00	C	
Skeg Sides - 1/2" PL	674	20.40	13,742	257.83	0.00	2.75	C	
<b>Bilge Keels</b>								
3/4x20" PL	360	51.00	18,360	150.00	0.00	4.00	E	WSF64 cross section
1-1/2" DIA RND BAR	360	6.01	2,164	150.00	0.00	4.00	E	WSF64 cross section
<b>Keel Cooler Guards</b>								
Side Guard	1	5,893.33	5,893	202.00	0.00	8.00	E	HP(ACF/WSF64)
End Strainer	1	924.80	925	202.00	0.00	8.00	E	HP(ACF/WSF64)
End Guard	1	408.00	408	202.00	0.00	8.00	E	HP(ACF/WSF64)
<b>130.1 Deck Plating</b>								
Car Deck - 1/2" PL	20716	20.40	422,616	173.42	0.00	24.00	C	
Car Deck - 7x4x1/2" L	10358	17.90	185,413	173.42	0.00	23.75	C	
Deck Girders - 14x4x3/8" FP	2368	22.95	54,336	173.42	0.00	23.50	C	
Transverse Web Frames - 14x1/2" web w/7"x3/4" flg	1080	41.65	44,982	180.00	0.00	23.25	C	
Transverse Web Frames Pillars - 6" Sch 80	945	28.57	26,999	180.00	0.00	13.75	C	
<b>120.4 Transverse Bulkheads</b>								
<u>FR 10, WT BHD (COLLISION)</u>								
3/8" Plate	238	15.30	3,636	20.00	0.00	14.68	C	
High Stiffeners 3x2x3/16" L	63	3.07	194	20.00	0.00	20.58	C	
Mid Stiffeners 6x3.5x5/16" L	39	9.80	385	20.00	0.00	10.05	C	
Low Stiffeners 4x3x1/4" L	16	5.80	94	20.00	0.00	2.88	C	
Horizontal Girder 7x4x3/8" L	9	13.60	116	20.00	0.00	15.50	C	

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
Vertical Web 24x4x1/2" FP	19	47.60	904	20.00	0.00	14.50	C	
<u>FR 27, WT BHD</u>								
Plating - 5/16"	518	12.75	6,608	54.00	0.00	16.11	C	
High Stiffeners 3x2x3/16" L	155	3.07	476	54.00	0.00	20.42	C	
Mid Stiffeners 5x3x3/8" L	87	9.80	850	54.00	0.00	11.04	C	
Low Stiffeners 3x3x1/4" L	17	4.90	85	54.00	0.00	2.81	C	
Horizontal Girder 14x3x5/16" L	24	18.06	438	54.00	0.00	15.50	C	
Vertical Web 24x4x1/2" FP	38	47.60	1,809	54.00	0.00	14.50	C	
<u>FR 39, WT BHD</u>								
Plating - 5/16"	473	12.75	6,031	78.00	0.00	16.09	C	Including the bhd changes due to the tank is more accurate but not necessary at this stage. This has not been done for other similar bulkheads.
Plating IWO Tank - 5/16"	304	12.75	3,876	78.00	0.00	14.50	C	
Tank Stiffeners 7x4x3/8" L	152	13.60	2,067	78.00	0.00	14.50	C	
High Stiffeners 3x2x3/16" L	147	3.07	451	78.00	0.00	20.59	C	
Mid Stiffeners 5x3x3/8" L	60	9.80	588	78.00	0.00	11.52	C	
Low Stiffeners 3x3x1/4" L	29	4.90	144	78.00	0.00	3.02	C	
Horizontal Girder 14x3x5/16" L	36	18.06	650	78.00	0.00	14.50	C	
<u>FR 50, WT BHD</u>								
Plating - 5/16"	1001	12.75	12,768	100.00	0.00	14.75	C	
High Stiffeners 3x2x3/16" L	215	3.07	660	100.00	0.00	20.33	C	
Mid Stiffeners 5x3x3/8" L	237	9.80	2,326	100.00	0.00	10.66	C	
Low Stiffeners 3x3x1/4" L	48	4.90	237	100.00	0.00	2.99	C	
Horizontal Girder 14x3x5/16" L	47	18.06	840	100.00	0.00	15.50	C	
Vertical Web 24x4x1/2" FP	95	47.60	4,522	100.00	0.00	14.50	C	
<u>FR 60, WT BHD</u>								
Plating - 5/16"	1188	12.75	15,144	120.00	0.00	14.26	C	
High Stiffeners 3x2x3/16" L	282	3.07	867	120.00	0.00	19.96	C	
Mid Stiffeners 5x3x3/8" L	250	9.80	2,449	120.00	0.00	10.59	C	
Low Stiffeners 3x3x1/4" L	62	4.90	302	120.00	0.00	3.06	C	
Horizontal Girder 14x3x5/16" L	57	18.06	1,026	120.00	0.00	15.50	C	
Vertical Web 24x4x1/2" FP	114	47.60	5,426	120.00	0.00	14.50	C	
<u>FR 72, WT BHD</u>								
Plating - 5/16"	1284	12.75	16,369	144.00	0.00	14.03	C	
High Stiffeners 3x2x3/16" L	294	3.07	901	144.00	0.00	19.88	C	
Mid Stiffeners 5x3x3/8" L	280	9.80	2,745	144.00	0.00	10.56	C	
Low Stiffeners 3x3x1/4" L	68	4.90	335	144.00	0.00	3.12	C	
Horizontal Girder 14x3x5/16" L	62	18.06	1,126	144.00	0.00	15.50	C	
Vertical Web 24x4x1/2" FP	114	47.60	5,426	144.00	0.00	14.50	C	

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
<b>FR 87, WT BHDS</b>								
Plating - 5/16"	1290	12.75	16,443	174.00	0.00	14.02	C	
High Stiffeners 3x2x3/16" L	294	3.07	904	174.00	0.00	19.88	C	
Mid Stiffeners 5x3x3/8" L	282	9.80	2,760	174.00	0.00	10.56	C	
Low Stiffeners 3x3x1/4" L	69	4.90	337	174.00	0.00	3.12	C	
Horizontal Girder 14x3x5/16" L	63	18.06	1,130	174.00	0.00	15.50	C	
Vertical Web 24x4x1/2" FP	114	47.60	5,426	174.00	0.00	14.50	C	
<b>FR 112, WT BHDS</b>								
Plating - 5/16"	1198	12.75	15,277	224.00	0.00	14.84	C	
High Stiffeners 3x2x3/16" L	294	3.07	903	224.00	0.00	19.88	C	
Mid Stiffeners 5x3x3/8" L	252	9.80	2,474	224.00	0.00	11.04	C	
Low Stiffeners 3x3x1/4" L	53	4.90	258	224.00	0.00	4.35	C	
Horizontal Girder 14x3x5/16" L	63	18.06	1,129	224.00	0.00	15.50	C	
Vertical Web 24x4x1/2" FP	114	47.60	5,426	224.00	0.00	15.00	C	
<b>FR 122, WT BHDS</b>								
Plating - 5/16"	1093	12.75	13,938	244.00	0.00	15.59	C	
High Stiffeners 3x2x3/16" L	289	3.07	887	244.00	0.00	19.88	C	
Mid Stiffeners 5x3x3/8" L	199	9.80	1,950	244.00	0.00	11.90	C	
Low Stiffeners 3x3x1/4" L	59	4.90	287	244.00	0.00	5.98	C	
Horizontal Girder 14x3x5/16" L	61	18.06	1,108	244.00	0.00	15.50	C	
Vertical Web 24x4x1/2" FP	114	47.60	5,426	244.00	0.00	15.96	C	
<b>FR 136, WT BHDS</b>								
Plating - 5/16"	881	12.75	11,237	272.00	0.00	16.87	C	
High Stiffeners 3x2x3/16" L	270	3.07	829	272.00	0.00	19.89	C	
Mid Stiffeners 5x3x3/8" L	114	9.80	1,120	272.00	0.00	13.15	C	
Low Stiffeners 3x3x1/4" L	56	4.90	276	272.00	0.00	8.16	C	
Horizontal Girder 14x3x5/16" L	57	18.06	1,022	272.00	0.00	15.50	C	
Vertical Web 24x4x1/2" FP	114	47.60	5,426	272.00	0.00	17.25	C	
<b>FR 148, WT BHDS</b>								
Plating - 5/16"	636	12.75	8,112	296.00	0.00	18.12	C	
High Stiffeners 3x2x3/16" L	231	3.07	709	296.00	0.00	19.93	C	
Mid Stiffeners 5x3x3/8" L	87	9.80	855	296.00	0.00	13.30	C	
Horizontal Girder 14x3x5/16" L	46	18.06	831	296.00	0.00	15.50	C	
Vertical Web 24x4x1/2" FP	95	47.60	4,522	296.00	0.00	17.25	C	
<b>Transom</b>								
Plating - 7/16"	299	17.85	5,333	324.72	0.00	20.00	C	
High Stiffeners 3x2x3/16" L	149	3.07	459	324.72	0.00	20.00	C	

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
<u>FO2 TK</u> Vertical Web 24x4x1/2" FP	30	47.60	1,428	324.72	0.00	20.00	C	
Top Plating - 1/4" 4x4x1/4" L	588	10.20	5,998	258.00	0.00	20.00	C	
Top Girder - 18x4x3/8" FP	294	6.60	1,940	258.00	0.00	20.00	C	
(-) Bottom Plate Stiffeners 4x3x3/8" L	28	28.05	785	258.00	0.00	20.00	C	
Bottom Plate Stiffeners 5x3x3/8" L	-224	8.50	-1,904	258.00	0.00	8.26	C	
Inbd/Outbd Plating - 5/16" 7x4x3/8" L	224	10.40	2,330	258.00	0.00	8.26	C	
<u>FO1 TK</u> Top Plating - 1/4" 5x3x1/4" L	657	12.75	8,378	258.00	0.00	14.13	C	
Top Girder - 20x4x3/8" FP	329	13.60	4,468	258.00	0.00	14.13	C	
(-) Bottom Plate Stiffeners 4x3x3/8" L	320	10.20	3,264	235.00	0.00	15.50	C	
Bottom Plate Stiffeners 6x4x5/16" L	160	6.60	1,056	235.00	0.00	15.50	C	
Inbd/Outbd Plating - 5/16" 5x3.5x1/4" L	16	30.60	490	235.00	0.00	15.50	C	
<u>FO DAY TK</u> Top Plating - 1/4" 5x3x1/4" L	-160	8.50	-1,360	235.00	0.00	5.89	C	
Fwd Plating - 5/16" 5x3.5x1/4" L	160	10.30	1,648	235.00	0.00	5.89	C	
(-) Bottom Plate Stiffeners 4x3x3/8" L	384	12.75	4,896	235.00	0.00	10.70	C	
Bottom Plate Stiffeners 6x4x5/16" L	192	7.00	1,344	235.00	0.00	10.70	C	
<u>FO SETTLE TK</u> Top Plating - 1/4" 5x3x1/4" L	134	10.20	1,367	170.00	-10.00	10.25	C	
Fwd Plating - 5/16" 5x3.5x1/4" L	67	6.60	442	170.00	-10.00	10.25	C	
(-) Bottom Plate Stiffeners 4x3x3/8" L	176	12.75	2,242	170.00	-10.00	10.25	C	
Bottom Plate Stiffeners 6x4x5/16" L	88	7.00	616	170.00	-10.00	10.25	C	
Inbd Plating - 5/16" 5x3.5x1/4" L	-67	8.50	-570	170.00	-10.00	10.25	C	
<u>FO DAY TK</u> Top Plating - 1/4" 5x3x1/4" L	67	10.30	690	170.00	-10.00	10.25	C	
Fwd Plating - 5/16" 5x3.5x1/4" L	84	12.75	1,071	170.00	-10.00	10.25	C	
(-) Bottom Plate Stiffeners 4x3x3/8" L	42	7.00	294	170.00	-10.00	10.25	C	
Bottom Plate Stiffeners 6x4x5/16" L	150	10.20	1,530	165.00	6.50	10.25	C	
Inbd Plating - 5/16" 5x3.5x1/4" L	75	6.60	495	165.00	6.50	10.25	C	
(-) Bottom Plate Stiffeners 4x3x3/8" L	87	12.75	1,104	165.00	6.50	10.25	C	
Bottom Plate Stiffeners 6x4x5/16" L	43	7.00	303	165.00	6.50	10.25	C	
Inbd Plating - 5/16" 5x3.5x1/4" L	-75	8.50	-638	165.00	6.50	10.25	C	
<u>UREA TANK</u> Top Plating - 1/4" 5x3x1/4" L	75	10.30	773	165.00	6.50	10.25	C	
Fwd Plating - 5/16" 5x3.5x1/4" L	189	12.75	2,410	165.00	6.50	10.25	C	
(-) Bottom Plate Stiffeners 4x3x3/8" L	95	7.00	662	165.00	6.50	10.25	C	
Bottom Plate Stiffeners 6x4x5/16" L	134	10.20	1,367	170.00	0.00	10.25	C	

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
5x3x1/4" L	67	6.60	442	170.00	0.00	10.25	C	
Fwd Plating - 5/16"	176	12.75	2,242	170.00	0.00	10.25	C	
5x3.5x1/4" L	88	7.00	616	170.00	0.00	10.25	C	
(-) Bottom Plate Stiffeners 4x3x3/8" L	-67	8.50	-570	170.00	0.00	10.25	C	
Bottom Plate Stiffeners 6x4x5/16" L	67	10.30	690	170.00	0.00	10.25	C	
Inbd Plating - 5/16"	84	12.75	1,071	170.00	0.00	10.25	C	
5x3.5x1/4" L	42	7.00	294	170.00	0.00	10.25	C	
<b>FO AUX TK</b>								
Top Plating - 1/4"	34	10.20	347	146.00	14.75	10.00	C	
5x3x1/4" L	17	6.60	112	146.00	14.75	10.00	C	
(-) Bottom Plate Stiffeners 4x3x3/8" L	-17	8.50	-145	146.00	14.75	5.00	C	
Bottom Plate Stiffeners 6x4x5/16" L	17	10.30	175	146.00	14.75	5.00	C	
Aft Plating - 5/16"	43	12.75	542	148.00	14.75	7.50	C	
5x3.5x1/4" L	21	7.00	149	148.00	14.75	7.50	C	
Inbd Plating - 5/16"	20	12.75	255	146.00	14.75	7.50	C	
5x3.5x1/4" L	10	7.00	70	146.00	14.75	7.50	C	
<b>TECH TK</b>								
Center Plating - 5/16"	120	12.75	1,530	132.00	0.00	2.50	C	
5x3.5x1/4" L	60	7.00	420	132.00	0.00	2.50	C	
Outbd Plating - 5/16"	240	12.75	3,060	132.00	0.00	2.50	C	
5x3.5x1/4" L	120	7.00	840	132.00	0.00	2.50	C	
<b>GREY TK</b>								
Top Plating - 1/4"	320	10.20	3,264	108.00	1.00	15.50	C	
5x3x1/4" L	160	6.60	1,056	108.00	1.00	15.50	C	
Top Girder - 20x4x3/8" FP	20	30.60	612	108.00	1.00	15.50	C	
Aft Plating - 5/16"	210	12.75	2,678	116.00	1.00	10.25	C	
5x3.5x1/4" L	105	7.00	735	116.00	1.00	10.25	C	
(-) Bottom Plate Stiffeners 4x3x3/8" L	-160	8.50	-1,360	108.00	1.00	5.00	C	
Bottom Plate Stiffeners 6x4x5/16" L	160	10.30	1,648	108.00	1.00	5.00	C	
Inbd/Outbd Plating - 5/16"	336	12.75	4,284	108.00	1.00	10.25	C	
5x3.5x1/4" L	168	7.00	1,176	108.00	1.00	10.25	C	
<b>BLACK TK</b>								
Top Plating - 1/4"	32	10.20	326	108.00	-10.00	15.50	C	
5x3x1/4" L	16	6.60	106	108.00	-10.00	15.50	C	
Aft Plating - 5/16"	21	12.75	268	116.00	-10.00	10.25	C	
5x3.5x1/4" L	11	7.00	74	116.00	-10.00	10.25	C	
(-) Bottom Plate Stiffeners 4x3x3/8" L	-16	8.50	-136	108.00	-10.00	5.00	C	

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source	Notes
Bottom Plate Stiffeners 6x4x5/16" L	16	10.30	165	108.00	-10.00	5.00	C	
Outbd Plating - 5/16"	168	12.75	2,142	108.00	-11.00	10.25	C	
5x3.5x1/4" L	84	7.00	588	108.00	-11.00	10.25	C	
<u>POTABLE TK</u>								
Top Plating - 1/4"	256	10.20	2,611	87.00	0.00	20.00	C	
4x4x1/4" L	128	6.60	845	87.00	0.00	20.00	C	
Top Girder - 18x4x3/8" FP	22	28.05	617	87.00	0.00	20.00	C	
(-) Bottom Plate Stiffeners 4x3x3/8" L	-128	8.50	-1,088	87.00	0.00	5.00	C	
Bottom Plate Stiffeners 5x3x3/8" L	128	10.40	1,331	87.00	0.00	5.00	C	
Aft Plating - 5/16"	240	12.75	3,060	94.00	0.00	12.50	C	
7x4x3/8" L	120	13.60	1,632	94.00	0.00	12.50	C	
Inbd/Outbd Plating - 5/16"	480	12.75	6,120	87.00	0.00	12.50	C	
7x4x3/8" L	240	13.60	3,264	87.00	0.00	12.50	C	
<b>110.1 Longitudinal Girders</b>								
<u>Skeg Top Girder (P/S)</u>								
7/16" Web	178	13.39	2,383	244.00	0.00	4.83	E	WSF64 cross section
6x3/4" FB	178	15.30	2,723	244.00	0.00	4.83	E	
<u>Stem Bar</u>								
2"x8" FB	58	54.40	3,155	0.00	0.00	7.50	E	WSF64 cross section
<b>120.3 Longitudinal Bulkheads</b>								
<u>Fr 72-87, 19'-0" OCL (P&amp;S)</u>								
Plating - 5/16"	1267	12.75	16,159	159.00	0.00	13.44	C	
High Stiffeners 3x2x3/16" L	128	3.07	391	159.00	0.00	19.75	C	
Mid Stiffeners 5x3x3/8" L	158	9.80	1,544	159.00	0.00	10.25	C	
Low Stiffeners 3x3x1/4" L	32	4.90	156	159.00	0.00	3.91	C	
Horizontal Girder 8x4x1/4" L	60	10.20	612	159.00	0.00	15.50	C	
<b>130.1 Flats</b>								
<u>Double Bottom</u>								
5' and Aft Flat Plating - 1/2"	5916	20.40	120,676	180.83	0.00	5.67	C	
Angle and 9'ABL Plating - 1/2"	4862	20.40	99,185	146.00	0.00	7.00	C	
Stiffeners - 4x3x3/8" L	1039	8.50	8,833	146.00	0.00	5.67	C	
<u>EOS Flat</u>								
Plating - 1/4"	919	10.20	9,374	159.00	-4.25	15.50	C	
Stiffeners - 4x4x1/4" L	460	6.60	3,033	159.00	-4.25	15.50	C	
Girders - 9x3x3/8" FP	115	15.30	1,758	159.00	-4.25	15.50	C	

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
Transverses - 14x4x3/8" FP	77	22.95	1,758	159.00	-4.25	15.50	C	
<u>Eng. Stores Flat</u>								
Plating - 1/4"	911	10.20	9,292	234.00	0.00	15.50	C	
Stiffeners - 4x4x1/4" L	456	6.60	3,006	234.00	0.00	15.50	C	
Girders - 9x3x3/8" FP	114	15.30	1,742	234.00	0.00	15.50	C	
Transverses - 14x4x3/8" FP	76	22.95	1,742	234.00	0.00	15.50	C	
<u>Elevator Pit Flats</u>								
Plating - 7/16"	136	17.85	2,428	203.66	14.75	16.75	C	
Stiffeners - 4x4x1/4" L	68	6.60	449	203.66	14.75	16.75	C	
<u>STRUCTURAL CLOSURES</u>								
<u>WATERTIGHT SLIDING DOORS</u>								
6		2,102.00	12,612	180.00	0.00	15.50	E	Bhds cutouts have not been considered yet.
<u>180.1 Machinery Foundations</u>								
<u>Main Engine Foundation</u>								
5/8" Plate Web	1	17,622.74	17,623	193.00	0.00	3.25	E	HP(ACF/W/SF64)
10x1.5" Flange	1	3,966.67	3,967	193.00	0.00	3.25	E	HP(ACF/W/SF64)
1/2" Plate Frames	1	26,743.79	26,744	193.00	0.00	3.25	E	HP(ACF/W/SF64)
6x1/2" FB	1	6,762.60	6,763	193.00	0.00	3.25	E	HP(ACF/W/SF64)
4x3/8" FB	1	2,336.44	2,336	193.00	0.00	3.25	E	HP(ACF/W/SF64)
<u>Reduction Gear Foundation</u>								
1/2" Plate Webs	1	8,986.88	8,987	212.00	0.00	3.25	E	HP(ACF/W/SF64)
6x1/2" FB	1	1,547.00	1,547	212.00	0.00	3.25	E	HP(ACF/W/SF64)
1 3/4" PL	1	6,445.04	6,445	212.00	0.00	3.25	E	HP(ACF/W/SF64)
3/8" PL w/ 3" flange	1	578.85	579	212.00	0.00	3.25	E	HP(ACF/W/SF64)
3x3/8" FB	1	263.77	264	212.00	0.00	3.25	E	HP(ACF/W/SF64)
<u>MISC FOUNDATIONS</u>								
<u>GENERATOR FDN</u>	108	48.00	5,184	131.00	1.33	7.00	E	
<u>ME ACCESSORY RACKS FDN</u>	1	2,138.33	2,138	193.00	0.00	7.00	E	HP(ACF/W/SF64)
<u>BOW THRUSTER FDN</u>	24	50.58	1,214	48.00	0.00	1.00	E	
<u>STABILIZER FDN</u>	48	50.58	2,428	160.00	0.00	5.00	E	
<u>RUDDER &amp; STR GR FDN</u>	48	50.58	2,428	314.00	0.00	13.50	E	
<u>MSD FDN</u>	1	841.77	842	109.00	0.00	16.50	E	
<u>BOILERS FDN</u>	1	841.77	842	133.50	-16.00	7.00	E	INTVOL(ACF/W/SF64)
<u>AIR RECEIVERS FDN</u>	1	338.90	339	144.00	0.00	7.00	E	WSF64
<u>PW PRESSURE TANK FDN</u>	1	488.00	488	144.00	0.00	7.00	E	WSF64

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
<b>SANITARY PRESS TANK FDN</b>	1	488.00	488	144.00	0.00	7.00	E WSF64	
<b>WATER HEATER FDN</b>	1	488.00	488	144.00	0.00	7.00	E WSF64	
<b>480V TRANSFORMER FDN</b>	2	350.00	700	144.00	0.00	7.00	E WSF64	
<b>SUPERSTRUCTURE</b>								
<u>Superstructure</u>								
<u>Gallery Deck</u>								
Fwd Plating - 1/4"	781	10.20	7,963	13.17	0.00	32.00	C	
Fwd Stiffeners - 5x3x5/16" L	390	8.20	3,201	13.17	0.00	31.75	C	
Aft Plating - 1/4"	5793	10.20	59,089	213.83	15.08	32.00	C	
Aft Stiffeners - 5x3x5/16" L	2897	8.20	23,751	213.83	15.08	31.75	C	
<u>Internal Bulkheads below Gallery Deck</u>								
Plating - 1/4"	5264	10.20	53,695	160.00	10.00	28.00	C	Comparison of prev wt est
Stiffeners - 4x3x1/4" L	2632	5.80	15,266	160.00	10.00	28.00	C	ext and int bhd areas with current. No update reqd.
<u>Passenger Deck</u>								
Bow Plating - 5/16"	3189	12.75	40,660	30.25	0.00	43.00	C	OLD 59443.2878472222
Bow Stiffeners - 4x3x1/4" L	2126	5.74	12,203	30.25	0.00	43.00	C	NEW 58382
Bow Girders - 9x4x3/8" FP	266	16.58	4,405	30.25	0.00	42.75	C	
Bow Transverse Web - 29x7/16" web w/9"x7/16" flg	266	56.53	15,022	30.25	0.00	40.54	C	
Obs Lounge Plating - 3/16"	2675	7.65	20,464	68.33	0.00	45.50	C	
Obs Lounge Stiffeners - 3x3x1/4" L	1783	4.89	8,721	68.33	0.00	45.50	C	
Obs Lounge Girders - 9x4x3/8" FP	223	16.58	3,695	68.33	0.00	45.25	C	
Obs Lounge Transverse Web - 29x7/16" web w/9"x7/16" flg	223	56.53	12,600	68.33	0.00	43.04	C	
Aft Plating - 3/16"	15068	7.65	115,270	200.25	0.00	43.00	C	
Aft Stiffeners - 3x3x1/4" L	10045	4.89	49,122	200.25	0.00	43.00	C	
Aft Girders - 9x4x3/8" FP	1256	16.58	20,813	200.25	0.00	42.75	C	
Aft Transverse Web - 29x7/16" web w/9"x7/16" flg	1256	56.53	70,977	200.25	0.00	40.54	C	
<u>Deckhouse Side below Passenger Deck</u>								
Lwr Foc'sle Plating - 3/8"	1044	15.30	15,976	17.10	0.00	27.67	C	At this stage,
Lwr Foc'sle Stiffeners - 5x3x5/16" L	522	8.20	4,281	17.10	0.00	27.67	C	the large drs are assumed
Upr Foc'sle Plating - 3/8"	1685	15.30	25,788	11.77	0.00	38.25	C	equivalent to steel they
Upr Foc'sle Stiffeners - 6x4x3/8" L	843	12.30	10,366	11.77	0.00	38.25	C	would cut out.
Foc'sle Stringer - 18x3x3/8" FP	96	26.78	2,570	50.00	0.00	32.00	C	
Foc'sle Web Frames - 34x1/2" web w/ 6x1/2" flg	227	68.00	15,468	13.81	0.00	34.17	C	

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
Lwr Side Plating, Mid - 3/8"	4164	15.30	63,710	158.33	0.00	27.96	C	
Lwr Mid Stiffeners - 4x3x5/16" L	2082	7.20	14,991	158.33	0.00	27.96	C	
Upr Side Plating, Mid - 3/8"	5965	15.30	91,266	155.42	0.00	37.58	C	
Upr Mid Stiffeners - 5x3x5/16" L	2983	8.20	24,457	155.42	0.00	37.58	C	
Mid Stringer - 18x3x3/8" FP	492	26.78	13,173	172.25	0.00	32.00	C	
Mid Web Frames - 29x7/16" web w/ 5x7/16" flg	844	50.58	42,690	156.67	0.00	33.67	C	
Lwr Side Plating, Aft - 5/16"	987	12.75	12,583	311.17	0.00	27.92	C	
Lwr Aft Stiffeners - 4x3x5/16" L	493	7.20	3,553	311.17	0.00	27.92	C	
Upr Side Plating, Aft - 5/16"	1271	12.75	16,202	310.08	0.00	37.50	C	
Upr Aft Stiffeners - 5x3x5/16" L	635	8.20	5,210	310.08	0.00	37.50	C	
Aft Stringer - 18x3x3/8" FP	76	26.78	2,035	308.50	0.00	32.00	C	
Aft Web Frames - 29x7/16" web w/ 5x7/16" flg	188	50.58	9,515	310.58	0.00	33.32	C	
<u>Internal Bulkheads below Passenger Deck</u>								
Plating - 1/4"	10789	10.20	110,048	179.17	11.00	37.50	C	
Stiffeners - 4x3x1/4" L	5395	5.80	31,288	179.17	11.00	37.50	C	
<u>Sun Deck</u>								
Fwd Plating - 3/16"	3579	7.65	27,376	70.33	0.00	55.50	C	
Fwd Stiffeners - 3x3x1/4" L	2386	4.89	11,666	70.33	0.00	55.50	C	
Fwd Girders - 9x3x3/8" FP	358	15.30	5,475	70.33	0.00	55.25	C	
Fwd Transverse Web - 15x5x3/8" FP	298	25.50	7,604	70.33	0.00	55.00	C	
Fwd Pillars - 6" Sch 80	124	28.57	3,550	70.33	0.00	49.83	C	
Aft Plating - 3/16"	13493	7.65	103,224	192.17	0.00	53.00	C	
Aft Stiffeners - 3x3x1/4" L	8996	4.89	43,988	192.17	0.00	53.00	C	
Aft Girders - 9x3x3/8" FP	1349	15.30	20,645	192.17	0.00	52.75	C	
Aft Transverse Web - 15x5x3/8" FP	1124	25.50	28,673	192.17	0.00	52.50	C	
Aft Pillars - 6" Sch 80	469	28.57	13,386	192.17	0.00	47.50	C	
<u>Deckhouse Side below Sun Deck</u>								
Bulwark Plating - 3/16"	724	7.65	5,542	40.00	0.00	45.50	C	
Bulwark Stiffeners - 4x3x1/4" L	483	5.80	2,801	40.00	0.00	45.50	C	
Fwd and Front Plating - 3/16"	1838	7.65	14,063	63.25	0.00	49.25	C	
Fwd and Front Mullions - 12x3.5x1/4" L	306	13.18	4,037	63.25	1.00	49.25	C	
Aft and Stern Plating - 3/16"	4639	7.65	35,485	198.33	0.58	48.00	C	
Aft and Stern Mullions - 12x3.5x1/4" L	773	13.18	10,185	198.33	0.58	48.00	C	

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
<u>Internal Bulkheads below Sun Deck</u>								
Fwd Plating - 3/16"	1003	7.65	7,675	64.08	0.63	50.50	C	
Fwd Stiffeners - 3x2x3/16" L	669	3.07	2,053	64.08	0.63	50.50	C	
Aft Plating - 3/16"	11050	7.65	84,536	185.75	0.00	48.00	C	
Aft Stiffeners - 3x2x3/16" L	7367	3.07	22,617	185.75	0.00	48.00	C	
<u>House Top Deck</u>								
Fwd Plating - 3/16"	2723	7.65	20,831	73.92	0.00	64.00	C	
Fwd Stiffeners - 3x3x3/16" L	1815	3.71	6,735	73.92	0.00	64.00	C	
Fwd Girders - 9x3x3/8" FP	272	15.30	4,166	73.92	0.00	63.75	C	
Fwd Transverse Web - 13x3x3/8" FP	227	20.40	4,629	73.92	0.00	63.50	C	
Amidships Plating - 3/16"	7371	7.65	56,388	170.83	-1.92	61.50	C	
Amidships Stiffeners - 3x3x3/16" L	4914	3.71	18,231	170.83	-1.92	61.50	C	
Amidships Girders - 9x3x3/8" FP	737	15.30	11,278	170.83	-1.92	61.25	C	
Amidships Transverse Web - 13x3x3/8" FP	614	20.40	12,531	170.83	-1.92	61.00	C	
Aft Plating - 3/16"	2281	7.65	17,450	257.58	-0.33	62.50	C	
Aft Stiffeners - 3x3x3/16" L	1521	3.71	5,642	257.58	-0.33	62.50	C	
Aft Girders - 9x3x3/8" FP	228	15.30	3,490	257.58	-0.33	62.25	C	
Aft Transverse Web - 13x3x3/8" FP	190	20.40	3,878	257.58	-0.33	62.00	C	
<u>Deckhouse Side below House Top</u>								
Bulwark Plating - 3/16"	118	7.65	899	48.00	0.00	56.50	C	
Bulwark Stiffeners - 4x3x1/4" L	78	5.80	454	48.00	0.00	56.50	C	
Fwd and Front Plating - 3/16"	1285	7.65	9,832	70.17	0.00	59.75	C	
Fwd and Front Stiffeners - 4x3x1/4" L	857	5.80	4,970	70.17	0.00	59.75	C	
Aft Plating - 3/16"	3825	7.65	29,262	182.92	-1.25	57.25	C	
Aft Stiffeners - 4x3x1/4" L	1913	5.80	11,093	182.92	-1.25	57.25	C	
<u>Internal Bulkheads below House Top</u>								
Fwd Plating - 3/16"	2164	7.65	16,552	82.00	0.09	59.75	C	
Fwd Stiffeners - 3x2x3/16" L	1442	3.07	4,428	82.00	0.09	59.75	C	
Aft Plating - 3/16"	9457	7.65	72,348	178.92	1.08	57.25	C	
Aft Stiffeners - 3x2x3/16" L	6305	3.07	19,356	178.92	1.08	57.25	C	
<u>Fidley Top Deck</u>								
Plating - 3/16"	2539	7.65	19,423	162.17	0.83	70.00	C	
Stiffeners - 3x2x3/16" L	1693	3.07	5,196	162.17	0.83	70.00	C	

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abt)	Source C, E, V *	Notes
	<u>Girders - 9x3x3/8" FP</u>	254	15.30	3,885	162.17	0.83	69.50	C
<u>Transverse Web - 16x5x3/8" FP</u>	212	26.78	5,665	162.17	0.83	69.50	C	
<u>Coaming - 4x1/4" FB</u>	239	3.40	813	162.17	0.83	70.00	C	
<u>Internal Bulkheads below Fidelity Top</u>								
<u>Plating - 3/16"</u>	1660	7.65	12,696	167.67	4.25	65.75	C	
<u>Stiffeners - 3x2x3/16" L</u>	1106	3.07	3,397	168.75	4.25	65.75	C	
<u>Deckhouse Side below Fidelity Top</u>								
<u>Plating - 3/16"</u>	2310	7.65	17,674	175.83	0.00	65.75	C	
<u>Stiffeners - 4x3x1/4" L</u>	1540	5.80	8,933	175.83	0.00	65.75	C	
<u>Bridge Deck</u>								
<u>Plating - 3/16"</u>	1645	7.65	12,584	67.33	0.00	68.00	C	
<u>Stiffeners - 3x2x3/16" L</u>	1097	3.07	3,367	67.33	0.00	68.00	C	
<u>Girders - 9x3x3/8" FP</u>	165	15.30	2,517	67.33	0.00	68.00	C	
<u>Deckhouse Side below Bridge Deck</u>								
<u>Plating - 3/16"</u>	1612	7.65	12,329	68.08	0.00	63.00	C	
<u>Stiffeners - 4x3x1/4" L</u>	1074	5.80	6,232	68.08	0.00	63.00	C	
<u>Internal Bulkheads below Bridge Deck</u>								
<u>Plating - 3/16"</u>	563	7.65	4,307	68.08	0.00	63.00	C	
<u>Stiffeners - 3x2x3/16" L</u>	375	3.07	1,152	68.08	0.00	63.00	C	
<u>Pilot House Top</u>								
<u>Plating - 3/16"</u>	1921	7.65	14,696	66.25	0.00	76.00	C	
<u>Stiffeners - 3x2x3/16" L</u>	1281	3.07	3,932	66.25	0.00	76.00	C	
<u>Girders - 9x3x3/8" FP</u>	192	15.30	2,939	66.25	0.00	76.00	C	
<u>Visor Plate - 1/8"</u>	1554	5.10	7,923	66.25	0.00	76.00	C	
<u>Visor Bkts - 1/8"</u>	309	5.10	1,578	66.25	0.00	76.00	C	
<u>Deckhouse Side below Pilot House Top</u>								
<u>Plating - 3/16"</u>	1984	7.65	15,174	68.08	0.00	72.00	C	
<u>Stiffeners - 4x3x1/4" L</u>	1322	5.80	7,670	68.08	0.00	72.00	C	

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	<b>Stack</b>							
Plating - 3/16"	1368	7.65	10,465	155.00	0.00	76.66	C	
Stiffeners - 4x3x1/4" L	912	5.80	5,290	155.00	0.00	76.66	C	
<b>Masts</b>								
<b>Aft Mast</b>								
Plating - 3/16"	298	7.65	2,280	215.00	0.00	68.00	C	
Stiffeners - 4x3x1/4" L	199	5.80	1,152	215.00	0.00	68.00	C	
<b>Fwd Mast</b>								
Plating - 3/16"	64	7.65	490	72.00	0.00	79.50	C	
Stiffeners - 4x3x1/4" L	43	5.80	247	72.00	0.00	79.50	C	
<b>Margins</b>								
Margin for Lapping & Brackets	2%		94,271	163.68	0.75	28.35	E	
Structure Margin for Roll & Weld	3%		144,234	163.68	0.75	28.35	E	
<b>STRUCTURE - SUBTOTAL</b>			4,952,039	163.50	0.73	28.084		
			2210.73					

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
<b>PROPULSION MACHINERY</b>								
<b>Engine Room</b>								
MAIN ENGINES W/ ACCESSORY RACKS & AIR FILTERS	2	51,000.00	102,000	193.00	0.00	10.00	V	EMD 20-710
DRIVE LINE COUPLING	2	1,208.33	2,417	205.00	0.00	10.00	E	HP(ACF/W/SF64)
MISC ENGINE ACCESSORIES	2	141.67	283	193.00	0.00	10.00	E	HP(ACF/W/SF64)
BOLTS AND CHOCK FAST	2	166.67	333	193.00	0.00	10.00	E	HP(ACF/W/SF64)
COLLISION CHOCKS	2	266.67	533	193.00	0.00	10.00	E	HP(ACF/W/SF64)
<b>REDUCTION GEARS</b>								
REDUCTION GEAR (DRY) W/ GEAR BOX	2	19,750.00	39,500	212.00	0.00	8.00	V	Falk 31.5X12ZM
BOLTS & CHOCK FAST	1	166.67	167	212.00	0.00	8.00	E	HP(ACF/W/SF64)
COLLISION CHOCKS	1	466.67	467	212.00	0.00	8.00	E	HP(ACF/W/SF64)
<b>BOW THRUSTERS</b>								
BOW THRUSTER	1	8,329.66	8,330	36.00	0.00	5.00	V	
MOTOR, 600 HP	1	5,000.00	5,000	36.00	0.00	5.00	E	FROM BALDON DATA
<b>PROPULSION SHAFTING</b>								
<b>LINE SHAFT</b>								
COUPLING FLANGE								
SHAFT	2.0	450.00	900	205.00	0.00	8.00	E	SHAFTL(ACF/W/SF64)
INTERMEDIATE COUPLING								
COUPLING FLANGE								
<b>CPP SYSTEM</b>								
PROPELLER AND SHAFTING	2	33,583.78	67,168	260.00	0.00	6.75	V	ROLLS ROYCE QUOTE
PROPELLER ROPE GUARD	2	71.80	144	302.00	0.00	5.75	E	D(ACF/W/SF64)
STRUT BEARING	2	373.37	747	302.00	0.00	5.75	E	D(ACF/W/SF64)
STRUTS	2	5,169.71	10,339	302.00	0.00	5.75	E	D(ACF/W/SF64)
<b>PROPULSION SHAFT BEARINGS AND SEALS</b>								
PPING	360	3.00	1,080	255.83	0.00	6.50	E	HP(ACF/W/SF64)
FITTING ALLOWANCE	20%	999.00	200	255.83	0.00	6.50	E	HP(ACF/W/SF64)
STERN TUBE 14" SCH 80 PIPE	4	176.88	708	255.83	0.00	6.50	E	HP(ACF/W/SF64)

SEE GENERAL NOTE 2.

Description	Unit Wt. (lbs)		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.							
STERN TUBE 18" X 2.5" WALL TUBE	4	569.17	2,277	255.83	0.00	6.50	E	SEE GENERAL NOTE 2.
LINE SHAFT BEARINGS	3	416.67	1,250	255.83	0.00	6.50	E	HP(ACF/WSF64)
TAIL SHAFT BEARINGS	2	983.33	1,967	255.83	0.00	6.50	E	HP(ACF/WSF64)
STERN TUBE BEARINGS	2	333.33	667	255.83	0.00	6.50	E	HP(ACF/WSF64)
STRUT BEARINGS	2	433.33	867	255.83	0.00	6.50	E	HP(ACF/WSF64)
STERN TUBE SEAL	2	383.33	767	255.83	0.00	6.50	E	HP(ACF/WSF64)
BULKHEAD SEALS	4	500.00	2,000	255.83	0.00	6.50	E	HP(ACF/WSF64)
COMBUSTION AIR								
SHEET METAL	1	500.00	500	202.00	0.00	15.50	E	HP(ACF/WSF64)
AIR FILTERS	1	900.00	900	202.00	0.00	15.50	E	HP(ACF/WSF64)
PROPULSION CONTROL SYSTEM								
MAIN ENGINE CONTROL STATION & GAGE BOARD	1	2,500.00	2,500	171.00	0.00	17.00	E	HP(ACF/WSF64)
ENGINE COOLING SYSTEM								
JACKET WATER GRID COOLERS	1	2,800.00	2,800	202.00	0.00	8.00	E	HP(ACF/WSF64)
AFTERCOOLER GRID COOLERS	1	1,066.67	1,067	202.00	0.00	8.00	E	HP(ACF/WSF64)
SSDG COOLING WATER EXPANSION TANK	1	308.33	308	202.00	0.00	15.50	E	HP(ACF/WSF64)
SSDG COOLING WATER EXPANSION TANK	1	308.33	308	202.00	0.00	15.50	E	HP(ACF/WSF64)
JACKET WATER PRE-HEATER W/ CIRCULATING PUMP	1	333.33	333	202.00	0.00	8.00	E	HP(ACF/WSF64)
JACKET WATER PRE-HEATER W/ CIRCULATING PUMP	1	333.33	333	202.00	0.00	8.00	E	HP(ACF/WSF64)
MAIN ENGINE AFTERCOOLER CIRCULATING PUMP	1	473.33	473	202.00	0.00	8.00	E	HP(ACF/WSF64)
MAIN ENGINE AFTERCOOLER CIRCULATING PUMP	1	473.33	473	202.00	0.00	8.00	E	HP(ACF/WSF64)
REDUCTION GEAR COOLING WATER CIRCULATING PUMP 356-PM-03	1	396.67	397	220.00	0.00	8.00	E	HP(ACF/WSF64)
REDUCTION GEAR COOLING WATER CIRCULATING PUMP 356-pm-04	1	396.67	397	220.00	0.00	8.00	E	HP(ACF/WSF64)
MAIN ENGINE AFTERCOOLER EXPANSION TANK	1	445.00	445	202.00	0.00	15.50	E	HP(ACF/WSF64)
MAIN ENGINE AFTERCOOLER EXPANSION TANK	1	445.00	445	202.00	0.00	15.50	E	HP(ACF/WSF64)
6" ELBOW 90 DEG	1	700.00	700	202.00	0.00	8.00	E	HP(ACF/WSF64)
6" ELBOW 45 DEG	1	116.67	117	202.00	0.00	8.00	E	HP(ACF/WSF64)
4" ELBOW 90 DEG	1	405.00	405	202.00	0.00	8.00	E	HP(ACF/WSF64)
4" ELBOW 45 DEG	1	20.33	20	202.00	0.00	8.00	E	HP(ACF/WSF64)

Description	Unit Wt. Total Wt.		LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)					
2 1/2" EL 90 DEG SW	1	26.67	27	0.00	8.00	E	SEE GENERAL NOTE 2.
2" ELBOW 90 DEG SW	1	46.67	47	0.00	8.00	E	HP(ACF/W/SF64)
2" ELBOW 45 DEG SW	1	9.67	10	0.00	8.00	E	HP(ACF/W/SF64)
6" EXP JOINT/GR	1	330.00	330	0.00	8.00	E	HP(ACF/W/SF64)
3" EXP JOINT/GR	1	85.00	85	0.00	8.00	E	HP(ACF/W/SF64)
2 1/2" EXP JOINT/GR	1	25.00	25	0.00	8.00	E	HP(ACF/W/SF64)
4" BTIFY VLV LUG	1	320.00	320	0.00	8.00	E	HP(ACF/W/SF64)
3" BTIFY VLV LUG	1	56.67	57	0.00	8.00	E	HP(ACF/W/SF64)
2 1/2" BTIFY VLV WAF	1	41.33	41	0.00	8.00	E	HP(ACF/W/SF64)
1 1/2" GATE VLV	1	39.33	39	0.00	8.00	E	HP(ACF/W/SF64)
3/4" GATE VLV	1	21.00	21	0.00	8.00	E	HP(ACF/W/SF64)
6" 150# FLG	1	680.00	680	0.00	8.00	E	HP(ACF/W/SF64)
4" 150# FLG	1	823.33	823	0.00	8.00	E	HP(ACF/W/SF64)
2 1/2" 150# FLG	1	89.33	89	0.00	8.00	E	HP(ACF/W/SF64)
TEMP GAGE ASSY	1	7.33	7	0.00	8.00	E	HP(ACF/W/SF64)
SIGHT GLASS	1	35.00	35	0.00	8.00	E	HP(ACF/W/SF64)
2" HOSE ASSY	1	53.33	53	0.00	8.00	E	HP(ACF/W/SF64)
1 1/2" HOSE ASSY	1	20.00	20	0.00	8.00	E	HP(ACF/W/SF64)
6" XS PIPE	1	3,360.00	3,360	0.00	8.00	E	HP(ACF/W/SF64)
4" XS PIPE	1	2,483.33	2,483	0.00	8.00	E	HP(ACF/W/SF64)
2 1/2" XS PIPE	1	340.00	340	0.00	8.00	E	HP(ACF/W/SF64)
2" XS PIPE	1	541.67	542	0.00	8.00	E	HP(ACF/W/SF64)
PRESS. GAGE ASSY	1	10.00	10	0.00	8.00	E	HP(ACF/W/SF64)
3/8" COPPER TUBE	1	17.33	17	0.00	8.00	E	HP(ACF/W/SF64)
2 1/2" X 2" BW RED SCH 80	1	14.00	14	0.00	8.00	E	HP(ACF/W/SF64)
4" X 3" BW RED SCH 80	1	15.67	16	0.00	8.00	E	HP(ACF/W/SF64)
4" X 2 1/2" BW RED SCH 80	1	14.67	15	0.00	8.00	E	HP(ACF/W/SF64)
FITTINGS & HANGER ALLOWANCE	1	1,074.83	1,075	0.00	8.00	E	HP(ACF/W/SF64)
<u>KIM HOTSTART LOOP</u>							
KIM HOTSTART	1	666.67	667	0.00	8.00	E	HP(ACF/W/SF64)
PPING	1	242.67	243	0.00	8.00	E	HP(ACF/W/SF64)
VALVES	1	80.00	80	0.00	8.00	E	HP(ACF/W/SF64)
FLANGES	1	15.00	15	0.00	8.00	E	HP(ACF/W/SF64)
HOSE	1	33.33	33	0.00	8.00	E	HP(ACF/W/SF64)

Description	Unit Wt. (lbs)		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.							
<u>REDUCTION GEAR WATER LOOP</u>								
REDUCTION GEAR COOLING PUMP	1	166.67	167	220.00	0.00	8.00	E	HP(ACF/W/SF64)
PUMP MOTOR	1	83.33	83	220.00	0.00	8.00	E	HP(ACF/W/SF64)
PUMP BASEPLATE	1	230.00	230	220.00	0.00	8.00	E	HP(ACF/W/SF64)
<u>REDUCTION GEAR COOLING PUMP</u>								
PUMP MOTOR	1	166.67	167	220.00	0.00	8.00	E	HP(ACF/W/SF64)
PUMP BASEPLATE	1	83.33	83	220.00	0.00	8.00	E	HP(ACF/W/SF64)
<u>COFFERDAM CONNECTION</u>								
GRID COOLERS	1	550.00	550	220.00	0.00	8.00	E	HP(ACF/W/SF64)
VALVES	1	833.33	833	220.00	0.00	8.00	E	HP(ACF/W/SF64)
PIPE AND FITTINGS	1	336.67	337	220.00	0.00	8.00	E	HP(ACF/W/SF64)
HANGER ALLOWANCE	1	508.00	508	220.00	0.00	8.00	E	HP(ACF/W/SF64)
	1	42.23	42	220.00	0.00	8.00	E	HP(ACF/W/SF64)
<u>MAIN ENG. EXHAUST SYSTEM</u>								
<u>MAIN ENGINES</u>								
CONNECTION ELBOW	1	333.33	333	187.50	0.00	15.50	E	HP(ACF/W/SF64)
ENGINE BELLOWES	1	333.33	333	187.50	-3.50	15.50	E	HP(ACF/W/SF64)
EXHAUST PIPE	1	1,742.10	1,742	187.50	-5.00	15.50	E	HP(ACF/W/SF64)
INSULATION	1	272.50	273	187.50	-5.00	15.50	E	HP(ACF/W/SF64)
ENGINE BELLOWES	1	500.00	500	187.50	-3.00	15.50	E	HP(ACF/W/SF64)
EXHAUST PIPE	1	8,929.04	8,929	187.50	-12.00	50.00	E	HP,L(ACF/W/SF64)
DRAIN PIPING	1	664.17	664	187.50	-12.00	15.50	E	HP(ACF/W/SF64)
RADIUS ELBOW	1	1,000.00	1,000	187.50	-16.25	15.50	E	HP(ACF/W/SF64)
CONNECTION FLANGES	1	500.00	500	187.50	-16.25	18.00	E	HP(ACF/W/SF64)
EXHAUST SILENCERS (2)	1	11,000.00	11,000	187.50	-16.00	35.00	E	HP(ACF/W/SF64)
<u>MAIN ENG. EXHAUST UREA/CATALYST HANDLING SYSTEM</u>								
LIQUID IN TANK	543	82.40	44,723	187.50	0.00	15.50	E	
(-) EXHAUST SILENCERS (2)	-1	11,000.00	-11,000	187.50	-16.00	35.00	E	
(+) SCR EQUIPMENT	1	22,000.00	22,000	187.50	-16.00	35.00	E	
PUMP ASSEMBLY	1	500.00	500	132.00	0.00	10.00	E	
CONTROLS	1	250.00	250	164.00	0.00	17.50	E	
<u>FUEL OIL SERVICE SYSTEM</u>								
FUEL OIL HAND PUMP (NO.1 END)	1	41.67	42	202.00	0.00	8.00	E	HP(ACF/W/SF64)
FUEL OIL HAND PUMP (NO.2 END)	1	41.67	42	202.00	0.00	8.00	E	HP(ACF/W/SF64)

SEE GENERAL NOTE 2.

Description	Unit Wt.		LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)					
BOILER FUEL OIL SUPPLY PUMP (NO.1 END)	1	251.67	202.00	0.00	8.00	E	SEE GENERAL NOTE 2.
BOILER FUEL OIL SUPPLY PUMP (NO.2 END)	1	251.67	202.00	0.00	8.00	E	HP(ACF/W/SF64)
KAMLOC FITTINGS	1	13.33	202.00	0.00	8.00	E	HP(ACF/W/SF64)
FUEL FILTER, EDG	1	15.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
FUEL FILTER, ME	1	106.67	202.00	0.00	8.00	E	HP(ACF/W/SF64)
FUEL FILTER, SS DG	1	83.33	202.00	0.00	8.00	E	HP(ACF/W/SF64)
FUEL FILTER, BOILER	1	46.67	202.00	0.00	8.00	E	HP(ACF/W/SF64)
FUEL OIL DAY TANK, EDG	1	510.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/2" HOSE ASSY	1	10.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/4" HOSE ASSY	1	25.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
3/4" HOSE ASSY	1	6.67	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1/2" HOSE ASSY	1	7.50	202.00	0.00	8.00	E	HP(ACF/W/SF64)
PRESS. GAGE ASSY	1	15.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/2" WYE STRAINER	1	7.50	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2 1/2" SWG CK FLG	1	160.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2 1/2" GATE	1	140.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/2" 3 WAY BALL	1	47.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1/2" 3 WAY BALL	1	2.50	202.00	0.00	8.00	E	HP(ACF/W/SF64)
3/4" 3 WAY BALL	1	9.67	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/2" BALL VLV SW	1	83.33	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2" BALL VLV SW	1	70.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
3/4" 3 PC BV SW	1	18.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1/2" 3 PC BV SW	1	21.67	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/4" 3 PC BV SW	1	16.33	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1/2" SWG CK SW	1	12.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
3/4" SWG CK SW	1	6.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/4" SWG CK SW	1	6.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2" SWG CK SW	1	14.83	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2 1/2" GATE VLV FLG	1	83.33	202.00	0.00	8.00	E	HP(ACF/W/SF64)
3/4" GATE VLV FLG	1	3.50	202.00	0.00	8.00	E	HP(ACF/W/SF64)
3/4" BAL VLV FLG	1	8.33	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2" SWG CK SW	1	20.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2" PIPE, SCH 40	1	365.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/4" SCH 40	1	227.00	202.00	0.00	8.00	E	HP(ACF/W/SF64)
3/4" SCH 40	1	52.50	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1/2" GATE VLV SW	1	2.50	202.00	0.00	8.00	E	HP(ACF/W/SF64)

Description	Unit Wt. (lbs)		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.							
1/2" PRESS RELIEF VLV	1	3.33	3	202.00	0.00	8.00	E	SEE GENERAL NOTE 2.
2 1/2" 150# FLG	1	89.33	89	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2 1/2" 90 DEG ELBOW	1	53.33	53	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2 1/2" 45 DEG ELBOW	1	14.00	14	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2 1/2" PIPE	1	2,566.67	2,567	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2" 90 DEG EL SW	1	70.00	70	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2" 45 DEG EL SW	1	19.33	19	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2" PIPE SCH 80	1	1,041.67	1,042	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/2 PIPE SCH 80	1	120.00	120	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1" PIPE SCH 80	1	88.00	88	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/4" PIPE SCH 80	1	250.00	250	202.00	0.00	8.00	E	HP(ACF/W/SF64)
3/4" PIPE SCH 80	1	120.00	120	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1/2" PIPE SCH 80	1	256.67	257	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/2" 90 DEG EL SW	1	14.00	14	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/2" 45 DEG EL SW	1	5.67	6	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/4" 90 DEG EL SW	1	20.00	20	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/4" 45 DEG EL SW	1	5.33	5	202.00	0.00	8.00	E	HP(ACF/W/SF64)
3/4" 90 DEG EL SW	1	17.50	18	202.00	0.00	8.00	E	HP(ACF/W/SF64)
3/4" 45 DEG EL SW	1	3.33	3	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1/2" 90 DEG EL SW	1	13.33	13	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1/2" 45 DEG EL SW	1	3.33	3	202.00	0.00	8.00	E	HP(ACF/W/SF64)
2" TEE 3000# SW	1	7.33	7	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1 1/2" TEE 3000# SW	1	48.00	48	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1" TEE 3000# SW	1	7.00	7	202.00	0.00	8.00	E	HP(ACF/W/SF64)
1/2" TEE 3000# SW	1	4.67	5	202.00	0.00	8.00	E	HP(ACF/W/SF64)
FITTINGS & HANGER ALLOWANCE	1	705.73	706	202.00	0.00	8.00	E	HP(ACF/W/SF64)
<u>LUBE OIL SERVICE SYSTEM</u>								
LUBE OIL FILTER	1	2,916.67	2,917	202.00	0.00	8.00	E	HP(ACF/W/SF64)
PRE-LUBE PUMP	1	275.00	275	202.00	0.00	8.00	E	HP(ACF/W/SF64)
PRE-LUBE PUMP	1	275.00	275	202.00	0.00	8.00	E	HP(ACF/W/SF64)
LUBE OIL COOLER	1	196.83	197	202.00	0.00	8.00	E	INC IN ENG COOL SYS
VALVES	1	1,850.00	1,850	202.00	0.00	8.00	E	HP(ACF/W/SF64)
PIPE AND FITTINGS	1	266.67	267	202.00	0.00	8.00	E	HP(ACF/W/SF64)
LUBE OIL PRIMING PUMP	1	266.67	267	202.00	0.00	8.00	E	HP(ACF/W/SF64)
LUBE OIL SOAK BACK PUMP	1	266.67	267	202.00	0.00	8.00	E	HP(ACF/W/SF64)

Description	Unit Wt. Total Wt.		LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)					
FITTINGS & HANGER ALLOWANCE	1	604.68	605	0.00	8.00	E	SEE GENERAL NOTE 2. HP(ACF/W/SF64)
<u>DIRTY/WASTE OIL SYSTEM</u>							
TRANSFER PUMP	1	133.33	133	0.00	8.00	E	HP(ACF/W/SF64)
PIPE AND FITTINGS	1	100.00	100	0.00	8.00	E	HP(ACF/W/SF64)
VALVES	1	100.00	100	0.00	8.00	E	HP(ACF/W/SF64)
<u>OPERATING FLUIDS</u>							
<u>ME LIQUIDS</u>							
ENGINE WATER EXPANSION TANK	2	2,900.00	5,800	0.00	10.00	V	EMD 20-710
ENGINE WATER LOOP	1	570.00	570	0.00	15.50	E	HP(ACF/W/SF64)
LUBE OIL COOLERS	1	427.50	428	0.00	8.00	E	HP(ACF/W/SF64)
LUBE OIL LOOP	1	523.33	523	0.00	8.00	E	HP(ACF/W/SF64)
FUEL OIL LOOP	1	372.00	372	0.00	8.00	E	HP(ACF/W/SF64)
TRANSMISSION INTERNAL FLUIDS	1	2,480.00	2,480	0.00	8.00	E	HP(ACF/W/SF64)
TRANSMISSION INTERNAL FLUIDS	1	712.50	713	0.00	8.00	E	HP(ACF/W/SF64)
TRANS COOLING WATER LOOP	1	299.25	299	0.00	8.00	E	HP(ACF/W/SF64)
TRANS COOLING WATER EXP TK	1	142.50	143	0.00	15.50	E	HP(ACF/W/SF64)
<u>REPAIR TOOLS AND SPARES</u>							
SPARES	1	1,666.67	1,667	0.00	20.00	E	HP(ACF/W/SF64)
<b>MACHINERY - SUBTOTAL</b>			388,327	206.38	-1.30	11.797	
			173				

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
<b><u>ELECTRICAL</u></b>								SEE GENERAL NOTE 2.
<u>SHIP SERVICE GENERATOR (HARBOR SET)</u>								
GENSET (DRY)	3	10,064.00	30,192	131.00	1.33	10.00	V	CAT C-18
VIBRATION MOUNTS	12	35.00	420	131.00	1.33	7.00	E	
<u>EMERGENCY GENERATOR</u>								
GENSET (INCLUDING RAILS AND MOUNTS)	1	10,064.00	10,064	130.42	4.00	65.75	E	CAT C-18
<u>CABLE</u>								
TO EMERGENCY SWITCHBOARD	1	322.04	322	144.00	0.00	37.00	E	Remainder of electrical
FROM EMERGENCY SWITCHBOARD	1	670.65	671	144.00	0.00	37.00	E	weights scaled by internal
TO SHIP'S SERVICE SWITCHBOARD	1	5,424.64	5,425	144.00	0.00	37.00	E	volume from WSF64. The
FROM SHIP'S SERVICE SWITCHBOARD	1	6,448.60	6,449	144.00	0.00	37.00	E	CGs have been roughly
FROM MCC1	1	370.50	371	144.00	0.00	37.00	E	estimated.
FROM MCC2	1	217.30	217	144.00	0.00	37.00	E	
FROM MCC3	1	256.38	256	144.00	0.00	37.00	E	
FROM MCC4	1	256.38	256	144.00	0.00	37.00	E	
FROM P1	1	100.05	100	144.00	0.00	37.00	E	
FROM P2	1	206.36	206	144.00	0.00	37.00	E	
FROM P3	1	60.97	61	144.00	0.00	37.00	E	
FROM P4	1	286.08	286	144.00	0.00	37.00	E	
FROM L1	1	390.82	391	144.00	0.00	37.00	E	
FROM L2	1	408.02	408	144.00	0.00	37.00	E	
FROM L3	1	290.77	291	144.00	0.00	37.00	E	
FROM L4	1	304.84	305	144.00	0.00	37.00	E	
FROM L5	1	189.16	189	144.00	0.00	37.00	E	
FROM L6	1	171.96	172	144.00	0.00	37.00	E	
FROM L7	1	187.60	188	144.00	0.00	37.00	E	
FROM L8	1	187.60	188	144.00	0.00	37.00	E	
FROM L10	1	187.60	188	144.00	0.00	37.00	E	
FROM L10	1	273.58	274	144.00	0.00	37.00	E	
FROM L10	1	273.58	274	144.00	0.00	37.00	E	
EMERGENCY PANELS	1	1,516.40	1,516	144.00	0.00	37.00	E	
<u>LIGHTING</u>								
HOLD DECK (MACHINERY SPACES)	1	2,221.44	2,221	144.00	0.00	23.50	E	
	1	262.63	263	144.00	0.00	23.50	E	

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
HOLD DECK (CREW SPACES)	1	2,516.91	2,517	144.00	0.00	23.50	E	SEE GENERAL NOTE 2.
FREIGHT DECK	1	2,090.13	2,090	144.00	0.00	42.50	E	
01 DECK	1	2,162.35	2,162	144.00	0.00	42.50	E	
02 DECK	1	820.73	821	144.00	0.00	52.50	E	
03 DECK	1	262.63	263	144.00	0.00	62.50	E	
PILOTHOUSE DECK								
<b>SWITCHBOARDS</b>								
SHIP SERVICE SWITCHBOARD	1	1,875.96	1,876	157.00	0.00	17.00	E	
EMERGENCY SWITCHBOARD	1	781.65	782	157.00	0.00	65.75	E	
<b>PANELS</b>								
P-401 ENGINE ROOM	1	234.49	234	144.00	0.00	37.00	E	
P-402 ELECT. EQUIP SPACE 03 DK	1	234.49	234	144.00	0.00	37.00	E	
P-203 DISTRIBUTION	1	39.08	39	144.00	0.00	37.00	E	
P-201 DISTRIBUTION	1	39.08	39	144.00	0.00	37.00	E	
P-202 DISTRIBUTION	1	39.08	39	144.00	0.00	37.00	E	
P-204 PASSENGER DECK	1	54.72	55	144.00	0.00	37.00	E	
P-205 PASSENGER DECK	1	54.72	55	144.00	0.00	37.00	E	
P-208 MEZZANINE DECK	1	54.72	55	144.00	0.00	37.00	E	
GALLEY PANEL 206	1	54.72	55	144.00	0.00	37.00	E	
GALLEY PANEL 207	1	54.72	55	144.00	0.00	37.00	E	
EOS PANEL TEP 103	1	39.08	39	144.00	0.00	37.00	E	
EOS PANEL P-209	1	54.72	55	144.00	0.00	37.00	E	
EOS PANEL 24DC3	1	39.08	39	144.00	0.00	37.00	E	
ENGINE ROOM PANEL P-211	1	54.72	55	144.00	0.00	37.00	E	
AUX MACHY RM PANEL P-210	1	54.72	55	144.00	0.00	37.00	E	
PILOTHSE NO. 1 PANEL TEP 101	1	39.08	39	144.00	0.00	37.00	E	
PILOTHSE NO. 1 PANEL 24DC1	1	39.08	39	144.00	0.00	37.00	E	
PILOTHSE NO. 2 PANEL TEP 102	1	39.08	39	144.00	0.00	37.00	E	
PILOTHSE NO. 2 PANEL 24DC2	1	39.08	39	144.00	0.00	37.00	E	
<b>LOAD CENTERS</b>								
EMERG. LOAD CENTER EP 200	1	234.49	234	144.00	0.00	37.00	E	
LOAD CENTER P200A	1	234.49	234	144.00	0.00	37.00	E	
LOAD CENTER P200B	1	234.49	234	144.00	0.00	37.00	E	

Description	Unit Wt. (lbs)		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes	
	Qty.								
<b><u>MOTOR CONTROLLERS</u></b>									
MCC NO. 1 ENGINE ROOM	1	1,000.51	1,001	144.00	0.00	37.00	E	SEE GENERAL NOTE 2.	
MCC NO. 2 ENGINE ROOM	1	539.34	539	144.00	0.00	37.00	E		
MCC NO. 3 AUX. MACH'Y SPACE	1	692.54	693	144.00	0.00	37.00	E		
MCC NO. 4 ELECT. EQUIP. RM	1	692.54	693	144.00	0.00	37.00	E		
<b><u>TRANSFORMERS</u></b>									
480V: 120/208V Δ/Y P5 TRANSFORMER	1	984.88	985	144.00	0.00	37.00	E		
480V: 120/208V Δ/Y P6 TRANSFORMER	1	984.88	985	144.00	0.00	37.00	E		
<b><u>GENERATOR SUPPORT SYSTEMS (SHIP SVC SET)</u></b>									
<b><u>EXHAUST SYSTEM</u></b>									
BELLOW	1	93.80	94	150.00	0.00	15.50	E		
EXHAUST PIPING	1	631.63	632	150.00	0.00	15.50	E		
INSULATION	1	425.61	426	150.00	0.00	15.50	E		
EXHAUST PIPING	1	1,982.57	1,983	150.00	0.00	37.00	E		
INSULATION	1	904.37	904	150.00	0.00	37.00	E		
EXPANSION JOINTS	1	156.33	156	150.00	0.00	15.50	E		
SILENCER	1	2,094.82	2,095	150.00	0.00	43.00	E		
INSULATION	1	540.12	540	150.00	0.00	43.00	E		
EXHAUST PIPING	1	2,040.88	2,041	150.00	0.00	37.00	E		
INSULATION	1	930.94	931	150.00	0.00	37.00	E		
RAIN HAT	1	31.27	31	150.00	0.00	85.00	E		
SILENCER SUPPORTS	1	156.33	156	150.00	0.00	43.00	E		
PIPE HANGERS	1	93.80	94	150.00	0.00	37.00	E		
<b><u>COOLING SYSTEM</u></b>									
KIM HOTSTART & LOOPS	1	937.98	938	131.00	0.00	7.00	E		
PIPING	1	1,349.44	1,349	131.00	0.00	7.00	E		
BUTTERFLY VALVES	1	100.05	100	131.00	0.00	7.00	E		
HEAD TANK	1	510.26	510	131.00	0.00	7.00	E		
FITTINGS	1	156.33	156	131.00	0.00	7.00	E		
AMOT VALVE	1	562.79	563	131.00	0.00	7.00	E		
COFFERDAM CONNECTION	1	500.25	500	131.00	0.00	7.00	E		
GRID COOLER	1	781.65	782	131.00	0.00	7.00	E		

Description	Unit Wt. Total Wt.		LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)					
<u>FUEL OIL SERVICE SYSTEM</u>							
PIPING	1	468.99	469	0.00	7.00	E	SEE GENERAL NOTE 2.
FILTER	1	62.53	63	0.00	7.00	E	
FITTINGS	1	156.33	156	0.00	7.00	E	
<u>STARTING SERVICE SYSTEM</u>							
PIPING	1	93.80	94	0.00	7.00	E	
FILTER	1	31.27	31	0.00	7.00	E	
FITTINGS	1	62.53	63	0.00	7.00	E	
<u>GENERATOR SUPPORT SYSTEMS (EMERGENCY SET)</u>							
<u>ELECTRICAL SYSTEM</u>							
24V STARTER	1	23.45	23	0.00	65.75	E	
BATTERY CABLES	1	35.17	35	0.00	65.75	E	
BATTERY SWITCH	1	12.51	13	0.00	65.75	E	
BATTERY CHARGER	1	12.51	13	0.00	65.75	E	
BATTERIES	1	150.08	150	0.00	65.75	E	
BATTERY BOXES	1	31.27	31	0.00	65.75	E	
<u>FUEL OIL</u>							
PIPING	1	78.16	78	0.00	65.75	E	
FILTER	1	15.63	16	0.00	65.75	E	
FITTINGS	1	15.63	16	0.00	65.75	E	
TANK	1	296.05	296	0.00	65.75	E	
<u>COOLING SYSTEM</u>							
LOUVERS	1	234.49	234	0.00	65.75	E	
<u>EXHAUST SYSTEM</u>							
BELLOW	1	62.53	63	0.00	65.75	E	
EXHAUST PIPING	1	190.72	191	0.00	65.75	E	
SILENCER	1	289.21	289	0.00	65.75	E	
INSULATION	1	218.86	219	0.00	65.75	E	
RAIN HAT	1	15.63	16	0.00	65.75	E	
SILENCER SUPPORTS	1	78.16	78	0.00	65.75	E	
PIPE HANGERS	1	46.90	47	0.00	65.75	E	

Description	Unit Wt. Total Wt.		LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)					
<b>SPECIAL PURPOSE SYSTEMS</b>							
ELECTROCATALYTIC POWER SUPPLY	1	500.25	500	0.00	7.00	E	SEE GENERAL NOTE 2.
<b>ELECTRICAL PLANT OPERATING FLUIDS</b>							
<u>SHIP SERVICE SET</u>							
COOLING, EXPANSION TANKS	1	267.32	267	0.00	15.50	E	
LUBE OIL	1	247.00	247	0.00	7.00	E	
COOLING LOOP	1	267.32	267	0.00	7.00	E	
<u>EMERGENCY SET</u>							
COOLING	1	93.56	94	0.00	65.75	E	
LUBE OIL	1	123.50	124	0.00	65.75	E	
FUEL OIL	1	1,744.64	1,745	0.00	65.75	E	
<b>ELECTRICAL - SUBTOTAL</b>			100436	0.81	30.139		
			44.84				

Description	Unit Wt. (lbs)		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.							
<b><u>ELECTRONICS</u></b>								
<b>ESTIMATE OF ELECTRONICS EQUIPMENT ESTIMATED FROM WSF64</b>								
Magnetic Compass 7 1/2" compass in shelf binnacle	2	50.00	100	72.00	0.00	72.00	E	SEE GENERAL NOTE 2.  WSF64 had two pit hses. The quantity of many pcs of equipment have been halved. The CGs have been roughly estimated.
Ship's Bell 12" ships bell	2	30.00	60	72.00	0.00	72.00	E	
Fog Gong	2	25.00	50	72.00	0.00	72.00	E	
Fog Horn	2	25.00	50	72.00	0.00	72.00	E	
Whistle Kahlenberg, model D-4, chrome valve	2	145.00	290	72.00	0.00	72.00	E	
fog timer	2	5.00	10	72.00	0.00	72.00	E	
air strainer	2	10.00	20	72.00	0.00	72.00	E	
push buttons	2	10.00	20	72.00	0.00	72.00	E	
Inclinometers	2	5.00	10	72.00	0.00	72.00	E	
Moeller #455 clinometer, pilothouse	2	4.00	8	72.00	0.00	72.00	E	
Moeller #455 clinometer, EOS	1	4.00	4	72.00	0.00	72.00	E	
Signal Flags flag set	2	10.00	20	72.00	0.00	72.00	E	
flag storage bins	2	50.00	100	72.00	0.00	72.00	E	
Engine Gage Boards w/tubing	9	75.00	675	226.00	0.00	19.75	E	
Miscellaneous Pump Gage Boards w/tubing	40	30.00	1,200	226.00	0.00	19.75	E	
<b>Pilothouse</b> SEA 157 Radio	2	3.00	6	72.00	0.00	72.00	E	
Johnson 800 MHz WSF Radio	1	4.00	4	72.00	0.00	72.00	E	

Description	Unit Wt. Total Wt.		LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)					
157 Antenna	2	10.00	72.00	0.00	72.00	E	SEE GENERAL NOTE 2.
800 MHz Antenna	1	10.00	72.00	0.00	72.00	E	
Speakers	2	10.00	72.00	0.00	72.00	E	
LSDSGU-4	40	0.10	72.00	0.00	72.00	E	
RG-213	45	0.20	72.00	0.00	72.00	E	
RG-214	35	0.20	72.00	0.00	72.00	E	
RG-58	400	0.20	72.00	0.00	72.00	E	
<b>Pilothouse</b>							
Belden 9365	150	0.05	72.00	0.00	72.00	E	
Belden 9553	325	0.10	72.00	0.00	72.00	E	
Dual Lever Follow-up unit	1	19.00	72.00	0.00	72.00	E	
Alarm/Transfer Unit	1	50.00	72.00	0.00	72.00	E	
Binnacle	2	50.00	72.00	0.00	72.00	E	
Elex Contr & Ximn Unit	1	5.00	72.00	0.00	72.00	E	
Master Compass	1	24.00	72.00	0.00	72.00	E	
Follow-up steering alarm	1	2.00	72.00	0.00	72.00	E	
Follow-up Steering Digital Con	2	2.00	72.00	0.00	72.00	E	
Furuno keyboard control unit RCU014	2	8.00	72.00	0.00	72.00	E	
Furuno GC10 Gyro-Converter card	2	2.00	72.00	0.00	72.00	E	
Furuno Radars FAR 2127	2	40.00	72.00	0.00	72.00	E	
Furuno XN24AF/8 Antenna	2	100.00	72.00	0.00	72.00	E	
Furuno 1832 Maneuvering Radar Display	1	20.00	72.00	0.00	72.00	E	
Global Positioning System Furuno GP90D	2	25.00	72.00	0.00	72.00	E	
Gyro, Anshutz	1	150.00	72.00	0.00	72.00	E	
Repeaters	4	10.00	72.00	0.00	72.00	E	
Satellite Compass Furuno SC110 Display	1	1.50	72.00	0.00	72.00	E	
Satellite Compass Furuno SC110 Processor Unit	1	8.00	72.00	0.00	72.00	E	
Satellite Compass Furuno SC110 Antenna Unit	1	15.00	72.00	0.00	72.00	E	
AIS Furuno FA-100S Display	1	1.50	72.00	0.00	72.00	E	
AIS Furuno FA-100S Antenna	1	12.00	72.00	0.00	72.00	E	
AIS Furuno FA-100S Transponder Unit	1	16.50	72.00	0.00	72.00	E	
Automatic Draft Indication System Weir-Jones ADIS	1	15.00	72.00	0.00	72.00	E	
LS2SWU-3	500	0.21	72.00	0.00	72.00	E	
LSDSGU-4	340	0.10	72.00	0.00	72.00	E	
LSDSGU-4	210	0.10	72.00	0.00	72.00	E	
LSMSCU-14	525	0.28	72.00	0.00	72.00	E	

Description	Unit Wt. Total Wt.		LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)					
LMSMCU-7	120	0.15	18	0.00	72.00	E	SEE GENERAL NOTE 2.
LMSMCU-7	175	0.15	26	0.00	72.00	E	
Motor Control w/Dconn	2	30.00	60	0.00	72.00	E	
MTNIA-10	950	0.39	374	0.00	72.00	E	
MTNIA-14	1240	0.51	626	0.00	72.00	E	
MTNIA-20	20	0.74	15	0.00	72.00	E	
MTNIA-4	1435	0.18	255	0.00	72.00	E	
MTNIA-40	330	1.34	442	0.00	72.00	E	
MTNIA-7	980	0.28	274	0.00	72.00	E	
MTNIA-8	405	0.33	133	0.00	72.00	E	
Non follow-up jog strg cont un	2	2.00	4	0.00	72.00	E	
Non-follow-up jog steering sta	1	16.00	16	0.00	72.00	E	
Pilothouse xfr panel	1	30.00	30	0.00	72.00	E	
Power Supply - Furuno PR-62	2	40.00	80	0.00	72.00	E	
Rudder Feedback	1	35.00	35	0.00	72.00	E	
Start/Stop PB Stations	2	0.50	1	0.00	72.00	E	
Steering Alm Junction Box	1	5.00	5	0.00	72.00	E	
Steering control panel	1	25.00	25	0.00	72.00	E	
Steering Station Transfer	1	2.00	2	0.00	72.00	E	
Steering transfer switch	1	2.00	2	0.00	72.00	E	
Synchro angle ind, jb	1	10.00	10	0.00	72.00	E	
Synchro RAI	1	12.00	12	0.00	72.00	E	
Synchro RAI 10"	1	13.00	13	0.00	72.00	E	
Synchro rudder angle feedback	1	16.00	16	0.00	72.00	E	
Terminal Block, Dbl Row 10T	2	1.00	2	0.00	72.00	E	
Transmitters	1	2.00	2	0.00	72.00	E	
Wheel Steering Stand	1	200.00	200	0.00	72.00	E	
Windbirds	1	5.00	5	0.00	72.00	E	
Windspeed Malling System	1	25.00	25	0.00	72.00	E	
<b>Hold</b>							
PLC and Cabinet	1	1200.00	1,200	0.00	226.00	E	
No. 1 String Gear	1	85.00	85	0.00	226.00	E	
No. 1 Tank Room	1	30.00	30	0.00	226.00	E	
No. 1 Phone	1	5.00	5	0.00	226.00	E	
No. 2 Tank Room	1	30.00	30	0.00	226.00	E	
No. 2 Phone	1	5.00	5	0.00	226.00	E	

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source	Notes
No. 2 Strng Gear	1	85.00	85	226.00	0.00	19.75	E	SEE GENERAL NOTE 2.
No. 1 Red Gear	1	85.00	85	226.00	0.00	19.75	E	
No. 1 Prop Room Stbd	1	65.00	65	226.00	0.00	19.75	E	
No. 1 Prop Room Port	1	55.00	55	226.00	0.00	19.75	E	
EOS	1	150.00	150	226.00	0.00	19.75	E	
Workshop/CHENG office	1	57.00	57	226.00	0.00	19.75	E	
No. 2 Prop Room Stbd	1	275.00	275	226.00	0.00	19.75	E	
No. 2 Prop Room Port	1	55.00	55	226.00	0.00	19.75	E	
No. 2 Red Gear	1	85.00	85	226.00	0.00	19.75	E	
Belden Cable Type 10	2355	0.20	471	226.00	0.00	19.75	E	
Belden Cable Type 8	945	0.21	198	226.00	0.00	19.75	E	
Belden Cable Type 9	125	0.22	28	226.00	0.00	19.75	E	
LS2SJ-12	40	0.13	5	226.00	0.00	19.75	E	
LS2SWU-1	5115	0.10	527	226.00	0.00	19.75	E	
LS2SWU-12	160	0.70	112	226.00	0.00	19.75	E	
LS2SWU-3	130	0.21	27	226.00	0.00	19.75	E	
LSDSGU-14	535	0.25	131	226.00	0.00	19.75	E	
LSDSGU-4	8330	0.10	833	226.00	0.00	19.75	E	
LSDSGU-9	880	0.18	158	226.00	0.00	19.75	E	
LSMSCA-10	110	0.27	29	226.00	0.00	19.75	E	
LSMSCU-10	860	0.27	230	226.00	0.00	19.75	E	
LSMSCU-14	50	0.28	14	226.00	0.00	19.75	E	
LSMSCU-24	845	0.47	395	226.00	0.00	19.75	E	
LSMSCU-30	125	0.54	67	226.00	0.00	19.75	E	
LSMSCU-7	1900	0.15	281	226.00	0.00	19.75	E	
LSTSGU-4	55	0.13	7	226.00	0.00	19.75	E	
LSTSGU-9	150	0.24	36	226.00	0.00	19.75	E	
LSTTRS-10	90	0.56	50	226.00	0.00	19.75	E	
LSTTSU-1.5	5040	0.07	333	226.00	0.00	19.75	E	
LSTTSU-10	150	0.26	39	226.00	0.00	19.75	E	
<b>Lower Car Deck</b>								
No. 1 Rescue Boat	1	142.00	142	165.00	0.00	28.00	E	
Anchor Room	1	15.00	15	165.00	0.00	28.00	E	
No. 1 Stairs - Stbd	1	110.00	110	165.00	0.00	28.00	E	
Fire Alarm Pull Switch	1	5.00	5	165.00	0.00	28.00	E	
No. 1 Elev.	1	110.00	110	165.00	0.00	28.00	E	

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abt)	Source C, E, V *	Notes
	Qty.	(lbs)						
No. 1 Stairs - Port	1	95.00	95	165.00	0.00	28.00	E	SEE GENERAL NOTE 2.
No. 2 Rescue Boat	1	142.00	142	165.00	0.00	28.00	E	
Crew Shelter	1	20.00	20	165.00	0.00	28.00	E	
No. 2 Elev.	1	110.00	110	165.00	0.00	28.00	E	
No. 2 Stairs - Port	1	160.00	160	165.00	0.00	28.00	E	
Fuel Station	1	7.00	7	165.00	0.00	28.00	E	
Belden Cable Type 10	1550	0.20	310	165.00	0.00	28.00	E	
Belden Cable Type 8	625	0.21	131	165.00	0.00	28.00	E	
Belden Cable Type 9	85	0.22	19	165.00	0.00	28.00	E	
LS2SJ-12	30	0.13	4	165.00	0.00	28.00	E	
LS2SWU-1	3365	0.10	347	165.00	0.00	28.00	E	
LS2SWU-12	105	0.70	74	165.00	0.00	28.00	E	
LS2SWU-3	85	0.21	18	165.00	0.00	28.00	E	
LSDSGU-14	355	0.25	87	165.00	0.00	28.00	E	
LSDSGU-4	5480	0.10	548	165.00	0.00	28.00	E	
LSDSGU-9	580	0.18	104	165.00	0.00	28.00	E	
LSMSCA-10	70	0.27	19	165.00	0.00	28.00	E	
LSMSCU-10	565	0.27	151	165.00	0.00	28.00	E	
LSMSCU-14	30	0.28	8	165.00	0.00	28.00	E	
LSMSCU-24	555	0.47	259	165.00	0.00	28.00	E	
LSMSCU-30	85	0.54	46	165.00	0.00	28.00	E	
LSMSCU-7	1250	0.15	185	165.00	0.00	28.00	E	
LSTSGU-4	35	0.13	4	165.00	0.00	28.00	E	
LSTSGU-9	150	0.24	36	165.00	0.00	28.00	E	
LSTTRS-10	60	0.56	34	165.00	0.00	28.00	E	
LSITTSU-1.5	3320	0.07	219	165.00	0.00	28.00	E	
LSITTSU-10	100	0.26	26	165.00	0.00	28.00	E	
<b>Upper Car Deck</b>								
No. 1 Video Camera	1	25.00	25	165.00	0.00	37.50	E	
No. 1 Stairs - Port	1	50.00	50	165.00	0.00	37.50	E	
No. 1 Crew Stairs	1	50.00	50	165.00	0.00	37.50	E	
No. 1 Stairs - Stbd.	1	45.00	45	165.00	0.00	37.50	E	
No. 2 Video Camera	1	25.00	25	165.00	0.00	37.50	E	
Paint Locker	1	25.00	25	165.00	0.00	37.50	E	
No. 2 Stairs - Port	1	45.00	45	165.00	0.00	37.50	E	
No. 2 Stairs - Stbd	1	45.00	45	165.00	0.00	37.50	E	
Belden Cable Type 10	560	0.20	112	165.00	0.00	37.50	E	

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
Belden Cable Type 8	225	0.21	47	165.00	0.00	37.50	E	SEE GENERAL NOTE 2.
Belden Cable Type 9	30	0.22	7	165.00	0.00	37.50	E	
LS2SJ-12	10	0.13	1	165.00	0.00	37.50	E	
LS2SWU-1	1215	0.10	125	165.00	0.00	37.50	E	
LS2SWU-12	40	0.70	28	165.00	0.00	37.50	E	
LS2SWU-3	30	0.21	6	165.00	0.00	37.50	E	
LSDSGU-14	130	0.25	32	165.00	0.00	37.50	E	
LSDSGU-4	1975	0.10	198	165.00	0.00	37.50	E	
LSDSGU-9	210	0.18	38	165.00	0.00	37.50	E	
LSMSCA-10	30	0.27	8	165.00	0.00	37.50	E	
LSMSCU-10	205	0.27	55	165.00	0.00	37.50	E	
LSMSCU-14	15	0.28	4	165.00	0.00	37.50	E	
LSMSCU-24	200	0.47	93	165.00	0.00	37.50	E	
LSMSCU-30	30	0.54	16	165.00	0.00	37.50	E	
LSMSCU-7	450	0.15	67	165.00	0.00	37.50	E	
LSTSGU-4	15	0.13	2	165.00	0.00	37.50	E	
LSTSGU-9	35	0.24	8	165.00	0.00	37.50	E	
LSTTRS-10	25	0.56	14	165.00	0.00	37.50	E	
LSTTSU-1.5	1195	0.07	79	165.00	0.00	37.50	E	
LSTTSU-10	35	0.26	9	165.00	0.00	37.50	E	
<b>Passenger Deck</b>								
No. 1 Passenger Doors - Port	1	130.00	130	165.00	0.00	48.00	E	
No. 1 Passenger Doors - Stbd	1	130.00	130	165.00	0.00	48.00	E	
Purser Office/Day Room	1	75.00	75	165.00	0.00	48.00	E	
No. 2 Passenger Doors - Port	1	130.00	130	165.00	0.00	48.00	E	
No. 2 Passenger Doors - Stbd	1	130.00	130	165.00	0.00	48.00	E	
Passenger Clocks	1	30.00	30	165.00	0.00	48.00	E	
Galley	1	15.00	15	165.00	0.00	48.00	E	
Belden Cable Type 10	685	0.20	137	165.00	0.00	48.00	E	
Belden Cable Type 8	275	0.21	58	165.00	0.00	48.00	E	
Belden Cable Type 9	40	0.22	9	165.00	0.00	48.00	E	
LS2SJ-12	15	0.13	2	165.00	0.00	48.00	E	
LS2SWU-1	1480	0.10	152	165.00	0.00	48.00	E	
LS2SWU-12	50	0.70	35	165.00	0.00	48.00	E	
LS2SWU-3	40	0.21	8	165.00	0.00	48.00	E	
LSDSGU-14	155	0.25	38	165.00	0.00	48.00	E	

Description	Unit Wt. Total Wt.		LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)					
LSDSGU-4	2415	0.10	242	0.00	48.00	E	SEE GENERAL NOTE 2.
LSDSGU-9	255	0.18	46	0.00	48.00	E	
LSMSCA-10	35	0.27	9	0.00	48.00	E	
LSMSCU-10	250	0.27	67	0.00	48.00	E	
LSMSCU-14	15	0.28	4	0.00	48.00	E	
LSMSCU-24	245	0.47	114	0.00	48.00	E	
LSMSCU-30	40	0.54	22	0.00	48.00	E	
LSMSCU-7	550	0.15	81	0.00	48.00	E	
LSTSGU-4	20	0.13	3	0.00	48.00	E	
LSTSGU-9	45	0.24	11	0.00	48.00	E	
LSTTRS-10	30	0.56	17	0.00	48.00	E	
LSTTSU-1.5	1460	0.07	96	0.00	48.00	E	
LSTTSU-10	45	0.26	12	0.00	48.00	E	
<b>Sun Deck</b>							
PBX Main Exchange	1	400.00	400	0.00	57.25	E	
Officer's Rooms	1	65.00	65	0.00	57.25	E	
Emerg. Genset	1	220.00	220	0.00	57.25	E	
Security Office	1	22.00	22	0.00	57.25	E	
Belden Cable Type 10	375	0.20	75	0.00	57.25	E	
Belden Cable Type 8	150	0.21	32	0.00	57.25	E	
Belden Cable Type 9	20	0.22	4	0.00	57.25	E	
LS2SJ-12	10	0.13	1	0.00	57.25	E	
LS2SWU-1	1220	0.10	126	0.00	57.25	E	
LS2SWU-12	30	0.70	21	0.00	57.25	E	
LS2SWU-3	25	0.21	5	0.00	57.25	E	
LSDSGU-14	85	0.25	21	0.00	57.25	E	
LSDSGU-4	1320	0.10	132	0.00	57.25	E	
LSDSGU-9	140	0.18	25	0.00	57.25	E	
LSMSCA-10	20	0.27	5	0.00	57.25	E	
LSMSCU-10	135	0.27	36	0.00	57.25	E	
LSMSCU-14	10	0.28	3	0.00	57.25	E	
LSMSCU-24	135	0.47	63	0.00	57.25	E	
LSMSCU-30	20	0.54	11	0.00	57.25	E	
LSMSCU-7	300	0.15	44	0.00	57.25	E	
LSTSGU-4	10	0.13	1	0.00	57.25	E	
LSTSGU-9	25	0.24	6	0.00	57.25	E	

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source	Notes
LSTTRS-10	15	0.56	8	165.00	0.00	57.25	E	SEE GENERAL NOTE 2.
LSTTSU-1.5	800	0.07	53	165.00	0.00	57.25	E	
LSTTSU-10	25	0.26	7	165.00	0.00	57.25	E	
<b>Navigation Bridge</b>								
No. 1 P/H	1	225.00	225	72.00	0.00	72.00	E	
Master Office	1	47.00	47	72.00	0.00	72.00	E	
No. 2 P/H	1	190.00	190	72.00	0.00	72.00	E	
Ship's Office	1	22.00	22	72.00	0.00	72.00	E	
Belden Cable Type 10	685	0.20	137	72.00	0.00	72.00	E	
Belden Cable Type 8	275	0.21	58	72.00	0.00	72.00	E	
Belden Cable Type 9	35	0.22	8	72.00	0.00	72.00	E	
LS2SJ-12	15	0.13	2	72.00	0.00	72.00	E	
LS2SWU-1	1480	0.10	152	72.00	0.00	72.00	E	
LS2SWU-12	50	0.70	35	72.00	0.00	72.00	E	
LS2SWU-3	40	0.21	8	72.00	0.00	72.00	E	
LSDSGU-14	155	0.25	38	72.00	0.00	72.00	E	
LSDSGU-4	2415	0.10	242	72.00	0.00	72.00	E	
LSDSGU-9	255	0.18	46	72.00	0.00	72.00	E	
LSMSCA-10	35	0.27	9	72.00	0.00	72.00	E	
LSMSCU-10	250	0.27	67	72.00	0.00	72.00	E	
LSMSCU-14	15	0.28	4	72.00	0.00	72.00	E	
LSMSCU-24	245	0.47	114	72.00	0.00	72.00	E	
LSMSCU-30	40	0.54	22	72.00	0.00	72.00	E	
LSMSCU-7	550	0.15	81	72.00	0.00	72.00	E	
LSTSGU-4	20	0.13	3	72.00	0.00	72.00	E	
LSTSGU-9	45	0.24	11	72.00	0.00	72.00	E	
LSTTRS-10	30	0.56	17	72.00	0.00	72.00	E	
LSTTSU-1.5	2205	0.07	146	72.00	0.00	72.00	E	
LSTTSU-10	15	0.26	4	72.00	0.00	72.00	E	
Super-LAN/Security Network								
LAN Equipment	1	2100.00	2,100	72.00	0.00	72.00	E	
Network Cable CAT 5 & Fiber-Optic	7200	0.03	230	72.00	0.00	72.00	E	
LSDSGU-4	350	0.10	35	72.00	0.00	72.00	E	
Test Board	1	100.00	100	226.00	0.00	19.75	E	

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
<b>ELECTRONICS &amp; IC - SUBTOTAL</b>		25048	152.18	0.00	44.361			
		11.18						

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
<b><u>AUXILIARY SYSTEMS</u></b>								
<b><u>FILLS AND VENTS</u></b>								
FILL AND VENT PIPING	1	7,454.49	7,454	162.00	0.00	21.25	E	D(ACF/W/SF64) FROM REF 2
<b><u>SOUNDING TUBES</u></b>								
PIPE & FITTINGS	1	2,644.00	2,644	162.00	0.00	21.25	E	D(ACF/W/SF64)
VALVES	1	355.73	356	162.00	0.00	21.25	E	D(ACF/W/SF64)
LEVEL INDICATORS	1	328.00	328	162.00	0.00	21.25	E	D(ACF/W/SF64)
<b><u>HVAC HOT WATER HEATING SYSTEM</u></b>								
HW CIRC. PUMP (END No. 1)	1	553.06	553	132.00	0.00	11.25	E	INTVOL(ACF/W/SF64)
HW CIRC. PUMP (END No. 2)	1	553.06	553	132.00	0.00	11.25	E	INTVOL(ACF/W/SF64)
PIPING & FITTINGS	1	2,182.90	2,183	132.00	0.00	11.25	E	INTVOL(ACF/W/SF64)
SMALL VALVES	1	443.03	443	132.00	0.00	11.25	E	INTVOL(ACF/W/SF64)
3" 3-WAY CONTROL VALVE	1	176.04	176	132.00	0.00	11.25	E	INTVOL(ACF/W/SF64)
3" 3-WAY CONTROL VALVE	1	176.04	176	132.00	0.00	11.25	E	INTVOL(ACF/W/SF64)
4" FLOW CONTROL VALVE	1	146.70	147	132.00	0.00	11.25	E	INTVOL(ACF/W/SF64)
4" FLOW CONTROL VALVE	1	146.70	147	132.00	0.00	11.25	E	INTVOL(ACF/W/SF64)
5" "Y" STRAINER	1	167.24	167	132.00	0.00	11.25	E	INTVOL(ACF/W/SF64)
HANGER & INSUL ALLOWANCE	1	364.23	364	132.00	0.00	11.25	E	INTVOL(ACF/W/SF64)
ENTRAINED WATER	40.2	64.00	2,570	132.00	0.00	11.25	E	INTVOL(ACF/W/SF64)
EOS A/C UNIT	1	415.00	415	159.00	0.00	19.75	E	WSF64
<b><u>EXPANSION SYSTEM</u></b>								
TANK	1	50.00	50	144.00	14.75	65.00	E	WSF64
ENTRAINED FLUID	8.55	10.00	86	144.00	14.75	65.00	E	WSF64
PIPING	60	1.68	101	144.00	14.75	38.00	E	WSF64
FITTING ALLOWANCE	20%	100.80	20	144.00	14.75	38.00	E	WSF64
<b><u>PILOTHOUSE AC SYSTEM</u></b>								
AHUs	2	600.00	1,200	64.00	0.00	76.00	E	WSF64
CONDENSERS	2	60.00	120	64.00	0.00	76.00	E	WSF64
EXHAUST FANS	2	7.00	14	64.00	0.00	76.00	E	WSF64
MISC EQUIPMENT	2	50.00	100	64.00	0.00	76.00	E	WSF64
SUPPLY REGISTERS (WINDOW)	110	3.93	432	64.00	0.00	76.00	E	WSF64

SEE GENERAL NOTE 2.

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
SUPPLY REGISTERS (WINDOW)	10	1.31	13	64.00	0.00	76.00	E	SEE GENERAL NOTE 2.
SUPPLY INSULATION	445	0.05	22	64.00	0.00	76.00	E	WSF64
RETURN DUCTING	32	3.93	126	64.00	0.00	76.00	E	WSF64
RETURN REGISTERS	2	6.00	12	64.00	0.00	76.00	E	WSF64
RETURN INSULATION	126	0.05	6	64.00	0.00	76.00	E	WSF64
FIRE DAMPER	2	25.00	50	64.00	0.00	76.00	E	WSF64
WEATHER LOUVER	2	10.00	20	64.00	0.00	76.00	E	WSF64
<u>PASSENGER ACCOMMODATIONS VENTILATION</u>								
EXHAUST FAN	1	366.57	367	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
"	1	366.57	367	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
"	1	677.68	678	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
SUPPLY AIR FAN	1	1,018.07	1,018	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
"	1	1,018.07	1,018	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
"	1	246.43	246	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
HOT WATER DUCT HEATER	1	1,178.25	1,178	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
MAKEUP DUCTING	1	754.08	754	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
SUPPLY DUCTING	1	13,078.54	13,079	160.00	0.00	46.00	E	PASSVOL(ACF/WSF64)
SUPPLY DUCTING	1	6,052.96	6,053	160.00	0.00	46.00	E	PASSVOL(ACF/WSF64)
SUPPLY REGISTERS	1	462.06	462	160.00	0.00	46.00	E	PASSVOL(ACF/WSF64)
SUPPLY INSULATION	1	993.89	994	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
RETURN DUCTING	1	754.08	754	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
RETURN DUCTING	1	13,078.54	13,079	160.00	0.00	46.00	E	PASSVOL(ACF/WSF64)
RETURN DUCTING	1	3,026.48	3,026	160.00	0.00	46.00	E	PASSVOL(ACF/WSF64)
RETURN REGISTERS	1	231.03	231	160.00	0.00	46.00	E	PASSVOL(ACF/WSF64)
RETURN INSULATION	1	720.26	720	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
FIRE DAMPER	1	238.73	239	160.00	0.00	43.00	E	PASSVOL(ACF/WSF64)
FIRE DAMPER	1	693.09	693	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
WEATHER LOUVER	1	308.04	308	160.00	0.00	55.00	E	PASSVOL(ACF/WSF64)
<u>CREW ACCOMMODATIONS</u>								
SELF-CONTAINED UNIT	1	901.84	902	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
INLINE EXHAUST FAN	1	43.46	43	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
FAN MOTOR	1	5.43	5	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
FAN MOTOR CONTROLLER	1	4.35	4	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
MISC EQUIPMENT	1	54.33	54	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
SEE GENERAL NOTE 2.								
SUPPLY DUCTING	1	213.51	214	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
SUPPLY DUCTING	1	244.91	245	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
SUPPLY REGISTERS	1	30.42	30	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
SUPPLY INSULATION	1	22.92	23	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
RETURN DUCTING	1	213.51	214	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
RETURN DUCTING	1	244.91	245	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
RETURN REGISTERS	1	30.42	30	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
RETURN INSULATION	1	22.92	23	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
FIRE DAMPER	1	43.46	43	141.00	0.00	63.50	E	CREWVOL(ACF/WSF64)
EXHAUST FAN	2	1,500.00	3,000	186.00	0.00	70.00	E	WSF64
INSULATION	320	0.09	29	186.00	0.00	70.00	E	WSF64
<u>GALLEY &amp; PASSENGER HEADS</u>								
GALLEY EXHAUST FAN	2	350.00	700	157.00	0.00	50.50	E	WSF64
RETURN DUCTING	40	20.40	816	157.00	0.00	50.50	E	WSF64
RETURN DUCTING	110	8.01	881	157.00	0.00	50.50	E	WSF64
RETURN DUCTING	200	4.00	800	157.00	0.00	50.50	E	WSF64
<u>MACHINERY SPACE VENTILATION</u>								
<u>BOW THRUSTER ROOM</u>								
SUPPLY FAN	1	500.00	500	37.00	0.00	23.00	E	WSF64
HEATER	1	74.00	74	37.00	0.00	23.00	E	WSF64
<u>TANK ROOM</u>								
SUPPLY FAN	1	500.00	500	89.00	0.00	23.00	E	WSF64
HEATER	1	74.00	74	89.00	0.00	23.00	E	WSF64
<u>MSD ROOM</u>								
SUPPLY FAN	1	500.00	500	110.00	0.00	23.00	E	WSF64
HEATER	1	74.00	74	110.00	0.00	23.00	E	WSF64
<u>AUXILIARY MACHINERY ROOM</u>								
SUPPLY FAN	1	500.00	500	132.00	0.00	23.00	E	WSF64
HEATER	1	74.00	74	132.00	0.00	23.00	E	WSF64

Description	Qty.	Total Wt.		LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
		Unit Wt. (lbs)	(lbs)					
<u>ENGINE ROOM</u>								
SUPPLY FAN	1	3,333.33	3,333	158.00	0.00	23.00	E	SEE GENERAL NOTE 2.
HEATER	1	246.67	247	158.00	0.00	23.00	E	HP(ACF/W/SF64)
DUCTING	1	3,400.00	3,400	158.00	0.00	23.00	E	HP(ACF/W/SF64)
DUCTING	1	1,068.00	1,068	158.00	0.00	23.00	E	HP(ACF/W/SF64)
FIRE DAMPER	1	333.33	333	158.00	0.00	23.00	E	HP(ACF/W/SF64)
LOUVER	1	266.67	267	158.00	0.00	23.00	E	HP(ACF/W/SF64)
<u>ENG SHOP &amp; STOREROOM</u>								
HEATER	2	74.00	148	234.00	0.00	23.00	E	WSF64
DUCTING	10	25.50	255	234.00	0.00	23.00	E	WSF64
DUCTING	10	8.01	80	234.00	0.00	23.00	E	WSF64
FIRE DAMPER	2	50.00	100	234.00	0.00	23.00	E	WSF64
LOUVER	2	40.00	80	234.00	0.00	23.00	E	WSF64
<u>STEERING GEAR ROOM</u>								
SUPPLY FAN	2	153.00	306	310.00	0.00	23.00	E	WSF64
HEATER	2	52.00	104	310.00	0.00	23.00	E	WSF64
DUCTING	80	8.01	641	310.00	0.00	23.00	E	WSF64
FIRE DAMPER	2	25.00	50	310.00	0.00	23.00	E	WSF64
LOUVER	2	25.00	50	310.00	0.00	23.00	E	WSF64
<u>EMERGENCY GENERATOR ROOM</u>								
SUPPLY FAN	1	25.00	25	132.00	0.00	70.00	E	WSF64
HEATER	1	10.00	10	132.00	0.00	70.00	E	WSF64
DUCTING	8	4.00	32	132.00	0.00	70.00	E	WSF64
FIRE DAMPER	2	10.00	20	132.00	0.00	70.00	E	WSF64
LOUVER	2	8.00	16	132.00	0.00	70.00	E	WSF64
<u>HEATING SYSTEM BOILERS</u>								
BOILER	1	15,277.37	15,277	132.50	-16.00	10.00	E	INTVOL(ACF/W/SF64)
ENTRAINED WATER	1	4,766.29	4,766	132.50	-16.00	10.00	E	INTVOL(ACF/W/SF64)
FEED TANK	1	146.70	147	132.50	-16.00	10.00	E	INTVOL(ACF/W/SF64)
ENTRAINED WATER	1	376.29	376	132.50	-16.00	10.00	E	INTVOL(ACF/W/SF64)
BOILER FEED PUMP	1	54.28	54	132.50	-16.00	7.00	E	INTVOL(ACF/W/SF64)
PIPING	1	903.67	904	148.00	0.00	38.50	E	INTVOL(ACF/W/SF64)

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
<u>PIPING</u>	1	3,333.03	3,333	148.00	0.00	38.50	E	SEE GENERAL NOTE 2.
FITTING, VALVE, INSULATION ALLOWANCE	1	847.34	847	148.00	0.00	38.50	E	INTVOL(ACF/W/SF64) INTVOL(ACF/W/SF64)
<u>BOILER EXHAUST</u>	1	1,739.52	1,740	148.00	14.75	50.00	E	INTVOL(ACF/W/SF64)
EXHAUST PIPE	1	117.36	117	148.00	14.75	50.00	E	INTVOL(ACF/W/SF64)
EXHAUST BELLOW	1	189.46	189	148.00	14.75	50.00	E	INTVOL(ACF/W/SF64)
INSULATION	1	334.48	334	148.00	14.75	50.00	E	INTVOL(ACF/W/SF64)
FLANGES	1	234.72	235	148.00	14.75	50.00	E	INTVOL(ACF/W/SF64)
PIPE HANGERS	1	44.01	44	148.00	14.75	50.00	E	INTVOL(ACF/W/SF64)
RAIN CAP	1							
<u>BOILER FUEL OIL</u>								
PIPING	1	127.63	128	133.00	0.00	10.00	E	INTVOL(ACF/W/SF64)
FITTING, VALVE, INSULATION ALLOWANCE	1	25.53	26	133.00	0.00	10.00	E	INTVOL(ACF/W/SF64)
<u>HOT WATER SYSTEM</u>								
AIR SEPARATOR	1	92.00	92	132.00	0.00	11.00	E	WSF64
VALVES, PIPE & FITTINGS	1	616.80	617	132.00	0.00	11.00	E	WSF64
	1	1,782.00	1,782	132.00	0.00	11.00	E	WSF64
<u>A/C SEAWATER COOLING SYSTEM</u>								
VALVE	1	190.00	190	132.00	0.00	6.00	E	WSF64
VALVE	1	190.00	190	132.00	0.00	6.00	E	WSF64
VALVE	1	178.00	178	132.00	0.00	6.00	E	WSF64
BASKET STRAINER	1	270.00	270	132.00	0.00	6.00	E	WSF64
PIPE AND FITTINGS	1	634.00	634	132.00	0.00	6.00	E	WSF64
<u>FIRE MAIN</u>								
FIRE/SPRINKLER PUMPS	1	864.47	864	162.00	0.00	16.50	E	FIRESTAHT(ACF/W/SF64)
FIRE PUMP MOTORS	1	1,915.29	1,915	162.00	0.00	16.50	E	FIRESTAHT(ACF/W/SF64)
FIRE PUMP FOUNDATIONS	1	517.65	518	162.00	0.00	16.50	E	FIRESTAHT(ACF/W/SF64)
FIRE/BILGE PUMP	1	427.06	427	162.00	0.00	16.50	E	FIRESTAHT(ACF/W/SF64)
FIRE PUMP MOTOR	1	440.00	440	162.00	0.00	16.50	E	FIRESTAHT(ACF/W/SF64)
FIRE PUMP FOUNDATION	1	226.47	226	162.00	0.00	16.50	E	FIRESTAHT(ACF/W/SF64)
FIRE STATIONS, 50' X 1-1/2" HOSE	1	4,542.35	4,542	162.00	0.00	33.00	E	FIRESTAHT(ACF/W/SF64)
VALVES	1	722.12	722	162.00	0.00	8.00	E	FIRESTAHT(ACF/W/SF64)
4" BRZ BASKET STRAINER	1	181.18	181	162.00	0.00	16.50	E	FIRESTAHT(ACF/W/SF64)

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
SEE GENERAL NOTE 2.								
6" BRZ BASKET STRAINERS	1	654.82	655	162.00	0.00	16.50	E	FIRESTAHT(ACF/W/SF64)
10" BRZ BASKET STRAINER	1	647.06	647	162.00	0.00	16.50	E	FIRESTAHT(ACF/W/SF64)
10" BRZ BASKET STRAINER	1	647.06	647	162.00	0.00	16.50	E	FIRESTAHT(ACF/W/SF64)
4" GATE, FLG	1	129.41	129	162.00	0.00	33.00	E	FIRESTAHT(ACF/W/SF64)
4" GATE, FLG	1	129.41	129	162.00	0.00	33.00	E	FIRESTAHT(ACF/W/SF64)
HOLD DK PIPE AND FITTINGS	1	3,392.53	3,393	162.00	0.00	33.00	E	FIRESTAHT(ACF/W/SF64)
VEH DK PIPE AND FITTINGS	1	481.88	482	162.00	0.00	33.00	E	FIRESTAHT(ACF/W/SF64)
01 DK PIPE AND FITTINGS	1	204.94	205	162.00	0.00	33.00	E	FIRESTAHT(ACF/W/SF64)
02 DK PIPE AND FITTINGS	1	260.32	260	162.00	0.00	33.00	E	FIRESTAHT(ACF/W/SF64)
03 DK PIPE AND FITTINGS	1	91.39	91	162.00	0.00	33.00	E	FIRESTAHT(ACF/W/SF64)
HANGERS AND FITTINGS ALLOWANCE	1	403.50	404	162.00	0.00	33.00	E	FIRESTAHT(ACF/W/SF64)
<u>VEHICLE DECK SPRINKLERS</u>								
3/4" CUNI 90/10 CL 200	1	41.39	41	172.00	0.00	31.50	E	VHDKAREA(ACF/W/SF64)
3/4" CUNI 90/10 CL 200	1	206.97	207	172.00	0.00	41.75	E	VHDKAREA(ACF/W/SF64)
1" CUNI 90/10 CL 200	1	60.42	60	172.00	0.00	31.50	E	VHDKAREA(ACF/W/SF64)
1" CUNI 90/10 CL 200	1	256.13	256	172.00	0.00	41.75	E	VHDKAREA(ACF/W/SF64)
1-1/4" CUNI 90/10 CL 200	1	53.49	53	172.00	0.00	31.50	E	VHDKAREA(ACF/W/SF64)
1-1/4" CUNI 90/10 CL 200	1	267.47	267	172.00	0.00	41.75	E	VHDKAREA(ACF/W/SF64)
1-1/2" CUNI 90/10 CL 200	1	115.43	115	172.00	0.00	31.50	E	VHDKAREA(ACF/W/SF64)
2" CUNI 90/10 CL 200	1	194.23	194	172.00	0.00	31.50	E	VHDKAREA(ACF/W/SF64)
2 1/2" CUNI 90/10 CL 200	1	69.79	70	172.00	0.00	31.50	E	VHDKAREA(ACF/W/SF64)
3" CUNI 90/10 CL 200	1	897.14	897	172.00	0.00	26.00	E	VHDKAREA(ACF/W/SF64)
5" CUNI 90/10 CL 201	1	366.18	366	172.00	0.00	26.00	E	VHDKAREA(ACF/W/SF64)
VALVES	1	161.86	162	172.00	0.00	26.00	E	VHDKAREA(ACF/W/SF64)
FITTINGS ALLOWANCE	1	269.05	269	172.00	0.00	26.00	E	VHDKAREA(ACF/W/SF64)
<u>PASSENGER DECK AUTOMATIC SPRINKLERS</u>								
TANK (425 GAL)	150	15.00	2,250	160.00	0.00	10.50	E	FROM POW
TANK CONTENTS	26.8	62.40	1,671	160.00	0.00	10.50	E	
PUMP	1	500.00	500	160.00	0.00	10.50	E	
3/4" CUNI 90/10 CL 200 W/ENTRAINED WATER	1	43.81	44	160.00	0.00	49.66	E	DKAREA(ACF/W/SF64)
3/4" CUNI 90/10 CL 201 W/ENTRAINED WATER	1	219.03	219	160.00	0.00	49.66	E	DKAREA(ACF/W/SF64)
1" CUNI 90/10 CL 200 W/ENTRAINED WATER	1	71.59	72	160.00	0.00	49.66	E	DKAREA(ACF/W/SF64)
1" CUNI 90/10 CL 200 W/ENTRAINED WATER	1	303.46	303	160.00	0.00	49.66	E	DKAREA(ACF/W/SF64)
1-1/4" CUNI 90/10 CL 200 W/ENTRAINED WATER	1	65.25	65	160.00	0.00	49.66	E	DKAREA(ACF/W/SF64)

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
1-1/4" CUNI 90/10 CL 200 W/ENTRAINED WATER	1	326.24	326	160.00	0.00	49.66	E	SEE GENERAL NOTE 2.
1-1/2" CUNI 90/10 CL 200 W/ENTRAINED WATER	1	146.49	146	160.00	0.00	49.66	E	DKAREA(ACF/WSF64)
2" CUNI 90/10 CL 200 W/ENTRAINED WATER	1	255.18	255	160.00	0.00	49.66	E	DKAREA(ACF/WSF64)
2 1/2" CUNI 90/10 CL 200 W/ENTRAINED WATER	1	125.48	125	160.00	0.00	49.66	E	DKAREA(ACF/WSF64)
3" CUNI 90/10 CL 200 W/ENTRAINED WATER	1	1,841.27	1,841	160.00	0.00	49.66	E	DKAREA(ACF/WSF64)
5" CUNI 90/10 CL 201 W/ENTRAINED WATER	1	606.92	607	160.00	0.00	49.66	E	DKAREA(ACF/WSF64)
VALVES	1	129.76	130	160.00	0.00	49.66	E	DKAREA(ACF/WSF64)
FITTINGS ALLOWANCE	1	215.69	216	160.00	0.00	49.66	E	DKAREA(ACF/WSF64)
<u>EXTERIOR DECK DRAINS</u>								
PIPING & FITTINGS	1	70.00	70	162.00	0.00	33.00	E	WSF64
DRAINS	1	20.00	20	162.00	0.00	33.00	E	WSF64
<u>DECKHOUSE DRAINS</u>								
PIPING & FITTINGS	1	1,900.00	1,900	162.00	0.00	33.00	E	WSF64
DRAINS	1	140.00	140	162.00	0.00	33.00	E	WSF64
<u>SANITARY DRAINS</u>								
SANITARY SYS LIFT PUMP	2	80.00	160	108.00	0.00	16.50	E	WSF64
SANITARY FLUSHING PUMP	1	796.00	796	108.00	0.00	16.50	E	WSF64
SANITARY FLUSHING PUMP	1	796.00	796	108.00	0.00	16.50	E	WSF64
1" SCH 10 S/S PIPE	1	1.40	1	108.00	0.00	16.50	E	WSF64
2" SCH 10 S/S PIPE	749	2.68	2,007	108.00	0.00	16.50	E	WSF64
3" SCH 10 S/S PIPE	82	4.00	328	108.00	0.00	16.50	E	WSF64
4" SCH 10 S/S PIPE	470	6.00	2,820	108.00	0.00	16.50	E	WSF64
4" BALL VALVE, BRONZE	5	102.00	510	108.00	0.00	16.50	E	WSF64
4" SWING CHECK VALVE, BRONZE	5	71.00	355	108.00	0.00	16.50	E	WSF64
FITTINGS ALLOWANCE	10%	6,021.72	602	108.00	0.00	16.50	E	WSF64
<u>AERATION SYSTEM</u>								
AERATION PUMP	2	150.00	300	108.00	0.00	16.50	E	WSF64
PIPE AND FITTINGS	1	1,080.00	1,080	108.00	0.00	16.50	E	WSF64
MSD	1	1,700.00	1,700	109.00	0.00	18.00	v	OMNIPURE 15MXMP
<u>BILGE</u>								
BILGE PUMP	1	573.53	574	162.50	0.00	8.00	E	LBP(ACF/WSF64)

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
BILGE PUMP MOTOR	1	320.90	321	162.50	0.00	8.00	E	SEE GENERAL NOTE 2.
BILGE PUMP BASEPLATE	1	427.42	427	162.50	0.00	8.00	E	LBP(ACF/W/SF64)
VALVES	1	1,259.03	1,259	162.50	0.00	8.00	E	LBP(ACF/W/SF64)
5" ANGLE GLOBE W/ACT	1	396.01	396	162.50	0.00	8.00	E	LBP(ACF/W/SF64)
2 1/2" ANGLE GLOBE W/ACT	1	273.11	273	162.50	0.00	8.00	E	LBP(ACF/W/SF64)
4" ANGLE GLOBE	1	136.55	137	162.50	0.00	8.00	E	LBP(ACF/W/SF64)
5" GATE	1	81.93	82	162.50	0.00	8.00	E	LBP(ACF/W/SF64)
5" GATE	1	81.93	82	162.50	0.00	8.00	E	LBP(ACF/W/SF64)
2 1/2" GATE	1	54.62	55	162.50	0.00	8.00	E	LBP(ACF/W/SF64)
PIPE AND FITTINGS	1	11,743.70	11,744	162.50	0.00	8.00	E	LBP(ACF/W/SF64)
HANGERS ALLOWANCE	1	111.43	111	162.50	0.00	8.00	E	LBP(ACF/W/SF64)
<u>POTABLE WATER</u>								
WATER HEATER	3	430.00	1,290	95.00	0.00	16.50	E	WSF64
ENTRAINED WATER	360	8.55	3,078	95.00	0.00	16.50	E	WSF64
POTABLE WATER PUMP	2	53.00	106	95.00	0.00	16.50	E	WSF64
PRESSURE TANK	1	513.00	513	95.00	0.00	16.50	E	WSF64
PURIFIER WATER TANK	1	20.00	20	95.00	0.00	16.50	E	WSF64
VALVES	1	293.30	293	95.00	0.00	16.50	E	WSF64
PIPE & FITTINGS	1	4,950.00	4,950	95.00	0.00	16.50	E	WSF64
<u>SANITARY WATER SUPPLY</u>								
1" COPPER TUBING TYPE K	258	1.47	379	108.00	0.00	16.50	E	WSF64
1-1/4" COPPER TUBING TYPE K	40	2.06	82	108.00	0.00	16.50	E	WSF64
1-1/2" COPPER TUBING TYPE K	23	2.52	58	108.00	0.00	16.50	E	WSF64
2" GALV SCH 40	171	3.55	607	108.00	0.00	16.50	E	WSF64
FITTINGS, VALVES & INSULATION ALLOWANCE	15%	1,126.67	169	108.00	0.00	16.50	E	WSF64
SANITARY SW PRESSURE PUMP	2	84.00	168	108.00	0.00	16.50	E	WSF64
PRESSURE TANK	1	456.00	456	108.00	0.00	16.50	E	WSF64
<u>FUELS &amp; LUBRICANTS, HANDLING &amp; STORAGE</u>								
<u>FUEL OIL TRANSFER &amp; STORAGE</u>								
MANIFOLD	1	70.00	70	160.00	0.00	16.50	E	WSF64
	4	5.00	20	160.00	0.00	16.50	E	WSF64
	4	5.00	20	160.00	0.00	16.50	E	WSF64
	4	8.00	32	160.00	0.00	16.50	E	WSF64

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
<u>FUEL OIL TRANSFER PUMP</u>	1	120.00	120	160.00	0.00	16.50	E	SEE GENERAL NOTE 2.
FUEL OIL PURIFIER	1	590.00	590	160.00	0.00	16.50	E	WSF64
PIPING								WSF64
VALVE & FITTINGS ALLOWANCE								INC IN F.O. SYS
								INC IN F.O. SYS
<u>LUBE OIL STORAGE TANK</u>								
SHELL	69	10.20	699	172.00	0.00	16.50	E	WSF64
BAFFLES	18	10.20	179	172.00	0.00	16.50	E	WSF64
SUPPORTS AND MOUNTS	4	15.30	61	172.00	0.00	16.50	E	WSF64
ACCESS PLATE & HARDWARE	1	60.00	60	172.00	0.00	16.50	E	WSF64
<u>DIRTY OIL TRANSFER &amp; STORAGE</u>								
DIRTY OIL TRANSFER PUMP	1	135.00	135	199.00	0.00	7.00	E	WSF64
VALVES	1	125.00	125	199.00	0.00	7.00	E	WSF64
PIPE AND FITTINGS	1	1,100.00	1,100	199.00	0.00	7.00	E	WSF64
FITTINGS & HANGER ALLOWANCE	10%	1,225.00	123	199.00	0.00	7.00	E	WSF64
<u>DIRTY OIL STORAGE TANK</u>								
SHELL	137	10.20	1,397	199.00	0.00	7.00	E	WSF64
BAFFLES	35	10.20	357	199.00	0.00	7.00	E	WSF64
SUPPORTS AND MOUNTS	8	15.30	122	199.00	0.00	7.00	E	WSF64
ACCESS PLATE & HARDWARE	1	60.00	60	199.00	0.00	7.00	E	WSF64
<u>OILY WATER STORAGE TANK</u>								
SHELL	137	10.20	1,397	199.00	0.00	7.00	E	WSF64
BAFFLES	35	10.20	357	199.00	0.00	7.00	E	WSF64
SUPPORTS AND MOUNTS	8	15.30	122	199.00	0.00	7.00	E	WSF64
ACCESS PLATE & HARDWARE	1	60.00	60	199.00	0.00	7.00	E	WSF64
<u>COMPRESSED AIR</u>								
VALVES	1	1,128.33	1,128	132.00	0.00	16.50	E	HP(ACF/WSF64)
PIPE & FITTINGS	1	4,700.00	4,700	132.00	0.00	16.50	E	HP(ACF/WSF64)
COMPRESSED AIR RECEIVER	1	2,450.00	2,450	132.00	0.00	16.50	E	HP(ACF/WSF64)
STARTING AIR COMPRESSORS	1	3,333.33	3,333	132.00	0.00	16.50	E	HP(ACF/WSF64)

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
<b><u>FIRE EXTINGUISHING SYSTEMS</u></b>								SEE GENERAL NOTE 2.
<b><u>ENGINE ROOM SYSTEM</u></b>								
Central Mist System (dni piping)	1	11,599.66	11,600	199.00	0.00	23.00	E	WSF64*1.5
<b><u>EMERGENCY GENERATOR SYS</u></b>								
<b><u>STORAGE BOTTLES</u></b>	1	300.00	300	133.00	2.00	65.75	E	WSF64
<b><u>BOTTLE RACK</u></b>	1	25.00	25	133.00	2.00	65.75	E	WSF64
<b><u>PIPING</u></b>	20	1.68	34	133.00	2.00	65.75	E	WSF64
<b><u>FITTINGS ALLOWANCE</u></b>	0.1	33.60	3	133.00	2.00	65.75	E	WSF64
<b><u>NOZZLES</u></b>	2	2.00	4	133.00	2.00	65.75	E	WSF64
<b><u>PULLEY, WIRES, BOXES</u></b>	1	20.00	20	133.00	2.00	65.75	E	WSF64
<b><u>SIREN</u></b>	1	6.00	6	133.00	2.00	65.75	E	WSF64
<b><u>FIRE EXTINGUISHING</u></b>								
<b><u>HOLD</u></b>								
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	18.50	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	18.50	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	18.50	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	18.50	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	18.50	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	18.50	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	18.50	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	18.50	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	18.50	E	WSF64
EXTINGUISHER, C02	1	15.00	15	162.00	0.00	18.50	E	WSF64
EXTINGUISHER, C02	1	15.00	15	162.00	0.00	18.50	E	WSF64
EXTINGUISHER, C02	1	15.00	15	162.00	0.00	18.50	E	WSF64
EXTINGUISHER, C02 LARGE	1	60.00	60	162.00	0.00	18.50	E	WSF64
<b><u>VEHICLE DECK</u></b>								
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	27.00	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	27.00	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	27.00	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	27.00	E	WSF64
<b><u>GALLERY DECK</u></b>								
EXTINGUISHER, ABC	1	15.00	15	162.00	21.00	32.00	E	WSF64

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
EXTINGUISHER, ABC	1	15.00	15	162.00	21.00	32.00	E	SEE GENERAL NOTE 2.
EXTINGUISHER, ABC	1	15.00	15	162.00	21.00	32.00	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	21.00	32.00	E	WSF64
EMERGENCY SQUAD LOCKER	1	100.00	100	162.00	21.00	32.00	E	WSF64
<u>PASS DECK</u>								
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	46.00	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	46.00	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	46.00	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	46.00	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	46.00	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	46.00	E	WSF64
<u>SUN DECK</u>								
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	53.00	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	162.00	0.00	53.00	E	WSF64
EXTINGUISHER, C02	1	15.00	15	162.00	0.00	53.00	E	WSF64
EXTINGUISHER, C02	1	15.00	15	162.00	0.00	53.00	E	WSF64
EMERGENCY SQUAD LOCKER	1	80.00	80	162.00	0.00	53.00	E	WSF64
<u>PILOTHOUSE DECK</u>								
EXTINGUISHER, ABC	1	15.00	15	64.00	0.00	71.00	E	WSF64
EXTINGUISHER, ABC	1	15.00	15	64.00	0.00	71.00	E	WSF64
EXTINGUISHER, C02	1	15.00	15	64.00	0.00	71.00	E	WSF64
EXTINGUISHER, C02	1	15.00	15	64.00	0.00	71.00	E	WSF64
<u>STEERING CONTROL SYSTEM</u>								
DOUBLE ACTING CYLINDERS	1	7,426.22	7,426	314.00	0.00	17.00	E	RUDAREA(ACF/WSF64)
TILLER	1	1,515.56	1,516	314.00	0.00	17.00	E	RUDAREA(ACF/WSF64)
HPU SET	1	17,618.33	17,618	314.00	0.00	17.00	E	RUDAREA(ACF/WSF64)
CYLINDER PIPING	1	492.56	493	314.00	0.00	17.00	E	RUDAREA(ACF/WSF64)
LOCKING PIN SET	1	1,515.56	1,516	314.00	0.00	17.00	E	RUDAREA(ACF/WSF64)
<u>RUDDERS</u>								
RUDDER, STOCK AND TUBE	2	26,304.36	52,609	314.00	0.00	9.00	E	RUDAREA(ACF/WSF64)

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
<u>FIN STABILIZERS</u>								
FIN STABILIZERS & HYDRAULICS	2	35,000.00	70,000	159.00	0.00	5.00	E	
<u>ELEVATORS</u>								
ELEVATOR (1)	1	5,650.00	5,650	203.00	14.75	41.00	E	WSF64
ELEVATOR (2)	1	5,060.00	5,060	203.00	14.75	41.00	E	WSF64
ELEVATOR HPU (1)	1	1,400.00	1,400	203.00	14.75	41.00	E	WSF64
ELEVATOR HPU (2)	1	1,400.00	1,400	203.00	14.75	41.00	E	WSF64
<u>ANCHOR HANDLING</u>								
ANCHOR	2	8,351.00	16,702	10.00	0.00	33.50	E	ABS EN CALC
ANCHOR SHACKLE & SWIVEL	2	835.10	1,670	10.00	0.00	33.50	E	ANCWT(ACF/WSF64)
CHAIN DEVIL'S CLAW	2	354.92	710	10.00	0.00	45.00	E	ANCWT(ACF/WSF64)
62mm STUD LINKED CHAIN	1714	55.10	94,454	10.00	0.00	24.00	E	ABS EN CALC
ANCHOR WINDLASS	2	11,200.00	22,400	10.00	0.00	45.00	E	ANCWT(ACF/ONGC)
100HP ELECTRO-HYDRAUL POWER UNIT	1	800.00	800	10.00	0.00	45.00	E	ANCWT(ACF/ONGC)
<u>MOORING</u>								
CAR DECK CAPSTANS	2	1,000.00	2,000	312.00	0.00	24.00	E	ABS EN CALC
PASS DECK LINE HANDLING DRUMS	2	1,000.00	2,000	10.00	0.00	45.00	E	ANCWT(ACF/WSF64)
<u>BOATS, BOAT STORAGE, &amp; LIFE JACKETS</u>								
LIFE BOAT DAVIT	2	9,909.40	19,819	115.00	0.00	60.00	V	
LIFEBOAT, FASSMER CL-P 9.8	2	8,484.32	16,969	115.00	0.00	65.00	V	
RESCUE BOAT DAVIT	2	2,535.00	5,070	256.00	0.00	37.25	E	WSF64
RESCUE BOAT	2	4,308.45	8,617	256.00	0.00	37.25	V	
RESCUE PLATFORM DAVIT	1	2,500.00	2,500	182.00	32.00	64.50	E	
RESCUE PLATFORM	1	500.00	500	182.00	32.00	64.50	E	
JACOBS LADDER	2	20.00	40	162.00	0.00	50.00	E	WSF64
LIFE JACKETS	600	2.00	1,200	162.00	0.00	50.00	E	
LIFEJACKET STORAGE	1	682.79	683	162.00	0.00	50.00	E	LIFEJCKTS(ACF/WSF64)
MES, LIFERAFT SYSTEMS MK2	2	1,745.47	3,491	154.00	0.00	48.00	E	WSF64
MES DOORS, LIFERAFT SYSTEMS MK2	2	408.75	818	154.00	0.00	48.00	E	WSF64
LIFE RAFT, LIFERAFT SYSTEMS "LINK"	4	817.50	3,270	88.00	0.00	45.00	E	WSF64
LIFE RAFT RACKS, LIFERAFT SYSTEMS "LINK"	4	106.05	424	88.00	0.00	45.00	E	WSF64

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
<b>AUXILIARY SYSTEMS - SUBTOTAL</b>		590177	142.94	0.02	26.115			
		263.47						

Description	Qty.	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
		(lbs)	(lbs)						
<b><u>OUTFIT</u></b>									SEE GENERAL NOTE 2.
<b><u>HULL FITTINGS</u></b>									
CLEATS	1	3,184.17		3,184	162.00	0.00	32.00	E	VHDKAREA(ACF/WSF64
CHOCK	1	2,642.86		2,643	162.00	0.00	32.00	E	VHDKAREA(ACF/WSF64
PIPE HORNS	1	212.28		212	162.00	0.00	32.00	E	VHDKAREA(ACF/WSF64
<b><u>EXTERIOR RAILINGS, STANCHIONS &amp; LIFELINES</u></b>									
<b><u>PASS DECK</u></b>									
RAILING	225	8.62		1,940	162.00	0.00	45.00	E	
<b><u>SUN DECK</u></b>									
RAILING	535	8.62		4,612	162.00	0.00	55.00	E	
<b><u>HOUSE TOP AFT</u></b>									
RAILING	346	8.62		2,983	170.00	0.00	64.00	E	
<b><u>PILOTHOUSE</u></b>									
RAILING	288	8.62		2,483	66.00	0.00	69.00	E	
<b><u>FIDLEY TOP</u></b>									
RAILING	236	8.62		2,034	164.00	0.00	71.00	E	
<b><u>PILOTHOUSE TOP</u></b>									
RAILING	216	2.94		635	66.00	0.00	78.00	E	
<b><u>INTERIOR RAILINGS &amp; STANCHIONS</u></b>									
<b><u>STAIR RAILINGS</u></b>									
VEHICLE/MEZZ DECK STAIRS	140	0.94		132	162.00	14.75	38.00	E	WSF64
<b><u>MEZZ/PASS DECK (4)</u></b>									
PASS-SUN DK STAIRS, P/S (1&2)	280	0.94		263	162.00	14.75	38.00	E	WSF64
<b><u>CREW STAIRS</u></b>									
LANDING RAILING	160	0.94		150	162.00	14.75	38.00	E	WSF64
LADDER RAILING	30	5.54		165	162.00	14.75	38.00	E	WSF64
	70	3.86		271	162.00	14.75	38.00	E	WSF64

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
LADDER RAILING	38	2.27	86	162.00	14.75	38.00	E	SEE GENERAL NOTE 2. WSF64
<u>AUXILIARY MACH RM PLATFORMS RAILING</u>	56	5.54	310	162.00	14.75	38.00	E	WSF64
<u>AUXILIARY MACH RM TO VEHICLE DK STAIRS LADDER RAILING</u>	36	3.86	139	162.00	14.75	38.00	E	WSF64
<u>MACHINERY RM TO VEHICLE DK STAIRS LADDER RAILING</u>	36	3.86	139	162.00	14.75	38.00	E	WSF64
<u>NON-STRUCTURAL BULKHEADS CREW QUARTERS</u>								
B-0 JOINER PANEL	2424	1.58	3,829	207.00	0.00	57.25	E	CREW AREA(ACF/WSF64)
LESS JOINER DOOR CUTOUT	-517	1.58	-817	207.00	0.00	57.25	E	CREW AREA(ACF/WSF64)
<u>SUN DECK OFFICER SPACES</u>								
B-0 JOINER PANEL	4475	1.58	7,071	99.00	0.00	59.75	E	OFCRAREA(ACF/WSF64)
LESS JOINER DOOR CUTOUT	-66	1.58	-105	99.00	0.00	59.75	E	OFCRAREA(ACF/WSF64)
<u>PASS DECK SHIP'S OFFICE</u>								
B-0 JOINER PANEL	500	1.58	790	218.00	0.00	48.00	E	WSF64
LESS JOINER DOOR CUTOUT	-20	1.58	-32	218.00	0.00	48.00	E	WSF64
<u>PASS DECK PUBLIC RESTROOMS</u>								
STALL DIVIDER	90	30.00	2,700	157.00	0.00	46.00	E	WSF64
<u>FLOOR PLATES &amp; GRATINGS</u>								
FLR PLT - ENG RM ABOVE DBL BTM	1425	10.00	14,250	198.00	0.00	7.00	C	DIA PL AND SUPPORT
FLR PLT - PUMP RM ABOVE DBL BTM	623	10.00	6,230	156.00	0.00	7.00	C	DIA PL AND SUPPORT
FLR PLT - AUX ENG RM ABOVE DBL BTM	905	10.00	9,050	132.00	0.00	7.00	C	DIA PL AND SUPPORT
GRATING - ENG RM 2ND DK	196	10.00	1,960	218.00	0.00	15.50	C	GRATING AND SUPPORT
GRATING - AUX ENG RM 2ND DK	550	10.00	5,500	132.00	0.00	15.50	C	GRATING AND SUPPORT
<u>EXTERIOR VERTICAL LADDERS</u>								
<u>PASS-SUN DK INCLINED (FORE&amp;AFT)</u>								
LEG	192	4.25	816	162.00	0.00	48.00	E	
STEP	102	2.64	269	162.00	0.00	48.00	E	

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
TREAD	408	0.88	359	162.00	0.00	48.00	E	SEE GENERAL NOTE 2.
<b><u>INTERIOR LADDERS</u></b>								
CREW STAIRS	1	994.00	994	300.00	0.00	27.00	E	
CREW STAIRS	1	994.00	994	232.00	14.75	15.50	E	
CREW STAIRS	1	994.00	994	212.00	14.75	24.00	E	
CREW STAIRS	1	2,485.00	2,485	165.00	14.75	38.25	E	WSF144
CREW STAIRS	1	994.00	994	153.00	14.75	15.50	E	
CREW STAIRS	1	994.00	994	109.00	14.75	15.50	E	
CREW STAIRS	1	497.00	497	88.00	14.75	15.50	E	
CREW STAIRS	1	1,491.00	1,491	26.00	14.75	15.50	E	
<b><u>PASS STAIRS (P) (FORE&amp;AFT)</u></b>								
LEG	95	13.40	1,273	184.00	14.75	38.00	E	WSF64
STEP	648	7.65	4,957	184.00	14.75	38.00	E	WSF64
TREAD	432	0.88	380	184.00	14.75	38.00	E	WSF64
<b><u>NON-STRUCTURAL CLOSURES</u></b>								
<b><u>2ND DECK</u></b>								
FIRE DOOR	2	230.00	460	171.00	10.50	19.00	C	
JOINER DOOR	2	215.00	430	227.00	-20.00	19.00	C	
WATER TIGHT DOOR	1	230.00	230	143.00	-15.00	19.00	C	
<b><u>CAR DECK</u></b>								
FIRE DOOR	2	230.00	460	171.00	0.00	27.50	C	
JOINER DOOR	4	215.00	860	171.00	0.00	27.50	C	
WATER TIGHT DOOR	8	230.00	1,840	171.00	0.00	27.50	C	
<b><u>GALLERY DECK</u></b>								
FIRE DOOR	13	230.00	2,990	171.00	0.00	35.50	C	
JOINER DOOR	10	215.00	2,150	171.00	0.00	35.50	C	
<b><u>PASS DECK</u></b>								
FIRE DOOR	15	230.00	3,450	171.00	0.00	46.50	C	
JOINER DOOR	20	215.00	4,300	171.00	0.00	46.50	C	
WEATHER TIGHT DOOR	6	110.00	660	171.00	0.00	46.50	C	

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
<u>SUN DECK</u>								SEE GENERAL NOTE 2.
FIRE DOOR	5	230.00	1,150	157.00	0.00	56.00	C	
JOINER DOOR	78	215.00	16,770	157.00	0.00	56.00	C	
WEATHER TIGHT DOOR	9	110.00	990	157.00	0.00	56.00	C	
<u>HOUSE TOP &amp; BRIDGE DECK</u>								
FIRE DOOR	3	230.00	690	135.00	0.00	68.00	C	
JOINER DOOR	5	215.00	1,075	135.00	0.00	68.00	C	
WEATHER TIGHT DOOR	8	110.00	880	135.00	0.00	68.00	C	
<u>AIRPORTS, FIXED PORTLIGHTS &amp; WINDOWS INCLUDED IN PLATE WEIGHT</u>								
<u>PAINTING</u>								
PAINT	4.0%	4,952,039	198,082	163.50	0.73	28.08	E	
<u>CATHODIC PROTECTION</u>								
SHELL, GENERAL ANODES	1	4,500.00	4,500	160.75	0.00	10.81	E	
MACHINERY SPACE BILGES	10	22.00	220	162.00	0.00	8.50	E	WSF64
SEA CHEST	4	22.00	88	162.00	0.00	8.50	E	WSF64
PROPELLER ROPE GUARDS	2	10.00	20	162.00	0.00	8.50	E	WSF64
KEEL COOLERS	16	22.00	352	162.00	0.00	8.50	E	WSF64
PROPELLER HUB	1	50.00	50	162.00	0.00	8.50	E	WSF64
STERN TUBE	4	22.00	88	162.00	0.00	8.50	E	WSF64
STRUTS	2	22.00	44	162.00	0.00	8.50	E	WSF64
VOID BILGE SUCTIONS	9	22.00	198	162.00	0.00	8.50	E	WSF64
<u>DECK COVERINGS</u>								
DECK COVERINGS	1	104,600	104,600	162.00	0.00	43.00	E	INTVOL(ACF/WSF144)
<u>INSULATION &amp; LININGS</u>								
<u>THERMAL, ACOUSTIC</u>								
<u>STRUCT FIRE PROTECTION, &amp; LININGS</u>								
GENERAL INSULATION & LININGS	1	198,300.00	198,300	162.00	0.00	48.00	E	INTVOL(ACF/WSF144)
Car Deck Inner Lining	6946	5.00	34,730	185.00	0.00	33.33	E	MATERIAL TBD

Description	Unit Wt.			LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)	Total Wt. (lbs)					
<u>LIVING SPACES</u>								SEE GENERAL NOTE 2.
<u>CREW QUARTERS</u>								
DOUBLE BERTH	12	450.00	5,400	207.00	-12.00	57.25	C	
HANGING LOCKER	12	100.00	1,200	207.00	-12.00	57.25	C	
HANGING LOCKER, DOUBLE STACKED	0	75.00	0	207.00	-12.00	57.25	C	
DESK	12	80.00	960	207.00	-12.00	57.25	C	
FILE CABINET, 2 DRAWER	12	100.00	1,200	207.00	-12.00	57.25	C	
CHAIR	12	48.00	576	207.00	-12.00	57.25	C	
<u>CREW QUARTERS PLUMBING FIXTURES</u>								
LAVATORY	12	22.00	264	207.00	-12.00	57.25	C	
FAUCET, LAVATORY	12	8.00	96	207.00	-12.00	57.25	C	
TOILET	12	35.00	420	207.00	-12.00	57.25	C	
NO TOUCH VALVE, TOILET	12	8.00	96	207.00	-12.00	57.25	C	
SHOWER STALL	12	250.00	3,000	207.00	-12.00	57.25	C	
FAUCET, SHOWER STALL	12	2.00	24	207.00	-12.00	57.25	C	
FRAMED MIRROR	12	5.00	60	207.00	-12.00	57.25	C	
COUNTER	12	30.00	360	207.00	-12.00	57.25	C	
<u>OFFICER QUARTERS</u>								
SINGLE BERTH	12	280.00	3,360	99.00	0.00	57.25	C	
HANGING LOCKER	12	100.00	1,200	99.00	0.00	57.25	C	
DESK	12	130.00	1,560	99.00	0.00	57.25	C	
FILE CABINET, 2 DRAWER	12	100.00	1,200	99.00	0.00	57.25	C	
CHAIR	12	48.00	576	99.00	0.00	57.25	C	
<u>OFFICER QUARTERS PLUMBING FIXTURES</u>								
LAVATORY	12	22.00	264	99.00	0.00	57.25	C	
FAUCET, LAVATORY	12	8.00	96	99.00	0.00	57.25	C	
TOILET	12	35.00	420	99.00	0.00	57.25	C	
NO TOUCH VALVE, TOILET	12	8.00	96	99.00	0.00	57.25	C	
SHOWER STALL	12	250.00	3,000	99.00	0.00	57.25	C	
FAUCET, SHOWER STALL	12	2.00	24	99.00	0.00	57.25	C	
FRAMED MIRROR	12	5.00	60	99.00	0.00	57.25	C	
COUNTER	12	30.00	360	99.00	0.00	57.25	C	

Description	Qty.	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
		(lbs)	(lbs)						
<u>CREW MESS</u>									
CREW DAY ROOM SEATS & TABLES	4	309.60		1,238	204.00	0.00	46.00	C	
COUNTER	1	200.00		200	204.00	0.00	46.00	C	SEE GENERAL NOTE 2.
TELEVISION	1	75.00		75	204.00	0.00	46.00	C	
<u>OFFICER MESS</u>									
CREW DAY ROOM SEATS & TABLES	4	309.60		1,238	185.00	0.00	46.00	C	
COUNTER	1	200.00		200	185.00	0.00	46.00	C	
TELEVISION	1	75.00		75	185.00	0.00	46.00	C	
<u>CREW GYM</u>									
EXERCISE EQUIPMENT	4	500.00		2,000	15.00	10.00	35.00	C	
<u>SERVICE SPACES</u>									
<u>PASS DECK PASSENGER SPACES</u>									
PASSENGER SEATS, INTERIOR	222	88.00		19,536	162.00	0.00	45.00	C	
TABLES, INTERIOR	29	40.00		1,160	268.00	0.00	45.00	C	
SETTEES & TABLES, INTERIOR	13	125.00		1,625	190.00	13.00	45.00	C	
DRINKING FOUNTAIN	2	85.00		170	162.00	0.00	46.00	E	WSF64
SERVICE SINK, CLEANING LOCKER	1	60.00		60	231.00	0.00	45.00	C	
<u>PASS DECK GALLEY/SERVING LINE</u>									
HOT CHOCOLATE MACHINE	2	30.00		60	219.00	-20.00	46.00	E	WSF64
COFFEE BREWER	2	25.00		50	219.00	-20.00	46.00	E	WSF64
BEVERAGE MACHINE, 8 VALVE	1	158.00		158	219.00	-20.00	46.00	E	WSF64
SODA STORAGE RACK	1	80.00		80	219.00	-20.00	46.00	E	WSF64
CO2 PUMP SYSTEM	1	100.00		100	219.00	-20.00	46.00	E	WSF64
CASH REGISTER	2	40.00		80	219.00	-20.00	46.00	E	WSF64
CONDIMENT COUNTER	1	50.00		50	219.00	-20.00	46.00	E	WSF64
REFRIGERATOR, 3 DOOR DISPLAY	1	800.00		800	219.00	-20.00	46.00	E	WSF64
STEAM TABLE, FOUR BAY	1	250.00		250	219.00	-20.00	46.00	E	WSF64
SANDWICH UNIT	1	300.00		300	219.00	-20.00	46.00	E	WSF64
DISPLAY UNIT, THREE TIER	1	150.00		150	219.00	-20.00	46.00	E	WSF64
PRETZEL MACHINE	1	100.00		100	219.00	-20.00	46.00	E	WSF64
SHELF FOR MICROWAVES	1	50.00		50	219.00	-20.00	46.00	E	WSF64
FOUR BARREL KEG UNIT	1	400.00		400	219.00	-20.00	46.00	E	WSF64

Description	Unit Wt.		Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	Qty.	(lbs)						
REMOTE STANCHION FOR DRAFT ICE SINK	1	50.00	50	219.00	-20.00	46.00	WSF64	
	1	50.00	50	219.00	-20.00	46.00	WSF64	
COUNTER - TOP WARMER	1	150.00	150	219.00	-20.00	46.00	WSF64	SEE GENERAL NOTE 2.
6' UNDER-COUNTER REFRIGERATOR	1	600.00	600	219.00	-20.00	46.00	WSF64	
TOASTER	1	15.00	15	219.00	-20.00	46.00	WSF64	
MICROWAVE OVEN	2	30.00	60	219.00	-20.00	46.00	WSF64	
5' UNDER-COUNTER REFRIGERATOR	1	500.00	500	219.00	-20.00	46.00	WSF64	
COUNTER-TOP CONVECTION STEAMER	1	150.00	150	219.00	-20.00	46.00	WSF64	
COUNTER-TOP CONVECTION OVEN	1	150.00	150	219.00	-20.00	46.00	WSF64	
2-DOOR UPRIGHT REFRIGERATOR	1	400.00	400	219.00	-20.00	46.00	WSF64	
2-DOOR SPLIT FREEZER/REFRIGERATOR	1	400.00	400	219.00	-20.00	46.00	WSF64	
8' WORK TABLE	1	150.00	150	219.00	-20.00	46.00	WSF64	
TRIPLE SINK	1	75.00	75	219.00	-20.00	46.00	WSF64	
SNEEZE GUARD	1	50.00	50	219.00	-20.00	46.00	WSF64	
BCG RADIO	1	25.00	25	219.00	-20.00	46.00	WSF64	
<u>PASS DECK PASS SANITARY SPACE</u>								
LAVATORY	12	22.00	264	157.00	-3.00	46.00	WSF64	
FAUCET	12	8.00	96	157.00	-3.00	46.00	WSF64	
TOILET	12	35.00	420	157.00	-3.00	46.00	WSF64	
NO TOUCH VALVE, URINAL	12	8.00	96	157.00	-3.00	46.00	WSF64	
URINAL	4	35.00	140	157.00	-3.00	46.00	WSF64	
NO TOUCH VALVE, URINAL	4	8.00	32	157.00	-3.00	46.00	WSF64	
HAND DRYER	4	30.00	120	157.00	-3.00	46.00	WSF64	
TOWEL DISPENSER	4	25.00	100	157.00	-3.00	46.00	WSF64	
SOAP DISPENSER	8	3.00	24	157.00	-3.00	46.00	WSF64	
FRAMED MIRROR	12	5.00	60	157.00	-3.00	46.00	WSF64	
BABY CHANGING TABLE	2	30.00	60	157.00	-3.00	46.00	WSF64	
COUNTER	36	10.00	360	157.00	-3.00	46.00	WSF64	
RAILINGS, HANDICAP	32	2.70	86	157.00	-3.00	46.00	WSF64	
TODDLER SEAT, FOLDING	2	25.00	50	157.00	-3.00	46.00	WSF64	
<u>SUN DECK PASSENGER SPACES</u>								
PASSENGER SEATS, EXTERIOR	48	50.00	2,400	264.00	0.00	55.00	WSF64	
<u>WORKING SPACES</u>								

Description	Qty.	Unit Wt. (lbs)	Total Wt. (lbs)	LCG (+ aft)	TCG (+ stbd)	VCG (+ abl)	Source C, E, V *	Notes
	<u>2ND DECK</u>							
PAINT LOCKER	1	88.02	88	234.00	0.00	18.50	E	INTVOL(ACF/WSF64) SEE GENERAL NOTE 2.
ENG RM WORK BENCH	1	220.05	220	234.00	0.00	18.50	E	INTVOL(ACF/WSF64)
TOOL CHEST	1	220.05	220	133.00	2.00	18.50	E	INTVOL(ACF/WSF64)
PARTS BIN	1	220.05	220	133.00	2.00	18.50	E	INTVOL(ACF/WSF64)
DRILL PRESS	1	293.40	293	133.00	2.00	18.50	E	INTVOL(ACF/WSF64)
LATHE	1	366.75	367	133.00	2.00	18.50	E	INTVOL(ACF/WSF64)
AUX ENG RM WORK BENCH	1	220.05	220	234.00	0.00	18.50	E	INTVOL(ACF/WSF64)
<u>PILOTHOUSES</u>								
SEATS	6	60.00	360	64.00	0.00	71.00	E	WSF64
CONSOLES	2	50.00	100	58.00	0.00	71.00	E	WSF64
<b>OUTFIT - SUBTOTAL</b>			736261	163.55	0.20	39.011		
			328.69					