STABILITY BOOKLET

ON

179'-6" x 36' x 15' RESEARCH VESSEL "GYRE"

HALTER MARINE HULL 375

FOR

TEXAS A&M UNIVERSITY

GALVESTON, TEXAS

APRIL 16, 1984

DWG. NO. 2042-D6

ALT. 1

APPROVED
Subject to comments in
CCGD8 (MMT) letter of
JUL 9 1984
Chief Merchant Marine Technical Branch
By Direction of Commander
Eighth Coast Guard District

schuller & allan, inc
NAVAL ARCHITECTS • MARINE CONSULTANTS
5012 TELEPHONE
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HOUSTON, TEXAS 77087-3598

F/O	GALLON	6.8 Lbs.
4/O	"	6.8 "
S/W	"	8.6 "
F/W	"	8.3 "

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ALT. 1 - SINGH 06/15/84
CHANGED TO REFLECT COMMENTS OF
U.S.C.G. LETTER SER H2-6443
DATED 25 MAY 1984

schuller & allan, inc.

TABLE OF CONTENTS

date _____ by SINGH file 2042

179'-6" x 36' x 15' RESEARCH VESSEL

HALTER MARINE HULL 375

schuller & allan, inc. date _____ by SINGH file 2042

VESSELL CHARACTERISTICS

LENGTH OVERALL	179.50 FT.
LENGTH BETWEEN PERPENDICULARS	171.00 FT.
BEAM (MOLDED)	36.00 FT.
DEPTH TO MAIN DECK (MOLDED)	15.00 FT.
DRAFT AT SUMMER FREEBOARD	11.50 FT.
DISPLACEMENT AT SUMMER FREEBOARD	1213.20 L.T.
LIGHTSHIP CHARACTERISTICS (FROM INCLINING)	
DISPLACEMENT	765.12 L.T.
VERTICAL POSITION OF THE CENTER OF GRAVITY (KG)	14.28 FT. ABV. B.L.
LONGITUDINAL POSITION OF THE CENTER OF GRAVITY (LCG)	4.67 FT. FWD. OF ℄
(℄ 6" FWD. OF FR. 47)	

NOTE: VESSEL WAS BUILT IN 1972-73 AND MODIFIED IN 1984.

schuller & allan, inc. date _____ by SINGH file 2042

INSTRUCTIONS TO THE MASTER

OBJECTIVE: Information and instructions contained in this stability booklet are intended to aid the master and other operating personnel in maintaining satisfactory stability for all loading conditions.

GENERAL INSTRUCTIONS:

1. When loaded to the summer load line draft of 11.50 feet, a maximum of 32.00 long tons of deck cargo may be carried having a maximum vertical center of gravity of 3.00 feet above the main deck, or 10.00 long tons on the aft deck house, with maximum of 3.00 feet center of gravity above the deck house.

2. When the mean draft does not exceed 9.76 feet, the deck cargo may be increased to not more than 185.00 long tons with a vertical center of gravity of not more than 3.00 feet above the main deck.

3. When the mean draft does not exceed 8.80 feet, the deck cargo on the aft deck house may be increased to not more than 50.00 long tons with a vertical center of gravity of not more than 3.00 feet above the aft deck house.

4. Other loading combinations are permitted when it is determined that deck cargo moment and below deck tonnage result in a safe operating condition as shown on the stability loading diagram, page 10.

5. Trim shall be minimized and shall always result in a freeboard of at least 22 inches at the stern.

6. Deck cargo must be positively secured against shifting in a seaway prior to leaving protected waters.

7. Partially filled ballast tanks shall never be carried less than 1/4 full. There shall never be more than one pair of partially filled ballast tanks at any one time.

8. There shall never be more than one pair of partially filled fuel tanks at any one time in addition to the fuel day tanks.

9. Cross-connections between all port and starboard wing tanks shall be kept closed at all times when underway.

10. Main deck hatches and weather doors to the deck house and machinery spaces shall be kept closed and fully secured at all times when underway, except when actually used for transit under safe conditions.

11. Main deck freeing ports shall be maintained operable and completely unobstructed at all times.

12. Bilges shall be kept pumped to minimum content at all times.

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STABILITY LOADING DIAGRAM INSTRUCTIONS

When the vessel is loaded differently from the example condition included below, the stability must be evaluated using the stability loading diagram. Calculations have been made which demonstrate that governing stability requirements are met when the vessel is loaded within the safe operating region of the stability loading diagram.

To use the diagram, first find the total below deck tonnage by adding individual tankage and cargo loads using the stability evaluation sheet provided.* Find out the total above deck equipment and combined VCG of the equipment above baseline. Enter the stability loading diagram with the total under deck tonnage and total deck equipment to find the allowable VCG of the deck equipment. If the allowable VCG of the deck equipment does not fall on the exact VCG'S shown, then use the next lower VCG allowed. Combined VCG of the deck equipment must be less than allowed.

The following example illustrates the use of the stability loading diagram.

EXAMPLE

All tanks are sounded and the amounts of each are determined from the Tank Capacities Table in this booklet. These are entered in the spaces provided on the stability evaluation sheet. Total under deck tonnage is found to be 301.72 long tons. Total desired deck equipment is 35 LT at 24.86' VCG above baseline.

The stability loading diagram shows that with 301.72 LT below deck tonnage and 35 LT of deck equipment, a VCG of 26.00' above baseline is allowed for the above deck equipment. Actual deck equipment VCG is 24.86' above baseline, therefore it is safe.

* PAGE 12A IS TO BE USED IN CONVERTING TANK CAPACITIES FROM CUBIC FEET AND GALLONS TO LONG TONS

DECK EQUIPMENT VCG

The deck equipment VCG of combined equipment is determined by dividing the combined deck equipment moments with total deck equipment.

Following is an example to illustrate the procedure used to determine the actual combined VCG of the deck equipment.

	WEIGHT (LT)	VCG (FEET) ABOVE BASELINE	MOMENT (FT-LT)
Deck Equipment (A)	100	17	1700
Deck Equipment (B)	50	18	900
Deck Equipment (C)	25	19	475
TOTAL	175		3075

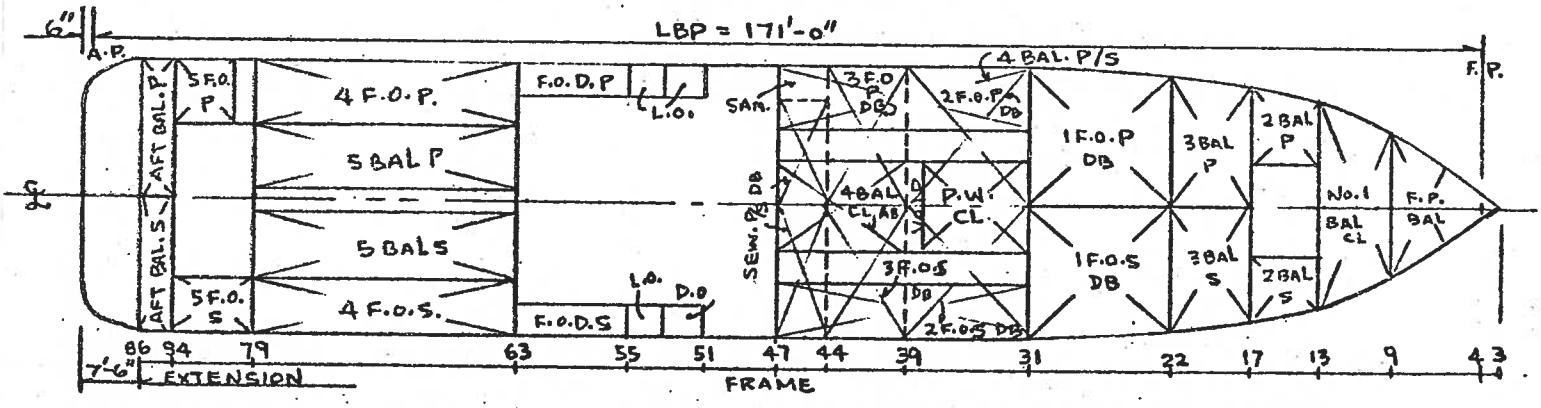
Actual deck equipment VCG $= \frac{3075}{175}$

$= 17.57$ Ft. above baseline

Actual deck equipment VCG should not exceed the allowable from stability loading diagram.

STABILITY EVALUATION SHEET

To be used with the Stability Loading Diagram for evaluating vessel stability.



BELOW DECK TONNAGE			
TANK	TYPE	FRMS.	WT.-LT.
FOD P/S	F.O.	55-63	36.14
NO.2 P/S	F.O.	31-39	60.60
NO.3 P/S	F.O.	39-44	39.53
L.O. P/S	L.O.	53-55	9.02
F.W. CTR.	F.W.	31-38	32.05
A.P. P/S	S.W.	84-86	19.13
NO.4 P/S	F.O.	63-79	105.25
		TOTAL	301.72 *

ABOVE DECK EQUIPMENT			
CARGO	WT.-LT.	VCG-FT.	MOMENT
A	20.00	18.00	360
B	15.00	34.00	510
TOTALS	35.00		870
	Deck Equip.		Deck Equip. Moment

COMBINED DECK EQUIP. VCG EQUALS

$$\frac{\text{DECK EQUIP. MOMENT}}{\text{DECK EQUIP.}} = \frac{870}{35}$$

ACTUAL DECK EQUIP. VCG 24.86 FT. ABV BL.

FROM STABILITY LOADING DIAGRAM

ALLOWABLE DECK EQUIP. VCG

= 26.00 FT. ABV BL.

*Enter the Stability Loading Diagram with this amount of under deck cargo and the total deck equipment calculated above to find the allowable deck equipment VCG. Compare this with the actual deck equip. VCG. Actual VCG should be less than the allowed VCG.

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INSTRUCTIONS FOR COMPUTATION OF VESSEL'S TRIM

In calculating the vessel's trim for any condition of loading, the detailed weights in each category such as cargo, fuel oil, ballast, and fresh water are computed with the longitudinal center of gravity (LCG) for each item.

Each category should be summed with respect to tonnage and longitudinal moment (moment is the product of the tonnage by the center of gravity distance for each item).

The Summary finally sums the tonnage and longitudinal moment and includes appropriate lightship values suitably increased for crew. The total tonnage obtained is the vessel's loaded displacement. The loaded vessel's LCG is determined by dividing the total longitudinal moment summation by the displacement. The mean draft corresponding to total displacement is read from the Hydrostatic Properties together with the LCF and LCB.

(CB)

The distance between the vessel's LCG and LCB is the trim lever. The product of displacement by trim lever is the moment causing the vessel to trim. When such a moment is divided by the moment to trim 1" multiplied by 12, the vessel's total trim, in feet, as measured on perpendiculars is obtained. (When the LCG is aft of LCB, the vessel trims aft and vice versa.) The decimal portion of this trim to be applied to the forward perpendicular is the LCF measured from the forward perpendicular divided by the length between perpendiculars. The remainder of the total trim is applied to the after perpendicular. Drafts on the perpendiculars are obtained by applying these decimal trims to the mean draft corresponding to the displacement involved.

179'-6" x 36' x 15' RESEARCH VESSEL "GYRE"

HALTER MARINE HULL 375

schuller & allan, inc. date _____ by SINGH file 2042

DRAFT AND TRIM SHEET

VARIABLES

Fr. Nos.	Item	Stowage	Tons	LCG Ft.	L. Mom. Ft.-Tons
	DECK CARGO	MAIN DECK	20.00	-58.50	-1170
	DECK CARGO	2ND DECK	15.00	- 2.50	- 38
			35.00		-1208

TANKS

No.	Cond.	Contents (tons) FW	SW	FO	LCG Ft.	L. Mom. Ft.-Tons
F.O.D. P/S	98%			36.14	-24.64	- 890
2 DB - P/S	98%			60.60	23.10	1400
3 DB - P/S	98%			39.53	10.25	405
L.O. P/S	98%			9.02	-14.75	- 133
F.W. CTR.	100%	32.05			24.25	777
A.P. P/S	100%		19.13		-76.52	-1464
4 F.O. P/S	98%			105.25	-46.65	-4910
		32.05	19.13	250.54		-4815
		301.72				

SUMMARY

Item	Tons	LCG Ft.	L. Mom. Ft.-Tons
Light Ship	765.12	4.67	3573.11
STORES	5.00	49.50	247.50
Crew Effects	2.50	36.40	91.00
Tanks	301.72		-4815
Deck Cargo	35.00		-1208
Displacement	1104.34	- 2.14	-2359

TRIM		DRAFTS		
LCB	-0.05	LCF		- 9.28
LCG	-2.14			
GB	2.09	Fwd.	10.23	~~10.03~~ -.55
MT 1'	1699	Mean		10.78
TRIM AFT	1.36	Aft	11.59	~~11.39~~ +.81

NOTE: 1. LCB & LCF taken from midship
2. Tons = 2240 Lbs. (+ Fwd)
LBP = 171.00'

STABILITY LOADING DIAGRAM

179'-6" x 36' x 15'

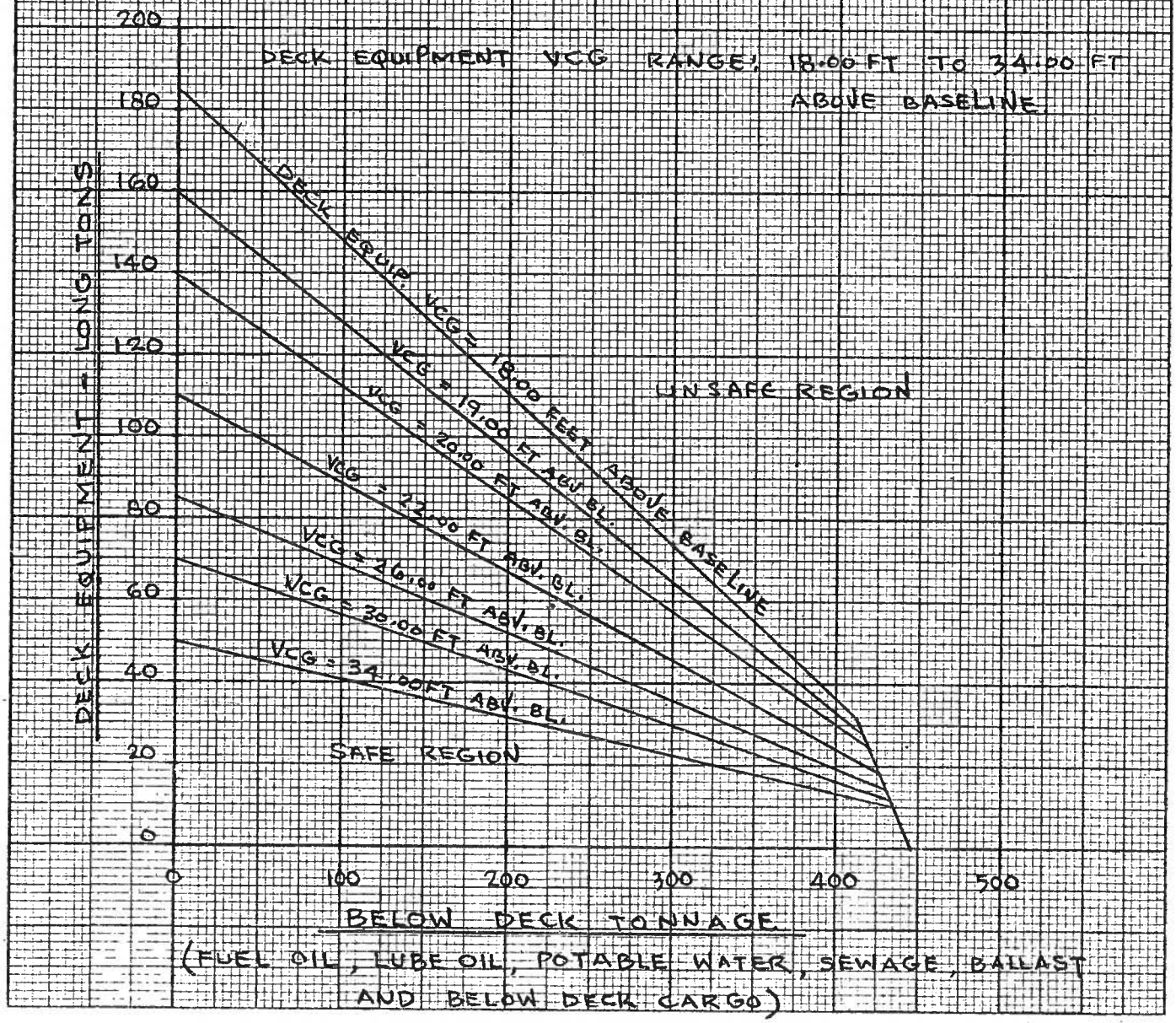
R/V "GYRE"

RESTRICTION: DECK EQUIPMENT SHOULD NEVER BE CARRIED ON THE AFT DECK HOUSE WITH ITS VCG MORE THAN 3.00' ABOVE THE HOUSE.

MAIN DECK : 15.00 FEET ABOVE BASELINE

AFTER DECK HOUSE : 31.00 FT ABOVE BASELINE

DECK EQUIPMENT VCG RANGE: 18.00 FT TO 34.00 FT ABOVE BASELINE.

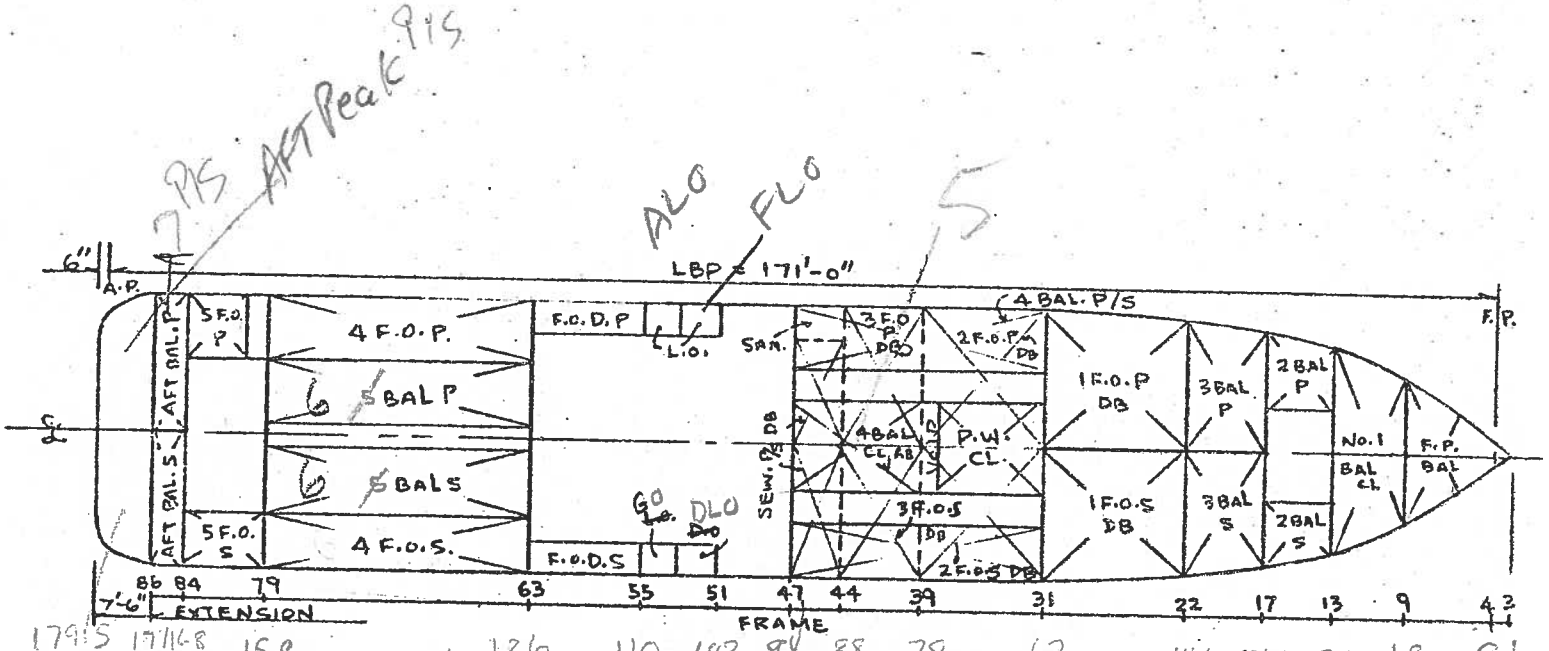


SUMMARY OF TANK CHARACTERISTICS

FRAMES	DESCRIPTION	FS (FT-L.T.)	WEIGHT (L.T.)		VCG (FT)	LCG (FT)@	
3- 9	FOREPEAK BAL-CTR.	14.86	3495.03	13.35	10.59	78.61	83248
9-13	NO. 1 BAL-CTR.	86.06	8176.01	31.23	9.70	70.86	2212.96
13-17	NO. 2 BAL,WING-P/S	7.05	2039.42	15.58 7.79	11.02	62.62	975.62
17-22	NO. 3 BAL-P/S	144.82	11304.52	86.37 43.18	9.03	53.99	4663.1
31-47	NO. 4 BAL,WING-P/S	77.23	16700.22	127.58 63.79	10.51	15.11	1927.73
39-47	NO. 5/4 BAL-CTR.	65.83	13014.22	48.38	10.50	7.25	350.76
63-79	NO. 6/5 BAL-P/S	93.58	22488.62	171.80 85.90	9.22	-47.39	-8141.6
84-AP	AFT PEAK BAL-P/S	26.86	2505.43	19.13 9.57	11.98	-76.52	-1463.8
AP-	AFT PEAK	NOT USED					
22-31	NO. 1 FO (DB)-P/S	273.80	7771.00	52.72 26.36	3.74	39.58	2086.66
31-39	NO. 2 FO (DB)-P/S	354.70	9414.00	60.60 30.30	3.61	23.10	1399.8
39-44	NO. 3 FO (DB)-P/S	233.65	6137.00	39.53 19.76	3.57	10.25	405.18
55-63	FO DAY, WING-P/S	4.10	5623.38	36.14 18.07	9.00	-24.64	-890.4
63-79	NO. 4 FO, WING-P/S	57.79	16598.00	105.25 56.23	10.21	-46.65	-4909.9
79-84	NO. 5 FO, WING-STBD	6.14		9.57	11.96	-69.50	-665.11
80½-84	NO. 5 FO, WING-PORT	4.09		5.39	12.09	-71.66	-386.25
31-38	POT. WATER-CTR.	56.06	8621.45	32.05	11.50	24.25	777.2
39-47	#5 POT WTR-CTR	65.83	13014.22	48.38	10.50	7.25	350.76
44-47	SEWAGE (DB)-STBD	79.35	3619.30	13.44	3.57	2.33	31.32
44-47	SEWAGE (DB)-PORT	37.33	3037.70	11.28	3.43	2.33	26.25
44-47	SAMPLE SEW. (DB)-PORT	0.87	581.69	2.16	4.31	2.33	5.03

FRAMES	DESCRIPTION	FS (FT-L.T.)	WEIGHT (L.T.)	VCG (FT)	LCG (FT)Φ
51-53	D.L.O., WING-STBD	0.48	1451.33 4.41	8.81	-10.75 -47.41
51-53	L.O., WING-PORT	0.50	1450.87 4.51	8.81	-10.75 -48.48
53-55	L.O., WING-P/S	0.49 0.99	1450.81 ~~9.02~~ 4.51	8.81	-14.75 -66.52
53-55	GOL WING S	0.49	1450.87 4.51	8.81	-14.75 -66.52

NOTE: i VCG ABOVE BASELINE, LCG FROM AMIDSHIPS, + FWD, (℄ 6" FWD. OF FR. 47)
ii VALUES LISTED FOR P/S PAIRS ARE FOR BOTH SIDES.



COMPARTMENTATION

℄
93.5
℄ 85.5 FP+6"

FUEL OIL	:	41.60 CU. FT./LONG TON	OR	311.2 GAL./LT.
LUBE OIL (GEAR OIL)	:	43.00 (43.50) CU. FT./LONG TON	OR	321.7 (325.4) GAL./LT.
DIRTY OIL	:	44.00 CU. FT./LONG TON	OR	329.1 GAL./LT.
POTABLE WATER	:	35.96 CU. FT./LONG TON	OR	269.0 GAL./LT.
BALLAST WATER	:	35.00 CU. FT./LONG TON	OR	261.8 GAL./LT.
SEWAGE	:	36.00 CU. FT./LONG TON	OR	269.3 GAL./LT.

TO CONVERT CUBIC FEET TO LONG TONS FOR DIFFERENT LIQUIDS, THE ABOVE FACTORS ARE USED.

EXAMPLE: CONVERT 1000 CU. FT. OF FUEL OIL TO LONG TONS.

$1000 \div 41.60$
$= 24.04$ LONG TONS

EXAMPLE: CONVERT 2450 GALLONS OF POTABLE WATER TO LONG TONS

$2450 \div 269$
$= 9.11$ LONG TONS

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: F.P, Ball. CACLS: H. Bamba CHECKED: DATE: 9/12/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	0.0	0.0	******	******
1.00	0.6	4.5	75.96	1.15
1.50	1.8	13.4	76.34	1.52
2.00	3.6	27.0	76.45	1.87
2.50	6.5	48.5	76.71	2.24
3.00	10.3	77.3	76.89	2.60
3.50	15.1	112.8	76.96	2.93
4.00	21.1	157.9	77.12	3.30
4.50	28.4	212.4	77.26	3.65
5.00	36.9	276.2	77.39	4.01
5.50	46.7	349.3	77.49	4.36
6.00	57.6	430.8	77.56	4.71
6.50	70.1	524.2	77.66	5.06
7.00	84.0	628.3	77.75	5.41
7.50	99.4	743.3	77.84	5.77
8.00	116.2	869.0	77.92	6.12
8.50	134.4	1005.6	77.99	6.47
9.00	154.1	1152.8	78.06	6.81
9.50	175.2	1310.3	78.12	7.16
10.00	197.7	1478.3	78.17	7.50
10.50	221.6	1657.3	78.23	7.85
11.00	247.0	1847.5	78.29	8.19
11.50	273.9	2049.0	78.34	8.54
12.00	302.4	2261.7	78.39	8.88

3.32 T
3.84 T
4.40
5.00

12.50	332.3	2485.8	78.44	9.22
13.00	363.8	2721.2	78.49	9.57
13.50	396.8	2967.8	78.53	9.91
14.00	431.3	3225.8	78.57	10.25
14.50	467.3	3495.0	78.61	10.59

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (@ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: 1, Ball. CALCS. H. Damba CHECKED: [illegible] DATE: 9/12/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	1.8	13.4	70.06	0.31
1.00	6.2	46.6	70.37	0.64
1.50	13.3	99.5	70.50	0.97
2.00	23.0	172.1	70.58	1.31
2.50	35.4	264.6	70.62	1.64
3.00	50.4	376.8	70.65	1.97
3.50	68.0	508.8	70.67	2.31
4.00	88.3	660.5	70.69	2.64
4.50	111.2	832.0	70.71	2.97
5.00	136.8	1023.3	70.72	3.30
5.50	165.0	1234.3	70.73	3.64
6.00	195.9	1465.1	70.73	3.97
6.50	229.4	1715.7	70.74	4.30
7.00	265.5	1986.0	70.75	4.64
7.50	304.3	2276.1	70.75	4.97
8.00	345.7	2585.6	70.76	5.30
8.50	389.2	2910.9	70.76	5.63
9.00	434.4	3249.1	70.77	5.96
9.50	481.1	3598.6	70.78	6.28
10.00	529.3	3959.1	70.79	6.59
10.50	579.0	4330.8	70.80	6.91
11.00	630.2	4713.5	70.80	7.22
11.50	682.8	5107.4	70.81	7.53
12.00	737.0	5512.3	70.82	7.84

12.50	792.6	5928.3	70.82	8.15
13.00	849.7	6355.4	70.83	8.46
13.50	908.3	6793.6	70.84	8.77
14.00	968.4	7242.9	70.84	9.08
14.50	1029.9	7703.3	70.85	9.39
15.00	1092.9	8174.8.	70.86	9.70

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS, (@ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO. 2187 & 2188

TANK: 2 P/S, Ball. CALCS. M. Bamba CHECKED: hb DATE: 9/12/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	0.1	1.0	59.26	4.16
1.00	1.0	7.4	60.23	4.58
1.50	3.1	23.3	60.59	4.94
2.00	7.0	52.0	60.92	5.30
2.50	12.9	96.5	61.26	5.67
3.00	21.0	156.9	61.54	6.02
3.50	30.6	229.1	61.78	6.36
4.00	41.2	308.5	61.95	6.67
4.50	52.6	393.4	62.07	6.98
5.00	64.7	483.6	62.16	7.28
5.50	77.5	579.3	62.23	7.58
6.00	91.0	680.4	62.29	7.87
6.50	105.2	786.9	62.34	8.17
7.00	120.2	898.7	62.39	8.47
7.50	135.8	1016.0	62.43	8.77
8.00	152.2	1138.7	62.46	9.08
8.50	169.4	1266.7	62.49	9.38
9.00	187.2	1400.2	62.52	9.68
9.50	205.8	1539.0	62.55	9.99
10.00	225.0	1683.3	62.57	10.30
10.50	245.1	1832.9	62.60	10.61
11.00	265.8	1987.9	62.62	10.92
11.16	272.6	2038.7	62.62	11.02

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (℄ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

TANK CAPACITIES

VESSEL: AGOR 21 &22 JOB NO: 2187 & 2188

TANK: 3 P/S, Ball. CALCS: M. Bamba CHECKED: lmb DATE: 9/12/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	4.0	29.8	53.40	0.30
1.00	12.8	95.9	53.58	0.63
1.50	26.5	198.6	53.66	0.96
2.00	45.1	337.6	53.71	1.29
2.50	68.6	513.1	53.74	1.62
3.00	96.9	725.1	53.76	1.95
3.50	130.1	973.5	53.77	2.28
4.00	168.2	1258.3	53.78	2.62
4.50	211.2	1579.5	53.79	2.95
5.00	259.0	1937.2	53.80	3.28
5.50	311.4	2329.1	53.81	3.62
6.00	366.8	2743.5	53.83	3.94
6.50	423.8	3169.7	53.85	4.25
7.00	481.6	3602.0	53.87	4.55
7.50	540.2	4040.2	53.89	4.84
8.00	599.5	4484.0	53.90	5.13
8.50	659.6	4933.7	53.91	5.41
9.00	720.5	5389.1	53.92	5.70
9.50	782.2	5850.3	53.93	5.98
10.00	844.6	6317.3	53.94	6.26
10.50	907.8	6790.1	53.94	6.53
11.00	971.8	7268.6	53.95	6.81
11.50	1036.5	7752.9	53.96	7.09
12.00	1102.1	8243.0	53.96	7.37

12.50	1168.4	8738.8	53.97	7.64
13.00	1235.4	9240.4	53.97	7.92
13.50	1303.3	9747.8	53.98	8.20
14.00	1371.9	10261.0	53.98	8.48
14.50	1441.3	10780.0	53.99	8.75
15.00	1511.4	11304.7	53.99	9.03

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (⊗ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

HALTER MARINE SERVICES

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: 4 P/S, Ball. CALCS: M. Bamba CHECKED: [illegible] DATE: 9/12/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0-50	122-9	919-4	15.01	6-25
1-00	246-0	1839-8	15.01	6-50
1-50	369-2	2761-1	15.02	6-75
2-00	492-5	3683-4	15.03	7-00
2-50	615-9	4606-7	15.03	7-25
3-00	739-5	5531-0	15.04	7-50
3-50	863-2	6456-3	15.05	7-75
4-00	987-0	7382-5	15.05	8-00
4-50	1111-0	8309-7	15.06	8-25
5-00	1235-1	9237-9	15.06	8-50
5-50	1359-3	10167-1	15.07	8-76
6-00	1483-7	11097-2	15.08	9-01
6-50	1608-2	12028-3	15.08	9-26
7-00	1732-8	12960-4	15.09	9-51
7-50	1857-5	13893-5	15.10	9-76
8-00	1982-4	14827-6	15.10	10-01
8-50	2107-4	15762-6	15.11	10-26
9-00	2232-6	16698-7	15.11	10-51

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (@ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

HALTER MARINE SERVICES

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: 4 C, Ball. CALCS: M. Bamba CHECKED: [illegible] DATE: 9/12/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	94.1	703.7	7.25	6.25
1.00	188.2	1407.4	7.25	6.50
1.50	282.2	2111.0	7.25	6.75
2.00	376.3	2814.7	7.25	7.00
2.50	470.4	3518.4	7.25	7.25
3.00	564.5	4222.1	7.25	7.50
3.50	658.6	4925.8	7.25	7.75
4.00	752.6	5629.4	7.25	8.00
4.50	846.7	6333.1	7.25	8.25
5.00	940.8	7036.8	7.25	8.50
5.50	1034.9	7740.5	7.25	8.75
6.00	1129.0	8444.2	7.25	9.00
6.50	1223.0	9147.8	7.25	9.25
7.00	1317.1	9851.5	7.25	9.50
7.50	1411.2	10555.2	7.25	9.75
8.00	1505.3	11258.9	7.25	10.00
8.50	1599.4	11962.6	7.25	10.25
9.00	1693.4	12666.2	7.25	10.50

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (⊗ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: 6 P/S, Ball. CALCS: M. Bamba CHECKED: [illegible] DATE: 9/12/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	1.6	11.7	-34.18	0.63
1.00	8.9	66.6	-35.22	0.99
1.50	25.1	188.0	-36.07	1.36
2.00	53.0	396.2	-36.82	1.72
2.50	94.0	703.0	-37.56	2.08
3.00	147.4	1102.5	-38.35	2.43
3.50	211.6	1583.0	-39.11	2.76
4.00	287.4	2149.8	-39.92	3.10
4.50	373.3	2791.9	-40.70	3.43
5.00	469.5	3511.9	-41.49	3.76
5.50	576.3	4310.3	-42.28	4.09
6.00	693.2	5184.6	-43.06	4.42
6.50	818.3	6120.5	-43.79	4.74
7.00	948.8	7096.9	-44.43	5.06
7.50	1081.9	8092.3	-44.96	5.36
8.00	1215.2	9089.1	-45.38	5.65
8.50	1348.5	10086.0	-45.71	5.94
9.00	1481.8	11082.9	-45.98	6.22
9.50	1615.0	12079.8	-46.21	6.49
10.00	1748.3	13076.7	-46.41	6.76
10.50	1881.6	14073.5	-46.57	7.03
11.00	2014.9	15070.4	-46.72	7.29
11.50	2148.2	16067.3	-46.84	7.55
12.00	2281.4	17064.2	-46.95	7.82

12.50	2414.7	18061.1	-47.05	8.08
13.00	2548.0	19057.9	-47.14	8.34
13.50	2681.3	20054.8	-47.22	8.59
14.00	2814.6	21051.7	-47.29	8.85
14.50	2947.8	22048.6	-47.36	9.11
14.72	3006.5	22487.2	-47.39	9.22

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (X 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

HALTER MARINE SERVICES

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: A-P, P/S Ball CALCS: M. Bamba CHECKED: mb DATE: 9/12/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	2.1	15.8	-75.49	8.28
1.00	11.5	85.8	-75.16	8.64
1.50	27.5	205.8	-76.31	8.97
2.00	50.3	376.0	-76.38	9.30
2.50	78.1	584.0	-76.43	9.62
3.00	106.4	795.8	-76.46	9.90
3.50	134.7	1007.9	-76.47	10.17
4.00	163.1	1220.2	-76.48	10.44
4.50	191.6	1432.7	-76.49	10.70
5.00	220.0	1645.5	-76.50	10.96
5.50	248.5	1858.6	-76.50	11.21
6.00	277.0	2071.9	-76.51	11.47
6.50	305.7	2286.7	-76.51	11.72
7.00	334.8	2503.8	-76.52	11.98

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (@ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

HALTER MARINE SERVICES

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2137 & 2188

TANK: 1 P/S. F.O. CALCS: N. Bamba CHECKED: [illegible] DATE: 9/13/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	20.1	150.4	39.06	0.28
1.00	54.7	408.8	39.17	0.59
1.50	103.6	775.2	39.24	0.91
2.00	167.1	1249.5	39.28	1.23
2.50	244.9	1831.9	39.31	1.56
3.00	337.2	2522.3	39.33	1.89
3.50	444.0	3320.6	39.34	2.21
4.00	564.4	4221.2	39.37	2.54
4.50	693.5	5187.0	39.42	2.86
5.00	826.7	6183.3	39.48	3.17
5.50	961.2	7189.5	39.54	3.46
6.00	1096.5	8201.7	39.58	3.74

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (※ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

7633 9890
7771 10196

HALTER MARINE SERVICES

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: 2 P/S, F.O. CALCS: M. Bamba CHECKED: hb DATE: 9/13/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	25.1	188.0	23.13	0.28
1.00	69.2	517.4	23.07	0.59
1.50	132.1	988.2	23.04	0.91
2.00	214.0	1600.5	23.02	1.24
2.50	314.8	2354.3	23.01	1.56
3.00	434.5	3249.5	23.00	1.89
3.50	569.4	4258.8	23.01	2.21
4.00	707.3	5290.6	23.04	2.51
4.50	845.4	6323.3	23.06	2.80
5.00	983.6	7357.1	23.08	3.07
5.50	1122.0	8391.8	23.09	3.34
6.00	1260.4	9427.5	23.10	3.61

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (@ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

9244 98%
9414 100%

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: 3 P/S, F.O. CALCS: M. Bamba CHECKED: DATE: 4/25/73

SDG FT	SDG IN	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0	6	16.3	122.0	10.25	0.28
1	0	45.6	341.3	10.24	0.60
1	6	88.0	657.9	10.24	0.92
2	0	143.3	1071.9	10.24	1.24
2	6	211.7	1583.2	10.24	1.57
3	0	293.0	2191.9	10.24	1.90
3	6	381.2	2851.5	10.24	2.21
4	0	469.4	3511.1	10.24	2.50
4	6	557.6	4170.8	10.25	2.78
5	0	645.8	4830.5	10.25	3.05
5	6	734.0	5490.2	10.25	3.31
6	0	822.2	6149.9	10.25	3.57

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (℄ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

6029 98%
6137 100%

HALTER MARINE SERVICES

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: Day, P/S F.O. CALCS: M. Bamba CHECKED: hb DATE: 9/13/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	3.5	26.4	-20.34	2.63
1.00	20.4	152.3	-21.89	2.98
1.50	47.8	357.5	-23.05	3.30
2.00	78.8	589.5	-23.69	3.58
2.50	110.2	824.0	-23.99	3.85
3.00	141.5	1058.5	-24.16	4.11
3.50	172.9	1293.0	-24.26	4.36
4.00	204.2	1527.5	-24.34	4.62
4.50	235.6	1762.0	-24.39	4.87
5.00	266.9	1996.6	-24.44	5.12
5.50	298.3	2231.1	-24.47	5.38
6.00	329.6	2465.6	-24.49	5.63
6.50	361.0	2700.1	-24.52	5.88
7.00	392.3	2934.6	-24.54	6.13
7.50	423.7	3169.1	-24.55	6.38
8.00	455.1	3403.6	-24.56	6.63
8.50	486.4	3638.1	-24.58	6.88
9.00	517.8	3872.6	-24.59	7.13
9.50	549.1	4107.1	-24.60	7.38
10.00	580.5	4341.6	-24.60	7.63
10.50	611.8	4576.2	-24.61	7.88
11.00	643.2	4810.7	-24.62	8.13

	[illegible]	5045.2	-24.62	8.38
12.00	705.9	5279.7	-24.63	8.63
12.50	737.2	5514.2	-24.63	8.89
12.73	751.7	5622.1	-24.64	9.00

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (兴 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: 4 P/S F.O CALCS: M. Bamba CHECKED: [illegible] DATE: 9/13/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	0.7	5.3	-33.81	2.60
1.00	5.3	39.4	-34.65	2.97
1.50	16.8	125.8	-35.43	3.34
2.00	38.1	284.9	-36.17	3.71
2.50	70.9	530.6	-36.91	4.07
3.00	114.8	859.0	-37.68	4.42
3.50	169.3	1266.0	-38.48	4.77
4.00	234.1	1750.7	-39.30	5.10
4.50	309.1	2312.1	-40.13	5.44
5.00	394.7	2952.2	-40.99	5.77
5.50	491.4	3675.7	-41.89	6.11
6.00	598.4	4476.0	-42.77	6.45
6.50	712.6	5330.3	-43.56	6.77
7.00	830.2	6209.3	-44.21	7.08
7.50	948.0	7090.4	-44.69	7.38
8.00	1066.5	7977.1	-45.09	7.67
8.50	1184.6	8860.1	-45.40	7.95
9.00	1302.2	9740.0	-45.64	8.22
9.50	1419.8	10619.8	-45.85	8.49
10.00	1537.5	11499.7	-46.02	8.76
10.50	1655.1	12379.5	-46.17	9.03
11.00	1772.7	13259.4	-46.30	9.29

11.50	1890.4	14139.3	-46.41	9.55
12.00	2008.0	15019.1	-46.51	9.81
12.50	2125.6	15899.0	-46.60	10.07
12.77	2189.2	16374.1	-46.65	10.21

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (⊗ 6" FWD. OF FR. 47
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

16266 98%
16598 100%

HALTER MARINE SERVICES

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: 5 S, F.O. CALCS: M. Bamba CHECKED: DATE: 9/15/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0-50	0-6	4-6	-65.50	8-01
1-00	5-3	39-7	-66.43	8-39
1-50	18-8	140-8	-67.42	8-77
2-00	44-5	333-0	-68.30	9-14
2-50	76-9	575-3	-68.84	9-45
3-00	109-9	822-1	-69.09	9-73
3-50	142-9	1068-9	-69.22	10-00
4-00	175-9	1315-6	-69.30	10-26
4-50	208-9	1562-4	-69.36	10-52
5-00	241-9	1809-1	-69.40	10-77
5-50	274-9	2055-9	-69.43	11-02
6-00	307-9	2302-6	-69.45	11-28
6-50	340-8	2549-4	-69.47	11-53
7-00	373-8	2796-2	-69.49	11-78
7-36	397-9	2975-8	-69.50	11-96

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (@ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

1946 9870
1986 1066

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: 5 P, F.O CALCS. M. Gamba CHECKED: [illegible] DATE: 9/15/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	0.8	5.6	-69.43	8.61
1.00	6.5	48.6	-70.58	9.00
1.50	20.8	155.6	-71.13	9.35
2.00	40.0	298.9	-71.40	9.66
2.50	59.3	443.7	-71.50	9.93
3.00	78.7	588.5	-71.55	10.19
3.50	98.0	733.4	-71.59	10.45
4.00	117.4	878.2	-71.61	10.70
4.50	136.8	1023.0	-71.62	10.96
5.00	156.1	1167.8	-71.63	11.21
5.50	175.5	1312.7	-71.64	11.46
6.00	194.9	1457.5	-71.65	11.71
6.50	214.2	1602.3	-71.66	11.96
6.76	224.3	1677.6	-71.66	12.09

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (⊗ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

HALTER MARINE SERVICES

TANK CAPACITIES

VESSEL: AGOR 21 & 22

JOB NO: 2187 & 2188

TANK: Pot. Water CALCS: M. Bamba CHECKED: LL DATE: 9/15/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	82.3	615.7	24.25	8.25
1.00	164.6	1231.4	24.25	8.50
1.50	247.0	1847.2	24.25	8.75
2.00	329.3	2462.9	24.25	9.00
2.50	411.6	3078.6	24.25	9.25
3.00	493.9	3694.3	24.25	9.50
3.50	576.2	4310.0	24.25	9.75
4.00	658.6	4925.8	24.25	10.00
4.50	740.9	5541.5	24.25	10.25
5.00	823.2	6157.2	24.25	10.50
5.50	905.5	6772.9	24.25	10.75
6.00	987.8	7388.6	24.25	11.00
6.50	1070.2	8004.4	24.25	11.25
7.00	1152.5	8620.1	24.25	11.50

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (@ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

GULTON MARINE SERVICES

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: SEWAGE STBD CALCS: M. BAMBA CHECKED: DATE: 4/25/73

SDG FT	SDG IN	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0	6	9.8	73.3	2.33	0.28
1	0	27.4	205.2	2.33	0.60
1	6	52.9	395.8	2.33	0.92
2	0	86.2	645.0	2.33	1.24
2	6	127.4	952.9	2.33	1.57
3	0	176.4	1319.4	2.33	1.90
3	6	229.3	1715.2	2.33	2.21
4	0	282.2	2111.0	2.33	2.50
4	6	335.2	2506.9	2.33	2.78
5	0	388.1	2902.7	2.33	3.05
5	6	441.0	3298.5	2.33	3.31
6	0	493.9	3694.3	2.33	3.57

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (℄ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

HALTER MARINE SERVICES

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187-2188

1 TANK: SEWAGE TK. @ ℄ FR 44-47 Port CALCS: F. RICKS CHECKED: DATE: 10/10/73

SDG FT	SDG IN	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0	6	9.8	73.3	2.33	0.28
1	0	27.4	205.2	2.33	0.60
1	6	52.9	395.8	2.33	0.92
2	0	86.2	645.0	2.33	1.24
2	6	126.4	945.6	2.33	1.56
3	0	167.6	1253.4	2.33	1.86
3	6	208.7	1561.3	2.33	2.13
4	0	249.9	1869.2	2.33	2.40
4	6	291.1	2177.0	2.33	2.66
5	0	332.2	2484.9	2.33	2.92
5	6	373.4	2792.7	2.33	3.18
6	0	414.5	3100.6	2.33	3.43

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (℄ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

HALTER MARINE SERVICES

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

⚠ TANK: Sewage Tk. (Wing) FR 44-47 Port CALCS: F. Ricks CHECKED: DATE: 10/10/73

SDG FT	SDG IN	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0	6	3.9	29.3	2.33	2.59
1	0	14.7	110.0	2.33	2.91
1	6	26.5	197.9	2.33	3.17
2	0	38.2	285.9	2.33	3.43
2	6	50.0	373.8	2.33	3.68
3	0	61.7	461.8	2.33	3.93
3	6	73.5	549.7	2.33	4.18
4	0	79.4	593.7	2.33	4.31

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (℄ 6" FWD. 0 FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: Dirty Oil STBD. CALCS: M. Bamba CHECKED: L.L. DATE: 2/15/72

SDG FT	CAPACITY CU FT	CAPACITY GAL.	LCG FT	VCG FT
0.50	2.6	19.5	-10.75	2.58
1.00	9.8	73.3	-10.75	2.90
1.50	17.6	131.9	-10.75	3.17
2.00	25.5	190.6	-10.75	3.42
2.50	33.3	249.2	-10.75	3.68
3.00	41.2	307.9	-10.75	3.93
3.50	49.0	366.5	-10.75	4.18
4.00	56.8	425.1	-10.75	4.43
4.50	64.7	483.8	-10.75	4.68
5.00	72.5	542.4	-10.75	4.93
5.50	80.4	601.1	-10.75	5.18
6.00	88.2	659.7	-10.75	5.43
6.50	96.0	718.3	-10.75	5.68
7.00	103.9	777.0	-10.75	5.93
7.50	111.7	835.6	-10.75	6.18
8.00	119.6	894.3	-10.75	6.43
8.50	127.4	952.9	-10.75	6.68
9.00	135.2	1011.5	-10.75	6.93
9.50	143.1	1070.2	-10.75	7.18
10.00	150.9	1128.8	-10.75	7.44
10.50	158.8	1187.5	-10.75	7.69
11.00	166.6	1246.1	-10.75	7.94

11.50	174.4	1304.7	-10.75	8.19
12.00	182.3	1363.4	-10.75	8.44
12.50	190.1	1422.0	-10.75	8.69
12.75	194.0	1451.3	-10.75	8.81

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (⊗ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

BALLAST SALINE SYSTEMS

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: L.O, Fwd. Port CALCS: H. Bamba CHECKED: L.L DATE: 9/15/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	2.6	19.5	-10.75	2.58
1.00	9.8	73.3	-10.75	2.90
1.50	17.6	131.9	-10.75	3.17
2.00	25.5	190.6	-10.75	3.42
2.50	33.3	249.2	-10.75	3.68
3.00	41.2	307.9	-10.75	3.93
3.50	49.0	366.5	-10.75	4.18
4.00	56.8	425.1	-10.75	4.43
4.50	64.7	483.8	-10.75	4.68
5.00	72.5	542.4	-10.75	4.93
5.50	80.4	601.1	-10.75	5.18
6.00	88.2	659.7	-10.75	5.43
6.50	96.0	718.3	-10.75	5.68
7.00	103.9	777.0	-10.75	5.93
7.50	111.7	835.6	-10.75	6.18
8.00	119.6	894.3	-10.75	6.43
8.50	127.4	952.9	-10.75	6.68
9.00	135.2	1011.5	-10.75	6.93
9.50	143.1	1070.2	-10.75	7.18
10.00	150.9	1128.8	-10.75	7.44
10.50	158.8	1187.5	-10.75	7.69
11.00	166.6	1246.1	-10.75	7.94

11.50	174.4	1304.7	-10.75	8.19
12.00	182.3	1363.4	-10.75	8.44
12.50	190.1	1422.0	-10.75	8.69
12.75	194.0	1451.3	-10.75	8.81

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (℄ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

HALTER MARINE SERVICES

TANK CAPACITIES

VESSEL: AGOR 21 & 22 JOB NO: 2187 & 2188

TANK: L.O, Aft. P/S CALCS: M. Bamba CHECKED: mb DATE: 9/15/72

SDG FT	CAPACITY CU FT	CAPACITY GAL	LCG FT	VCG FT
0.50	2.6	19.2	-14.75	2.58
1.00	9.7	72.8	-14.75	2.90
1.50	17.6	131.4	-14.75	3.17
2.00	25.4	190.1	-14.75	3.43
2.50	33.3	248.7	-14.75	3.68
3.00	41.1	307.4	-14.75	3.93
3.50	48.9	366.0	-14.75	4.18
4.00	56.8	424.6	-14.75	4.43
4.50	64.6	483.3	-14.75	4.68
5.00	72.5	541.9	-14.75	4.93
5.50	80.3	600.6	-14.75	5.19
6.00	88.1	659.2	-14.75	5.44
6.50	96.0	717.8	-14.75	5.69
7.00	103.8	776.5	-14.75	5.94
7.50	111.7	835.1	-14.75	6.19
8.00	119.5	893.8	-14.75	6.44
8.50	127.3	952.4	-14.75	6.69
9.00	135.2	1011.0	-14.75	6.94
9.50	143.0	1069.7	-14.75	7.19
10.00	150.9	1128.3	-14.75	7.44
10.50	158.7	1187.0	-14.75	7.69
11.00	166.5	1245.6	-14.75	7.94

11.50	174.4	1304.2	-14.75	8.19
12.00	182.2	1362.9	-14.75	8.44
12.50	190.1	1421.5	-14.75	8.69
12.75	194.0	1450.8	-14.75	8.81

NOTES:
LCG IS REFERENCED FWD (+) OR AFT (-) OF MIDSHIPS. (⊗ 6" FWD. OF FR. 47)
VCG IS REFERENCED FROM THE BASE LINE.
SDG IS TAKEN FROM THE LOWEST POINT IN THE TANK.

HYDROSTATICS

UNITS AND DEFINITIONS

CIDOFTS	CHANGE IN DISPLACEMENT FOR ONE FOOT TRIM BY STERN IN TONS
DISPLACEMENT	DISPLACEMENT IN TONS (LT-SW) (35.00)
DRAFT	HEIGHT ABOVE BASELINE IN FEET AMIDSHIPS
KB	HEIGHT OF CENTER OF BUOYANCY ABOVE BASELINE IN FEET
LCB	LONGITUDINAL CENTER OF BUOYANCY IN FEET FROM AMIDSHIPS (+ FWD)
LCF	LONGITUDINAL CENTER OF FLOATATION IN FEET FROM AMIDSHIPS (+ FWD)
LONG.BM	LONGITUDINAL BM IN FEET
LONG.KM	LONGITUDINAL KM IN FEET
MT1	MOMENT TO CHANGE TRIM ONE INCH IN FOOT TONS
PRISMATIC	PRISMATIC COEFFICIENT - VOLUME/(LBP X AREA*)
TPI	TONS PER INCH IMMERSION
TRNSV BM	TRANSVERSE BM IN FEET
TRNSV KM	TRANSVERSE KM IN FEET
VOLUME	DISPLACED VOLUME IN CUBIC FEET
WETTED SURFACE	SURFACE AREA OF WETTED PORTION OF HULL IN SQUARE FEET
WPLANE AREA	AREA OF WATERPLANE IN SQUARE FEET
WPLANE COEF	WATERPLANE COEFFICIENT - WATERPLANE AREA/(LBP X BEAM*)
WPLANE I COEF	INERTIA COEFT - WPLANE TRANS INTERIA/(LBP X BEAM*CUBED/12)

179'-6" X 36' X 15' "GYRE" HALTER MARINE HULL NO. 375 FILE 2042

YDROSTATICS - PART I TRIM 0.000 FEET

DRAFT	VOLUME	DISPLACEMENT	LCB	KB	WETTED SURFACE	PRISMATIC COEF	WPLANE COEF	WPLANE I COEF
1.00	766.	21.9	7.23	.60	1277.	.480	.495	.386
1.08	867.	24.8	7.19	.65	1354.	.481	.495	.386
1.17	987.	28.2	7.17	.71	1440.	.482	.496	.385
1.25	1100.	31.4	7.15	.76	1517.	.483	.496	.384
1.33	1219.	34.8	7.14	.81	1593.	.483	.496	.384
1.42	1360.	38.9	7.14	.87	1679.	.484	.496	.383
1.50	1491.	42.6	7.14	.92	1756.	.484	.496	.382
1.58	1628.	46.5	7.14	.97	1832.	.485	.496	.382
1.67	1789.	51.1	7.15	1.03	1918.	.485	.496	.381
1.75	1939.	55.4	7.15	1.09	1995.	.486	.496	.381
1.83	2094.	59.8	7.16	1.14	2071.	.486	.496	.381
1.92	2275.	65.0	7.17	1.20	2157.	.487	.496	.380
2.00	2442.	69.8	7.18	1.25	2234.	.487	.496	.380
2.08	2618.	74.8	7.15	1.30	2315.	.488	.497	.380
2.17	2822.	80.6	7.11	1.36	2406.	.488	.499	.380
2.25	3011.	86.0	7.08	1.42	2488.	.489	.500	.380
2.33	3205.	91.6	7.04	1.47	2570.	.490	.501	.380
2.42	3432.	98.0	7.00	1.53	2662.	.491	.502	.380
2.50	3640.	104.0	6.96	1.58	2745.	.491	.503	.380
2.58	3854.	110.1	6.92	1.63	2828.	.492	.504	.380
2.67	4103.	117.2	6.87	1.69	2922.	.493	.505	.380
2.75	4330.	123.7	6.83	1.75	3006.	.493	.506	.381

YDROSTATICS - PART II TRIM 0.000 FEET

DRAFT	WPLANE AREA	LCF	TPI	CIDOFTS	LONG. BM	TRNSV BM	LONG. KM	TRNSV KM	MT1
1.00	1241.	6.17	2.96	-1.28	1167.1	22.69	1167.7	23.29	12.4
1.08	1314.	6.20	3.13	-1.36	1097.6	23.71	1098.2	24.36	13.2
1.17	1396.	6.24	3.32	-1.46	1029.1	24.87	1029.8	25.58	14.1
1.25	1469.	6.28	3.50	-1.54	975.3	25.91	976.1	26.67	14.9
1.33	1542.	6.32	3.67	-1.63	927.2	26.97	928.0	27.78	15.7
1.42	1624.	6.37	3.87	-1.73	878.6	28.17	879.5	29.04	16.6
1.50	1697.	6.42	4.04	-1.82	839.7	29.24	840.6	30.16	17.4
1.58	1769.	6.46	4.21	-1.91	804.2	30.31	805.1	31.29	18.2
1.67	1851.	6.50	4.41	-2.01	767.8	31.53	768.8	32.56	19.1
1.75	1924.	6.54	4.58	-2.10	738.2	32.62	739.3	33.70	19.9
1.83	1996.	6.58	4.75	-2.20	710.8	33.71	712.0	34.84	20.7
1.92	2078.	6.62	4.95	-2.30	682.4	34.94	683.6	36.13	21.6
2.00	2151.	6.66	5.12	-2.39	659.1	36.03	660.3	37.28	22.4
2.08	2227.	6.60	5.30	-2.45	641.0	37.14	642.3	38.44	23.4
2.17	2314.	6.52	5.51	-2.52	622.1	38.38	623.5	39.74	24.4
2.25	2392.	6.45	5.70	-2.58	606.5	39.48	607.9	40.90	25.4
2.33	2470.	6.38	5.88	-2.63	591.8	40.59	593.3	42.05	26.4
2.42	2558.	6.29	6.09	-2.69	576.5	41.83	578.0	43.36	27.5
2.50	2637.	6.21	6.28	-2.74	563.7	42.93	565.2	44.51	28.6
2.58	2716.	6.13	6.47	-2.78	551.6	44.04	553.3	45.67	29.6
2.67	2805.	6.04	6.68	-2.83	538.9	45.28	540.6	46.97	30.8
2.75	2885.	5.95	6.87	-2.87	528.3	46.38	530.0	48.13	31.9

179'-6" X 36' X 15' "GYRE" HALTER MARINE HULL NO. 375 FILE 2042

YDROSTATICS - PART I TRIM 0.000 FEET

DRAFT	VOLUME	DISPLACEMENT	LCB	KB	WETTED SURFACE	PRISMATIC COEF	WPLANE COEF	WPLANE I COEF
2.83	4565.	130.4	6.78	1.80	3090.	.494	.507	.381
2.92	4836.	138.2	6.73	1.86	3186.	.495	.508	.381
3.00	5084.	145.2	6.68	1.92	3271.	.495	.509	.381
3.08	5336.	152.5	6.63	1.97	3325.	.496	.517	.390
3.17	5625.	160.7	6.57	2.03	3387.	.498	.525	.402
3.25	5886.	168.2	6.52	2.08	3442.	.499	.532	.412
3.33	6150.	175.7	6.47	2.13	3498.	.500	.539	.423
3.42	6451.	184.3	6.41	2.19	3561.	.502	.548	.436
3.50	6723.	192.1	6.36	2.24	3617.	.504	.555	.448
3.58	6998.	200.0	6.31	2.29	3669.	.506	.562	.458
3.67	7312.	208.9	6.25	2.35	3728.	.508	.569	.470
3.75	7594.	217.0	6.20	2.40	3768.	.510	.573	.474
3.83	7877.	225.1	6.15	2.45	3808.	.513	.577	.477
3.92	8198.	234.2	6.10	2.51	3853.	.515	.582	.481
4.00	8486.	242.5	6.06	2.56	3894.	.517	.586	.485
4.08	8776.	250.7	6.02	2.60	3934.	.519	.591	.489
4.17	9104.	260.1	5.98	2.66	3976.	.521	.595	.492
4.25	9398.	268.5	5.94	2.71	4011.	.523	.598	.494
4.33	9693.	276.9	5.91	2.76	4046.	.525	.601	.496
4.42	10026.	286.5	5.87	2.81	4086.	.528	.604	.498
4.50	10324.	295.0	5.83	2.86	4121.	.530	.607	.499
4.58	10623.	303.5	5.79	2.91	4156.	.532	.610	.501

YDROSTATICS - PART II TRIM 0.000 FEET

DRAFT	WPLANE AREA	LCF	TPI	CIDOFTS	LONG. BM	TRNSV BM	LONG. KM	TRNSV KM	MT1
2.83	2965.	5.86	7.06	-2.91	518.2	47.48	520.0	49.28	32.9
2.92	3056.	5.76	7.28	-2.94	507.5	48.72	509.3	50.58	34.2
3.00	3136.	5.67	7.47	-2.97	498.5	49.82	500.4	51.73	35.3
3.08	3181.	5.60	7.57	-2.98	489.1	48.64	491.1	50.61	36.3
3.17	3231.	5.52	7.69	-2.98	479.4	47.47	481.4	49.49	37.5
3.25	3276.	5.44	7.80	-2.98	471.5	46.55	473.6	48.63	38.6
3.33	3321.	5.35	7.91	-2.97	464.1	45.74	466.2	47.87	39.7
3.42	3372.	5.26	8.03	-2.96	456.4	44.94	458.6	47.13	41.0
3.50	3418.	5.17	8.14	-2.95	450.0	44.31	452.3	46.56	42.1
3.58	3458.	5.04	8.23	-2.91	443.6	43.54	445.9	45.83	43.2
3.67	3504.	4.90	8.34	-2.87	436.8	42.77	439.1	45.12	44.5
3.75	3529.	4.92	8.40	-2.90	428.8	41.48	431.2	43.88	45.3
3.83	3555.	4.93	8.46	-2.93	421.4	40.28	423.8	42.73	46.2
3.92	3584.	4.95	8.53	-2.96	413.7	39.04	416.2	41.55	47.2
4.00	3609.	4.96	8.59	-2.99	407.3	38.02	409.8	40.58	48.1
4.08	3635.	4.96	8.66	-3.01	401.3	37.07	403.9	39.68	49.0
4.17	3660.	4.92	8.71	-3.01	394.3	35.96	396.9	38.62	50.0
4.25	3678.	4.84	8.76	-2.98	388.0	34.95	390.7	37.65	50.8
4.33	3697.	4.76	8.80	-2.94	382.0	34.00	384.8	36.75	51.6
4.42	3718.	4.67	8.85	-2.90	375.8	33.00	378.6	35.81	52.5
4.50	3736.	4.59	8.90	-2.87	370.6	32.17	373.4	35.02	53.3
4.58	3755.	4.51	8.94	-2.83	365.6	31.38	368.5	34.29	54.1

179'-6" X 36' X 15' "GYRE" HALTER MARINE HULL NO. 375 FILE 2042

HYDROSTATICS - PART I TRIM 0.000 FEET

DRAFT	VOLUME	DISPLACEMENT	LCB	KB	WETTED SURFACE	PRISMATIC COEF	WPLANE COEF	WPLANE I COEF
4.67	10961.	313.2	5.75	2.96	4196.	.534	.613	.504
4.75	11263.	321.8	5.72	3.01	4231.	.536	.617	.506
4.83	11567.	330.5	5.68	3.05	4267.	.537	.620	.508
4.92	11910.	340.3	5.64	3.10	4307.	.539	.623	.511
5.00	12216.	349.0	5.60	3.15	4342.	.541	.626	.513
5.08	12524.	357.8	5.57	3.20	4378.	.543	.629	.516
5.17	12872.	367.8	5.53	3.25	4418.	.545	.633	.519
5.25	13183.	376.7	5.49	3.30	4454.	.547	.636	.521
5.33	13496.	385.6	5.45	3.34	4489.	.549	.639	.524
5.42	13848.	395.7	5.41	3.39	4530.	.550	.643	.528
5.50	14165.	404.7	5.37	3.44	4567.	.552	.646	.531
5.58	14484.	413.8	5.32	3.49	4603.	.554	.649	.534
5.67	14844.	424.1	5.27	3.54	4644.	.556	.653	.538
5.75	15166.	433.3	5.23	3.59	4681.	.558	.656	.541
5.83	15489.	442.5	5.18	3.63	4719.	.560	.659	.544
5.92	15855.	453.0	5.12	3.68	4762.	.562	.663	.548
6.00	16182.	462.3	5.07	3.73	4800.	.563	.667	.552
6.08	16511.	471.7	5.02	3.78	4839.	.565	.670	.556
6.17	16882.	482.4	4.96	3.83	4883.	.567	.674	.561
6.25	17215.	491.9	4.90	3.87	4923.	.569	.678	.565
6.33	17549.	501.4	4.84	3.92	4963.	.571	.682	.569
6.42	17927.	512.2	4.77	3.97	5005.	.573	.685	.572

HYDROSTATICS - PART II TRIM 0.000 FEET

DRAFT	WPLANE AREA	LCF	TPI	CIDOFTS	LONG. BM	TRNSV BM	LONG. KM	TRNSV KM	MT1
4.67	3777.	4.42	8.99	-2.79	360.4	30.55	363.3	33.51	55.0
4.75	3796.	4.34	9.04	-2.75	355.9	29.86	358.9	32.86	55.8
4.83	3815.	4.25	9.08	-2.71	351.7	29.20	354.8	32.25	56.6
4.92	3836.	4.16	9.13	-2.66	347.2	28.51	350.3	31.61	57.6
5.00	3855.	4.07	9.18	-2.62	343.4	27.93	346.6	31.08	58.4
5.08	3875.	3.99	9.23	-2.58	339.8	27.37	343.0	30.57	59.3
5.17	3896.	3.89	9.28	-2.53	335.8	26.79	339.1	30.04	60.2
5.25	3916.	3.81	9.32	-2.49	332.5	26.30	335.8	29.59	61.0
5.33	3935.	3.73	9.37	-2.45	329.3	25.83	332.7	29.18	61.9
5.42	3957.	3.63	9.42	-2.40	325.9	25.34	329.2	28.73	62.8
5.50	3977.	3.52	9.47	-2.34	323.2	24.92	326.7	28.37	63.8
5.58	3997.	3.39	9.52	-2.26	320.5	24.51	324.0	28.00	64.6
5.67	4019.	3.23	9.57	-2.17	317.6	24.08	321.1	27.62	65.6
5.75	4039.	3.09	9.62	-2.09	315.2	23.71	318.8	27.30	66.6
5.83	4059.	2.94	9.67	-1.99	313.0	23.36	316.6	27.00	67.5
5.92	4083.	2.77	9.72	-1.89	310.7	23.00	314.4	26.68	68.6
6.00	4104.	2.61	9.77	-1.79	308.8	22.69	312.6	26.41	69.6
6.08	4126.	2.44	9.82	-1.68	307.1	22.39	310.9	26.17	70.6
6.17	4151.	2.25	9.88	-1.56	305.3	22.08	309.2	25.91	71.8
6.25	4174.	2.07	9.94	-1.44	303.9	21.82	307.8	25.69	72.8
6.33	4197.	1.89	9.99	-1.32	302.6	21.57	306.5	25.49	73.9
6.42	4218.	1.73	10.04	-1.22	300.6	21.22	304.6	25.19	75.0

179'-6" X 36' X 15' "GYRE" HALTER MARINE HULL NO. 375 FILE 2042

YDROSTATICS - PART I TRIM 0.000 FEET

DRAFT	VOLUME	DISPLACEMENT	LCB	KB	WETTED SURFACE	PRISMATIC COEF	WPLANE COEF	WPLANE I COEF
6.50	18265.	521.9	4.71	4.02	5042.	.574	.688	.575
6.58	18604.	531.6	4.65	4.06	5080.	.576	.692	.577
6.67	18988.	542.5	4.58	4.12	5123.	.578	.695	.580
6.75	19330.	552.3	4.52	4.16	5160.	.580	.698	.583
6.83	19675.	562.1	4.45	4.21	5198.	.581	.701	.585
6.92	20063.	573.2	4.38	4.26	5242.	.583	.705	.589
7.00	20411.	583.2	4.31	4.31	5280.	.585	.708	.592
7.08	20760.	593.1	4.24	4.35	5320.	.587	.711	.595
7.17	21154.	604.4	4.16	4.40	5364.	.589	.715	.599
7.25	21507.	614.5	4.09	4.45	5404.	.590	.718	.602
7.33	21861.	624.6	4.01	4.50	5444.	.592	.722	.606
7.42	22261.	636.0	3.93	4.55	5490.	.594	.726	.610
7.50	22619.	646.3	3.85	4.59	5531.	.596	.729	.615
7.58	22978.	656.5	3.77	4.64	5572.	.598	.733	.619
7.67	23385.	668.1	3.68	4.69	5618.	.599	.737	.624
7.75	23748.	678.5	3.60	4.74	5660.	.601	.741	.629
7.83	24112.	688.9	3.52	4.78	5697.	.603	.743	.630
7.92	24523.	700.7	3.43	4.84	5738.	.605	.746	.633
8.00	24890.	711.2	3.35	4.88	5775.	.606	.749	.635
8.08	25258.	721.7	3.26	4.93	5812.	.608	.752	.637
8.17	25674.	733.5	3.17	4.98	5853.	.610	.755	.639
8.25	26044.	744.1	3.09	5.03	5891.	.612	.757	.642

YDROSTATICS - PART II TRIM 0.000 FEET

DRAFT	WPLANE AREA	LCF	TPI	CIDOFTS	LONG. BM	TRNSV BM	LONG. KM	TRNSV KM	MT1
6.50	4237.	1.59	10.09	-1.13	299.0	20.91	303.1	24.93	76.0
6.58	4257.	1.44	10.14	-1.03	297.6	20.63	301.6	24.69	77.1
6.67	4279.	1.25	10.19	-.90	295.9	20.31	300.0	24.43	78.2
6.75	4297.	1.07	10.23	-.77	294.3	20.04	298.5	24.20	79.2
6.83	4317.	.88	10.28	-.63	292.9	19.78	297.1	23.99	80.2
6.92	4339.	.66	10.33	-.48	291.5	19.51	295.7	23.77	81.4
7.00	4359.	.46	10.38	-.34	290.3	19.28	294.6	23.58	82.5
7.08	4379.	.26	10.43	-.19	289.2	19.06	293.5	23.41	83.6
7.17	4402.	.02	10.48	-.02	288.1	18.82	292.5	23.22	84.8
7.25	4423.	-.19	10.53	.14	287.1	18.62	291.6	23.07	86.0
7.33	4444.	-.40	10.58	.30	286.3	18.43	290.8	22.93	87.1
7.42	4469.	-.65	10.64	.48	285.4	18.23	289.9	22.78	88.5
7.50	4490.	-.87	10.69	.65	284.6	18.06	289.2	22.66	89.6
7.58	4513.	-1.09	10.74	.82	283.9	17.91	288.6	22.54	90.8
7.67	4538.	-1.34	10.80	1.02	283.2	17.74	287.9	22.43	92.2
7.75	4560.	-1.57	10.86	1.19	282.6	17.60	287.3	22.34	93.4
7.83	4577.	-1.72	10.90	1.31	281.3	17.38	286.1	22.17	94.4
7.92	4595.	-1.89	10.94	1.45	279.9	17.15	284.8	21.98	95.6
8.00	4611.	-2.06	10.98	1.59	278.6	16.95	283.5	21.83	96.6
8.08	4627.	-2.23	11.02	1.73	277.3	16.76	282.3	21.69	97.5
8.17	4645.	-2.43	11.06	1.88	276.0	16.55	280.9	21.53	98.7
8.25	4662.	-2.60	11.10	2.03	274.8	16.38	279.8	21.40	99.7

HYDROSTATICS - PART I TRIM 0.000 FEET

DRAFT	VOLUME	DISPLACEMENT	LCB	KB	WETTED SURFACE	PRISMATIC COEF	WPLANE COEF	WPLANE I COEF
8.33	26416.	754.7	3.01	5.07	5928.	.613	.760	.644
8.42	26836.	766.7	2.92	5.12	5970.	.615	.763	.647
8.50	27210.	777.4	2.84	5.17	6008.	.617	.766	.650
8.50	27210.	777.4	2.84	5.17	6008.	.617	.766	.650
8.67	28013.	800.4	2.65	5.27	6094.	.620	.773	.657
8.75	28393.	811.2	2.56	5.31	6137.	.622	.776	.660
8.83	28775.	822.2	2.47	5.36	6180.	.624	.780	.664
8.92	29207.	834.5	2.37	5.41	6228.	.625	.784	.667
9.00	29593.	845.5	2.28	5.46	6270.	.627	.787	.670
9.08	29981.	856.6	2.18	5.50	6313.	.629	.791	.673
9.17	30419.	869.1	2.08	5.56	6362.	.631	.795	.676
9.25	30810.	880.3	1.98	5.60	6407.	.632	.798	.679
9.33	31203.	891.5	1.88	5.65	6452.	.634	.802	.683
9.42	31648.	904.2	1.77	5.70	6504.	.636	.807	.687
9.50	32045.	915.6	1.67	5.75	6550.	.637	.811	.691
9.58	32443.	927.0	1.57	5.80	6597.	.639	.815	.695
9.67	32895.	939.8	1.45	5.85	6650.	.641	.819	.701
9.75	33298.	951.4	1.35	5.90	6698.	.643	.824	.706
9.83	33702.	962.9	1.24	5.94	6745.	.644	.828	.712
9.92	34161.	976.0	1.12	6.00	6800.	.646	.833	.719
10.00	34571.	987.8	1.00	6.04	6849.	.648	.837	.726
10.08	34985.	999.6	.89	6.09	6892.	.650	.840	.729

HYDROSTATICS - PART II TRIM 0.000 FEET

DRAFT	WPLANE AREA	LCF	TPI	CIDOFTS	LONG. BM	TRNSV BM	LONG. KM	TRNSV KM	MT1
8.33	4678.	-2.78	11.14	2.17	273.7	16.21	278.7	21.28	100.7
8.42	4697.	-2.97	11.18	2.33	272.5	16.03	277.6	21.15	101.8
8.50	4714.	-3.15	11.22	2.48	271.4	15.88	276.6	21.04	102.8
8.50	4714.	-3.15	11.22	2.48	271.4	15.88	276.6	21.04	102.8
8.67	4757.	-3.62	11.33	2.88	270.5	15.58	275.7	20.85	105.5
8.75	4778.	-3.87	11.38	3.09	270.3	15.46	275.6	20.77	106.8
8.83	4800.	-4.12	11.43	3.31	270.2	15.34	275.6	20.70	108.3
8.92	4825.	-4.40	11.49	3.55	270.1	15.19	275.5	20.61	109.9
9.00	4845.	-4.64	11.54	3.75	270.0	15.05	275.4	20.51	111.2
9.08	4867.	-4.89	11.59	3.97	270.0	14.92	275.5	20.42	112.7
9.17	4892.	-5.18	11.65	4.23	270.1	14.77	275.7	20.33	114.4
9.25	4915.	-5.45	11.70	4.47	270.3	14.65	275.9	20.26	116.0
9.33	4938.	-5.72	11.76	4.72	270.7	14.54	276.3	20.19	117.6
9.42	4966.	-6.04	11.82	5.01	271.1	14.43	276.8	20.13	119.5
9.50	4990.	-6.33	11.88	5.28	271.6	14.34	277.3	20.08	121.2
9.58	5016.	-6.63	11.94	5.56	272.0	14.25	277.8	20.05	122.9
9.67	5044.	-6.96	12.01	5.87	272.6	14.16	278.4	20.01	124.9
9.75	5070.	-7.26	12.07	6.15	273.1	14.10	279.0	19.99	126.6
9.83	5096.	-7.56	12.13	6.44	273.6	14.04	279.6	19.98	128.4
9.92	5127.	-7.91	12.21	6.78	274.3	13.99	280.3	19.98	130.5
10.00	5155.	-8.22	12.27	7.08	274.9	13.95	280.9	20.00	132.3
10.08	5174.	-8.42	12.32	7.28	274.5	13.86	280.6	19.95	133.7

179'-6" X 36' X 15' "GYRE" HALTER MARINE HULL NO. 375 FILE 2042

HYDROSTATICS - PART I TRIM 0.000 FEET

DRAFT	VOLUME	DISPLACEMENT	LCB	KB	WETTED SURFACE	PRISMATIC COEF	WPLANE COEF	WPLANE I COEF
10.17	35451.	1012.9	.77	6.14	6940.	.652	.844	.73
10.25	35867.	1024.8	.66	6.19	6983.	.653	.847	.73
10.33	36285.	1036.7	.55	6.24	7021.	.655	.849	.74
10.42	36756.	1050.2	.43	6.29	7064.	.657	.852	.74
10.50	37176.	1062.2	.32	6.34	7103.	.659	.854	.75
10.58	37597.	1074.2	.21	6.38	7133.	.661	.855	.75
10.67	38071.	1087.8	.09	6.44	7168.	.662	.856	.75
10.75	38493.	1099.8	-.01	6.48	7199.	.664	.857	.75
10.83	38915.	1111.9	-.11	6.53	7227.	.666	.858	.75
10.92	39391.	1125.4	-.22	6.58	7258.	.667	.858	.75
11.00	39813.	1137.5	-.32	6.63	7286.	.669	.859	.75
11.08	40236.	1149.6	-.41	6.68	7315.	.671	.859	.75
11.17	40712.	1163.2	-.51	6.73	7346.	.672	.859	.75
11.25	41136.	1175.3	-.60	6.77	7374.	.674	.860	.75
11.33	41559.	1187.4	-.69	6.82	7402.	.675	.860	.75
11.42	42036.	1201.0	-.78	6.87	7434.	.677	.861	.75
11.50	42460.	1213.2	-.86	6.92	7462.	.678	.861	.75
11.58	42885.	1225.3	-.94	6.96	7490.	.680	.862	.75
11.67	43362.	1238.9	-1.03	7.01	7522.	.681	.862	.76
11.75	43787.	1251.1	-1.11	7.06	7550.	.683	.863	.76
11.83	44212.	1263.2	-1.18	7.11	7578.	.684	.863	.76
11.92	44691.	1276.9	-1.27	7.16	7610.	.686	.864	.76

HYDROSTATICS - PART II TRIM 0.000 FEET

DRAFT	WPLANE AREA	LCF	TPI	CIDOFTS	LONG. BM	TRNSV BM	LONG. KM	TRNSV KM	MT1
10.17	5195.	-8.65	12.37	7.51	274.1	13.77	280.2	19.91	135.
10.25	5214.	-8.84	12.41	7.71	273.7	13.69	279.9	19.88	136.
10.33	5228.	-8.97	12.45	7.84	272.6	13.59	278.9	19.83	137.
10.42	5244.	-9.12	12.49	7.99	271.4	13.49	277.7	19.78	138.
10.50	5258.	-9.24	12.52	8.12	270.4	13.41	276.7	19.75	140.
10.58	5264.	-9.26	12.53	8.14	268.2	13.28	274.6	19.67	140.
10.67	5270.	-9.27	12.55	8.17	265.8	13.14	272.3	19.58	140.
10.75	5276.	-9.29	12.56	8.19	263.8	13.03	270.2	19.51	141.
10.83	5279.	-9.26	12.57	8.16	261.3	12.89	267.8	19.42	141.
10.92	5282.	-9.22	12.58	8.14	258.5	12.75	265.1	19.33	141.
11.00	5285.	-9.19	12.58	8.12	256.2	12.62	262.8	19.25	142.
11.08	5288.	-9.16	12.59	8.10	253.8	12.50	260.5	19.17	142.
11.17	5291.	-9.13	12.60	8.07	251.3	12.36	258.0	19.09	142.
11.25	5294.	-9.10	12.60	8.05	249.1	12.24	255.8	19.01	142.
11.33	5297.	-9.07	12.61	8.03	246.9	12.12	253.7	18.94	142.
11.42	5300.	-9.04	12.62	8.00	244.5	12.00	251.3	18.87	143.
11.50	5303.	-9.01	12.63	7.98	242.4	11.88	249.3	18.80	143.
11.58	5305.	-8.98	12.63	7.96	240.3	11.77	247.3	18.74	143.
11.67	5309.	-8.95	12.64	7.94	238.1	11.65	245.1	18.67	143.
11.75	5311.	-8.92	12.65	7.91	236.1	11.55	243.1	18.61	143.
11.83	5314.	-8.89	12.65	7.89	234.2	11.45	241.3	18.55	144.
11.92	5317.	-8.85	12.66	7.87	232.0	11.33	239.2	18.49	144.

179'-6" X 36' X 15' "GYRE" HALTER MARINE HULL NO. 375 FILE 2042

HYDROSTATICS - PART I TRIM 0.000 FEET

DRAFT	VOLUME	DISPLACEMENT	LCB	KB	WETTED SURFACE	PRISMATIC COEF	WPLANE COEF	WPLANE I COEF
12.00	45116.	1289.0	-1.34	7.20	7638.	.687	.864	.762
12.08	45542.	1301.2	-1.41	7.25	7666.	.688	.865	.763
12.17	46021.	1314.9	-1.48	7.30	7697.	.690	.865	.763
12.25	46447.	1327.1	-1.55	7.34	7726.	.691	.866	.764
12.33	46874.	1339.3	-1.62	7.39	7754.	.692	.866	.764
12.42	47354.	1353.0	-1.69	7.44	7785.	.694	.867	.765
12.50	47781.	1365.2	-1.75	7.48	7814.	.695	.867	.766
12.58	48208.	1377.4	-1.81	7.53	7842.	.696	.868	.766
12.67	48689.	1391.1	-1.88	7.58	7874.	.698	.868	.767
12.75	49116.	1403.3	-1.94	7.62	7902.	.699	.869	.767
12.83	49544.	1415.6	-1.99	7.67	7930.	.700	.869	.768
12.92	50026.	1429.3	-2.06	7.72	7962.	.701	.870	.768
13.00	50454.	1441.6	-2.11	7.76	7990.	.703	.870	.769
13.08	50883.	1453.8	-2.16	7.81	8018.	.704	.870	.769
13.17	51365.	1467.6	-2.22	7.86	8050.	.705	.871	.770
13.25	51794.	1479.8	-2.27	7.90	8078.	.706	.871	.771
13.33	52224.	1492.1	-2.32	7.95	8106.	.707	.872	.771
13.42	52707.	1505.9	-2.38	8.00	8138.	.708	.872	.772
13.50	53137.	1518.2	-2.43	8.04	8167.	.709	.873	.772
13.58	53567.	1530.5	-2.47	8.08	8195.	.711	.873	.773
13.67	54051.	1544.3	-2.52	8.13	8227.	.712	.874	.773
13.75	54481.	1556.6	-2.57	8.18	8255.	.713	.874	.774

HYDROSTATICS - PART II TRIM 0.000 FEET

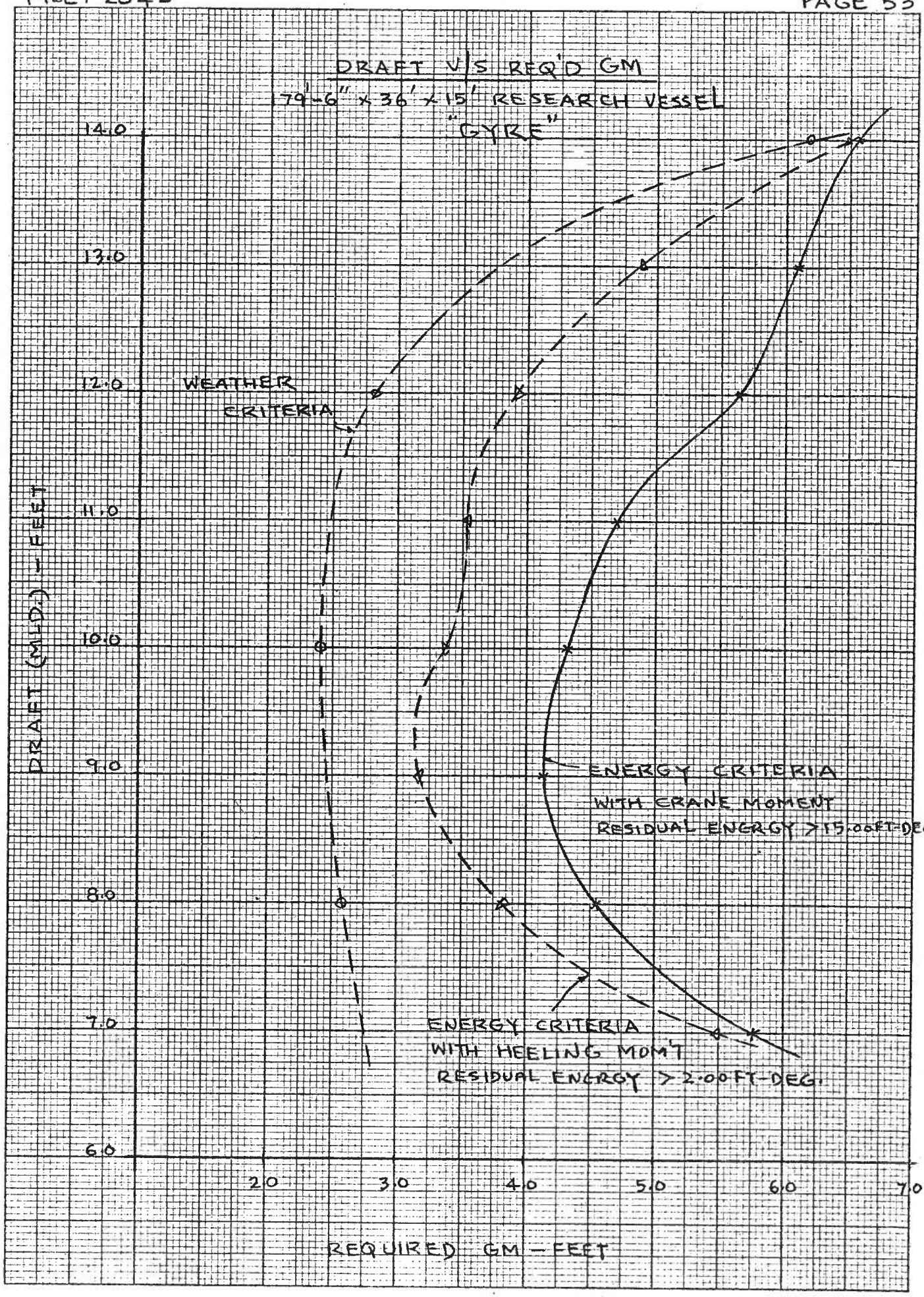
DRAFT	WPLANE AREA	LCF	TPI	CIDOFTS	LONG. BM	TRNSV BM	LONG. KM	TRNSV KM	MT1
12.00	5320.	-8.82	12.67	7.84	230.2	11.23	237.4	18.43	144.6
12.08	5323.	-8.79	12.67	7.82	228.3	11.13	235.6	18.38	144.8
12.17	5326.	-8.76	12.68	7.80	226.3	11.03	233.6	18.33	145.0
12.25	5329.	-8.73	12.69	7.77	224.6	10.93	231.9	18.28	145.2
12.33	5332.	-8.70	12.70	7.75	222.8	10.84	230.2	18.23	145.4
12.42	5335.	-8.67	12.70	7.73	220.9	10.74	228.4	18.18	145.7
12.50	5338.	-8.64	12.71	7.70	219.2	10.65	226.7	18.14	145.9
12.58	5341.	-8.61	12.72	7.68	217.6	10.56	225.1	18.09	146.1
12.67	5344.	-8.57	12.72	7.66	215.8	10.47	223.4	18.05	146.3
12.75	5347.	-8.54	12.73	7.63	214.2	10.38	221.8	18.01	146.5
12.83	5350.	-8.51	12.74	7.61	212.7	10.30	220.3	17.97	146.7
12.92	5353.	-8.48	12.74	7.58	211.0	10.21	218.7	17.93	146.9
13.00	5356.	-8.45	12.75	7.56	209.5	10.13	217.2	17.89	147.1
13.08	5358.	-8.42	12.76	7.54	208.0	10.05	215.8	17.86	147.4
13.17	5362.	-8.39	12.77	7.51	206.4	9.97	214.2	17.82	147.6
13.25	5364.	-8.36	12.77	7.49	204.9	9.89	212.8	17.79	147.8
13.33	5367.	-8.33	12.78	7.47	203.5	9.82	211.5	17.76	148.0
13.42	5371.	-8.29	12.79	7.44	202.0	9.73	210.0	17.73	148.2
13.50	5373.	-8.26	12.79	7.42	200.6	9.66	208.7	17.70	148.4
13.58	5376.	-8.23	12.80	7.39	199.3	9.59	207.4	17.68	148.6
13.67	5379.	-8.20	12.81	7.37	197.8	9.51	205.9	17.65	148.9
13.75	5382.	-8.17	12.81	7.35	196.5	9.45	204.7	17.62	149.1

HYDROSTATICS - PART I TRIM 0.000 FEET

DRAFT	VOLUME	DISPLACEMENT	LCB	KB	WETTED SURFACE	PRISMATIC COEF	WPLANE COEF	WPLANE I COEF
13.83	54912.	1568.9	-2.61	8.22	8283.	.714	.875	.775
13.92	55397.	1582.8	-2.66	8.27	8315.	.715	.875	.775
14.00	55828.	1595.1	-2.70	8.32	8344.	.716	.876	.776
14.08	56259.	1607.4	-2.74	8.36	8372.	.717	.876	.776
14.17	56745.	1621.3	-2.79	8.41	8404.	.718	.877	.777
14.25	57177.	1633.6	-2.83	8.45	8432.	.719	.877	.778
14.33	57609.	1646.0	-2.87	8.50	8461.	.720	.878	.778
14.42	58096.	1659.9	-2.91	8.55	8493.	.721	.878	.779
14.50	58528.	1672.2	-2.94	8.59	8521.	.722	.879	.779
14.58	58961.	1684.6	-2.98	8.63	8550.	.723	.879	.780
14.67	59448.	1698.5	-3.02	8.68	8582.	.724	.880	.781
14.75	59882.	1710.9	-3.05	8.73	8610.	.725	.880	.781
14.83	60315.	1723.3	-3.09	8.77	8638.	.726	.881	.782
14.92	60803.	1737.2	-3.13	8.82	8670.	.727	.881	.783
14.99	61183.	1748.1	-3.15	8.86	8697.	.728	.881	.783

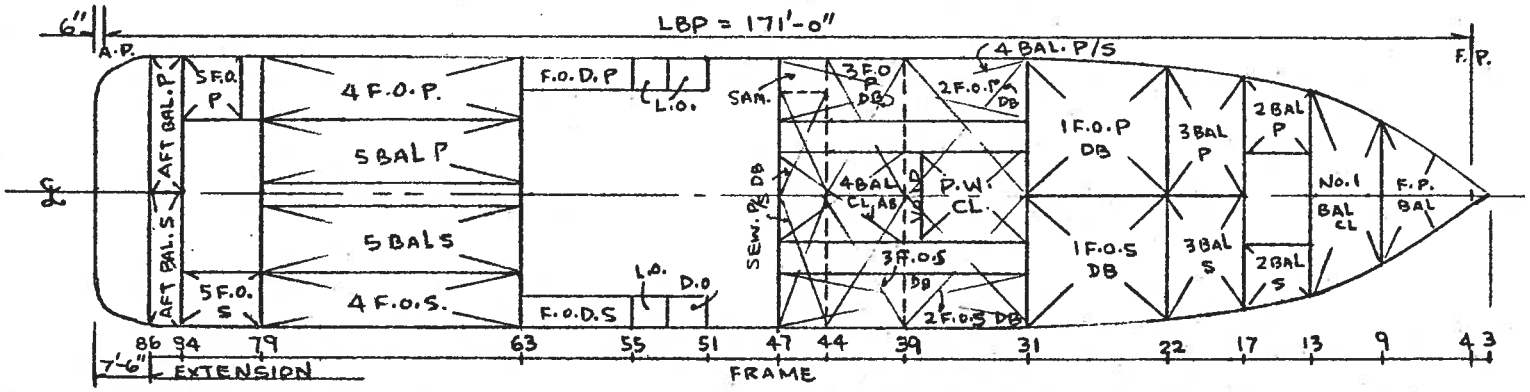
HYDROSTATICS - PART II TRIM 0.000 FEET

DRAFT	WPLANE AREA	LCF	TPI	CIDOFTS	LONG. BM	TRNSV BM	LONG. KM	TRNSV KM	MT1
13.83	5385.	-8.14	12.82	7.32	195.2	9.38	203.5	17.60	149.3
13.92	5388.	-8.10	12.83	7.30	193.8	9.30	202.1	17.58	149.5
14.00	5391.	-8.07	12.84	7.27	192.6	9.24	200.9	17.55	149.7
14.08	5394.	-8.04	12.84	7.25	191.4	9.17	199.8	17.53	149.9
14.17	5397.	-8.01	12.85	7.22	190.0	9.10	198.5	17.51	150.2
14.25	5400.	-7.98	12.86	7.20	188.9	9.04	197.3	17.49	150.4
14.33	5403.	-7.95	12.86	7.17	187.7	8.98	196.2	17.48	150.6
14.42	5406.	-7.91	12.87	7.15	186.4	8.91	195.0	17.46	150.8
14.50	5409.	-7.88	12.88	7.12	185.3	8.85	193.9	17.44	151.0
14.58	5412.	-7.85	12.89	7.10	184.2	8.79	192.8	17.43	151.2
14.67	5415.	-7.82	12.89	7.07	183.0	8.73	191.6	17.41	151.4
14.75	5418.	-7.79	12.90	7.05	181.9	8.67	190.6	17.40	151.7
14.83	5421.	-7.76	12.91	7.03	180.8	8.62	189.6	17.39	151.9
14.92	5424.	-7.72	12.91	7.00	179.6	8.56	188.5	17.37	152.1
14.99	5426.	-7.70	12.92	6.98	178.7	8.51	187.6	17.36	152.3



STABILITY EVALUATION SHEET

To be used with the Stability Loading Diagram for evaluating vessel stability.



BELOW DECK TONNAGE			
TANK	TYPE	FRMS.	WT.-LT.
		TOTAL	

*

ABOVE DECK EQUIPMENT			
CARGO	WT.-LT.	VCG-FT.	MOMENT
TOTALS			

Deck Equip. | Deck Equip. Moment

COMBINED DECK EQUIP. VCG EQUALS

$$\frac{\text{DECK EQUIP. MOMENT}}{\text{DECK EQUIP.}} = \underline{\qquad\qquad}$$

ACTUAL DECK EQUIP. VCG : _____ FT. ABV BL

FROM STABILITY LOADING DIAGRAM

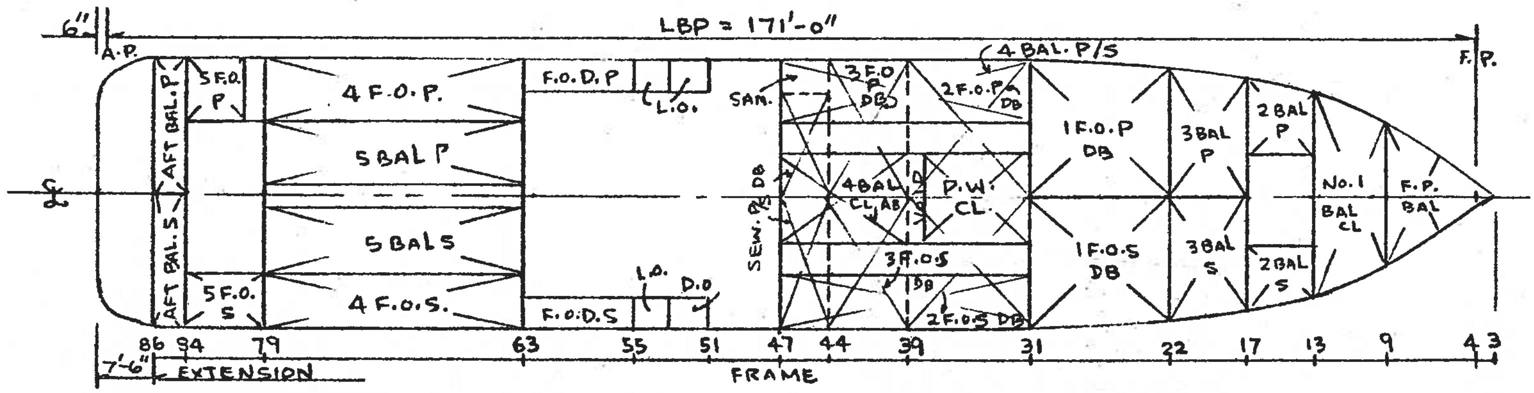
ALLOWABLE DECK EQUIP. VCG

= _____ FT. ABV BL

*Enter the Stability Loading Diagram with this amount of under deck cargo and the total deck equipment calculated above to find the allowable deck equipment VCG. Compare this with the actual deck equip. VCG. Actual VCG should be less than the allowed VCG.

STABILITY EVALUATION SHEET

To be used with the Stability Loading Diagram for evaluating vessel stability.



BELOW DECK TONNAGE

TANK	TYPE	FRMS.	WT.-LT.
		TOTAL	*

ABOVE DECK EQUIPMENT

CARGO	WT.-LT.	VCG-FT.	MOMENT
TOTALS	Deck Equip.		Deck Equip. Moment

COMBINED DECK EQUIP. VCG EQUALS

$$\frac{\text{DECK EQUIP. MOMENT}}{\text{DECK EQUIP.}} = \_\_\_\_\_\_\_\_\_\_$$

ACTUAL DECK EQUIP. VCG ________ FT. ABV BL

FROM STABILITY LOADING DIAGRAM

ALLOWABLE DECK EQUIP. VCG

= ________ FT. ABV BL

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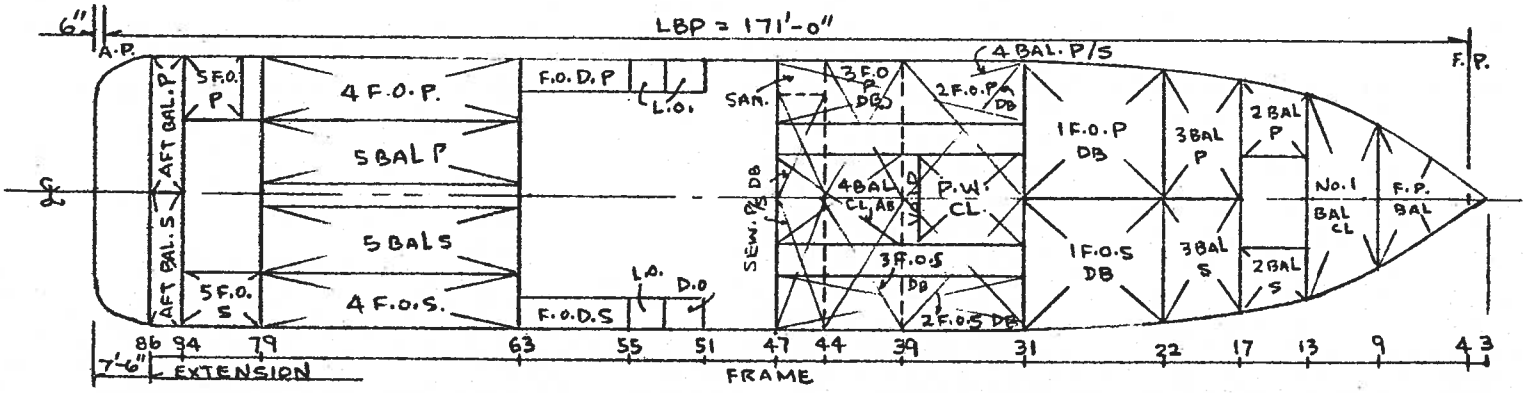

BELOW DECK TONNAGE			
TANK	TYPE	FRMS.	WT.-LT.
		TOTAL	*

ABOVE DECK EQUIPMENT			
CARGO	WT.-LT.	VCG-FT.	MOMENT
TOTALS			
	Deck Equip.		Deck Equip. Moment

COMBINED DECK EQUIP. VCG EQUALS

$$\frac{\text{DECK EQUIP. MOMENT}}{\text{DECK EQUIP.}} = \underline{\qquad\qquad}$$

ACTUAL DECK EQUIP. VCG _____ FT. ABV BL

FROM STABILITY LOADING DIAGRAM

ALLOWABLE DECK EQUIP. VCG

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schuller & allan, inc. date _____ by _____ file _____

DRAFT AND TRIM SHEET

VARIABLES					
Fr. Nos.	Item	Stowage	Tons	LCG Ft.	L. Mom. Ft.-Tons

TANKS							
No.	Cond.	Contents (tons)			LCG Ft.	L. Mom. Ft.-Tons
		FW	SW	FO		

SUMMARY			
Item	Tons	LCG Ft.	L. Mom. Ft.-Tons
Light Ship			
Stores			
Crew Effects			
Tanks			
Displacement			

TRIM		DRAFTS	
LCB		LCF	
LCG			
GB		Fwd.	
MT 1'		Mean	
TRIM		Aft	

NOTE: 1. LCB & LCF taken
2. Tons = Lbs.

schuller & allan, inc. date _____ by _____ file _____

DRAFT AND TRIM SHEET

VARIABLES

Fr. Nos.	Item	Stowage	Tons	LCG Ft.	L. Mom. Ft.-Tons

TANKS

No.	Cond.	Contents (tons)			LCG Ft.	L. Mom. Ft.-Tons
		FW	SW	FO		

SUMMARY

Item	Tons	LCG Ft.	L. Mom. Ft.-Tons
Light Ship			
Stores			
Crew Effects			
Tanks			
Displacement			

TRIM		DRAFTS	
LCB		LCF	
LCG			
GB		Fwd.	
MT 1'		Mean	
TRIM		Aft	

NOTE: 1. LCB & LCF taken
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schuller & allan, inc. date _____ by _____ file _____

DRAFT AND TRIM SHEET

VARIABLES

Fr. Nos.	Item	Stowage	Tons	LCG Ft.	L. Mom. Ft.-Tons

TANKS

No.	Cond.	Contents (tons)			LCG Ft.	L. Mom. Ft.-Tons
		FW	SW	FO		

SUMMARY

Item	Tons	LCG Ft.	L. Mom. Ft.-Tons
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Stores			
Crew Effects			
Tanks			
Displacement			

TRIM		DRAFTS	
LCB		LCF	
LCG			
GB		Fwd.	
MT 1'		Mean	
TRIM		Aft	

NOTE: 1. LCB & LCF taken
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