Fast Vehicle Ferry — *M/V Chenega*

Trim and Stability Book

Prepared for
Alaska Marine Highway System
Juneau, Alaska

File No. 11148.01
9 March 2012
Rev. A

Subject to comments in
Marine Safety Center letter of

APR - 2 2012

APPROVED

THE GLOSTEN ASSOCIATES
Consulting Engineers Serving the Marine Community

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Contents

Revision History

Section	Rev	Description	Date	Approved
All	—	Initial Issue	01/20/2012	RJVS
7,8	A	Sample Loading Conditions Updated per USCG Comments	03/09/2012	RJVS

References

1. *International Code of Safety for High Speed Craft 2000* (2000 HSC Code), International Maritime Organization, 2008

2. *Alaska Marine Highways FVF Stability Report – Chenega (US Units)*, BMT Nigel Gee, Reference: NG717-835-54 Issue 5, 6 July 2010

3. *Fast Vehicle Ferry - M/V Chenega, Intact and Damage Stability Report*, Glosten Associates, Rev A, 9 March 2012

4. *Freeboard Plan,* BMT Nigel Gee, NG-810-01-1, Issue 2

5. *Draft Marks,* BMT Nigel Gee, NG408-850-01, Issue 4

6. *Tank Capacity Plan,* BMT Nigel Gee, NG408-525-01-1, Issue 4

Section 1 Introduction

The stability of the AMHS FVF catamaran passenger-vehicle vessel has been assessed to the International Code of Safety for High Speed Craft 2000 (HSC Code 2000), Chapter 2 and Annex 7. This Trim and Stability Book supersedes the previous Trim and Stability Book (Reference 2).

The following sections contain instructions that allow any condition of loading to be assessed for compliance with the stability criteria. The load condition satisfies the stability requirements when its VCG is below the Maximum Allowable VCG at the displacement and trim under consideration. A set of 14 sample conditions are included to represent a range of possible vessel loads. The sample load conditions meet the stability criteria. Loading conditions that deviate from the sample cases must be assessed according to the instructions and Maximum Allowable VCG curve.

Section 2 General Information

2.1 Principal Particulars

Length Overall	235' 5"
Length between Perpendiculars	210' 4"
Maximum Beam	59' 1"
Mean Draft (Max Load)	8' 5 1/2"
Displacement (Max Load)	787.4 LT
Maximum No. of Passengers	250

2.2 Shipyard

Derecktor Shipyard Conn
LLC 837 Seaview Avenue
Bridgeport, CT 06607-1607

2.3 Safety Authority

United States Coast Guard

2.4 Lightship

The lightship weight and center of gravity used in this document are taken from the USCG letter dated March 25, 2010, based on the September 9, 2009 Lightship Survey (see Reference 2) This supersedes all previous lightship weights for this vessel.

This USCG letter states an approved lightship and center of gravity as indicated in the following table.

Item	Value	Units
Lightship Displacement	500.46	LT
LCG	84.77	ft Fwd AP (Fr 0)
VCG	23.23	ft Abv BL

2.5 Coordinate System

Logitudinal origin is AP (Frame 0, positive forward)
Transverse origin is centerline (positive starboard)
Vertical origin is baseline (positive up)
Aft trim, i.e. trim down by the stern, is considered to be positive, signed “a.”
Fwd trim, i.e. trim down by the bow, is considered to be negative, signed by “-” or “f.”

2.6 Nomenclature

Symbol	Explanation	Units
∇	Volumetric displacement	ft^3
AB	Above Baseline	-
AEQ	Automotive Equivalent Unit (ie. 6000 lbs or 2.72t equivalent vehicle)	-
AMHS FVF	Alaska Marine Highways System Fast Vehicle Ferry	-
AP	Aft Perpendicular	-
FP	Fwd Perpendicular	-
FSf FSM	Free Surface / Free Surface Moment	LT.ft
GM (fluid)	GM_T corrected for FS effect	ft
GM (solid)	GM_T excluding FS effect	ft
GM/GM_T	Transverse Metacentric height above VCG	ft
GM_L	Longitudinal Metacentric height above VCG	ft
GZ	Righting Arm	ft
HSC	High Speed Craft	-
IMO	International Maritime Organization	-
KG/VCG	Center of Gravity Above Baseline	ft
KM_L	Longitudinal Metacentric Height Above Baseline	ft
KM_T	Transverse Metacentric Height Above Baseline	ft
LCB	Longitudinal Center of Buoyancy	ft
LCF	Longitudinal Center of Flotation	ft
LPA	Lateral Projected Area	ft^2
MCT	Moment to Change Trim by 1 cm	$LT.ft.in^{-1}$
MES	Marine Evacuation Slide	-
T	Draft	ft
T_{AP}	Draft measured at AP	ft
T_{FP}	Draft measured at FP	ft
TPC	Tons per inch Immersion	$LT.in^{-1}$
USCG	US Coast Guard	-
VCB	Vertical Center of Buoyancy (above baseline)	ft
X	Longitudinal Coordinate	ft
y	Transverse Coordinate	ft
Z	Vertical Coordinate	ft
Δ	Displacement	LT
θ	Heel Angle	degrees
θ_t	Downflooding Angle	degrees

Section 3 Instructions to the Master

3.1 Carriage of Large Trailers

a. Large trailers of up to 28.12 Long Tons (63,000 pounds) may be carried only on the two center lanes of the vehicle deck aft of Frame 45. The vessel may carry a maximum of four large trailers if there is potential for icing conditions and a maximum of five large trailers if no icing conditions are expected.

3.2 Compliance with Stability Criteria

a. Compliance with intact and damage stability criteria as specified in the HSC Code 2000 has been investigated and calculations have been carried out for a range of loading conditions. The summary of the results is shown as maximum VCG curves in Section 4.

b. WARNING. The vessel shall not go to sea if conditions are forecast for significant wave heights greater than 13ft or wind speeds over 50 knots. In these conditions the vessel shall reduce speed and make way to safe refuge.

c. No fixed ballast or other such weights shall be added, removed, altered and / or relocated without the authorization and supervision of the USCG.

d. The load line displacement for this vessel is 787.4 LT. This maximum displacement, however, includes an added mass for ice accretion as defined by the HSC Code 2000.

   It is the sole responsibility of the master to assess if ice accretion is present or if the prevailing condition, including wind chill, present the threat of ice accumulating during the passage.

   If ice accumulation is present or remotely possible then the maximum displacement of the craft should be limited to 737.2 LT. The $VCG_{CORRECTED}$ and trim of the vessel at this displacement must meet the stability criteria defined by the maximum VCG curves.

   If, however, ice accretion is not present and not possible given the medium term forecast then the vessel displacement shall be limited to its load line displacement provided that the $VCG_{CORRECTED}$ and trim of the vessel satisfy the stability criteria defined in the maximum VCG curves.

3.3 General Precautions against Capsizing and Dangerous Phenomena

a. Compliance with the requirements regarding maximum allowable VCG information shown in Section 4 does not ensure immunity against capsizing regardless of the circumstances or absolve the master from his responsibilities. Masters should exercise prudence and good seamanship with due regard to the season, weather forecasts and the navigational zone, and

should take the appropriate action regarding the vessel speed and course warranted by the prevailing conditions.

b. All persons responsible for the safe operation and navigation of the craft must be fully aware and understand the hazards of operating the vessel in following and stern quartering seas. All persons responsible for the operation of the craft must attain a full understanding of the IMO circular, MSC 707, Guidance to the Master for Avoiding Dangerous Situations in Following and Quartering Seas. This circular was issued following meetings of the Maritime Safety Committee and outlines the various dangerous phenomena and proposes actions and procedures to assist Masters in maintaining the safety of their vessels. A ships copy of this circular must be maintained onboard at all times for reference.

   In following and stern quartering seas, conditions that may be well below the operation limiting envelope can cause dangerous situations to occur depending if the vessel speed, length and heading correlates to that of the prevailing conditions.

   If the master anticipates these conditions arising given the prevailing weather and sea conditions, or feels the vessel gain a tendency to surf, the master must reduce speed and alter course.

c. It is the responsibility of the Master to ensure that deadweight is securely stowed and in a position such that compliance with the VCG requirements can be achieved. If necessary, the amount of deadweight should be limited to ensure compliance with the maximum VCG curves shown in Section 4.

d. Before departure care should be taken to ensure that the deadweight and sizable pieces of equipment have been properly stowed or lashed so as to minimize the possibility of both longitudinal and lateral shifting while at sea, under the effect of acceleration caused by rolling and pitching.

e. Before departure the Master shall strive for level heel and trim. Any level or trimmed condition shall be checked to ensure that the vessel passes the stability criteria, as summarized by the Maximum Allowable VCG curves in Section 4. The vessel should not proceed to sea with more than ±0.2° (± 8 1/2") trim.

3.4 Closing of Openings in Hull and in Watertight Bulkheads

a. Watertight Doors

All watertight doors as shown on the Freeboard Plan, drawing number NG408-810-01-1 (Reference 4), are to be kept closed at sea except those which on instructions from the Master are allowed to be opened in accordance with the USCG regulations. In case of damage, all the watertight doors MUST be closed immediately.

b. Portable Plates, Manholes and Hatches

All portable, manholes and hatches serving spaces below the main deck are to be effectively closed and secured watertight (or weathertight where applicable) before the

ship departs, and are to be kept closed during the voyage. The times of opening and closing of any closing devices are to be entered in the official log as requested by the USCG regulations.

3.5 Method for Calculating Displacement and VCG

The following instructions provide a quick method for estimating the VCG of the vessel in any loading condition, with reference to the table shown on the following page. This method is not intended to generate exact results, but it will generate a conservative estimate of the VCG location. It is assumed that the cargo weight has been calculated by the Master.

Step 1 – Determine Loads aboard the Vessel

a. Calculate deadweight for items in group (i). Luggage quantity shall be assumed the same as the passenger quantity.

b. Calculate deadweight and LCG for items in group (ii).

c. Calculate tank fluid weights for items in groups (iii), (iv) and (v) by multiplying the volume of fluid in each tank (in US gallons) by the unit weight.

d. Estimate deadweight, LCG and VCG for miscellaneous items in group (vi).

e. If ice accretion is present or if the prevailing conditions, including wind chill, present the threat of ice accumulating during the passage, then include item (vii) in the calculation. Otherwise consider the weight due to item (vii) to be zero.

Step 2 – Fill in the blank slots in the table for items (i) to (vii)

The Values in the LMOM column are the result of multiplying the LCG value by the respective weight. Similarly, the values in the VMOM column are the result of multiplying the VCG value by the respective weight.

Step 3 – Total the data in the Weight column from items (i) to (viii). Result: _____

Step 4 – Total the data in the LMOM column from items (i) to (viii). Result: _____

Step 5 – Total the data in the VMOM column from items (i) to (viii). Result: _____

Step 6 – Total the data in the FSM column from items (i) to (viii). Result: _88.9 ft-LT__

Step 7 – Divide the result from Step 4 by the result from Step 3. Result: _____

Step 8 – Divide the result from Step 5 by the result from Step 3. Result: _____

Step 9 – Divide the result from Step 6 by the result from Step 3. Result: _____

Step 10 – Add the result from Step 8 to the result from Step 9. Result: _____

Step 11 – Fill in the cells for item (ix) of the table with the above results.

Step 12 – Plot $VCG_{CORRECTED}$ against displacement on the maximum VCG curves as described in Section 4.1

The table represents the calculated total displacement of the vessel together with the calculated $VCG_{CORRECTED}$, and LCG. The VCG is corrected for free surface of liquids by assuming the maximum free surface moment for fuel and water tanks. This will produce a conservative estimate of the free surface effects. Free surface moments of all other tanks currently present on the ship are negligible.

3.6 Calculation Worksheet

Item	Weight Breakdown	Quantity	Unit Wt [LT]	Wt [LT]	LCG [ft]	VCG [ft]	LMOM [LT.ft]	VMOM [LT.ft]	FSM (Max) [LT.ft]
(i)	**Personnel and Luggage**								
	Passngers (@ 185 lb ea.)		0.083		105.24	38.55			-
	Luggage (@ 20 lb ea.)		0.01		115.75	21.33			-
	Crew (@ 220 lb ea.)	10	0.098	0.984	125.38	46.05	37.61	13.81	-
(ii)	**Vehicles**								
	Bicycles (@ 30 lb ea.)		0.014		209.26	19.68			-
	Kayaks (@ 75 lb ea.)		0.033		131.35	21.65			-
	AEQs (@ 6000 lb ea.)		2.679			21.32			-
	Small trailers					27.45			-
	Large trailers (@ 63000 lb ea.)		28.125			27.45			-
	RVs (@ 15000 lb ea.)		6.696			23.81			-
(iii)	**Fuel (quantity in US Gal)**								
	Fuel in DBF3 (S)		0.00313		114.15	3.56			38.2
	Fuel in DBF4 (P)		0.00313		114.15	3.56			38.2
(iv)	**Water Fluids (quantity in US Gal)**								
	Fresh Water (P)		0.00373		135.82	10.24			1.8
	Black Water (S)		0.00382		98.12	10.43			10.5
(v)	**Lube Oil (quantity in US Gal)**								
	Lube Oil Header Tank 1 (S)		0.00328		49.21	14.45			0.1
	Lube Oil Header Tank 2 (P)		0.00328		49.21	14.45			0.1
(vi)	**Misellaneous Items**								
	Food stuffs	-	-	0.58	100.46	38.71	58.34	22.48	-
	Loose outfit/Gear	-	-	0.40	111.22	37.07	44.88	14.96	-
	Stores	-	-	0.67	101.71	37.07	68.07	24.81	-
	Art Allowance	-	-	0.53	111.22	40.35	59.11	21.45	-
	Trash	-	-	0.44	104.66	28.64	46.35	12.69	-
	Video Games	-	-	0.44	28.48	38.71	12.61	17.15	-
	.....								-
	.....								-
	.....								-
	.....								-
	.....								-
	.....								-
	.....								-
(vii)	**Ice Accretion***	-	-	50.21	112.83	38.16	5664.72	1915.70	-
(viii)	**Lightship Mass**	-	-	500.46	84.77	23.23	42423.99	11625.69	-
(ix)	**Displacement**	-	-						88.9
				(From Step 3) DISP	(From Step 7) LCG	(From Step 8) VCG	(From Step 4) LMOM	(From Step 5) VMOM	(From Step 6) FSM

Step 9: Free Surface Correction FS_{corr} ____ ft = FSM / DISP (Step 6 / Step 3)

Step 10: Corrected Vertical Center of Gravity $VCG_{CORRECTED}$ ____ ft = VCG + FS_{CORR} (Step 8 + Step 9)

* Only include Item (vii) if Ice accretion is present or if the prevailing conditions, including wind chill, present the threat of ice accumulating during the passage.

Section 4 Maximum VCG Curves

4.1 How to Use the Max VCG Curves

As mentioned in Section 3, Instructions to the Master, the maximum VCG curves are used to quickly assess whether or not the vessel passes the intact and damaged stability criteria for any given loading condition that varies from those shown in Section 7.

It is the responsibility of the Master to accurately determine the draft, displacement, and trim of the vessel. Reference can be made to the Draft Mark drawing, NG408-850-01 as shown in Section 10.

A point should be plotted on the maximum VCG curves shown in Section 4.2. The coordinates of the point should be the displacement and the $VCG_{CORRECTED}$ values, ensuring that the units of these values are consistent with the units shown in the charts. Once the point has been plotted, it should be noted where the point lies with respect to the corresponding trim curve which represents the as-loaded condition of the vessel.

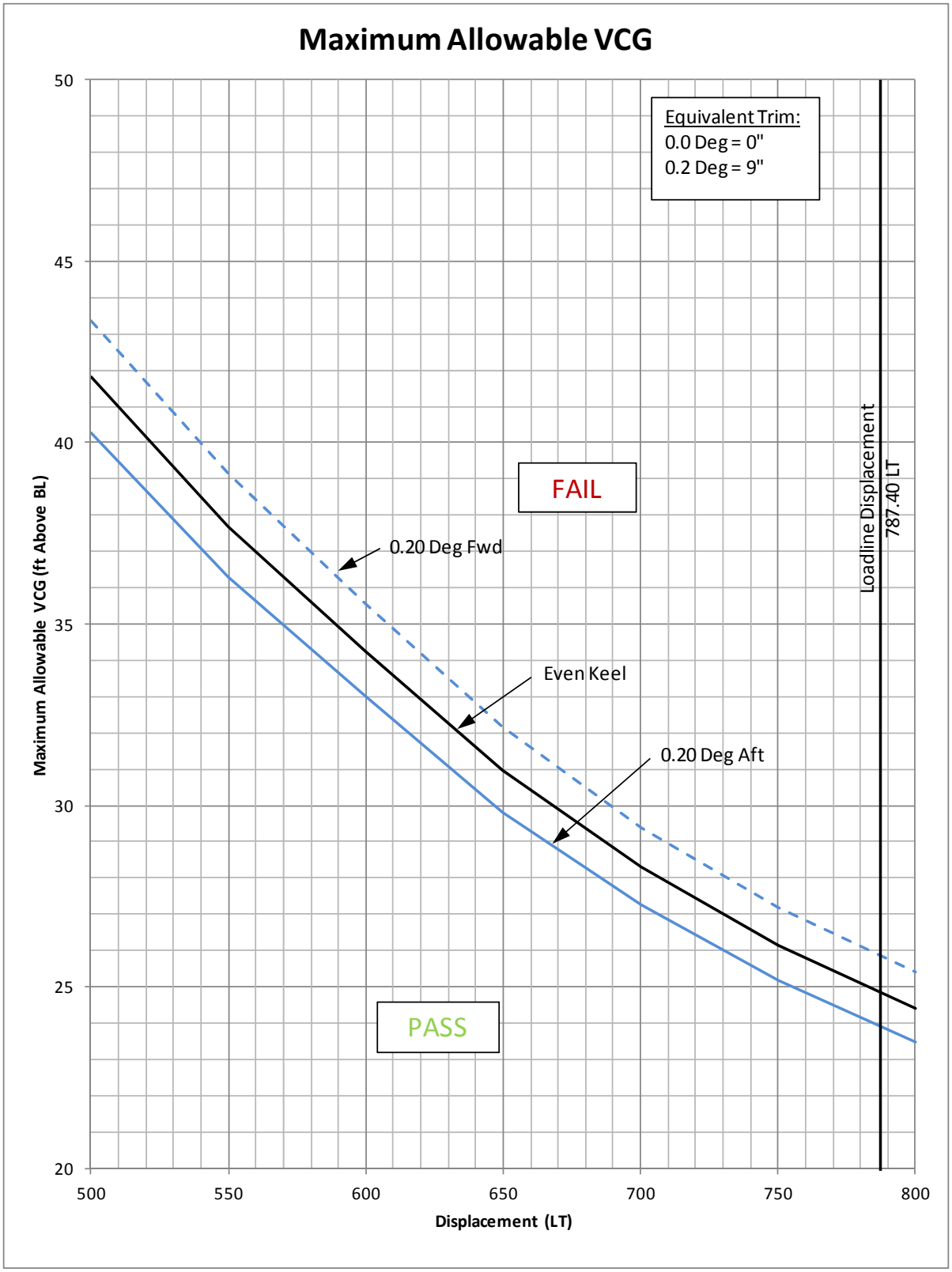
Each graph of the maximum VCG shows curves for a range of trim angles, between 0.2 degrees aft to 0.2 degrees fwd (±8 1/2"). If the trim of the vessel is outside this range, refer to Section 7 for more detailed maximum Allowable VCG curves. On reading the curves in Section 7 the same procedures apply for determining pass or fail criteria.

If the trim of the vessel does not exactly correspond to any of the lines presented, a new curve can be manually added by interpolating between the two curves representing nearest trims to the trim of the vessel.

If the plotted point lies on or below the corresponding line of maximum VCG for trim of the vessel as loaded, then the vessel passes the stability criteria. If the point is above the line then the vessel fails and the trim of the vessel must be adjusted by moving the deadweight until a point calculated and plotted on the graph shows that the vessel passes the criteria.

In all situations the Master must ensure that the vessel is within safe limits of operation.

4.2 Maximum Allowable VCG



Section 5 Hydrostatics

5.1 Condition: 1.0° (3' 8") Aft Trim

Draft @ Origin	Displacement Weight(LT)	Buoyancy Ctr		Weight/ Inch	LCF	Moment/ Deg trim	KML	KMT
		LCB	VCB					
5.000	214.38	78.60f	2.530	8.880	75.33f	4104.01	1096.60	259.59
5.250	241.14	78.27f	2.670	8.960	76.01f	4195.12	996.50	233.03
5.500	268.09	78.08f	2.810	9.010	76.78f	4262.38	910.70	211.19
5.750	295.17	78.00f	2.940	9.060	77.49f	4327.57	839.80	193.26
6.000	322.41	77.97f	3.080	9.100	77.85f	4376.57	777.60	178.14
6.250	349.78	77.98f	3.210	9.150	78.21f	4440.34	727.20	165.51
6.500	377.31	78.01f	3.340	9.210	78.58f	4516.98	685.80	154.76
6.750	405.02	78.06f	3.470	9.270	78.94f	4602.42	650.90	145.45
7.000	432.93	78.13f	3.600	9.350	79.28f	4698.91	621.70	137.53
7.250	461.09	78.21f	3.730	9.430	79.62f	4806.13	597.10	130.62
7.500	489.51	78.30f	3.860	9.530	80.00f	4928.40	576.70	124.59
7.750	518.26	78.41f	3.990	9.630	80.44f	5070.42	560.40	119.32
8.000	547.29	78.52f	4.120	9.720	80.64f	5181.60	542.30	114.32
8.250	576.60	78.63f	4.260	9.830	80.74f	5305.38	527.00	109.95
8.500	606.26	78.73f	4.390	9.940	80.76f	5445.47	514.50	106.13
8.750	636.20	78.84f	4.520	10.020	81.05f	5545.88	499.30	102.22
9.000	666.35	78.94f	4.650	10.090	81.42f	5635.28	484.40	98.55
9.250	696.71	79.06f	4.790	10.160	81.78f	5729.07	471.00	95.21
9.500	727.27	79.18f	4.920	10.220	82.12f	5798.98	456.70	92.10
9.750	758.02	79.31f	5.050	10.280	82.53f	5883.15	444.60	89.23
10.000	788.95	79.44f	5.190	10.350	82.96f	5969.06	433.40	86.57
10.250	820.08	79.58f	5.320	10.410	83.39f	6056.70	423.00	84.11
10.500	851.41	79.73f	5.450	10.480	83.82f	6146.17	413.50	81.83

5.2 Condition: 0.5° (1' 10") Aft Trim

Draft@ Origin-	Displacement Weight (LT)	Buoyancy Ctr.		Weight/ Inch	LCF	Moment/ Deg trim	KML	KMT
		LCB	VCB					
5.000	287.30	85.74f	2.80	9.21	78.01f	4586.52	914.60	201.65
5.250	315.00	85.08f	2.95	9.26	78.51f	4648.88	845.50	185.33
5.500	342.84	84.57f	3.09	9.29	79.20f	4691.06	783.90	171.27
5.750	370.78	84.19f	3.23	9.34	79.83f	4749.07	733.80	159.52
6.000	398.88	83.91f	3.37	9.40	80.41f	4832.91	694.10	149.62
6.250	427.22	83.70f	3.50	9.49	81.10f	4953.21	664.20	141.40
6.500	455.78	83.54f	3.64	9.56	81.49f	5034.50	632.80	133.67
6.750	484.55	83.43f	3.77	9.63	81.82f	5124.02	605.80	127.00
7.000	513.54	83.35f	3.91	9.70	82.12f	5219.51	582.30	121.09
7.250	542.77	83.29f	4.04	9.78	82.40f	5320.59	561.60	115.82
7.500	572.23	83.25f	4.18	9.87	82.66f	5428.17	543.40	111.10
7.750	601.98	83.22f	4.31	9.96	82.81f	5523.17	525.60	106.90
8.000	631.99	83.21f	4.45	10.05	83.00f	5643.09	511.50	103.08
8.250	662.31	83.20f	4.58	10.16	83.11f	5779.09	499.90	99.77
8.500	692.96	83.20f	4.72	10.27	83.21f	5923.65	489.70	96.66
8.750	723.89	83.20f	4.85	10.35	83.53f	6034.04	477.50	93.57
9.000	755.04	83.23f	4.99	10.42	83.93f	6132.98	465.30	90.64
9.250	786.42	83.26f	5.12	10.50	84.32f	6239.29	454.50	87.97
9.500	818.02	83.31f	5.26	10.57	84.76f	6339.44	444.00	85.45
9.750	849.83	83.37f	5.40	10.64	85.23f	6439.06	434.10	83.11
10.000	881.85	83.45f	5.53	10.71	85.70f	6541.08	424.90	80.94
10.250	914.10	83.54f	5.67	10.79	86.19f	6647.04	416.60	78.92
10.500	946.57	83.64f	5.80	10.86	86.69f	6755.65	408.90	77.05

5.3 Condition: Level Trim

Draft@ Origin	Displacement Weight(LT)	Buoyancy Ctr. LCB	Buoyancy Ctr. VCB	Weight/ Inch	LCF	Moment/ Deg trim	KML	KMT
5.000	365.23	90.97f	3.17	9.57	80.94f	5114.82	802.30	165.61
5.250	394.01	90.26f	3.31	9.62	81.44f	5178.43	753.00	154.71
5.500	422.90	89.67f	3.46	9.65	82.14f	5215.08	706.50	144.91
5.750	451.90	89.21f	3.59	9.69	82.71f	5271.48	668.30	136.61
6.000	481.05	88.83f	3.73	9.74	83.13f	5323.65	634.00	129.33
6.250	510.37	88.51f	3.87	9.81	83.55f	5404.05	606.60	123.06
6.500	539.89	88.25f	4.01	9.88	83.93f	5493.31	582.90	117.50
6.750	569.63	88.03f	4.14	9.95	84.28f	5591.92	562.40	112.55
7.000	599.62	87.85f	4.28	10.04	84.58f	5697.96	544.40	108.17
7.250	629.88	87.71f	4.42	10.13	84.89f	5811.04	528.50	104.16
7.500	660.40	87.58f	4.55	10.22	85.19f	5930.57	514.50	100.53
7.750	691.21	87.48f	4.69	10.32	85.42f	6061.89	502.40	97.36
8.000	722.33	87.40f	4.83	10.42	85.67f	6199.32	491.70	94.36
8.250	753.75	87.33f	4.97	10.53	85.85f	6354.01	482.90	91.67
8.500	785.53	87.27f	5.10	10.64	86.04f	6514.32	475.10	89.18
8.750	817.59	87.23f	5.24	10.73	86.42f	6644.63	465.60	86.71
9.000	849.91	87.21f	5.38	10.81	86.89f	6764.70	456.00	84.35
9.250	882.49	87.21f	5.52	10.90	87.35f	6891.42	447.40	82.19
9.500	915.33	87.22f	5.66	10.99	87.88f	7015.40	439.10	80.16
9.750	948.42	87.26f	5.80	11.07	88.43f	7139.29	431.30	78.25
10.000	981.78	87.31f	5.93	11.16	89.00f	7267.26	424.10	76.49
10.250	1015.40	87.38f	6.07	11.25	89.59f	7400.13	417.50	74.85
10.500	1049.30	87.46f	6.21	11.34	90.19f	7537.18	411.50	73.33

5.4 Condition: 0.5° (1' 10") Fwd Trim

Draft@ Origin	Displacement Weight(LT)	Buoyancy Ctr.		Weight/ Inch	LCF	Moment/ Deg trim	KML	KMT
		LCB	VCB					
5.000	448.88	95.26f	3.61	9.89	83.43f	5590.10	713.4	140.27
5.250	478.63	94.54f	3.75	9.94	83.97f	5659.18	677.4	132.65
5.500	508.53	93.94f	3.89	9.98	84.70f	5701.28	642.3	125.66
5.750	538.52	93.44f	4.02	10.03	85.31f	5767.28	613.5	119.53
6.000	568.70	93.02f	4.16	10.09	85.83f	5851.76	589.5	114.26
6.250	599.09	92.67f	4.30	10.17	86.29f	5948.15	568.8	109.57
6.500	629.72	92.37f	4.44	10.26	86.70f	6056.11	550.9	105.43
6.750	660.61	92.12f	4.58	10.34	87.10f	6171.63	535.2	101.64
7.000	691.77	91.90f	4.71	10.43	87.49f	6298.15	521.6	98.22
7.250	723.21	91.72f	4.85	10.54	87.82f	6436.43	509.8	95.24
7.500	754.97	91.56f	4.99	10.63	88.18f	6576.99	499.1	92.39
7.750	787.03	91.43f	5.13	10.74	88.53f	6728.76	489.8	89.79
8.000	819.42	91.33f	5.27	10.85	88.86f	6893.51	481.9	87.43
8.250	852.16	91.24f	5.41	10.97	89.12f	7077.60	475.8	85.32
8.500	885.30	91.16f	5.55	11.10	89.44f	7263.96	470.1	83.33
8.750	918.76	91.11f	5.69	11.20	89.93f	7422.49	462.8	81.36
9.000	952.53	91.08f	5.83	11.30	90.48f	7566.53	455.1	79.48
9.250	986.60	91.07f	5.97	11.41	91.05f	7723.54	448.5	77.76
9.500	1020.98	91.08f	6.11	11.51	91.69f	7877.81	442.0	76.14
9.750	1055.68	91.11f	6.25	11.62	92.35f	8032.93	435.9	74.61
10.000	1090.70	91.16f	6.40	11.74	93.07f	8198.98	430.6	73.23
10.250	1126.10	91.23f	6.54	11.86	93.82f	8370.23	425.8	71.94
10.500	1161.87	91.33f	6.68	11.99	94.58f	8547.49	421.4	70.76

Section 6 Tank Capacities

Tank sounding tables have been generated for port and starboard tanks. The tank capacities are shown in the following table.

Tank Capacity Table

Tank	Volume	Specific Gravity	Weight	Centroid			FSM Max
				LCG	TCG	VCG	
	Cu. Ft	SG	LT	ft +Fwd AP	ft +Stbd	ft +Abv BL	ft-LT
Fuel							
DBF4.P	890.4	0.840	20.85	114.15	-22.47	3.56	38.2
DBF3.S	890.4	0.840	20.85	114.15	22.47	3.56	38.2
Water Fluids							
FW.P	123.1	1.000	3.43	135.82	-21.23	10.24	1.8
BW.S	484.2	1.025	13.83	98.12	21.00	10.43	10.5
Lube Oil							
LOH2.P	26.2	0.880	0.64	49.21	-17.12	14.45	0.1
LOH1.S	26.2	0.880	0.64	49.21	17.12	14.45	0.1
Double Bottom							
DB2.P	1881.5	1.025	53.75	140.43	-22.47	3.97	66.4
DB1.S	1881.5	1.025	53.75	140.43	22.47	3.97	66.4
DB6.P	1158.0	1.025	33.08	96.37	-22.47	3.55	74.9
DB5.S	1158.0	1.025	33.08	96.37	22.47	3.55	74.9
DB8.P	948.7	1.025	27.10	78.74	-22.47	3.69	73.0
DB7.S	948.7	1.025	27.10	78.74	22.47	3.69	73.0
						Maximum Free Surface =	88.9

*Maximum FSM values are given for level trim

The tank sounding tables are presented in Section 9 at level trim, 0.5 degrees aft trim and 0.5 degrees forward trim. Weights of all double bottom tanks other than fuel tanks have been calculated with a specific gravity (SpGr) of 1.025.

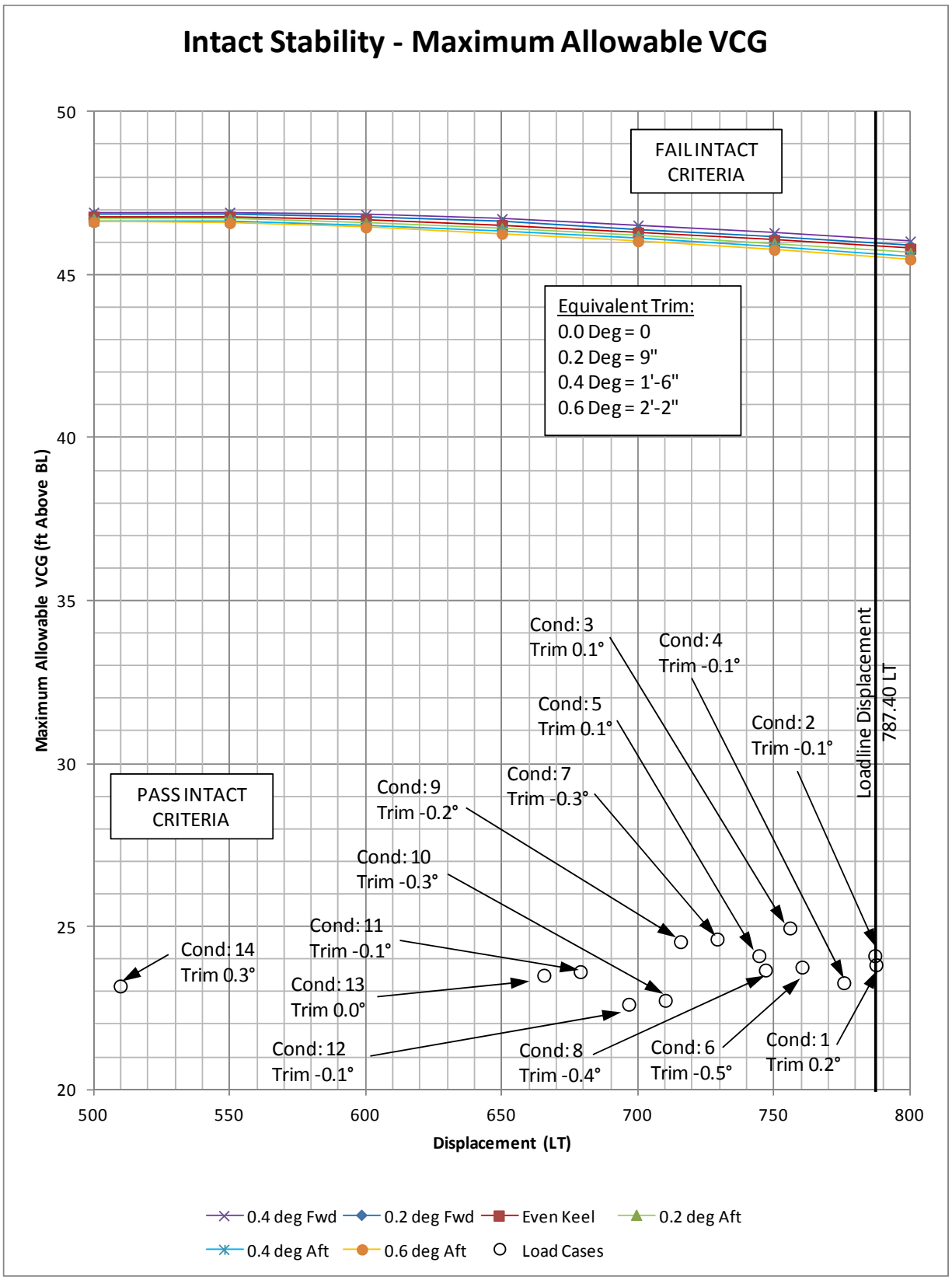
The tanks have been modeled in accordance with the Tank Capacity Plan drawing, NG408-525-01-1 Issue 1 (See Reference 6).

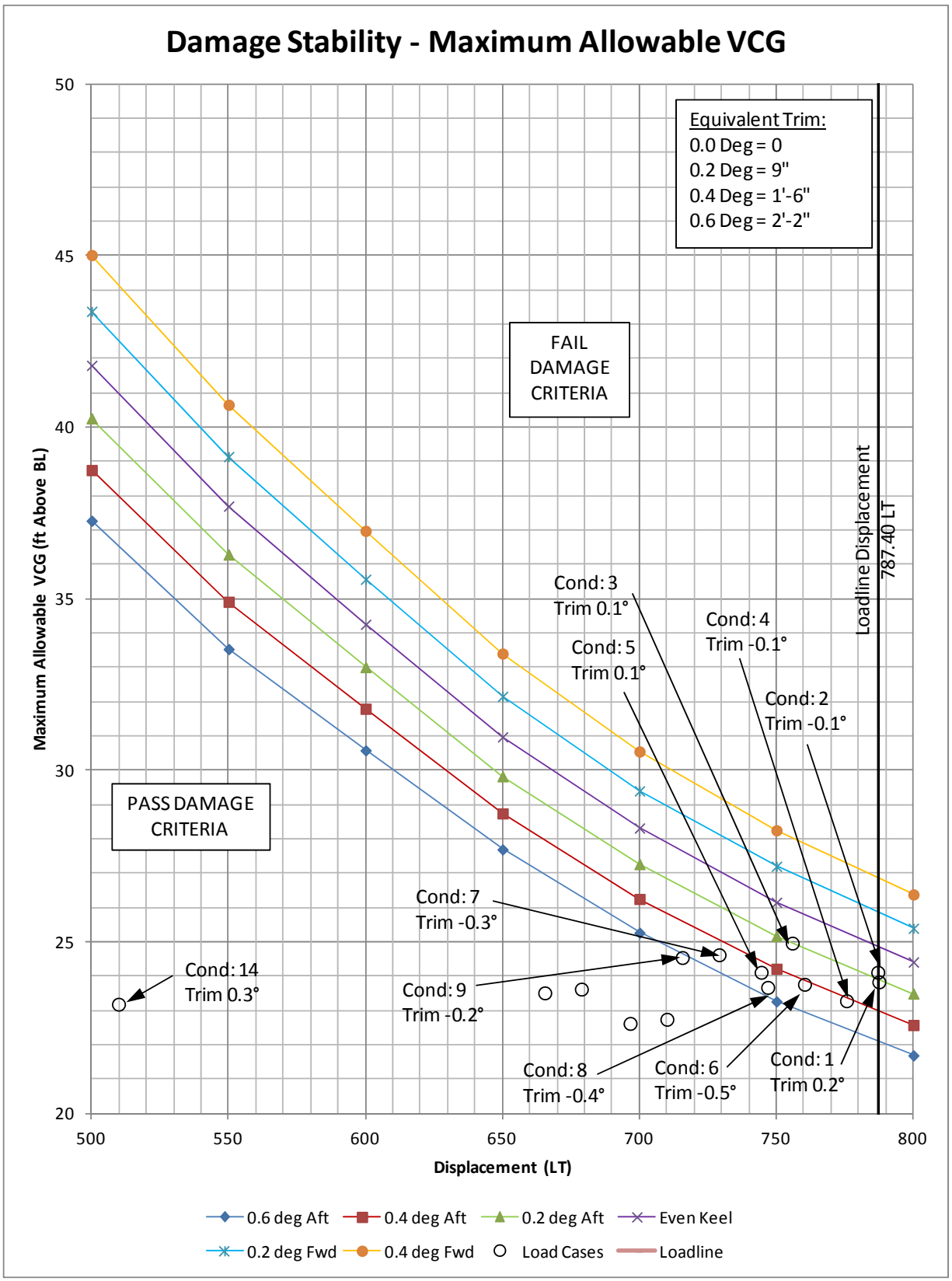
The tank sounding tubes have been modeled in accordance with the System Installation Detail Booklet NG408-950-03-1, Tank Penetration Details drawing NG408-151-01-1 and Hull and Bulkhead Penetration Details drawing NG408-152-02-4. Sounding rods can be calibrated.

Section 7 Summary of Loading Conditions

The table below provides floating particulars for the 14 loading conditions analyzed for this booklet. These loading conditions are plotted on the Maximum Allowable VCG curves for both Intact and Damage Stability in the following charts. Detailed weight breakdowns for all conditions are presented in Section 8.

Scenario Number	Description	AP Draft	Displacement	VCGcorr	Trim	Heel	Pax Seated	Pax Standing	AEQ	LT	ST	RV	Bike	Kayak
		ft	LT	ft	deg (+ Aft)	deg (+ Stbd)	185 lb each	185 lb each	6000 lb each	63000 lb each	45000 lb each	15000 lb each	30 lb each	75 lb each
1	HSC Loadline	8.79	787.4	23.83	0.2	0.0	0	250	31	2	1	0	100	25
2	18AEQ 4LT Departure with Ice	8.33	787.0	24.11	-0.1	-0.2	0	250	18	4	0	0	12	6
3	18AEQ 4LT Arrival with Ice	8.34	755.8	24.96	0.1	0.1	0	250	18	4	0	0	12	6
4	22AEQ 5LT Departure with No Ice	8.32	775.6	23.28	-0.1	-0.1	0	250	22	5	0	0	12	6
5	22AEQ 5LT Arrival with No Ice	8.32	744.4	24.11	0.1	0.2	0	250	22	5	0	0	12	6
6	20AEQ 6RV Fwd Departure with Ice	7.55	760.2	23.76	-0.5	0.2	0	250	20	0	2	6	12	6
7	20AEQ 6RV Fwd Arrival with Ice	7.55	729.0	24.62	-0.3	0.5	0	250	20	0	2	6	12	6
8	30AEQ 2ST Aft Departure with Ice	7.65	746.8	23.67	-0.4	-0.2	0	250	30	0	2	0	12	6
9	30AEQ 2ST Aft Arrival with Ice	7.66	715.6	24.54	-0.2	0.2	0	250	30	0	2	0	12	6
10	20AEQ 2ST 6RV Fwd Departure with no Ice	7.47	710.0	22.74	-0.3	0.2	0	250	20	0	2	6	12	6
11	20AEQ 2ST 6RV Fwd Arrival with no Ice	7.48	678.8	23.62	-0.1	0.5	0	250	20	0	2	6	12	6
12	30AEQ 2ST Aft Departure with no Ice	7.59	696.6	22.62	-0.1	-0.2	0	250	30	0	2	0	12	6
13	30AEQ 2ST Aft Arrival with no Ice	7.60	665.4	23.51	0.0	0.2	0	250	30	0	2	0	12	6
14	10% Lightship	6.73	509.8	23.18	0.3	0.1	0	0	0	0	0	0	0	0


Intact Stability - Maximum Allowable VCG
FAIL INTACT CRITERIA
Equivalent Trim:
0.0 Deg = 0
0.2 Deg = 9"
0.4 Deg = 1'-6"
0.6 Deg = 2'-2"
PASS INTACT CRITERIA
Loadline Displacement 787.40 LT
Cond: 3 Trim 0.1°
Cond: 4 Trim -0.1°
Cond: 5 Trim 0.1°
Cond: 2 Trim -0.1°
Cond: 7 Trim -0.3°
Cond: 9 Trim -0.2°
Cond: 10 Trim -0.3°
Cond: 11 Trim -0.1°
Cond: 14 Trim 0.3°
Cond: 13 Trim 0.0°
Cond: 12 Trim -0.1°
Cond: 8 Trim -0.4°
Cond: 6 Trim -0.5°
Cond: 1 Trim 0.2°
Maximum Allowable VCG (ft Above BL)
Displacement (LT)
50
45
40
35
30
25
20
500
550
600
650
700
750
800
0.4 deg Fwd
0.2 deg Fwd
Even Keel
0.2 deg Aft
0.4 deg Aft
0.6 deg Aft
Load Cases


Damage Stability - Maximum Allowable VCG
Maximum Allowable VCG (ft Above BL)
Displacement (LT)
Equivalent Trim:
0.0 Deg = 0
0.2 Deg = 9"
0.4 Deg = 1'-6"
0.6 Deg = 2'-2"
FAIL DAMAGE CRITERIA
PASS DAMAGE CRITERIA
Loadline Displacement 787.40 LT
Cond: 3 Trim 0.1°
Cond: 4 Trim -0.1°
Cond: 5 Trim 0.1°
Cond: 2 Trim -0.1°
Cond: 7 Trim -0.3°
Cond: 14 Trim 0.3°
Cond: 9 Trim -0.2°
Cond: 8 Trim -0.4°
Cond: 6 Trim -0.5°
Cond: 1 Trim 0.2°
0.6 deg Aft
0.4 deg Aft
0.2 deg Aft
Even Keel
0.2 deg Fwd
0.4 deg Fwd
Load Cases
Loadline

Section 8 Loading Conditions: Detailed Breakdown

8.1 HSC Loadline

WEIGHT STATUS

Trim: Aft 0.68/210.33, Heel: 0.00 deg.

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	500.46	84.77f	0.01p	23.23
Pax @185 lb ea (Stand)	20.65	105.24f	0.00	38.55
Luggage @20 lb ea Pax	2.23	115.75f	0.00	21.33
Vehicles AEQ @6 kip ea	83.05	101.90f	0.15s	21.33
Vehicles LT @63 kip ea	56.25	22.00f	0.00	27.46
Vehicles ST @45 kip ea	20.09	55.00f	0.00	27.46
Bikes @30 lb ea	1.34	210.00f	0.00	19.69
Kayaks @ 75 lb ea	0.84	135.00f	6.56p	21.65
Crew	0.98	115.83f	2.23s	44.16
Food Stuffs	0.58	100.46f	1.05p	38.71
Loose Outfit/Gear	0.40	111.22f	0.00	37.07
Stores	0.67	101.71f	0.00	37.07
Art Allowance	0.54	111.22f	0.00	40.35
Trash	0.45	104.66f	25.13s	28.64
Video Games	0.45	28.46f	5.11p	38.71
Ice Accretion	50.21	112.83f	0.00	38.16
Total Fixed--------->	739.19	84.04f	0.02s	24.97

Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FW.P 0.980	1.000	3.36	135.82f	21.23p	10.19	0.2
BW.S 0.200	1.025	2.77	98.08f	20.99s	7.96	6.8
DBF4.P 0.980	0.840	20.43	114.06f	22.47p	3.50	22.5
DBF3.S 0.980	0.840	20.43	114.06f	22.47s	3.50	22.5
LOH2.P 0.980	0.880	0.63	49.21f	17.12p	14.41	0.1
LOH1.S 0.980	0.880	0.63	49.21f	17.12s	14.41	0.1
Total Tanks--------->		48.25	112.96f	0.28p	4.51	88.9*
Total Weight-------->		787.44	85.82f	0.00	23.71	
Free Surface Adjustment---------->					0.11	
Adjusted CG---------->			85.82f	0.00	23.83	

Distances in FEET. Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

CRITICAL POINT STATUS

Baseline draft: 8.793 @ Origin
Trim: Aft 0.68/210.33, Heel: 0.00 deg.
+

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-8.79
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.00
(3) F.P	210.33f	0.00	0.00	-8.11
(4) AFT MARKS	1.00f	0.00	0.00	-8.79
(5) M.S. MARKS	104.36f	0.00	0.00	-8.45
(6) FWD MARKS	206.60f	0.00	0.00	-8.12

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Aft 0.68/210.33, Heel: 0.00 deg., VCG = 23.71

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.516	787.39	85.76f	5.11	10.60	85.35f	138.32	443.4	64.80

Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.2 18AEQ 4LT Departure with Ice

WEIGHT STATUS

Trim: Fwd 0.44/210.33, Heel: Port 0.23 deg.

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	500.46	84.77f	0.01p	23.23
Pax @185 lb ea (Stand)	20.65	105.24f	0.00	38.55
Luggage @20 lb ea Pax	2.22	115.73f	5.24p	21.33
Vehicles AEQ @6 kip ea	48.22	120.90f	3.80p	21.33
Vehicles LT @63 kip ea	112.50	63.65f	0.00	27.46
Bikes @30 lb ea	0.16	209.32f	0.00	19.69
Kayaks @ 75 lb ea	0.20	131.39f	6.56p	21.65
Crew	0.98	115.83f	2.23s	44.16
Food Stuffs	0.58	100.46f	1.05p	38.71
Loose Outfit/Gear	0.40	111.22f	0.00	37.07
Stores	0.67	101.71f	0.00	37.07
Art Allowance	0.54	111.22f	0.00	40.35
Trash	0.45	104.66f	25.13s	28.64
Video Games	0.45	28.46f	5.11p	38.71
Ice Accretion	50.21	112.83f	0.00	38.16
Total Fixed--------->	738.70	86.61f	0.26p	25.27

Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FW.P 0.980	1.000	3.36	135.82f	21.23p	10.19	0.2
BW.S 0.200	1.025	2.77	98.14f	20.98s	7.96	6.8
DBF4.P 0.980	0.840	20.43	114.07f	22.48p	3.50	28.0
DBF3.S 0.980	0.840	20.43	114.07f	22.47s	3.50	28.0
LOH2.P 0.980	0.880	0.63	49.21f	17.12p	14.41	0.1
LOH1.S 0.980	0.880	0.63	49.21f	17.12s	14.41	0.1
Total Tanks--------->		48.25	112.98f	0.28p	4.51	88.9*
Total Weight-------->		786.95	88.22f	0.26p	24.00	
Free Surface Adjustment---------->					0.11	
Adjusted CG---------->			88.22f	0.26p	24.11	

Distances in FEET.----------Moments in Ft-LT.

\+

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

\+

CRITICAL POINT STATUS

Baseline draft: 8.329 @ Origin
Trim: Fwd 0.44/210.33, Heel: Port 0.23 deg.
+

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-8.33
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.01
(3) F.P	210.33f	0.00	0.00	-8.77
(4) AFT MARKS	1.00f	0.00	0.00	-8.33
(5) M.S. MARKS	104.36f	0.00	0.00	-8.55
(6) FWD MARKS	206.60f	0.00	0.00	-8.76

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Fwd 0.44/210.33, Heel: Port 0.23 deg., VCG = 24.00

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.512	786.97	88.27f	5.11	10.67	86.62f	141.62	454.2	65.14

Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.3 18AEQ 4LT Arrival with Ice

WEIGHT STATUS

Trim: Aft 0.17/210.33, Heel: Stbd 0.09 deg.

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	500.46	84.77f	0.01p	23.23
Pax @185 lb ea (Stand)	20.65	105.24f	0.00	38.55
Luggage @20 lb ea Pax	2.22	115.73f	5.24p	21.33
Vehicles AEQ @6 kip ea	48.22	120.90f	3.80p	21.33
Vehicles LT @63 kip ea	112.50	63.65f	0.00	27.46
Bikes @30 lb ea	0.16	209.32f	0.00	19.69
Kayaks @ 75 lb ea	0.20	131.39f	25.83p	21.65
Crew	0.98	115.83f	2.23s	44.16
Food Stuffs	0.06	100.46f	1.05p	38.71
Loose Outfit/Gear	0.40	111.22f	0.00	37.07
Stores	0.07	101.71f	0.00	37.07
Art Allowance	0.54	111.22f	0.00	40.35
Trash	0.45	104.66f	25.13s	28.64
Video Games	0.45	28.46f	5.11p	38.71
Ice Accretion	50.21	112.83f	0.00	38.16
Total Fixed--------->	737.58	86.58f	0.26p	25.25

Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FW.P 0.100	1.000	0.34	135.82f	21.23p	8.19	0.7
BW.S 0.980	1.025	13.55	98.12f	21.00s	10.37	0.9
DBF4.P 0.100	0.840	2.08	114.26f	22.46p	0.77	19.1
DBF3.S 0.100	0.840	2.08	114.26f	22.49s	0.77	19.1
LOH2.P 0.100	0.880	0.06	49.21f	17.12p	12.70	0.1
LOH1.S 0.100	0.880	0.06	49.21f	17.12s	12.70	0.1
Total Tanks--------->		18.20	102.18f	15.24s	8.14	88.9*
Total Weight-------->		755.77	86.96f	0.11s	24.84	
Free Surface Adjustment---------->					0.12	
Adjusted CG---------->			86.96f	0.11s	24.96	

Distances in FEET.----------Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

CRITICAL POINT STATUS

Baseline draft: 8.335 @ Origin
Trim: Aft 0.17/210.33, Heel: Stbd 0.09 deg.

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-8.33
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.25
(3) F.P	210.33f	0.00	0.00	-8.17
(4) AFT MARKS	1.00f	0.00	0.00	-8.33
(5) M.S. MARKS	104.36f	0.00	0.00	-8.25
(6) FWD MARKS	206.60f	0.00	0.00	-8.17

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Aft 0.17/210.33, Heel: Stbd 0.09 deg., VCG = 24.84

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.266	755.77	86.94f	4.97	10.54	85.58f	136.83	457.0	66.55

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.4 22AEQ 5LT Departure with no Ice

WEIGHT STATUS

Trim: Fwd 0.26/210.33, Heel: Port 0.14 deg.

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	500.46	84.77f	0.01p	23.23
Pax @185 lb ea (Stand)	20.65	105.24f	0.00	38.55
Luggage @20 lb ea Pax	2.22	115.73f	5.24p	21.33
Vehicles AEQ @6 kip ea	58.94	112.70f	1.36s	21.33
Vehicles LT @63 kip ea	140.63	76.25f	1.28p	27.46
Bikes @30 lb ea	0.16	209.32f	0.00	19.69
Kayaks @ 75 lb ea	0.20	131.39f	25.83p	21.65
Crew	0.98	115.83f	2.23s	44.16
Food Stuffs	0.58	100.46f	1.05p	38.71
Loose Outfit/Gear	0.40	111.22f	0.00	37.07
Stores	0.67	101.71f	0.00	37.07
Art Allowance	0.54	111.22f	0.00	40.35
Trash	0.45	104.66f	25.13s	28.64
Video Games	0.45	28.46f	5.11p	38.71
Total Fixed--------->	727.33	86.18f	0.15p	24.41

Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FW.P 0.980	1.000	3.36	135.82f	21.23p	10.19	0.2
BW.S 0.200	1.025	2.77	98.13f	20.99s	7.96	6.8
DBF4.P 0.980	0.840	20.43	114.07f	22.48p	3.50	27.9
DBF3.S 0.980	0.840	20.43	114.07f	22.47s	3.50	27.9
LOH2.P 0.980	0.880	0.63	49.21f	17.12p	14.41	0.1
LOH1.S 0.980	0.880	0.63	49.21f	17.12s	14.41	0.1
Total Tanks--------->		48.25	112.97f	0.28p	4.51	88.9*
Total Weight-------->		775.58	87.85f	0.16p	23.17	
Free Surface Adjustment---------->					0.11	
Adjusted CG---------->			87.85f	0.16p	23.28	

Distances in FEET.----------Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

CRITICAL POINT STATUS

Baseline draft: 8.316 @ Origin
Trim: Fwd 0.26/210.33, Heel: Port 0.14 deg.

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-8.32
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.10
(3) F.P	210.33f	0.00	0.00	-8.57
(4) AFT MARKS	1.00f	0.00	0.00	-8.32
(5) M.S. MARKS	104.36f	0.00	0.00	-8.44
(6) FWD MARKS	206.60f	0.00	0.00	-8.57

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Fwd 0.26/210.33, Heel: Port 0.14 deg., VCG = 23.17

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.422	775.57	87.87f	5.06	10.62	86.28f	140.31	456.6	66.78

Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.5 22AEQ 5LT Arrival with no Ice

WEIGHT STATUS

Trim: Aft 0.36/210.33, Heel: Stbd 0.19 deg.

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	500.46	84.77f	0.01p	23.23
Pax @185 lb ea (Stand)	20.65	105.24f	0.00	38.55
Luggage @20 lb ea Pax	2.22	115.73f	5.24p	21.33
Vehicles AEQ @6 kip ea	58.94	112.70f	1.36s	21.33
Vehicles LT @63 kip ea	140.63	76.25f	1.28p	27.46
Bikes @30 lb ea	0.16	209.32f	0.00	19.69
Kayaks @ 75 lb ea	0.20	131.39f	25.83p	21.65
Crew	0.98	115.83f	2.23s	44.16
Food Stuffs	0.06	100.46f	1.05p	38.71
Loose Outfit/Gear	0.40	111.22f	0.00	37.07
Stores	0.07	101.71f	0.00	37.07
Art Allowance	0.54	111.22f	0.00	40.35
Trash	0.45	104.66f	25.13s	28.64
Video Games	0.45	28.46f	5.11p	38.71
Total Fixed--------->	726.21	86.16f	0.15p	24.39

Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FW.P 0.100	1.000	0.34	135.81f	21.23p	8.19	0.7
BW.S 0.980	1.025	13.56	98.12f	21.00s	10.37	0.9
DBF4.P 0.100	0.840	2.08	114.24f	22.44p	0.77	19.1
DBF3.S 0.100	0.840	2.08	114.24f	22.50s	0.77	19.1
LOH2.P 0.100	0.880	0.06	49.21f	17.12p	12.70	0.1
LOH1.S 0.100	0.880	0.06	49.21f	17.12s	12.70	0.1
Total Tanks--------->		18.20	102.17f	15.25s	8.14	88.9*
Total Weight-------->		744.40	86.55f	0.22s	23.99	
Free Surface Adjustment---------->					0.12	
Adjusted CG---------->			86.55f	0.22s	24.11	

Distances in FEET.----------Moments in Ft-LT.

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Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

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CRITICAL POINT STATUS

Baseline draft: 8.324 @ Origin
Trim: Aft 0.36/210.33, Heel: Stbd 0.19 deg.
+

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-8.32
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.34
(3) F.P	210.33f	0.00	0.00	-7.96
(4) AFT MARKS	1.00f	0.00	0.00	-8.32
(5) M.S. MARKS	104.36f	0.00	0.00	-8.14
(6) FWD MARKS	206.60f	0.00	0.00	-7.97

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Aft 0.36/210.33, Heel: Stbd 0.19 deg., VCG = 23.99

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.176	744.40	86.52f	4.93	10.49	85.28f	135.48	459.4	68.27

Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.6 20AEQ 2ST 6RV Fwd Departure with Ice

WEIGHT STATUS

Trim: Fwd 1.81/210.33, Heel: Stbd 0.16 deg.

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	500.46	84.77f	0.01p	23.23
Pax @185 lb ea (Stand)	20.65	105.24f	0.00	38.55
Luggage @20 lb ea Pax	2.22	115.73f	5.24p	21.33
Vehicles AEQ @6 kip ea	53.58	103.08f	0.75p	21.33
Vehicles ST @45 kip ea	40.18	93.21f	6.00s	27.46
Vehicles RV @15 kip ea	40.18	92.52f	0.75p	23.82
Bikes @30 lb ea	0.16	209.32f	0.00	19.69
Kayaks @ 75 lb ea	0.20	131.39f	25.83p	21.65
Crew	0.98	115.83f	2.23s	44.16
Food Stuffs	0.58	100.46f	1.05p	38.71
Loose Outfit/Gear	0.40	111.22f	0.00	37.07
Stores	0.67	101.71f	0.00	37.07
Art Allowance	0.54	111.22f	0.00	40.35
Trash	0.45	104.66f	25.13s	28.64
Video Games	0.45	28.46f	5.11p	38.71
Ice Accretion	50.21	112.83f	0.00	38.16
Total Fixed--------->	711.91	89.86f	0.22s	24.94

Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FW.P 0.980	1.000	3.36	135.83f	21.23p	10.19	0.2
BW.S 0.200	1.025	2.77	98.20f	21.00s	7.96	6.8
DBF4.P 0.980	0.840	20.43	114.08f	22.47p	3.50	33.7
DBF3.S 0.980	0.840	20.43	114.08f	22.48s	3.50	33.7
LOH2.P 0.980	0.880	0.63	49.21f	17.12p	14.41	0.1
LOH1.S 0.980	0.880	0.63	49.21f	17.12s	14.41	0.1
Total Tanks--------->		48.25	112.99f	0.27p	4.51	88.9*
Total Weight-------->		760.16	91.32f	0.19s	23.64	
Free Surface Adjustment---------->					0.12	
Adjusted CG---------->			91.32f	0.19s	23.76	

Distances in FEET.----------Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

CRITICAL POINT STATUS

Baseline draft: 7.551 @ Origin
Trim: Fwd 1.81/210.33, Heel: Stbd 0.16 deg.
+

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-7.55
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.23
(3) F.P	210.33f	0.00	0.00	-9.36
(4) AFT MARKS	1.00f	0.00	0.00	-7.56
(5) M.S. MARKS	104.36f	0.00	0.00	-8.45
(6) FWD MARKS	206.60f	0.00	0.00	-9.33

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Fwd 1.81/210.33, Heel: Stbd 0.16 deg., VCG = 23.64

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.311	760.23	91.48f	5.01	10.65	88.21f	142.57	473.3	68.18

Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.7 20AEQ 2ST 6RV Fwd Arrival with Ice

WEIGHT STATUS

Trim: Fwd 1.24/210.33, Heel: Stbd 0.49 deg.

Part	Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
LIGHT SHIP			500.46	84.77f	0.01p	23.23	
Pax @185 lb ea (Stand)			20.65	105.24f	0.00	38.55	
Luggage @20 lb ea Pax			2.22	115.73f	5.24p	21.33	
Vehicles AEQ @6 kip ea			53.58	103.08f	0.75p	21.33	
Vehicles ST @45 kip ea			40.18	93.21f	6.00s	27.46	
Vehicles RV @15 kip ea			40.18	92.52f	0.75p	23.82	
Bikes @30 lb ea			0.16	209.32f	0.00	19.69	
Kayaks @ 75 lb ea			0.20	131.39f	25.83p	21.65	
Crew			0.98	115.83f	2.23s	44.16	
Food Stuffs			0.06	100.46f	1.05p	38.71	
Loose Outfit/Gear			0.40	111.22f	0.00	37.07	
Stores			0.07	101.71f	0.00	37.07	
Art Allowance			0.54	111.22f	0.00	40.35	
Trash			0.45	104.66f	25.13s	28.64	
Video Games			0.45	28.46f	5.11p	38.71	
Ice Accretion			50.21	112.83f	0.00	38.16	
Total Fixed--------->			710.79	89.84f	0.23s	24.92	
FW.P	0.100	1.000	0.34	135.86f	21.22p	8.19	0.7
BW.S	0.980	1.025	13.56	98.12f	21.00s	10.37	0.9
DBF4.P	0.100	0.840	2.08	114.46f	22.39p	0.77	19.0
DBF3.S	0.100	0.840	2.08	114.46f	22.55s	0.77	19.1
LOH2.P	0.100	0.880	0.06	49.23f	17.11p	12.70	0.1
LOH1.S	0.100	0.880	0.06	49.23f	17.13s	12.70	0.1
Total Tanks--------->			18.20	102.23f	15.26s	8.14	88.9*
Total Weight-------->			728.98	90.15f	0.60s	24.50	
Free Surface Adjustment---------->						0.12	
Adjusted CG---------->				90.15f	0.60s	24.62	

Distances in FEET. Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

CRITICAL POINT STATUS

Baseline draft: 7.545 @ Origin
Trim: Fwd 1.24/210.33, Heel: Stbd 0.49 deg.
+

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-7.54
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.47
(3) F.P	210.33f	0.00	0.00	-8.78
(4) AFT MARKS	1.00f	0.00	0.00	-7.55
(5) M.S. MARKS	104.36f	0.00	0.00	-8.16
(6) FWD MARKS	206.60f	0.00	0.00	-8.76

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Fwd 1.24/210.33, Heel: Stbd 0.49 deg., VCG = 24.50

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.057	729.04	90.27f	4.87	10.51	87.21f	137.61	476.4	69.68

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.8 30AEQ 2ST Aft Departure with Ice

WEIGHT STATUS

Trim: Fwd 1.31/210.33, Heel: Port 0.17 deg.

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	500.46	84.77f	0.01p	23.23
Pax @185 lb ea (Stand)	20.65	105.24f	0.00	38.55
Luggage @20 lb ea Pax	2.22	115.73f	5.24p	21.33
Vehicles AEQ @6 kip ea	80.37	98.46f	1.64s	21.33
Vehicles ST @45 kip ea	40.18	75.92f	6.40p	27.46
Bikes @30 lb ea	0.16	209.32f	0.00	19.69
Kayaks @ 75 lb ea	0.20	131.39f	25.83p	21.65
Crew	0.98	115.83f	2.23s	44.16
Food Stuffs	0.58	100.46f	1.05p	38.71
Loose Outfit/Gear	0.40	111.22f	0.00	37.07
Stores	0.67	101.71f	0.00	37.07
Art Allowance	0.54	111.22f	0.00	40.35
Trash	0.45	104.66f	25.13s	28.64
Video Games	0.45	28.46f	5.11p	38.71
Ice Accretion	50.21	112.83f	0.00	38.16
Total Fixed--------->	698.53	88.68f	0.20p	24.86

Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FW.P 0.980	1.000	3.36	135.83f	21.23p	10.19	0.2
BW.S 0.200	1.025	2.77	98.18f	20.98s	7.96	6.8
DBF4.P 0.980	0.840	20.43	114.08f	22.48p	3.50	32.7
DBF3.S 0.980	0.840	20.43	114.08f	22.47s	3.50	32.7
LOH2.P 0.980	0.880	0.63	49.21f	17.12p	14.41	0.1
LOH1.S 0.980	0.880	0.63	49.21f	17.12s	14.41	0.1
Total Tanks--------->		48.25	112.99f	0.28p	4.51	88.9*
Total Weight-------->		746.77	90.25f	0.20p	23.55	
Free Surface Adjustment---------->					0.12	
Adjusted CG---------->			90.25f	0.20p	23.67	

Distances in FEET.----------Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

CRITICAL POINT STATUS

Baseline draft: 7.654 @ Origin
Trim: Fwd 1.31/210.33, Heel: Port 0.17 deg.
+

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-7.65
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.33
(3) F.P	210.33f	0.00	0.00	-8.97
(4) AFT MARKS	1.00f	0.00	0.00	-7.66
(5) M.S. MARKS	104.36f	0.00	0.00	-8.31
(6) FWD MARKS	206.60f	0.00	0.00	-8.94

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Fwd 1.31/210.33, Heel: Port 0.17 deg., VCG = 23.55

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
8.200	746.79	90.37f	4.95	10.57	87.46f	139.76	472.3	69.14

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.9 30AEQ 2ST Aft Arrival with Ice

WEIGHT STATUS

Trim: Fwd 0.71/210.33, Heel: Stbd 0.16 deg.

Part	Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
LIGHT SHIP			500.46	84.77f	0.01p	23.23	
Pax @185 lb ea (Stand)			20.65	105.24f	0.00	38.55	
Luggage @20 lb ea Pax			2.22	115.73f	5.24p	21.33	
Vehicles AEQ @6 kip ea			80.37	98.46f	1.64s	21.33	
Vehicles ST @45 kip ea			40.18	75.92f	6.40p	27.46	
Bikes @30 lb ea			0.16	209.32f	0.00	19.69	
Kayaks @ 75 lb ea			0.20	131.39f	25.83p	21.65	
Crew			0.98	115.83f	2.23s	44.16	
Food Stuffs			0.06	100.46f	1.05p	38.71	
Loose Outfit/Gear			0.40	111.22f	0.00	37.07	
Stores			0.07	101.71f	0.00	37.07	
Art Allowance			0.54	111.22f	0.00	40.35	
Trash			0.45	104.66f	25.13s	28.64	
Video Games			0.45	28.46f	5.11p	38.71	
Ice Accretion			50.21	112.83f	0.00	38.16	
Total Fixed--------->			697.40	88.66f	0.20p	24.84	
FW.P	0.100	1.000	0.34	135.84f	21.23p	8.19	0.7
BW.S	0.980	1.025	13.56	98.12f	21.00s	10.37	0.9
DBF4.P	0.100	0.840	2.08	114.39f	22.45p	0.77	19.1
DBF3.S	0.100	0.840	2.08	114.39f	22.50s	0.77	19.1
LOH2.P	0.100	0.880	0.06	49.22f	17.12p	12.70	0.1
LOH1.S	0.100	0.880	0.06	49.22f	17.12s	12.70	0.1
Total Tanks--------->			18.20	102.21f	15.25s	8.14	88.9*
Total Weight-------->			715.60	89.01f	0.20s	24.42	
Free Surface Adjustment---------->						0.12	
Adjusted CG---------->				89.01f	0.20s	24.54	

Distances in FEET. Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

CRITICAL POINT STATUS

Baseline draft: 7.655 @ Origin
Trim: Fwd 0.71/210.33, Heel: Stbd 0.16 deg.
+

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-7.66
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.58
(3) F.P	210.33f	0.00	0.00	-8.37
(4) AFT MARKS	1.00f	0.00	0.00	-7.66
(5) M.S. MARKS	104.36f	0.00	0.00	-8.01
(6) FWD MARKS	206.60f	0.00	0.00	-8.35

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Fwd 0.71/210.33, Heel: Stbd 0.16 deg., VCG = 24.42

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.947	715.60	89.08f	4.80	10.44	86.45f	134.87	475.7	70.77

Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.10 20AEQ 2ST 6RV Fwd Departure with no Ice

WEIGHT STATUS

Trim: Fwd 1.04/210.33, Heel: Stbd 0.16 deg.

Part	Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
LIGHT SHIP			500.46	84.77f	0.01p	23.23	
Pax @185 lb ea (Stand)			20.65	105.24f	0.00	38.55	
Luggage @20 lb ea Pax			2.22	115.73f	5.24p	21.33	
Vehicles AEQ @6 kip ea			53.58	103.08f	0.75p	21.33	
Vehicles ST @45 kip ea			40.18	93.21f	6.00s	27.46	
Vehicles RV @15 kip ea			40.18	92.52f	0.75p	23.82	
Bikes @30 lb ea			0.16	209.32f	0.00	19.69	
Kayaks @ 75 lb ea			0.20	131.39f	25.83p	21.65	
Crew			0.98	115.83f	2.23s	44.16	
Food Stuffs			0.58	100.46f	1.05p	38.71	
Loose Outfit/Gear			0.40	111.22f	0.00	37.07	
Stores			0.67	101.71f	0.00	37.07	
Art Allowance			0.54	111.22f	0.00	40.35	
Trash			0.45	104.66f	25.13s	28.64	
Video Games			0.45	28.46f	5.11p	38.71	
Total Fixed--------->			661.70	88.11f	0.24s	23.93	
FW.P	0.980	1.000	3.36	135.83f	21.23p	10.19	0.2
BW.S	0.200	1.025	2.77	98.17f	21.00s	7.96	6.8
DBF4.P	0.980	0.840	20.43	114.07f	22.47p	3.50	31.8
DBF3.S	0.980	0.840	20.43	114.07f	22.48s	3.50	31.8
LOH2.P	0.980	0.880	0.63	49.21f	17.12p	14.41	0.1
LOH1.S	0.980	0.880	0.63	49.21f	17.12s	14.41	0.1
Total Tanks--------->			48.25	112.98f	0.27p	4.51	88.9*
Total Weight-------->			709.95	89.80f	0.21s	22.61	
Free Surface Adjustment---------->						0.13	
Adjusted CG---------->				89.80f	0.21s	22.74	

Distances in FEET. Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

CRITICAL POINT STATUS

Baseline draft: 7.473 @ Origin
Trim: Fwd 1.04/210.33, Heel: Stbd 0.16 deg.
+

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-7.47
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.62
(3) F.P	210.33f	0.00	0.00	-8.52
(4) AFT MARKS	1.00f	0.00	0.00	-7.48
(5) M.S. MARKS	104.36f	0.00	0.00	-7.99
(6) FWD MARKS	206.60f	0.00	0.00	-8.50

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Fwd 1.04/210.33, Heel: Stbd 0.16 deg., VCG = 22.61

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.904	709.99	89.89f	4.78	10.44	86.77f	135.84	482.9	73.29

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.11 20AEQ 2ST 6RV Fwd Arrival with no Ice

WEIGHT STATUS

Trim: Fwd 0.41/210.33, Heel: Stbd 0.49 deg.

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	500.46	84.77f	0.01p	23.23
Pax @185 lb ea (Stand)	20.65	105.24f	0.00	38.55
Luggage @20 lb ea Pax	2.22	115.73f	5.24p	21.33
Vehicles AEQ @6 kip ea	53.58	103.08f	0.75p	21.33
Vehicles ST @45 kip ea	40.18	93.21f	6.00s	27.46
Vehicles RV @15 kip ea	40.18	92.52f	0.75p	23.82
Bikes @30 lb ea	0.16	209.32f	0.00	19.69
Kayaks @ 75 lb ea	0.20	131.39f	25.83p	21.65
Crew	0.98	115.83f	2.23s	44.16
Food Stuffs	0.06	100.46f	1.05p	38.71
Loose Outfit/Gear	0.40	111.22f	0.00	37.07
Stores	0.07	101.71f	0.00	37.07
Art Allowance	0.54	111.22f	0.00	40.35
Trash	0.45	104.66f	25.13s	28.64
Video Games	0.45	28.46f	5.11p	38.71
Total Fixed--------->	660.58	88.09f	0.24s	23.91

Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FW.P 0.100	1.000	0.34	135.83f	21.22p	8.19	0.7
BW.S 0.980	1.025	13.56	98.12f	21.00s	10.37	0.9
DBF4.P 0.100	0.840	2.08	114.35f	22.39p	0.77	19.1
DBF3.S 0.100	0.840	2.08	114.35f	22.55s	0.77	19.1
LOH2.P 0.100	0.880	0.06	49.22f	17.11p	12.70	0.1
LOH1.S 0.100	0.880	0.06	49.22f	17.13s	12.70	0.1
Total Tanks--------->		18.20	102.20f	15.26s	8.14	88.9*
Total Weight-------->		678.77	88.47f	0.64s	23.49	
Free Surface Adjustment---------->					0.13	
Adjusted CG---------->			88.47f	0.64s	23.62	

Distances in FEET.----------Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

CRITICAL POINT STATUS

Baseline draft: 7.482 @ Origin
Trim: Fwd 0.41/210.33, Heel: Stbd 0.49 deg.
+

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-7.48
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.87
(3) F.P	210.33f	0.00	0.00	-7.89
(4) AFT MARKS	1.00f	0.00	0.00	-7.48
(5) M.S. MARKS	104.36f	0.00	0.00	-7.68
(6) FWD MARKS	206.60f	0.00	0.00	-7.88

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Fwd 0.41/210.33, Heel: Stbd 0.49 deg., VCG = 23.49

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.649	678.77	88.50f	4.64	10.30	85.77f	131.13	487.6	75.20

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.12 30AEQ 2ST Aft Departure with no Ice

WEIGHT STATUS

Trim: Fwd 0.51/210.33, Heel: Port 0.17 deg.

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	500.46	84.77f	0.01p	23.23
Pax @185 lb ea (Stand)	20.65	105.24f	0.00	38.55
Luggage @20 lb ea Pax	2.22	115.73f	5.24p	21.33
Vehicles AEQ @6 kip ea	80.37	98.46f	1.64s	21.33
Vehicles ST @45 kip ea	40.18	75.92f	6.40p	27.46
Bikes @30 lb ea	0.16	209.32f	0.00	19.69
Kayaks @ 75 lb ea	0.20	131.39f	25.83p	21.65
Crew	0.98	115.83f	2.23s	44.16
Food Stuffs	0.58	100.46f	1.05p	38.71
Loose Outfit/Gear	0.40	111.22f	0.00	37.07
Stores	0.67	101.71f	0.00	37.07
Art Allowance	0.54	111.22f	0.00	40.35
Trash	0.45	104.66f	25.13s	28.64
Video Games	0.45	28.46f	5.11p	38.71
Total Fixed--------->	648.32	86.81f	0.21p	23.83

	Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FW.P	0.980	1.000	3.36	135.82f	21.23p	10.19	0.2
BW.S	0.200	1.025	2.77	98.14f	20.98s	7.96	6.8
DBF4.P	0.980	0.840	20.43	114.07f	22.48p	3.50	30.6
DBF3.S	0.980	0.840	20.43	114.07f	22.47s	3.50	30.6
LOH2.P	0.980	0.880	0.63	49.21f	17.12p	14.41	0.1
LOH1.S	0.980	0.880	0.63	49.21f	17.12s	14.41	0.1
Total Tanks--------->			48.25	112.98f	0.28p	4.51	88.9*
Total Weight-------->			696.56	88.63f	0.22p	22.50	
Free Surface Adjustment---------->						0.13	
Adjusted CG---------->				88.63f	0.22p	22.62	

Distances in FEET.----------Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

CRITICAL POINT STATUS

Baseline draft: 7.586 @ Origin
Trim: Fwd 0.51/210.33, Heel: Port 0.17 deg.
+

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-7.59
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.73
(3) F.P	210.33f	0.00	0.00	-8.09
(4) AFT MARKS	1.00f	0.00	0.00	-7.59
(5) M.S. MARKS	104.36f	0.00	0.00	-7.84
(6) FWD MARKS	206.60f	0.00	0.00	-8.09

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Fwd 0.51/210.33, Heel: Port 0.17 deg., VCG = 22.50

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.794	696.56	88.67f	4.72	10.36	86.05f	133.17	482.5	74.41

Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.13 30AEQ 2ST Aft Arrival with no Ice

WEIGHT STATUS

Trim: Aft 0.15/210.33, Heel: Stbd 0.16 deg.

Part	Weight(LT)	LCG	TCG	VCG
LIGHT SHIP	500.46	84.77f	0.01p	23.23
Pax @185 lb ea (Stand)	20.65	105.24f	0.00	38.55
Luggage @20 lb ea Pax	2.22	115.73f	5.24p	21.33
Vehicles AEQ @6 kip ea	80.37	98.46f	1.64s	21.33
Vehicles ST @45 kip ea	40.18	75.92f	6.40p	27.46
Bikes @30 lb ea	0.16	209.32f	0.00	19.69
Kayaks @ 75 lb ea	0.20	131.39f	25.83p	21.65
Crew	0.98	115.83f	2.23s	44.16
Food Stuffs	0.06	100.46f	1.05p	38.71
Loose Outfit/Gear	0.40	111.22f	0.00	37.07
Stores	0.07	101.71f	0.00	37.07
Art Allowance	0.54	111.22f	0.00	40.35
Trash	0.45	104.66f	25.13s	28.64
Video Games	0.45	28.46f	5.11p	38.71
Total Fixed--------->	647.19	86.79f	0.21p	23.81

Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FW.P 0.100	1.000	0.34	135.82f	21.23p	8.19	0.7
BW.S 0.980	1.025	13.56	98.12f	21.00s	10.37	0.9
DBF4.P 0.100	0.840	2.08	114.27f	22.45p	0.77	19.1
DBF3.S 0.100	0.840	2.08	114.27f	22.50s	0.77	19.1
LOH2.P 0.100	0.880	0.06	49.21f	17.12p	12.70	0.1
LOH1.S 0.100	0.880	0.06	49.21f	17.12s	12.70	0.1
Total Tanks--------->		18.20	102.18f	15.25s	8.14	88.9*
Total Weight-------->		665.39	87.21f	0.21s	23.38	
Free Surface Adjustment---------->					0.13	
Adjusted CG---------->			87.21f	0.21s	23.51	

Distances in FEET.----------Moments in Ft-LT.

+

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

+

CRITICAL POINT STATUS

Baseline draft: 7.602 @ Origin
Trim: Aft 0.15/210.33, Heel: Stbd 0.16 deg.
+

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-7.60
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	0.98
(3) F.P	210.33f	0.00	0.00	-7.45
(4) AFT MARKS	1.00f	0.00	0.00	-7.60
(5) M.S. MARKS	104.36f	0.00	0.00	-7.53
(6) FWD MARKS	206.60f	0.00	0.00	-7.45

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Aft 0.15/210.33, Heel: Stbd 0.16 deg., VCG = 23.38

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
7.541	665.39	87.20f	4.58	10.23	85.04f	128.52	487.5	76.45

Distances in FEET.-------Specific Gravity = 1.025.-----------Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

8.14 10% Lightship

WEIGHT STATUS

Trim: Aft 1.24/210.33, Heel: Stbd 0.06 deg.

Part			Weight(LT)	LCG	TCG	VCG	
LIGHT SHIP			500.46	84.77f	0.01p	23.23	
Food Stuffs			0.06	100.46f	1.05p	38.71	
Loose Outfit/Gear			0.40	111.22f	0.00	37.07	
Stores			0.07	101.71f	0.00	37.07	
Art Allowance			0.54	111.22f	0.00	40.35	
Trash			0.45	104.66f	25.13s	28.64	
Video Games			0.45	28.46f	5.11p	38.71	
Total Fixed--------->			502.42	84.79f	0.01s	23.28	
	Load	SpGr	Weight(LT)	LCG	TCG	VCG	FSM
FW.P	0.100	1.000	0.34	135.79f	21.23p	8.19	0.7
BW.S	0.200	1.025	2.77	98.06f	20.99s	7.96	6.8
DBF4.P	0.100	0.840	2.08	114.11f	22.46p	0.77	19.1
DBF3.S	0.100	0.840	2.08	114.11f	22.48s	0.77	19.1
LOH2.P	0.100	0.880	0.06	49.20f	17.12p	12.70	0.1
LOH1.S	0.100	0.880	0.06	49.20f	17.12s	12.70	0.1
Total Tanks--------->			7.41	107.99f	6.86s	4.01	88.9*
Total Weight-------->			509.83	85.13f	0.11s	23.00	
Free Surface Adjustment---------->						0.17	
Adjusted CG---------->				85.13f	0.11s	23.18	

Distances in FEET.----------Moments in Ft-LT.

Note: FSM values marked with an asterisk (*) are formal values which are not the same as the true values in the present condition.

CRITICAL POINT STATUS

Baseline draft: 6.734 @ Origin
Trim: Aft 1.24/210.33, Heel: Stbd 0.06 deg.
+

Critical Points	LCP	TCP	VCP	Height
(1) A.P	0.00	0.00	0.00	-6.73
(2) LL Mark 8.52 ft ABL	85.26f	0.00	8.52	2.29
(3) F.P	210.33f	0.00	0.00	-5.50
(4) AFT MARKS	1.00f	0.00	0.00	-6.73
(5) M.S. MARKS	104.36f	0.00	0.00	-6.12
(6) FWD MARKS	206.60f	0.00	0.00	-5.52

Distances in FEET.

HYDROSTATIC PROPERTIES

Trim: Aft 1.24/210.33, Heel: Stbd 0.06 deg., VCG = 23.00

LCF Draft	Displacement Weight(LT)	Buoyancy-Ctr. LCB	VCB	Weight/ Inch	Moment/ LCF	In trim	GML	GMT
6.248	509.77	85.02f	3.88	9.72	82.55f	114.61	567.5	99.04

Distances in FEET. Specific Gravity = 1.025. Moment in Ft-LT.

Trim is per 210.33Ft
Draft is from Baseline. Formal Free Surface included.

Note: GMT includes the formal free surface moment 88.9 Ft-LT

Section 9 Tank Sounding Tables

9.1 BW.S (Level Trim)

NO TRIM NO HEEL

BW.S

Capacity: 3,622 GALLONS (7 FT. 2 IN. sounding)
Center of gravity when full: 98.12 LONG, 21.00 TRANS, 10.43 VERT
Soundings are from the lowest point of the tank
Lowest point of the tank is 6 FT. 10 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	0	0.0	0.00				
0-02							0.22
0-03	33	4.4	0.13	98.12	21.03	7.03	0.41
0-06	103	13.7	0.39	98.12	20.99	7.18	1.30
0-09	193	25.8	0.74	98.12	20.98	7.33	2.26
1-00	299	39.9	1.14	98.12	21.00	7.48	3.38
1-03	417	55.7	1.59	98.12	21.01	7.62	4.43
1-06	545	72.8	2.08	98.12	21.00	7.77	5.60
1-09	681	91.1	2.60	98.12	20.99	7.92	6.50
2-00	824	110.2	3.15	98.12	20.99	8.06	7.49
2-03	974	130.2	3.72	98.12	21.00	8.20	8.29
2-06	1,127	150.7	4.30	98.12	21.00	8.35	8.93
2-09	1,285	171.7	4.91	98.12	21.00	8.49	9.60
3-00	1,445	193.2	5.52	98.12	20.99	8.63	9.96
3-03	1,607	214.8	6.14	98.12	20.99	8.76	10.19
3-06	1,770	236.6	6.76	98.12	21.00	8.90	10.42
3-09	1,933	258.5	7.38	98.12	21.00	9.04	10.30
4-00	2,096	280.2	8.00	98.12	21.00	9.17	10.07
4-03	2,257	301.7	8.62	98.12	21.00	9.30	9.84
4-06	2,416	323.0	9.23	98.12	21.00	9.43	9.27
4-09	2,571	343.8	9.82	98.12	21.00	9.55	8.61
5-00	2,723	364.0	10.40	98.12	21.00	9.67	7.99
5-03	2,870	383.6	10.96	98.12	21.00	9.79	6.98
5-06	3,009	402.3	11.49	98.12	21.00	9.91	6.04
5-09	3,142	420.1	12.00	98.12	21.00	10.02	5.04
6-00	3,265	436.5	12.47	98.12	21.00	10.12	3.89
6-03	3,378	451.5	12.90	98.12	21.00	10.21	2.88
6-06	3,476	464.7	13.27	98.12	21.00	10.30	1.74
6-09	3,557	475.6	13.59	98.12	21.00	10.37	0.81
7-00	3,613	483.0	13.80	98.12	21.00	10.42	0.12
7-02	3,622	484.2	13.83	98.12	21.00	10.43	0.00

9.2 BW.S (0.5° Aft Trim)

TRIM = 0.50 DEGREES AFT NO HEEL

BW.S

Capacity: 3,622 GALLONS (7 FT. 1 IN. sounding)
Center of gravity when full: 98.12 LONG, 21.00 TRANS, 10.43 VERT
Soundings are from the lowest point of the tank
Lowest point of the tank is 6 FT. 10 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	2	0.3	0.01	95.06	20.80	6.92	0.03
0-03	46	6.2	0.18	97.52	21.03	7.07	0.57
0-06	121	16.2	0.46	97.80	20.99	7.22	1.48
0-09	214	28.7	0.82	97.91	20.99	7.36	2.51
1-00	323	43.2	1.23	97.96	21.01	7.51	3.59
1-03	443	59.3	1.69	97.99	21.00	7.66	4.69
1-06	574	76.7	2.19	98.01	20.99	7.80	5.78
1-09	712	95.1	2.72	98.03	20.99	7.95	6.70
2-00	856	114.5	3.27	98.04	21.00	8.09	7.72
2-03	1,007	134.6	3.84	98.05	21.00	8.24	8.43
2-06	1,161	155.2	4.43	98.06	21.00	8.38	9.07
2-09	1,319	176.3	5.04	98.06	21.00	8.52	9.74
3-00	1,480	197.8	5.65	98.07	20.99	8.66	10.01
3-03	1,642	219.5	6.27	98.07	20.99	8.79	10.24
3-06	1,805	241.3	6.89	98.08	21.00	8.93	10.45
3-09	1,969	263.2	7.52	98.08	21.00	9.06	10.25
4-00	2,131	284.8	8.14	98.08	21.00	9.20	10.02
4-03	2,292	306.3	8.75	98.09	21.00	9.33	9.77
4-06	2,450	327.5	9.36	98.09	21.00	9.45	9.12
4-09	2,605	348.2	9.95	98.09	21.00	9.58	8.47
5-00	2,755	368.3	10.52	98.09	21.00	9.70	7.79
5-03	2,900	387.7	11.08	98.10	21.00	9.82	6.77
5-06	3,039	406.2	11.60	98.10	21.00	9.93	5.85
5-09	3,170	423.7	12.10	98.10	21.00	10.04	4.77
6-00	3,290	439.9	12.57	98.10	21.00	10.14	3.67
6-03	3,400	454.6	12.99	98.10	21.00	10.23	2.61
6-06	3,495	467.2	13.35	98.11	21.00	10.32	1.55
6-09	3,572	477.5	13.64	98.11	21.00	10.39	0.63
6-11							0.16
7-00	3,619	483.7	13.82	98.11	21.00	10.43	0.04
7-01	3,622	484.2	13.83	98.12	21.00	10.43	0.00

9.3 BW.S (0.5° Fwd Trim)

TRIM = 0.50 DEGREES FWD NO HEEL

BW.S

Capacity: 3,622 GALLONS (7 FT. 2 IN. sounding)
Center of gravity when full: 98.12 LONG, 21.00 TRANS, 10.43 VERT
Soundings are from the lowest point of the tank
Lowest point of the tank is 6 FT. 10 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	0	0.0	0.00				
0-00							0.83
0-01							0.08
0-03	22	2.9	0.08	99.12	21.01	7.00	0.30
0-06	86	11.5	0.33	98.52	21.01	7.15	1.10
0-09	172	23.0	0.66	98.36	20.98	7.30	2.03
1-00	275	36.7	1.05	98.30	21.00	7.45	3.18
1-03	390	52.2	1.49	98.25	21.01	7.59	4.19
1-06	516	69.0	1.97	98.23	21.00	7.74	5.38
1-09	651	87.1	2.49	98.21	20.99	7.89	6.30
2-00	793	106.0	3.03	98.20	20.99	8.03	7.27
2-03	941	125.8	3.59	98.19	21.00	8.17	8.16
2-06	1,094	146.2	4.18	98.18	21.00	8.32	8.79
2-09	1,250	167.2	4.77	98.17	21.00	8.46	9.46
3-00	1,410	188.5	5.39	98.17	21.00	8.60	9.91
3-03	1,572	210.1	6.00	98.16	20.99	8.73	10.14
3-06	1,735	231.9	6.62	98.16	21.00	8.87	10.37
3-09	1,898	253.7	7.25	98.16	21.00	9.01	10.36
4-00	2,061	275.5	7.87	98.15	21.00	9.14	10.12
4-03	2,222	297.1	8.49	98.15	21.00	9.27	9.89
4-06	2,382	318.4	9.10	98.15	21.00	9.40	9.41
4-09	2,538	339.3	9.69	98.14	21.00	9.52	8.75
5-00	2,691	359.7	10.28	98.14	21.00	9.65	8.12
5-03	2,839	379.5	10.84	98.14	21.00	9.77	7.20
5-06	2,980	398.3	11.38	98.14	21.00	9.88	6.24
5-09	3,114	416.3	11.89	98.14	21.00	9.99	5.31
6-00	3,240	433.1	12.37	98.13	21.00	10.10	4.12
6-03	3,354	448.4	12.81	98.13	21.00	10.19	3.11
6-06	3,456	462.0	13.20	98.13	21.00	10.28	1.96
6-09	3,541	473.4	13.52	98.13	21.00	10.36	1.04
7-00	3,603	481.7	13.76	98.12	21.00	10.42	0.26
7-02	3,622	484.2	13.83	98.12	21.00	10.43	0.00

9.4 FW.P (Level Trim)

NO TRIM NO HEEL

FW.P

Capacity: 921 GALLONS (5 FT. 1 IN. sounding)
Center of gravity when full: 135.82 LONG, -21.23 TRANS, 10.24 VERT
Soundings are from the lowest point of the tank
Lowest point of the tank is 7 FT. 8 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	0	0.0	0.00				
0-01							0.04
0-03	15	2.0	0.06	135.82	-21.25	7.86	0.13
0-06	44	5.9	0.17	135.82	-21.22	8.01	0.36
0-09	82	11.0	0.31	135.82	-21.23	8.16	0.63
1-00	126	16.8	0.47	135.82	-21.23	8.30	0.91
1-03	174	23.3	0.65	135.82	-21.22	8.45	1.15
1-06	226	30.2	0.84	135.82	-21.23	8.59	1.40
1-09	280	37.5	1.04	135.82	-21.23	8.73	1.56
2-00	336	45.0	1.25	135.82	-21.23	8.88	1.72
2-03	394	52.7	1.47	135.82	-21.22	9.01	1.78
2-06	452	60.5	1.68	135.82	-21.23	9.15	1.84
2-09	511	68.3	1.90	135.82	-21.23	9.29	1.80
3-00	568	76.0	2.12	135.82	-21.23	9.42	1.74
3-03	625	83.6	2.33	135.82	-21.23	9.54	1.60
3-06	680	90.9	2.53	135.82	-21.23	9.67	1.44
3-09	733	97.9	2.73	135.82	-21.23	9.79	1.22
4-00	782	104.5	2.91	135.82	-21.23	9.90	0.99
4-03	827	110.6	3.08	135.82	-21.23	10.00	0.71
4-06	867	115.9	3.23	135.82	-21.23	10.10	0.44
4-09	899	120.2	3.35	135.82	-21.23	10.18	0.20
5-00	919	122.9	3.43	135.82	-21.23	10.23	0.01
5-01	921	123.1	3.43	135.82	-21.23	10.24	0.00

9.5 FW.P (0.5° Aft Trim)

TRIM = 0.50 DEGREES AFT NO HEEL

FW.P

Capacity: 921 GALLONS
Center of gravity when full: 135.82 LONG, -21.23 TRANS, 10.24 VERT
Soundings are from the lowest point of the tank
Lowest point of the tank is 7 FT. 8 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	0	0.0	0.00	134.25	-21.05	7.73	0.28
0-03	17	2.3	0.07	135.66	-21.24	7.88	0.15
0-06	48	6.4	0.18	135.74	-21.22	8.02	0.39
0-09	87	11.6	0.32	135.77	-21.23	8.17	0.66
1-00	131	17.5	0.49	135.78	-21.23	8.32	0.95
1-03	180	24.0	0.67	135.79	-21.22	8.46	1.18
1-06	232	31.0	0.86	135.80	-21.23	8.61	1.42
1-09	286	38.3	1.07	135.80	-21.23	8.75	1.57
2-00	343	45.8	1.28	135.80	-21.23	8.89	1.73
2-03	400	53.5	1.49	135.81	-21.22	9.03	1.79
2-06	459	61.3	1.71	135.81	-21.23	9.17	1.85
2-09	517	69.1	1.93	135.81	-21.23	9.30	1.79
3-00	575	76.8	2.14	135.81	-21.23	9.43	1.74
3-03	631	84.4	2.35	135.81	-21.23	9.56	1.59
3-06	686	91.7	2.56	135.81	-21.23	9.68	1.43
3-09	738	98.7	2.75	135.82	-21.23	9.80	1.19
4-00	787	105.2	2.93	135.82	-21.23	9.91	0.97
4-03	832	111.2	3.10	135.82	-21.23	10.02	0.68
4-06	871	116.4	3.24	135.82	-21.23	10.11	0.41
4-09	902	120.6	3.36	135.82	-21.23	10.19	0.17
5-00							0.00
5-00	920	123.0	3.43	135.82	-21.23	10.23	0.00

9.6 FW.P (0.5° Fwd Trim)

TRIM = 0.50 DEGREES FWD NO HEEL

FW.P

Capacity: 921 GALLONS (5 FT. 1 IN. sounding)
Center of gravity when full: 135.82 LONG, -21.23 TRANS, 10.24 VERT
Soundings are from the lowest point of the tank
Lowest point of the tank is 7 FT. 8 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	0	0.0	0.00				
0-03	12	1.6	0.05	136.03	-21.25	7.84	0.10
0-06	41	5.4	0.15	135.91	-21.22	7.99	0.33
0-09	78	10.4	0.29	135.88	-21.23	8.14	0.61
1-00	121	16.2	0.45	135.87	-21.23	8.29	0.88
1-03	169	22.6	0.63	135.86	-21.22	8.43	1.13
1-06	220	29.4	0.82	135.85	-21.23	8.58	1.37
1-09	274	36.7	1.02	135.85	-21.23	8.72	1.54
2-00	330	44.2	1.23	135.84	-21.23	8.86	1.71
2-03	388	51.8	1.44	135.84	-21.22	9.00	1.78
2-06	446	59.6	1.66	135.84	-21.23	9.14	1.84
2-09	504	67.4	1.88	135.84	-21.23	9.27	1.81
3-00	562	75.1	2.09	135.83	-21.23	9.40	1.75
3-03	619	82.8	2.31	135.83	-21.23	9.53	1.62
3-06	674	90.1	2.51	135.83	-21.23	9.65	1.46
3-09	727	97.2	2.71	135.83	-21.23	9.77	1.24
4-00	777	103.8	2.89	135.83	-21.23	9.89	1.01
4-03	822	109.9	3.06	135.83	-21.23	9.99	0.73
4-06	863	115.3	3.21	135.83	-21.23	10.09	0.47
4-09	896	119.7	3.34	135.83	-21.23	10.17	0.22
5-00	918	122.7	3.42	135.83	-21.23	10.23	0.03
5-01	921	123.1	3.43	135.82	-21.23	10.24	0.00

9.7 LOH1.S (Level Trim)

NO TRIM NO HEEL

LOH1.S

Capacity: 196 GALLONS (4 FT. 0 IN. sounding)
95% Capacity: 186 GALLONS
Center of gravity when full: 49.21 LONG, 17.12 TRANS, 14.45 VERT
Soundings are from the lowest point of the tank
Lowest point of the tank is 12 FT. 6 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	0	0.0	0.00				
0-03	13	1.7	0.04	49.21	17.12	12.62	0.06
0-06	25	3.4	0.08	49.21	17.12	12.75	0.06
0-09	38	5.0	0.12	49.21	17.12	12.87	0.06
1-00	50	6.7	0.16	49.21	17.12	13.00	0.06
1-03	63	8.4	0.21	49.21	17.12	13.13	0.06
1-06	75	10.1	0.25	49.21	17.12	13.25	0.06
1-09	88	11.8	0.29	49.21	17.12	13.37	0.06
2-00	100	13.4	0.33	49.21	17.12	13.50	0.06
2-03	113	15.1	0.37	49.21	17.12	13.62	0.06
2-06	126	16.8	0.41	49.21	17.12	13.75	0.06
2-09	138	18.5	0.45	49.21	17.12	13.87	0.06
3-00	151	20.1	0.49	49.21	17.12	14.00	0.06
3-03	163	21.8	0.54	49.21	17.12	14.13	0.06
3-06	176	23.5	0.58	49.21	17.12	14.25	0.06
3-09	188	25.2	0.62	49.21	17.12	14.38	0.06
3-11							0.06
3-11							0.00
4-00	196	26.2	0.64	49.21	17.12	14.45	0.00

9.8 LOH1.S (0.5° Aft Trim)

TRIM = 0.50 DEGREES AFT NO HEEL

LOH1.S

Capacity: 196 GALLONS (3 FT. 11 IN. sounding)
95% Capacity: 186 GALLONS
Center of gravity when full: 49.21 LONG, 17.12 TRANS, 14.45 VERT
Soundings are from the lowest point of the tank
Lowest point of the tank is 12 FT. 6 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	1	0.1	0.00	48.68	17.12	12.51	0.01
0-03	13	1.8	0.04	49.18	17.12	12.63	0.06
0-06	26	3.5	0.08	49.20	17.12	12.76	0.06
0-09	38	5.1	0.13	49.20	17.12	12.88	0.06
1-00	51	6.8	0.17	49.21	17.12	13.01	0.06
1-03	64	8.5	0.21	49.21	17.12	13.13	0.06
1-06	76	10.2	0.25	49.21	17.12	13.26	0.06
1-09	89	11.8	0.29	49.21	17.12	13.38	0.06
2-00	101	13.5	0.33	49.21	17.12	13.51	0.06
2-03	114	15.2	0.37	49.21	17.12	13.63	0.06
2-06	126	16.9	0.41	49.21	17.12	13.76	0.06
2-09	139	18.6	0.46	49.21	17.12	13.88	0.06
3-00	151	20.2	0.50	49.21	17.12	14.01	0.06
3-03	164	21.9	0.54	49.21	17.12	14.13	0.06
3-06	177	23.6	0.58	49.21	17.12	14.26	0.06
3-09	189	25.3	0.62	49.21	17.12	14.38	0.06
3-11	196	26.2	0.64	49.21	17.12	14.45	0.00

9.9 LOH1.S (0.5° Fwd Trim)

TRIM = 0.50 DEGREES FWD NO HEEL

LOH1.S

Capacity: 196 GALLONS (4 FT. 0 IN. sounding)
95% Capacity: 186 GALLONS
Center of gravity when full: 49.21 LONG, 17.12 TRANS, 14.45 VERT
Soundings are from the lowest point of the tank
Lowest point of the tank is 12 FT. 6 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	0	0.0	0.00				
0-00							0.01
0-01							0.06
0-03	12	1.6	0.04	49.24	17.12	12.62	0.06
0-06	24	3.3	0.08	49.23	17.12	12.74	0.06
0-09	37	4.9	0.12	49.22	17.12	12.87	0.06
1-00	50	6.6	0.16	49.22	17.12	12.99	0.06
1-03	62	8.3	0.20	49.22	17.12	13.12	0.06
1-06	75	10.0	0.24	49.22	17.12	13.24	0.06
1-09	87	11.7	0.29	49.22	17.12	13.37	0.06
2-00	100	13.3	0.33	49.22	17.12	13.49	0.06
2-03	112	15.0	0.37	49.22	17.12	13.62	0.06
2-06	125	16.7	0.41	49.22	17.12	13.74	0.06
2-09	137	18.4	0.45	49.22	17.12	13.87	0.06
3-00	150	20.1	0.49	49.22	17.12	13.99	0.06
3-03	163	21.7	0.53	49.21	17.12	14.12	0.06
3-06	175	23.4	0.57	49.21	17.12	14.24	0.06
3-09	188	25.1	0.62	49.21	17.12	14.37	0.06
3-11							0.06
3-11							0.00
4-00	196	26.2	0.64	49.21	17.12	14.45	0.00

9.10 LOH2.P (Level Trim)

NO TRIM NO HEEL

LOH2.P

Capacity: 196 GALLONS (4 FT. 0 IN. sounding)
95% Capacity: 186 GALLONS
Center of gravity when full: 49.21 LONG, -17.12 TRANS, 14.45 VERT
Soundings are from the lowest point of the tank
Lowest point of the tank is 12 FT. 6 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	0	0.0	0.00				
0-03	13	1.7	0.04	49.21	-17.12	12.62	0.06
0-06	25	3.4	0.08	49.21	-17.12	12.75	0.06
0-09	38	5.0	0.12	49.21	-17.12	12.88	0.06
1-00	50	6.7	0.16	49.21	-17.12	13.00	0.06
1-03	63	8.4	0.21	49.21	-17.12	13.12	0.06
1-06	75	10.1	0.25	49.21	-17.12	13.25	0.06
1-09	88	11.8	0.29	49.21	-17.12	13.38	0.06
2-00	100	13.4	0.33	49.21	-17.12	13.50	0.06
2-03	113	15.1	0.37	49.21	-17.12	13.62	0.06
2-06	126	16.8	0.41	49.21	-17.12	13.75	0.06
2-09	138	18.5	0.45	49.21	-17.12	13.87	0.06
3-00	151	20.1	0.49	49.21	-17.12	14.00	0.06
3-03	163	21.8	0.54	49.21	-17.12	14.13	0.06
3-06	176	23.5	0.58	49.21	-17.12	14.25	0.06
3-09	188	25.2	0.62	49.21	-17.12	14.37	0.06
3-11							0.06
3-11							0.00
4-00	196	26.2	0.64	49.21	-17.12	14.45	0.00

9.11 LOH2.P (0.5° Aft Trim)

TRIM = 0.50 DEGREES AFT NO HEEL

LOH2.P

Capacity: 196 GALLONS (3 FT. 11 IN. sounding)
95% Capacity: 186 GALLONS
Center of gravity when full: 49.21 LONG, -17.12 TRANS, 14.45 VERT
Soundings are from the lowest point of the tank
Lowest point of the tank is 12 FT. 6 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	1	0.1	0.00	48.68	-17.12	12.51	0.01
0-03	13	1.8	0.04	49.18	-17.12	12.63	0.06
0-06	26	3.5	0.08	49.20	-17.12	12.76	0.06
0-09	38	5.1	0.13	49.20	-17.12	12.88	0.06
1-00	51	6.8	0.17	49.21	-17.12	13.01	0.06
1-03	64	8.5	0.21	49.21	-17.12	13.13	0.06
1-06	76	10.2	0.25	49.21	-17.12	13.26	0.06
1-09	89	11.8	0.29	49.21	-17.12	13.38	0.06
2-00	101	13.5	0.33	49.21	-17.12	13.51	0.06
2-03	114	15.2	0.37	49.21	-17.12	13.63	0.06
2-06	126	16.9	0.41	49.21	-17.12	13.76	0.06
2-09	139	18.6	0.46	49.21	-17.12	13.88	0.06
3-00	151	20.2	0.50	49.21	-17.12	14.01	0.06
3-03	164	21.9	0.54	49.21	-17.12	14.13	0.06
3-06	177	23.6	0.58	49.21	-17.12	14.26	0.06
3-09	189	25.3	0.62	49.21	-17.12	14.38	0.06
3-11	196	26.2	0.64	49.21	-17.12	14.45	0.00

9.12 LOH2.P (0.5° Fwd Trim)

TRIM = 0.50 DEGREES FWD NO HEEL

LOH2.P

Capacity: 196 GALLONS (4 FT. 0 IN. sounding)
95% Capacity: 186 GALLONS
Center of gravity when full: 49.21 LONG, -17.12 TRANS, 14.45 VERT
Soundings are from the lowest point of the tank
Lowest point of the tank is 12 FT. 6 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	0	0.0	0.00				
0-00							0.01
0-01							0.06
0-03	12	1.6	0.04	49.24	-17.12	12.62	0.06
0-06	24	3.3	0.08	49.23	-17.12	12.74	0.06
0-09	37	4.9	0.12	49.22	-17.12	12.87	0.06
1-00	50	6.6	0.16	49.22	-17.12	12.99	0.06
1-03	62	8.3	0.20	49.22	-17.12	13.12	0.06
1-06	75	10.0	0.24	49.22	-17.12	13.24	0.06
1-09	87	11.7	0.29	49.22	-17.12	13.37	0.06
2-00	100	13.3	0.33	49.22	-17.12	13.49	0.06
2-03	112	15.0	0.37	49.22	-17.12	13.62	0.06
2-06	125	16.7	0.41	49.22	-17.12	13.74	0.06
2-09	137	18.4	0.45	49.22	-17.12	13.87	0.06
3-00	150	20.1	0.49	49.22	-17.12	13.99	0.06
3-03	163	21.7	0.53	49.21	-17.12	14.12	0.06
3-06	175	23.4	0.57	49.21	-17.12	14.24	0.06
3-09	188	25.1	0.62	49.21	-17.12	14.37	0.06
3-11							0.06
3-11							0.00
4-00	196	26.2	0.64	49.21	-17.12	14.45	0.00

9.13 DB1.S (Level Trim)

NO TRIM NO HEEL

DB1.S

Capacity: 14,075 GALLONS (7 FT. 2 IN. sounding)
Center of gravity when full: 140.43 LONG, 22.47 TRANS, 3.97 VERT
Total length of the sounding tube is 8 FT. 1 IN.
Striker plate is 0 FT. 4 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 0 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	192	25.6	0.73	141.31	22.47	0.24	4.97
0-03	484	64.7	1.85	139.89	22.47	0.38	10.42
0-06	830	111.0	3.17	139.48	22.47	0.53	15.02
0-09	1,212	162.0	4.63	139.33	22.47	0.67	18.89
1-00	1,621	216.6	6.19	139.27	22.47	0.81	22.24
1-03	2,051	274.1	7.83	139.26	22.47	0.95	25.19
1-06	2,499	334.0	9.54	139.27	22.47	1.09	27.83
1-09	2,962	395.9	11.31	139.29	22.47	1.23	30.25
2-00	3,438	459.6	13.13	139.32	22.47	1.37	32.52
2-03	3,927	525.0	15.00	139.35	22.47	1.50	34.66
2-06	4,427	591.8	16.91	139.39	22.47	1.64	36.67
2-09	4,937	660.0	18.85	139.42	22.47	1.78	38.65
3-00	5,457	729.5	20.84	139.46	22.47	1.92	40.59
3-03	5,986	800.2	22.86	139.50	22.47	2.06	42.47
3-06	6,523	872.0	24.91	139.54	22.47	2.19	44.30
3-09	7,069	945.0	27.00	139.57	22.47	2.33	46.11
4-00	7,623	1,019.1	29.11	139.61	22.47	2.47	47.95
4-03	8,185	1,094.2	31.26	139.64	22.47	2.61	49.81
4-06	8,755	1,170.3	33.43	139.68	22.47	2.74	51.68
4-09	9,332	1,247.5	35.64	139.71	22.47	2.88	53.58
5-00	9,916	1,325.6	37.87	139.75	22.47	3.02	55.52
5-03	10,509	1,404.8	40.13	139.78	22.47	3.16	57.51
5-06	11,108	1,485.0	42.42	139.81	22.47	3.30	59.53
5-09	11,715	1,566.1	44.74	139.84	22.47	3.44	61.61
6-00	12,330	1,648.2	47.08	139.87	22.47	3.58	63.73
6-03	12,951	1,731.3	49.46	139.90	22.47	3.72	65.91
6-04							66.39
6-06	13,514	1,806.6	51.61	140.00	22.47	3.84	45.52
6-09	13,878	1,855.2	53.00	140.22	22.47	3.92	23.51
7-00	14,053	1,878.6	53.66	140.40	22.47	3.96	6.74
7-02	14,075	1,881.5	53.75	140.43	22.47	3.97	0.00

9.14 DB1.S (0.5° Aft Trim)

TRIM = 0.50 DEGREES AFT NO HEEL

DB1.S

Capacity: 14,075 GALLONS (7 FT. 2 IN. sounding)
Center of gravity when full: 140.43 LONG, 22.47 TRANS, 3.97 VERT
Total length of the sounding tube is 8 FT. 1 IN.
Striker plate is 0 FT. 4 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 0 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	416	55.6	1.59	137.00	22.47	0.37	10.06
0-00							10.74
0-03	750	100.3	2.86	137.57	22.47	0.50	14.58
0-06	1,122	150.1	4.29	137.90	22.47	0.64	18.43
0-09	1,523	203.6	5.82	138.14	22.47	0.78	21.78
1-00	1,947	260.3	7.43	138.31	22.47	0.92	24.69
1-03	2,389	319.3	9.12	138.46	22.47	1.06	27.34
1-06	2,847	380.6	10.87	138.58	22.47	1.20	29.76
1-09	3,318	443.6	12.67	138.69	22.47	1.33	32.01
2-00	3,803	508.4	14.52	138.79	22.47	1.47	34.17
2-03	4,298	574.6	16.41	138.87	22.47	1.61	36.17
2-06	4,804	642.3	18.35	138.95	22.47	1.75	38.13
2-09	5,320	711.2	20.32	139.03	22.47	1.88	40.06
3-00	5,846	781.5	22.32	139.09	22.47	2.02	41.96
3-03	6,380	852.9	24.36	139.16	22.47	2.16	43.77
3-06	6,922	925.4	26.43	139.22	22.47	2.30	45.58
3-09	7,473	999.0	28.54	139.27	22.47	2.43	47.41
4-00	8,032	1,073.7	30.67	139.33	22.47	2.57	49.25
4-03	8,598	1,149.4	32.83	139.38	22.47	2.71	51.13
4-06	9,172	1,226.1	35.03	139.43	22.47	2.85	53.02
4-09	9,754	1,303.9	37.25	139.47	22.47	2.98	54.94
5-00	10,343	1,382.7	39.50	139.52	22.47	3.12	56.91
5-03	10,940	1,462.4	41.78	139.56	22.47	3.26	58.92
5-06	11,544	1,543.2	44.08	139.60	22.47	3.40	60.98
5-09	12,155	1,624.9	46.42	139.64	22.47	3.54	63.08
6-00	12,772	1,707.4	48.77	139.68	22.47	3.68	62.29
6-03	13,300	1,777.9	50.79	139.82	22.47	3.79	44.08
6-06	13,685	1,829.5	52.26	140.05	22.47	3.88	28.49
6-09	13,936	1,862.9	53.22	140.27	22.47	3.94	15.44
7-00	14,059	1,879.3	53.69	140.41	22.47	3.96	4.76
7-02	14,075	1,881.5	53.75	140.43	22.47	3.97	0.00

9.15 DB1.S (0.5° Fwd Trim)

TRIM = 0.50 DEGREES FWD NO HEEL

DB1.S

Capacity: 14,075 GALLONS (7 FT. 2 IN. sounding)
Center of gravity when full: 140.43 LONG, 22.47 TRANS, 3.97 VERT
Total length of the sounding tube is 8 FT. 1 IN.
Striker plate is 0 FT. 4 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 0 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	65	8.7	0.25	150.87	22.47	0.17	0.95
0-03	260	34.8	0.99	145.02	22.47	0.29	5.15
0-06	563	75.3	2.15	142.24	22.47	0.43	10.68
0-09	918	122.7	3.51	141.15	22.47	0.57	15.38
1-00	1,308	174.8	4.99	140.62	22.47	0.71	19.34
1-03	1,723	230.4	6.58	140.32	22.47	0.85	22.69
1-06	2,159	288.6	8.25	140.14	22.47	0.99	25.67
1-09	2,612	349.2	9.98	140.03	22.47	1.13	28.30
2-00	3,080	411.8	11.76	139.96	22.47	1.27	30.76
2-03	3,562	476.1	13.60	139.91	22.47	1.40	33.00
2-06	4,055	542.0	15.48	139.89	22.47	1.54	35.16
2-09	4,559	609.4	17.41	139.88	22.47	1.68	37.19
3-00	5,073	678.1	19.37	139.88	22.47	1.82	39.17
3-03	5,596	748.1	21.37	139.88	22.47	1.96	41.10
3-06	6,128	819.3	23.40	139.89	22.47	2.09	43.00
3-09	6,670	891.6	25.47	139.90	22.47	2.23	44.83
4-00	7,219	965.0	27.57	139.92	22.47	2.37	46.67
4-03	7,776	1,039.5	29.69	139.93	22.47	2.51	48.51
4-06	8,341	1,115.0	31.85	139.95	22.47	2.65	50.38
4-09	8,914	1,191.6	34.04	139.97	22.47	2.78	52.24
5-00	9,494	1,269.2	36.26	139.99	22.47	2.92	54.16
5-03	10,082	1,347.7	38.50	140.01	22.47	3.06	56.12
5-06	10,677	1,427.3	40.77	140.03	22.47	3.20	58.12
5-09	11,279	1,507.8	43.07	140.05	22.47	3.34	60.17
6-00	11,889	1,589.3	45.40	140.08	22.47	3.48	62.26
6-03	12,506	1,671.9	47.76	140.10	22.47	3.62	64.41
6-06	13,131	1,755.4	50.14	140.12	22.47	3.76	66.61
6-08							67.90
6-09	13,730	1,835.4	52.43	140.18	22.47	3.89	47.89
7-00	14,039	1,876.7	53.61	140.39	22.47	3.96	12.04
7-02	14,075	1,881.5	53.75	140.43	22.47	3.97	0.00

9.16 DB2.P (Level Trim)

NO TRIM NO HEEL

DB2.P

Capacity: 14,075 GALLONS (7 FT. 2 IN. sounding)
Center of gravity when full: 140.43 LONG, -22.47 TRANS, 3.97 VERT
Total length of the sounding tube is 8 FT. 1 IN.
Striker plate is 0 FT. 4 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 0 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	192	25.6	0.73	141.31	-22.47	0.24	4.97
0-03	484	64.7	1.85	139.89	-22.47	0.38	10.42
0-06	830	111.0	3.17	139.48	-22.47	0.53	15.02
0-09	1,212	162.0	4.63	139.33	-22.47	0.67	18.89
1-00	1,621	216.6	6.19	139.27	-22.47	0.81	22.24
1-03	2,051	274.1	7.83	139.26	-22.47	0.95	25.19
1-06	2,499	334.0	9.54	139.27	-22.47	1.09	27.83
1-09	2,962	395.9	11.31	139.29	-22.47	1.23	30.25
2-00	3,438	459.6	13.13	139.32	-22.47	1.37	32.52
2-03	3,927	525.0	15.00	139.35	-22.47	1.50	34.66
2-06	4,427	591.8	16.91	139.39	-22.47	1.64	36.67
2-09	4,937	660.0	18.85	139.42	-22.47	1.78	38.65
3-00	5,457	729.5	20.84	139.46	-22.47	1.92	40.59
3-03	5,986	800.2	22.86	139.50	-22.47	2.06	42.47
3-06	6,523	872.0	24.91	139.54	-22.47	2.19	44.30
3-09	7,069	945.0	27.00	139.57	-22.47	2.33	46.11
4-00	7,623	1,019.1	29.11	139.61	-22.47	2.47	47.95
4-03	8,185	1,094.2	31.26	139.64	-22.47	2.61	49.81
4-06	8,755	1,170.3	33.43	139.68	-22.47	2.74	51.68
4-09	9,332	1,247.5	35.64	139.71	-22.47	2.88	53.58
5-00	9,916	1,325.6	37.87	139.75	-22.47	3.02	55.52
5-03	10,509	1,404.8	40.13	139.78	-22.47	3.16	57.51
5-06	11,108	1,485.0	42.42	139.81	-22.47	3.30	59.53
5-09	11,715	1,566.1	44.74	139.84	-22.47	3.44	61.61
6-00	12,330	1,648.2	47.08	139.87	-22.47	3.58	63.73
6-03	12,951	1,731.3	49.46	139.90	-22.47	3.72	65.91
6-04							66.39
6-06	13,514	1,806.6	51.61	140.00	-22.47	3.84	45.52
6-09	13,878	1,855.2	53.00	140.22	-22.47	3.92	23.51
7-00	14,053	1,878.6	53.66	140.40	-22.47	3.96	6.74
7-02	14,075	1,881.5	53.75	140.43	-22.47	3.97	0.00

9.17 DB2.P (0.5° Aft Trim)

TRIM = 0.50 DEGREES AFT NO HEEL

DB2.P

Capacity: 14,075 GALLONS (7 FT. 2 IN. sounding)
Center of gravity when full: 140.43 LONG, -22.47 TRANS, 3.97 VERT
Total length of the sounding tube is 8 FT. 1 IN.
Striker plate is 0 FT. 4 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 0 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	416	55.6	1.59	137.00	-22.47	0.37	10.06
0-00							10.74
0-03	750	100.3	2.86	137.57	-22.47	0.50	14.58
0-06	1,122	150.1	4.29	137.90	-22.47	0.64	18.43
0-09	1,523	203.6	5.82	138.14	-22.47	0.78	21.78
1-00	1,947	260.3	7.43	138.31	-22.47	0.92	24.69
1-03	2,389	319.3	9.12	138.46	-22.47	1.06	27.34
1-06	2,847	380.6	10.87	138.58	-22.47	1.20	29.76
1-09	3,318	443.6	12.67	138.69	-22.47	1.33	32.01
2-00	3,803	508.4	14.52	138.79	-22.47	1.47	34.17
2-03	4,298	574.6	16.41	138.87	-22.47	1.61	36.17
2-06	4,804	642.3	18.35	138.95	-22.47	1.75	38.13
2-09	5,320	711.2	20.32	139.03	-22.47	1.88	40.06
3-00	5,846	781.5	22.32	139.09	-22.47	2.02	41.96
3-03	6,380	852.9	24.36	139.16	-22.47	2.16	43.77
3-06	6,922	925.4	26.43	139.22	-22.47	2.30	45.58
3-09	7,473	999.0	28.54	139.27	-22.47	2.43	47.41
4-00	8,032	1,073.7	30.67	139.33	-22.47	2.57	49.25
4-03	8,598	1,149.4	32.83	139.38	-22.47	2.71	51.13
4-06	9,172	1,226.1	35.03	139.43	-22.47	2.85	53.02
4-09	9,754	1,303.9	37.25	139.47	-22.47	2.98	54.94
5-00	10,343	1,382.7	39.50	139.52	-22.47	3.12	56.91
5-03	10,940	1,462.4	41.78	139.56	-22.47	3.26	58.92
5-06	11,544	1,543.2	44.08	139.60	-22.47	3.40	60.98
5-09	12,155	1,624.9	46.42	139.64	-22.47	3.54	63.08
6-00							64.93
6-00	12,772	1,707.4	48.77	139.68	-22.47	3.68	62.29
6-03	13,300	1,777.9	50.79	139.82	-22.47	3.79	44.08
6-06	13,685	1,829.5	52.26	140.05	-22.47	3.88	28.49
6-09	13,936	1,862.9	53.22	140.27	-22.47	3.94	15.44
7-00	14,059	1,879.3	53.69	140.41	-22.47	3.96	4.76
7-02	14,075	1,881.5	53.75	140.43	-22.47	3.97	0.00

9.18 DB2.P (0.5° Fwd Trim)

TRIM = 0.50 DEGREES FWD NO HEEL

DB2.P

Capacity: 14,075 GALLONS (7 FT. 2 IN. sounding)
Center of gravity when full: 140.43 LONG, -22.47 TRANS, 3.97 VERT
Total length of the sounding tube is 8 FT. 1 IN.
Striker plate is 0 FT. 4 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 0 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	65	8.7	0.25	150.87	-22.47	0.17	0.95
0-03	260	34.8	0.99	145.02	-22.47	0.29	5.15
0-06	563	75.3	2.15	142.24	-22.47	0.43	10.68
0-09	918	122.7	3.51	141.15	-22.47	0.57	15.38
1-00	1,308	174.8	4.99	140.62	-22.47	0.71	19.34
1-03	1,723	230.4	6.58	140.32	-22.47	0.85	22.69
1-06	2,159	288.6	8.25	140.14	-22.47	0.99	25.67
1-09	2,612	349.2	9.98	140.03	-22.47	1.13	28.30
2-00	3,080	411.8	11.76	139.96	-22.47	1.27	30.76
2-03	3,562	476.1	13.60	139.91	-22.47	1.40	33.00
2-06	4,055	542.0	15.48	139.89	-22.47	1.54	35.16
2-09	4,559	609.4	17.41	139.88	-22.47	1.68	37.19
3-00	5,073	678.1	19.37	139.88	-22.47	1.82	39.17
3-03	5,596	748.1	21.37	139.88	-22.47	1.96	41.10
3-06	6,128	819.3	23.40	139.89	-22.47	2.09	43.00
3-09	6,670	891.6	25.47	139.90	-22.47	2.23	44.83
4-00	7,219	965.0	27.57	139.92	-22.47	2.37	46.67
4-03	7,776	1,039.5	29.69	139.93	-22.47	2.51	48.51
4-06	8,341	1,115.0	31.85	139.95	-22.47	2.65	50.38
4-09	8,914	1,191.6	34.04	139.97	-22.47	2.78	52.24
5-00	9,494	1,269.2	36.26	139.99	-22.47	2.92	54.16
5-03	10,082	1,347.7	38.50	140.01	-22.47	3.06	56.12
5-06	10,677	1,427.3	40.77	140.03	-22.47	3.20	58.12
5-09	11,279	1,507.8	43.07	140.05	-22.47	3.34	60.17
6-00	11,889	1,589.3	45.40	140.08	-22.47	3.48	62.26
6-03	12,506	1,671.9	47.76	140.10	-22.47	3.62	64.41
6-06	13,131	1,755.4	50.14	140.12	-22.47	3.76	66.61
6-08							67.90
6-09	13,730	1,835.4	52.43	140.18	-22.47	3.89	47.89
7-00	14,039	1,876.7	53.61	140.39	-22.47	3.96	12.04
7-02	14,075	1,881.5	53.75	140.43	-22.47	3.97	0.00

9.19 DBF3.S (Level Trim)

NO TRIM NO HEEL

DBF3.S

Capacity: 6,661 GALLONS (6 FT. 5 IN. sounding)
95% Capacity: 6,328 GALLONS
Center of gravity when full: 114.15 LONG, 22.47 TRANS, 3.56 VERT
Total length of the sounding tube is 7 FT. 2 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 2 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	5	0.7	0.02	119.81	22.48	0.25	0.37
0-03	120	16.0	0.38	115.47	22.47	0.42	6.99
0-06	317	42.4	0.99	114.62	22.48	0.56	13.15
0-09	542	72.5	1.70	114.36	22.47	0.70	17.41
1-00	785	104.9	2.46	114.24	22.47	0.84	20.45
1-03	1,037	138.7	3.25	114.18	22.47	0.98	22.71
1-06	1,298	173.5	4.06	114.14	22.47	1.11	24.44
1-09	1,563	209.0	4.89	114.11	22.48	1.24	25.81
2-00	1,834	245.1	5.74	114.10	22.48	1.38	26.94
2-03	2,107	281.7	6.59	114.08	22.47	1.51	27.90
2-06	2,384	318.7	7.46	114.08	22.47	1.64	28.78
2-09	2,663	356.1	8.34	114.07	22.47	1.77	29.58
3-00	2,945	393.7	9.22	114.06	22.47	1.90	30.31
3-03	3,229	431.7	10.11	114.06	22.47	2.04	31.03
3-06	3,516	470.0	11.00	114.06	22.47	2.17	31.69
3-09	3,804	508.5	11.90	114.05	22.47	2.30	32.34
4-00	4,094	547.3	12.81	114.05	22.47	2.43	32.98
4-03	4,386	586.4	13.73	114.05	22.47	2.56	33.62
4-06	4,680	625.7	14.65	114.05	22.47	2.69	34.27
4-09	4,976	665.2	15.57	114.05	22.47	2.82	34.93
5-00	5,274	705.0	16.51	114.05	22.47	2.95	35.59
5-03	5,574	745.1	17.44	114.05	22.47	3.09	36.26
5-06	5,875	785.4	18.39	114.05	22.47	3.22	36.94
5-09	6,179	826.0	19.34	114.05	22.47	3.35	37.63
6-00							38.22
6-00	6,481	866.4	20.28	114.05	22.47	3.48	33.72
6-03	6,644	888.2	20.79	114.13	22.47	3.55	1.86
6-05	6,661	890.4	20.85	114.15	22.47	3.56	0.00

9.20 DBF3.S (0.5° Aft Trim)

TRIM = 0.50 DEGREES AFT NO HEEL

DBF3.S

Capacity: 6,661 GALLONS (6 FT. 5 IN. sounding)
95% Capacity: 6,328 GALLONS
Center of gravity when full: 114.15 LONG, 22.47 TRANS, 3.56 VERT
Total length of the sounding tube is 7 FT. 2 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 2 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	13	1.8	0.04	116.66	22.48	0.29	7.14
0-03	168	22.4	0.52	114.30	22.47	0.46	9.11
0-06	375	50.1	1.17	114.10	22.48	0.60	14.54
0-09	605	80.9	1.89	114.04	22.47	0.74	18.35
1-00	851	113.7	2.66	114.01	22.47	0.88	21.12
1-03	1,106	147.8	3.46	114.00	22.47	1.01	23.22
1-06	1,367	182.8	4.28	113.99	22.47	1.15	24.83
1-09	1,634	218.5	5.12	113.99	22.48	1.28	26.13
2-00	1,906	254.7	5.96	113.99	22.48	1.41	27.20
2-03	2,180	291.4	6.82	113.99	22.47	1.54	28.13
2-06	2,457	328.5	7.69	113.99	22.47	1.68	29.00
2-09	2,738	366.0	8.57	113.99	22.47	1.81	29.76
3-00	3,020	403.7	9.45	113.99	22.47	1.94	30.49
3-03	3,305	441.8	10.34	114.00	22.47	2.07	31.20
3-06	3,591	480.1	11.24	114.00	22.47	2.20	31.86
3-09	3,880	518.7	12.14	114.00	22.47	2.33	32.50
4-00	4,171	557.6	13.05	114.00	22.47	2.46	33.14
4-03	4,463	596.7	13.97	114.00	22.47	2.60	33.79
4-06	4,758	636.0	14.89	114.01	22.47	2.73	34.44
4-09	5,054	675.7	15.82	114.01	22.47	2.86	35.09
5-00	5,352	715.5	16.75	114.01	22.47	2.99	35.76
5-03	5,653	755.6	17.69	114.01	22.47	3.12	36.44
5-06	5,955	796.0	18.63	114.01	22.47	3.25	37.12
5-09	6,258	836.6	19.59	114.01	22.47	3.38	37.81
5-10							38.03
6-00	6,526	872.4	20.42	114.05	22.47	3.50	23.89
6-02							8.91
6-03	6,646	888.4	20.80	114.13	22.47	3.55	1.57
6-05	6,661	890.4	20.85	114.15	22.47	3.56	0.00

9.21 DBF3.S (0.5° Fwd Trim)

TRIM = 0.50 DEGREES FWD NO HEEL

DBF3.S

Capacity: 6,661 GALLONS (6 FT. 5 IN. sounding)
95% Capacity: 6,328 GALLONS
Center of gravity when full: 114.15 LONG, 22.47 TRANS, 3.56 VERT
Total length of the sounding tube is 7 FT. 2 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 2 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	4	0.5	0.01	120.66	22.46	0.24	0.17
0-03	82	10.9	0.26	117.19	22.47	0.38	4.78
0-06	262	35.0	0.82	115.30	22.48	0.53	11.53
0-09	481	64.3	1.51	114.75	22.48	0.67	16.33
1-00	719	96.2	2.25	114.51	22.47	0.80	19.67
1-03	970	129.6	3.03	114.38	22.47	0.94	22.16
1-06	1,228	164.2	3.84	114.30	22.47	1.08	24.02
1-09	1,493	199.5	4.67	114.25	22.47	1.21	25.48
2-00	1,762	235.5	5.51	114.21	22.48	1.34	26.67
2-03	2,035	272.0	6.37	114.18	22.47	1.48	27.66
2-06	2,311	308.9	7.23	114.16	22.47	1.61	28.56
2-09	2,590	346.2	8.10	114.15	22.47	1.74	29.39
3-00	2,871	383.8	8.98	114.14	22.47	1.87	30.12
3-03	3,155	421.7	9.87	114.13	22.47	2.00	30.86
3-06	3,440	459.9	10.77	114.12	22.47	2.13	31.53
3-09	3,728	498.4	11.67	114.11	22.47	2.26	32.18
4-00	4,018	537.1	12.57	114.11	22.47	2.40	32.82
4-03	4,310	576.1	13.49	114.10	22.47	2.53	33.46
4-06	4,603	615.3	14.41	114.10	22.47	2.66	34.11
4-09	4,899	654.8	15.33	114.09	22.47	2.79	34.76
5-00	5,196	694.6	16.26	114.09	22.47	2.92	35.42
5-03	5,495	734.6	17.20	114.09	22.47	3.05	36.09
5-06	5,796	774.8	18.14	114.09	22.47	3.18	36.77
5-09	6,099	815.3	19.09	114.09	22.47	3.31	37.46
6-00	6,404	856.1	20.04	114.08	22.47	3.45	38.16
6-01							38.42
6-03	6,641	887.7	20.78	114.13	22.47	3.55	9.99
6-05	6,661	890.4	20.85	114.15	22.47	3.56	0.00

9.22 DBF4.P (Level Trim)

NO TRIM NO HEEL

DBF4.P

Capacity: 6,661 GALLONS (6 FT. 5 IN. sounding)
95% Capacity: 6,328 GALLONS
Center of gravity when full: 114.15 LONG, -22.47 TRANS, 3.56 VERT
Total length of the sounding tube is 7 FT. 2 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 2 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	5	0.7	0.02	119.81	-22.48	0.25	0.37
0-03	120	16.0	0.38	115.47	-22.47	0.42	6.99
0-06	317	42.4	0.99	114.62	-22.48	0.56	13.15
0-09	542	72.5	1.70	114.36	-22.47	0.70	17.41
1-00	785	104.9	2.46	114.24	-22.47	0.84	20.45
1-03	1,037	138.7	3.25	114.18	-22.47	0.98	22.71
1-06	1,298	173.5	4.06	114.14	-22.47	1.11	24.44
1-09	1,563	209.0	4.89	114.11	-22.48	1.24	25.81
2-00	1,834	245.1	5.74	114.10	-22.48	1.38	26.94
2-03	2,107	281.7	6.59	114.08	-22.47	1.51	27.90
2-06	2,384	318.7	7.46	114.08	-22.47	1.64	28.78
2-09	2,663	356.1	8.34	114.07	-22.47	1.77	29.58
3-00	2,945	393.7	9.22	114.06	-22.47	1.90	30.31
3-03	3,229	431.7	10.11	114.06	-22.47	2.04	31.03
3-06	3,516	470.0	11.00	114.06	-22.47	2.17	31.69
3-09	3,804	508.5	11.90	114.05	-22.47	2.30	32.34
4-00	4,094	547.3	12.81	114.05	-22.47	2.43	32.98
4-03	4,386	586.4	13.73	114.05	-22.47	2.56	33.62
4-06	4,680	625.7	14.65	114.05	-22.47	2.69	34.27
4-09	4,976	665.2	15.57	114.05	-22.47	2.82	34.93
5-00	5,274	705.0	16.51	114.05	-22.47	2.95	35.59
5-03	5,574	745.1	17.44	114.05	-22.47	3.09	36.26
5-06	5,875	785.4	18.39	114.05	-22.47	3.22	36.94
5-09	6,179	826.0	19.34	114.05	-22.47	3.35	37.63
6-00							38.22
6-00	6,481	866.4	20.28	114.05	-22.47	3.48	33.72
6-03	6,644	888.2	20.79	114.13	-22.47	3.55	1.86
6-05	6,661	890.4	20.85	114.15	-22.47	3.56	0.00

9.23 DBF4.P (0.5° Aft Trim)

TRIM = 0.50 DEGREES FWD NO HEEL

DBF4.P

Capacity: 6,661 GALLONS (6 FT. 5 IN. sounding)
95% Capacity: 6,328 GALLONS
Center of gravity when full: 114.15 LONG, -22.47 TRANS, 3.56 VERT
Total length of the sounding tube is 7 FT. 2 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 2 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	4	0.5	0.01	120.66	-22.46	0.24	0.17
0-03	82	10.9	0.26	117.19	-22.47	0.38	4.78
0-06	262	35.0	0.82	115.30	-22.48	0.53	11.53
0-09	481	64.3	1.51	114.75	-22.48	0.67	16.33
1-00	719	96.2	2.25	114.51	-22.47	0.80	19.67
1-03	970	129.6	3.03	114.38	-22.47	0.94	22.16
1-06	1,228	164.2	3.84	114.30	-22.47	1.08	24.02
1-09	1,493	199.5	4.67	114.25	-22.47	1.21	25.48
2-00	1,762	235.5	5.51	114.21	-22.48	1.34	26.67
2-03	2,035	272.0	6.37	114.18	-22.47	1.48	27.66
2-06	2,311	308.9	7.23	114.16	-22.47	1.61	28.56
2-09	2,590	346.2	8.10	114.15	-22.47	1.74	29.39
3-00	2,871	383.8	8.98	114.14	-22.47	1.87	30.12
3-03	3,155	421.7	9.87	114.13	-22.47	2.00	30.86
3-06	3,440	459.9	10.77	114.12	-22.47	2.13	31.53
3-09	3,728	498.4	11.67	114.11	-22.47	2.26	32.18
4-00	4,018	537.1	12.57	114.11	-22.47	2.40	32.82
4-03	4,310	576.1	13.49	114.10	-22.47	2.53	33.46
4-06	4,603	615.3	14.41	114.10	-22.47	2.66	34.11
4-09	4,899	654.8	15.33	114.09	-22.47	2.79	34.76
5-00	5,196	694.6	16.26	114.09	-22.47	2.92	35.42
5-03	5,495	734.6	17.20	114.09	-22.47	3.05	36.09
5-06	5,796	774.8	18.14	114.09	-22.47	3.18	36.77
5-09	6,099	815.3	19.09	114.09	-22.47	3.31	37.46
6-00	6,404	856.1	20.04	114.08	-22.47	3.45	38.16
6-01							38.42
6-03	6,641	887.7	20.78	114.13	-22.47	3.55	9.99
6-05	6,661	890.4	20.85	114.15	-22.47	3.56	0.00

9.24 DBF4.P (0.5° Fwd Trim)

TRIM = 0.50 DEGREES FWD NO HEEL

DBF4.P

Capacity: 6,661 GALLONS (6 FT. 5 IN. sounding)
95% Capacity: 6,328 GALLONS
Center of gravity when full: 114.15 LONG, -22.47 TRANS, 3.56 VERT
Total length of the sounding tube is 7 FT. 2 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 2 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	4	0.5	0.01	120.66	-22.46	0.24	0.17
0-03	82	10.9	0.26	117.19	-22.47	0.38	4.78
0-06	262	35.0	0.82	115.30	-22.48	0.53	11.53
0-09	481	64.3	1.51	114.75	-22.48	0.67	16.33
1-00	719	96.2	2.25	114.51	-22.47	0.80	19.67
1-03	970	129.6	3.03	114.38	-22.47	0.94	22.16
1-06	1,228	164.2	3.84	114.30	-22.47	1.08	24.02
1-09	1,493	199.5	4.67	114.25	-22.47	1.21	25.48
2-00	1,762	235.5	5.51	114.21	-22.48	1.34	26.67
2-03	2,035	272.0	6.37	114.18	-22.47	1.48	27.66
2-06	2,311	308.9	7.23	114.16	-22.47	1.61	28.56
2-09	2,590	346.2	8.10	114.15	-22.47	1.74	29.39
3-00	2,871	383.8	8.98	114.14	-22.47	1.87	30.12
3-03	3,155	421.7	9.87	114.13	-22.47	2.00	30.86
3-06	3,440	459.9	10.77	114.12	-22.47	2.13	31.53
3-09	3,728	498.4	11.67	114.11	-22.47	2.26	32.18
4-00	4,018	537.1	12.57	114.11	-22.47	2.40	32.82
4-03	4,310	576.1	13.49	114.10	-22.47	2.53	33.46
4-06	4,603	615.3	14.41	114.10	-22.47	2.66	34.11
4-09	4,899	654.8	15.33	114.09	-22.47	2.79	34.76
5-00	5,196	694.6	16.26	114.09	-22.47	2.92	35.42
5-03	5,495	734.6	17.20	114.09	-22.47	3.05	36.09
5-06	5,796	774.8	18.14	114.09	-22.47	3.18	36.77
5-09	6,099	815.3	19.09	114.09	-22.47	3.31	37.46
6-00	6,404	856.1	20.04	114.08	-22.47	3.45	38.16
6-01							38.42
6-03	6,641	887.7	20.78	114.13	-22.47	3.55	9.99
6-05	6,661	890.4	20.85	114.15	-22.47	3.56	0.00

9.25 DB5.S (Level Trim)

NO TRIM NO HEEL

DB5.S

Capacity: 8,663 GALLONS (5 FT. 10 IN. sounding)
Center of gravity when full: 96.37 LONG, 22.47 TRANS, 3.55 VERT
Total length of the sounding tube is 6 FT. 6 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 5 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	5	0.6	0.02	104.81	22.52	0.46	0.60
0-03	121	16.2	0.46	100.64	22.47	0.64	13.75
0-06	402	53.7	1.53	98.00	22.47	0.80	33.70
0-09	738	98.6	2.82	97.25	22.47	0.94	44.30
1-00	1,095	146.4	4.18	96.93	22.47	1.08	50.34
1-03	1,464	195.7	5.59	96.76	22.47	1.21	54.45
1-06	1,841	246.1	7.03	96.66	22.48	1.35	57.38
1-09	2,224	297.3	8.49	96.59	22.47	1.48	59.56
2-00	2,611	349.0	9.97	96.54	22.47	1.61	61.24
2-03	3,001	401.1	11.46	96.51	22.47	1.74	62.66
2-06	3,393	453.6	12.96	96.48	22.47	1.87	63.81
2-09	3,788	506.4	14.47	96.46	22.47	2.00	64.81
3-00	4,185	559.5	15.98	96.44	22.47	2.13	65.73
3-03	4,584	612.8	17.51	96.43	22.47	2.26	66.62
3-06	4,985	666.4	19.04	96.42	22.47	2.39	67.50
3-09	5,387	720.2	20.57	96.41	22.47	2.51	68.35
4-00	5,791	774.2	22.12	96.40	22.47	2.64	69.21
4-03	6,197	828.4	23.66	96.39	22.47	2.77	70.06
4-06	6,604	882.9	25.22	96.39	22.47	2.90	70.92
4-09	7,013	937.5	26.78	96.38	22.47	3.03	71.79
5-00	7,424	992.4	28.35	96.38	22.47	3.16	72.66
5-03	7,836	1,047.6	29.92	96.38	22.47	3.29	73.54
5-06	8,250	1,102.9	31.51	96.37	22.47	3.42	74.43
5-09							75.31
5-09	8,663	1,158.0	33.08	96.37	22.47	3.55	0.00

9.26 DB5.S (0.5° Aft Trim)

TRIM = 0.50 DEGREES AFT NO HEEL

DB5.S

Capacity: 8,663 GALLONS (5 FT. 10 IN. sounding)
Center of gravity when full: 96.37 LONG, 22.47 TRANS, 3.55 VERT
Total length of the sounding tube is 6 FT. 6 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 5 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	8	1.0	0.03	103.58	22.49	0.48	1.22
0-03	198	26.5	0.76	97.90	22.47	0.70	22.87
0-06	510	68.1	1.95	96.93	22.47	0.85	38.67
0-09	855	114.3	3.27	96.65	22.47	0.99	46.84
1-00	1,217	162.7	4.65	96.53	22.47	1.13	51.95
1-03	1,589	212.4	6.07	96.46	22.48	1.26	55.53
1-06	1,968	263.1	7.52	96.42	22.48	1.39	58.17
1-09	2,352	314.4	8.98	96.39	22.47	1.52	60.17
2-00	2,740	366.3	10.46	96.37	22.47	1.65	61.73
2-03	3,131	418.6	11.96	96.36	22.47	1.78	63.05
2-06	3,525	471.2	13.46	96.35	22.47	1.91	64.13
2-09	3,920	524.1	14.97	96.34	22.47	2.04	65.11
3-00	4,318	577.2	16.49	96.33	22.47	2.17	66.01
3-03	4,717	630.6	18.01	96.33	22.47	2.30	66.90
3-06	5,118	684.2	19.55	96.33	22.47	2.43	67.77
3-09	5,521	738.1	21.08	96.32	22.47	2.56	68.63
4-00	5,926	792.1	22.63	96.32	22.47	2.69	69.47
4-03	6,332	846.4	24.18	96.32	22.47	2.82	70.33
4-06	6,740	901.0	25.74	96.32	22.47	2.94	71.19
4-09	7,149	955.7	27.30	96.32	22.47	3.07	72.06
5-00	7,560	1,010.7	28.87	96.32	22.47	3.20	72.93
5-03	7,973	1,065.9	30.45	96.32	22.47	3.33	73.81
5-06	8,388	1,121.3	32.03	96.32	22.47	3.46	74.71
5-07							74.98
5-07							65.82
5-08							17.79
5-09							2.31
5-09	8,663	1,158.0	33.08	96.37	22.47	3.55	0.24
5-10	8,663	1,158.0	33.08	96.37	22.47	3.55	0.00

9.27 DB5.S (0.5° Fwd Trim)

TRIM = 0.50 DEGREES FWD NO HEEL

DB5.S

Capacity: 8,663 GALLONS (6 FT. 0 IN. sounding)
Center of gravity when full: 96.37 LONG, 22.47 TRANS, 3.55 VERT
Total length of the sounding tube is 6 FT. 6 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 5 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	4	0.5	0.01	105.16	22.49	0.46	0.27
0-03	84	11.2	0.32	102.35	22.47	0.61	8.52
0-06	304	40.7	1.16	99.53	22.47	0.76	26.17
0-09	624	83.4	2.38	98.03	22.47	0.90	40.92
1-00	975	130.3	3.72	97.43	22.47	1.04	48.38
1-03	1,340	179.1	5.12	97.12	22.47	1.17	53.12
1-06	1,715	229.2	6.55	96.94	22.48	1.30	56.43
1-09	2,096	280.2	8.00	96.82	22.48	1.43	58.89
2-00	2,481	331.7	9.48	96.73	22.47	1.57	60.73
2-03	2,870	383.7	10.96	96.67	22.47	1.70	62.24
2-06	3,262	436.1	12.46	96.63	22.47	1.83	63.46
2-09	3,657	488.9	13.96	96.59	22.47	1.96	64.50
3-00	4,053	541.8	15.48	96.56	22.47	2.09	65.46
3-03	4,452	595.1	17.00	96.53	22.47	2.21	66.34
3-06	4,852	648.6	18.53	96.51	22.47	2.34	67.23
3-09	5,253	702.3	20.06	96.50	22.47	2.47	68.09
4-00	5,657	756.2	21.60	96.48	22.47	2.60	68.95
4-03	6,062	810.4	23.15	96.47	22.47	2.73	69.80
4-06	6,469	864.8	24.70	96.46	22.47	2.86	70.66
4-09	6,877	919.4	26.26	96.45	22.47	2.99	71.52
5-00	7,288	974.2	27.83	96.44	22.47	3.12	72.39
5-03	7,700	1,029.3	29.40	96.44	22.47	3.25	73.27
5-06	8,113	1,084.6	30.98	96.43	22.47	3.37	74.15
5-09							75.02
5-09	8,528	1,140.0	32.57	96.43	22.47	3.50	72.58
6-00	8,663	1,158.0	33.08	96.37	22.47	3.55	0.00

9.28 DB6.P (Level Trim)

NO TRIM NO HEEL

DB6.P

Capacity: 8,663 GALLONS (5 FT. 10 IN. sounding)
Center of gravity when full: 96.37 LONG, -22.47 TRANS, 3.55 VERT
Total length of the sounding tube is 6 FT. 6 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 5 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	5	0.6	0.02	104.81	-22.52	0.46	0.60
0-03	121	16.2	0.46	100.64	-22.47	0.64	13.75
0-06	402	53.7	1.53	98.00	-22.47	0.80	33.70
0-09	738	98.6	2.82	97.25	-22.47	0.94	44.30
1-00	1,095	146.4	4.18	96.93	-22.47	1.08	50.34
1-03	1,464	195.7	5.59	96.76	-22.47	1.21	54.45
1-06	1,841	246.1	7.03	96.66	-22.48	1.35	57.38
1-09	2,224	297.3	8.49	96.59	-22.47	1.48	59.56
2-00	2,611	349.0	9.97	96.54	-22.47	1.61	61.24
2-03	3,001	401.1	11.46	96.51	-22.47	1.74	62.66
2-06	3,393	453.6	12.96	96.48	-22.47	1.87	63.81
2-09	3,788	506.4	14.47	96.46	-22.47	2.00	64.81
3-00	4,185	559.5	15.98	96.44	-22.47	2.13	65.73
3-03	4,584	612.8	17.51	96.43	-22.47	2.26	66.62
3-06	4,985	666.4	19.04	96.42	-22.47	2.39	67.50
3-09	5,387	720.2	20.57	96.41	-22.47	2.51	68.35
4-00	5,791	774.2	22.12	96.40	-22.47	2.64	69.21
4-03	6,197	828.4	23.66	96.39	-22.47	2.77	70.06
4-06	6,604	882.9	25.22	96.39	-22.47	2.90	70.92
4-09	7,013	937.5	26.78	96.38	-22.47	3.03	71.79
5-00	7,424	992.4	28.35	96.38	-22.47	3.16	72.66
5-03	7,836	1,047.6	29.92	96.38	-22.47	3.29	73.54
5-06	8,250	1,102.9	31.51	96.37	-22.47	3.42	74.43
5-09							75.31
5-09	8,663	1,158.0	33.08	96.37	-22.47	3.55	0.00

9.29 DB6.P (0.5° Aft Trim)

TRIM = 0.50 DEGREES AFT NO HEEL

DB6.P

Capacity: 8,663 GALLONS (5 FT. 10 IN. sounding)
Center of gravity when full: 96.37 LONG, -22.47 TRANS, 3.55 VERT
Total length of the sounding tube is 6 FT. 6 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 5 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	8	1.0	0.03	103.58	-22.50	0.48	1.22
0-03	198	26.5	0.76	97.90	-22.47	0.70	22.87
0-06	510	68.1	1.95	96.93	-22.47	0.85	38.67
0-09	855	114.3	3.27	96.65	-22.47	0.99	46.84
1-00	1,217	162.7	4.65	96.53	-22.47	1.13	51.95
1-03	1,589	212.4	6.07	96.46	-22.48	1.26	55.53
1-06	1,968	263.1	7.52	96.42	-22.48	1.39	58.17
1-09	2,352	314.4	8.98	96.39	-22.47	1.52	60.17
2-00	2,740	366.3	10.46	96.37	-22.47	1.65	61.73
2-03	3,131	418.6	11.96	96.36	-22.47	1.78	63.05
2-06	3,525	471.2	13.46	96.35	-22.47	1.91	64.13
2-09	3,920	524.1	14.97	96.34	-22.47	2.04	65.11
3-00	4,318	577.2	16.49	96.33	-22.47	2.17	66.01
3-03	4,717	630.6	18.01	96.33	-22.47	2.30	66.90
3-06	5,118	684.2	19.55	96.33	-22.47	2.43	67.77
3-09	5,521	738.1	21.08	96.32	-22.47	2.56	68.63
4-00	5,926	792.1	22.63	96.32	-22.47	2.69	69.47
4-03	6,332	846.4	24.18	96.32	-22.47	2.82	70.33
4-06	6,740	901.0	25.74	96.32	-22.47	2.94	71.19
4-09	7,149	955.7	27.30	96.32	-22.47	3.07	72.06
5-00	7,560	1,010.7	28.87	96.32	-22.47	3.20	72.93
5-03	7,973	1,065.9	30.45	96.32	-22.47	3.33	73.81
5-06	8,388	1,121.3	32.03	96.32	-22.47	3.46	74.71
5-07							74.98
5-07							65.82
5-08							17.79
5-09							2.31
5-09	8,663	1,158.0	33.08	96.37	-22.47	3.55	0.24
5-10	8,663	1,158.0	33.08	96.37	-22.47	3.55	0.00

9.30 DB6.P (0.5° Fwd Trim)

TRIM = 0.50 DEGREES FWD NO HEEL

DB6.P

Capacity: 8,663 GALLONS (6 FT. 0 IN. sounding)
Center of gravity when full: 96.37 LONG, -22.47 TRANS, 3.55 VERT
Total length of the sounding tube is 6 FT. 6 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 5 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	4	0.5	0.01	105.16	-22.49	0.46	0.27
0-03	84	11.2	0.32	102.35	-22.47	0.61	8.52
0-06	304	40.7	1.16	99.53	-22.47	0.76	26.17
0-09	624	83.4	2.38	98.03	-22.47	0.90	40.92
1-00	975	130.3	3.72	97.43	-22.47	1.04	48.38
1-03	1,340	179.1	5.12	97.12	-22.47	1.17	53.12
1-06	1,715	229.2	6.55	96.94	-22.48	1.30	56.43
1-09	2,096	280.2	8.00	96.82	-22.48	1.43	58.89
2-00	2,481	331.7	9.48	96.73	-22.47	1.57	60.73
2-03	2,870	383.7	10.96	96.67	-22.47	1.70	62.24
2-06	3,262	436.1	12.46	96.63	-22.47	1.83	63.46
2-09	3,657	488.9	13.96	96.59	-22.47	1.96	64.50
3-00	4,053	541.8	15.48	96.56	-22.47	2.09	65.46
3-03	4,452	595.1	17.00	96.53	-22.47	2.21	66.34
3-06	4,852	648.6	18.53	96.51	-22.47	2.34	67.23
3-09	5,253	702.3	20.06	96.50	-22.47	2.47	68.09
4-00	5,657	756.2	21.60	96.48	-22.47	2.60	68.95
4-03	6,062	810.4	23.15	96.47	-22.47	2.73	69.80
4-06	6,469	864.8	24.70	96.46	-22.47	2.86	70.66
4-09	6,877	919.4	26.26	96.45	-22.47	2.99	71.52
5-00	7,288	974.2	27.83	96.44	-22.47	3.12	72.39
5-03	7,700	1,029.3	29.40	96.44	-22.47	3.25	73.27
5-06	8,113	1,084.6	30.98	96.43	-22.47	3.37	74.15
5-09							75.02
5-09	8,528	1,140.0	32.57	96.43	-22.47	3.50	72.58
6-00	8,663	1,158.0	33.08	96.37	-22.47	3.55	0.00

9.31 DB7.S (Level Trim)

NO TRIM NO HEEL

DB7.S

Capacity: 7,097 GALLONS (5 FT. 5 IN. sounding)
Center of gravity when full: 78.74 LONG, 22.47 TRANS, 3.69 VERT
Total length of the sounding tube is 6 FT. 2 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 9 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	5	0.7	0.02	85.39	22.45	0.83	0.67
0-03	121	16.2	0.46	82.21	22.47	1.01	20.97
0-06	391	52.3	1.49	80.07	22.47	1.17	44.36
0-09	703	94.0	2.69	79.47	22.48	1.31	53.52
1-00	1,029	137.6	3.93	79.22	22.48	1.45	58.56
1-03	1,362	182.1	5.20	79.08	22.48	1.58	61.47
1-06	1,699	227.2	6.49	78.99	22.47	1.71	63.26
1-09	2,039	272.6	7.79	78.94	22.47	1.84	64.55
2-00	2,381	318.3	9.09	78.89	22.47	1.97	65.55
2-03	2,725	364.2	10.41	78.86	22.47	2.10	66.36
2-06	3,070	410.3	11.72	78.84	22.47	2.23	67.07
2-09	3,415	456.6	13.04	78.82	22.47	2.35	67.66
3-00	3,762	503.0	14.37	78.81	22.47	2.48	68.22
3-03	4,110	549.5	15.70	78.79	22.47	2.61	68.76
3-06	4,459	596.1	17.03	78.78	22.47	2.74	69.29
3-09	4,809	642.8	18.36	78.78	22.47	2.86	69.81
4-00	5,159	689.7	19.70	78.77	22.47	2.99	70.34
4-03	5,511	736.7	21.04	78.76	22.47	3.12	70.86
4-06	5,863	783.7	22.39	78.76	22.47	3.25	71.39
4-09	6,216	831.0	23.74	78.75	22.47	3.37	71.92
5-00	6,570	878.3	25.09	78.75	22.47	3.50	72.45
5-03	6,925	925.7	26.44	78.74	22.47	3.63	72.99
5-05	7,097	948.7	27.10	78.74	22.47	3.69	0.00

9.32 DB7.S (0.5° Aft Trim)

TRIM = 0.50 DEGREES AFT NO HEEL

DB7.S

Capacity: 7,097 GALLONS (5 FT. 5 IN. sounding)
Center of gravity when full: 78.74 LONG, 22.47 TRANS, 3.69 VERT
Total length of the sounding tube is 6 FT. 2 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 9 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	7	0.9	0.03	84.92	22.49	0.85	1.91
0-03	177	23.7	0.68	80.43	22.48	1.06	31.14
0-06	470	62.8	1.80	79.38	22.47	1.21	47.77
0-09	787	105.2	3.01	79.09	22.48	1.35	55.30
1-00	1,115	149.1	4.26	78.96	22.48	1.48	59.51
1-03	1,450	193.8	5.54	78.89	22.47	1.61	62.02
1-06	1,788	239.0	6.83	78.84	22.47	1.75	63.62
1-09	2,128	284.5	8.13	78.81	22.47	1.87	64.83
2-00	2,471	330.3	9.44	78.79	22.47	2.00	65.77
2-03	2,815	376.2	10.75	78.77	22.47	2.13	66.54
2-06	3,160	422.4	12.07	78.76	22.47	2.26	67.22
2-09	3,506	468.7	13.39	78.75	22.47	2.39	67.80
3-00	3,853	515.1	14.71	78.74	22.47	2.51	68.35
3-03	4,201	561.6	16.04	78.73	22.47	2.64	68.89
3-06	4,550	608.2	17.38	78.73	22.47	2.77	69.42
3-09	4,900	655.0	18.71	78.72	22.47	2.90	69.94
4-00	5,250	701.9	20.05	78.72	22.47	3.02	70.47
4-03	5,602	748.9	21.39	78.71	22.47	3.15	70.99
4-06	5,955	796.0	22.74	78.71	22.47	3.28	71.52
4-09	6,308	843.2	24.09	78.71	22.47	3.41	72.05
5-00	6,662	890.6	25.44	78.71	22.47	3.53	72.58
5-03							73.09
5-03	7,016	938.0	26.79	78.71	22.47	3.66	66.28
5-05	7,097	948.7	27.10	78.74	22.47	3.69	0.00

9.33 DB7.S (0.5° Fwd Trim)

TRIM = 0.50 DEGREES FWD NO HEEL

DB7.S

Capacity: 7,097 GALLONS (5 FT. 6 IN. sounding)
Center of gravity when full: 78.74 LONG, 22.47 TRANS, 3.69 VERT
Total length of the sounding tube is 6 FT. 2 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 9 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	4	0.6	0.02	85.69	22.45	0.83	0.53
0-03	91	12.1	0.35	83.32	22.47	0.99	14.74
0-06	317	42.4	1.21	81.00	22.47	1.14	38.12
0-09	621	83.0	2.37	79.94	22.47	1.28	51.22
1-00	944	126.1	3.60	79.52	22.48	1.41	57.33
1-03	1,275	170.4	4.87	79.30	22.48	1.55	60.76
1-06	1,611	215.4	6.15	79.16	22.47	1.68	62.81
1-09	1,950	260.7	7.45	79.07	22.47	1.81	64.23
2-00	2,292	306.4	8.75	79.01	22.47	1.94	65.32
2-03	2,635	352.3	10.06	78.97	22.47	2.06	66.17
2-06	2,980	398.3	11.38	78.93	22.47	2.19	66.91
2-09	3,325	444.5	12.70	78.90	22.47	2.32	67.53
3-00	3,672	490.9	14.02	78.88	22.47	2.45	68.09
3-03	4,020	537.3	15.35	78.86	22.47	2.58	68.63
3-06	4,368	583.9	16.68	78.84	22.47	2.70	69.17
3-09	4,718	630.6	18.02	78.83	22.47	2.83	69.69
4-00	5,068	677.5	19.35	78.82	22.47	2.96	70.21
4-03	5,419	724.4	20.69	78.81	22.47	3.09	70.74
4-06	5,771	771.5	22.04	78.80	22.47	3.21	71.26
4-09	6,124	818.7	23.39	78.79	22.47	3.34	71.79
5-00	6,478	866.0	24.74	78.79	22.47	3.47	72.33
5-03	6,833	913.4	26.09	78.78	22.47	3.59	72.86
5-04							73.11
5-05							64.17
5-06							20.50
5-06	7,097	948.7	27.10	78.74	22.47	3.69	0.57
5-06	7,097	948.7	27.10	78.74	22.47	3.69	0.00

9.34 DB8.P (Level Trim)

NO TRIM NO HEEL

DB8.P

Capacity: 7,097 GALLONS (5 FT. 5 IN. sounding)
Center of gravity when full: 78.74 LONG, -22.47 TRANS, 3.69 VERT
Total length of the sounding tube is 6 FT. 2 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 9 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	5	0.7	0.02	85.39	-22.45	0.83	0.67
0-03	121	16.2	0.46	82.21	-22.47	1.01	20.97
0-06	391	52.3	1.49	80.07	-22.47	1.17	44.36
0-09	703	94.0	2.69	79.47	-22.48	1.31	53.52
1-00	1,029	137.6	3.93	79.22	-22.48	1.45	58.56
1-03	1,362	182.1	5.20	79.08	-22.48	1.58	61.47
1-06	1,699	227.2	6.49	78.99	-22.47	1.71	63.26
1-09	2,039	272.6	7.79	78.94	-22.47	1.84	64.55
2-00	2,381	318.3	9.09	78.89	-22.47	1.97	65.55
2-03	2,725	364.2	10.41	78.86	-22.47	2.10	66.36
2-06	3,070	410.3	11.72	78.84	-22.47	2.23	67.07
2-09	3,415	456.6	13.04	78.82	-22.47	2.35	67.66
3-00	3,762	503.0	14.37	78.81	-22.47	2.48	68.22
3-03	4,110	549.5	15.70	78.79	-22.47	2.61	68.76
3-06	4,459	596.1	17.03	78.78	-22.47	2.74	69.29
3-09	4,809	642.8	18.36	78.78	-22.47	2.86	69.81
4-00	5,159	689.7	19.70	78.77	-22.47	2.99	70.34
4-03	5,511	736.7	21.04	78.76	-22.47	3.12	70.86
4-06	5,863	783.7	22.39	78.76	-22.47	3.25	71.39
4-09	6,216	831.0	23.74	78.75	-22.47	3.37	71.92
5-00	6,570	878.3	25.09	78.75	-22.47	3.50	72.45
5-03	6,925	925.7	26.44	78.74	-22.47	3.63	72.99
5-05	7,097	948.7	27.10	78.74	-22.47	3.69	0.00

9.35 DB8.P (0.5° Aft Trim)

TRIM = 0.50 DEGREES AFT NO HEEL

DB8.P

Capacity: 7,097 GALLONS (5 FT. 5 IN. sounding)
Center of gravity when full: 78.74 LONG, -22.47 TRANS, 3.69 VERT
Total length of the sounding tube is 6 FT. 2 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 9 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	7	0.9	0.03	84.92	-22.49	0.85	1.91
0-03	177	23.7	0.68	80.43	-22.48	1.06	31.14
0-06	470	62.8	1.80	79.38	-22.47	1.21	47.77
0-09	787	105.2	3.01	79.09	-22.48	1.35	55.30
1-00	1,115	149.1	4.26	78.96	-22.48	1.48	59.51
1-03	1,450	193.8	5.54	78.89	-22.47	1.61	62.02
1-06	1,788	239.0	6.83	78.84	-22.47	1.75	63.62
1-09	2,128	284.5	8.13	78.81	-22.47	1.87	64.83
2-00	2,471	330.3	9.44	78.79	-22.47	2.00	65.77
2-03	2,815	376.2	10.75	78.77	-22.47	2.13	66.54
2-06	3,160	422.4	12.07	78.76	-22.47	2.26	67.22
2-09	3,506	468.7	13.39	78.75	-22.47	2.39	67.80
3-00	3,853	515.1	14.71	78.74	-22.47	2.51	68.35
3-03	4,201	561.6	16.04	78.73	-22.47	2.64	68.89
3-06	4,550	608.2	17.38	78.73	-22.47	2.77	69.42
3-09	4,900	655.0	18.71	78.72	-22.47	2.90	69.94
4-00	5,250	701.9	20.05	78.72	-22.47	3.02	70.47
4-03	5,602	748.9	21.39	78.71	-22.47	3.15	70.99
4-06	5,955	796.0	22.74	78.71	-22.47	3.28	71.52
4-09	6,308	843.2	24.09	78.71	-22.47	3.41	72.05
5-00	6,662	890.6	25.44	78.71	-22.47	3.53	72.58
5-03							73.09
5-03	7,016	938.0	26.79	78.71	-22.47	3.66	66.28
5-05	7,097	948.7	27.10	78.74	-22.47	3.69	0.00

9.36 DB8.P (0.5° Fwd Trim)

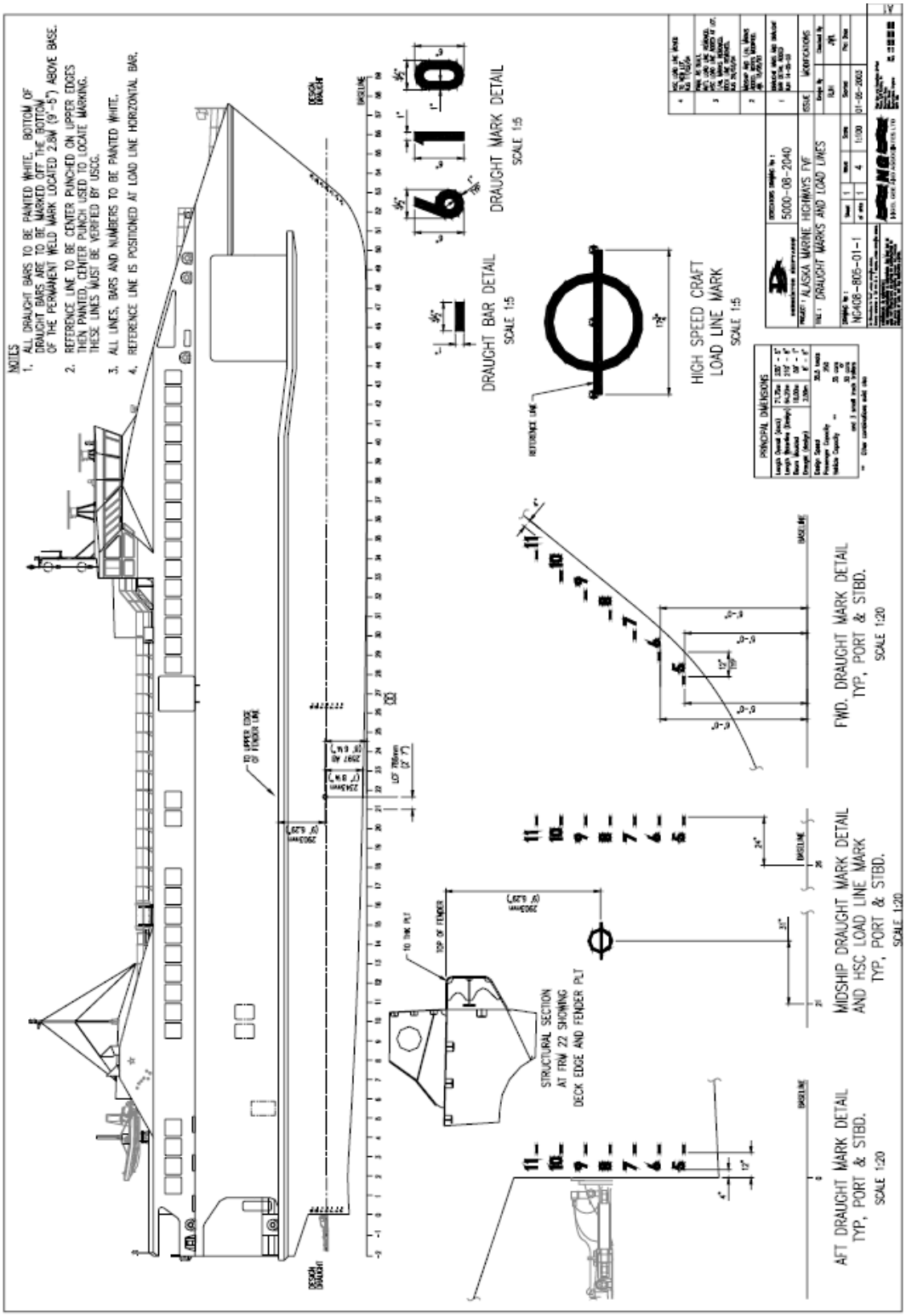
TRIM = 0.50 DEGREES FWD NO HEEL

DB8.P

Capacity: 7,097 GALLONS (5 FT. 6 IN. sounding)
Center of gravity when full: 78.74 LONG, -22.47 TRANS, 3.69 VERT
Total length of the sounding tube is 6 FT. 2 IN.
Striker plate is 0 FT. 1 IN. above lowest point of the tank
Lowest point of the tank is 0 FT. 9 IN. above the Base plane

SOUNDING	V O L U M E		WEIGHT	CENTER OF GRAVITY			FSM (LT-FT)
FEET-IN	GALLONS	CUBIC FT	LONG TONS	LONG	TRANS	VERT	TRANS
0-00	4	0.6	0.02	85.69	-22.45	0.83	0.53
0-03	91	12.1	0.35	83.32	-22.47	0.99	14.74
0-06	317	42.4	1.21	81.00	-22.47	1.14	38.12
0-09	621	83.0	2.37	79.94	-22.47	1.28	51.22
1-00	944	126.1	3.60	79.52	-22.48	1.41	57.33
1-03	1,275	170.4	4.87	79.30	-22.48	1.55	60.76
1-06	1,611	215.4	6.15	79.16	-22.47	1.68	62.81
1-09	1,950	260.7	7.45	79.07	-22.47	1.81	64.23
2-00	2,292	306.4	8.75	79.01	-22.47	1.94	65.32
2-03	2,635	352.3	10.06	78.97	-22.47	2.06	66.17
2-06	2,980	398.3	11.38	78.93	-22.47	2.19	66.91
2-09	3,325	444.5	12.70	78.90	-22.47	2.32	67.53
3-00	3,672	490.9	14.02	78.88	-22.47	2.45	68.09
3-03	4,020	537.3	15.35	78.86	-22.47	2.58	68.63
3-06	4,368	583.9	16.68	78.84	-22.47	2.70	69.17
3-09	4,718	630.6	18.02	78.83	-22.47	2.83	69.69
4-00	5,068	677.5	19.35	78.82	-22.47	2.96	70.21
4-03	5,419	724.4	20.69	78.81	-22.47	3.09	70.74
4-06	5,771	771.5	22.04	78.80	-22.47	3.21	71.26
4-09	6,124	818.7	23.39	78.79	-22.47	3.34	71.79
5-00	6,478	866.0	24.74	78.79	-22.47	3.47	72.33
5-03	6,833	913.4	26.09	78.78	-22.47	3.59	72.86
5-04							73.11
5-05							64.17
5-06							20.50
5-06	7,097	948.7	27.10	78.74	-22.47	3.69	0.57
5-06	7,097	948.7	27.10	78.74	-22.47	3.69	0.00

Section 10 Draft Marks Drawing



U.S. Department of Homeland Security

United States Coast Guard

Commanding Officer
United States Coast Guard
Marine Safety Center

2100 2ND ST SW, STOP 7102
WASHINGTON, DC 20593-7102
Staff Symbol: MSC-1
Phone: (202) 475-3401
Fax: (202) 475-3920
Email: msc@uscg.mil

STABILITY LETTER

16710/P009237
Serial: H2-1201752
April 2, 2012

Master, M/V CHENEGA, O.N. 1166054
Derecktor Shipyard Hull No. 5100
219.6' x 59.1' x 17.7' Passenger/Vehicle Ferry (HSC)

You are responsible for maintaining this vessel in a satisfactory stability condition at all times and following the instructions and precautions listed below.

A deadweight survey witnessed by the U.S. Coast Guard was conducted on the M/V CHENEGA, O.N. 1166054, at Cordova, Alaska, on September 9, 2009. On the basis of that survey and a conservatively estimated lightship vertical center of gravity, stability calculations were performed and a stability letter was issued on July 16, 2010. Based on those stability calculations, additional weight and moment calculations were performed to account for a 185 pound average weight per person. Results indicate that the stability information contained in the booklet specified below, which has been provided to the vessel, is applicable to the M/V CHENEGA as presently outfitted and equipped:

"M/V Chenega Trim and Stability Book," Rev A, prepared by
The Glosten Associates, dated March 9, 2012, bearing the U.S. Coast
Guard Marine Safety Center approval stamp dated April 2, 2012.

The booklet data meets the applicable requirements of the IMO HSC Code 2000, Chapter 2 for buoyancy, stability, and subdivision and Annex 7, stability of multi-hull craft. Such data provides you with sufficient information for the following purposes:

1. To determine the metacentric height and freeboard for any condition of vessel loading or operation.

2. To obtain by rapid and simple process, accurate information as to the stability of the vessel for any condition of loading or operation.

This stability letter shall be posted under glass or other suitable transparent material in the pilothouse of the vessel. It supersedes any stability information previously issued to the vessel.

Randy J. Jenkins

R. J. JENKINS
Lieutenant Commander, U. S. Coast Guard
By direction

U.S. Department of Homeland Security

United States Coast Guard

Commanding Officer
United States Coast Guard
Marine Safety Center

2100 2ND ST SW, STOP 7102
WASHINGTON, DC 20593-7102
Staff Symbol: MSC-1
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Email: msc@uscg.mil

16710/P009237
Serial: H2-1201751
April 2, 2012

The Glosten Associates
Attn: Mr. Stephen D. White
1201 Western Avenue, Suite 200
Seattle, WA 98101

Subj: M/V CHENEGA, O.N. 1166054
Derecktor Shipyard Hull No. 5100
219.6' x 59.1' x 17.7' Passenger/Vehicle Ferry (HSC)
250 Passengers / Exposed Waters
Stability for Increased Assumed Average Weight Per Person (AAWPP)

Ref: (a) The Glosten Associates (GA) File. No. 11148.01, Rev A, "M/V Chenega Trim and Stability Book," 90 sheets, dated March 9, 2012
(b) GA File. No. 11148.01, Rev A, "M/V Chenega Intact and Damage Stability Report," 231 sheets, dated March 9, 2012

Dear Mr. White:

We reviewed references (a) and (b), submitted with your e-mail dated March 9, 2012, for compliance with the applicable requirements of the International Code of Safety for High-Speed Craft (HSC Code) and the guidance of Navigation and Vessel Inspection Circular (NVIC) 6-99, "Plan Review, Inspection, And Certification Guidance For Vessels Built To The International Code Of Safety For High-Speed Craft And Additional Information Regarding Non-Code High-Speed Vessels." Accordingly, reference (a) is "**Approved**." Reference (b) is "**Examined**." Calculations such as these are not normally approved; however, the information is used in our review of the vessel stability. While we are including a stamped copy of the cover page to reference (a) as enclosure (1) to this letter, per your participation in the Marine Safety Center's electronic commerce program, you must provide the cognizant Officer in Charge, Marine Inspection (OCMI) with an identical paper copy of references (a) and (b).

Based on our review of the stability calculations presented in references (a) and (b), which assume a weight of 185 pounds per person, we have verified that the vessel has adequate stability for operation with 250 passengers on Exposed Waters and we have issued the vessel's revised stability letter accordingly.

Enclosure (2) is the revised stability letter for the subject vessel. It is applicable to the vessel as presently outfitted and configured. The owner is responsible for ensuring that the stability letter is posted under glass or other suitable transparent material in the pilot house of the vessel, and that the Trim and Stability Book is placed aboard the vessel.

16710/P009237
Serial: H2-1201751
April 2, 2012

Subj: M/V CHENEGA, O.N. 1166054; Stability for Increased AAWPP

Should you have any questions about the above comments, please contact Mr. Mark Wolf at the phone number listed above.

Sincerely,

B. C. YEZEFSKI
Lieutenant Commander, U.S. Coast Guard
Chief, Major Vessel Branch
By direction

Encl: (1) GA File. No. 11148.01, Rev A, "M/V Chenega Trim and Stability Book," dated March 9, 2012 (Cover Sheet Only)
(2) Stability Letter for M/V CHENEGA, O.N. 1166054, dated April 2, 2012

Copy: Commander, Coast Guard Sector Juneau, Prevention Department