

ALTERATIONS

N.Y.S.

ALT	SHTS RANGE	ITEM	DESCRIPTION	APPROVAL		
				BUILDER BY	M. A. BY	OWNER BY
A	ALL	1.	ALL SHEETS REVISED IN ACCORDANCE WITH INFORMAL U.S.C.G. COMMENTS.	8/30/60 LJS		
	0,10	2.	LIGHT SHIP WEIGHT AND CENTERS REVISED IN ACCORDANCE WITH INCLINING DATA.			
	6	3.	READ ON CURVE REVISED IN ACCORDANCE WITH MARAD COMMENTS			
B	A	1.	OPERATING INSTRUCTIONS REVISED.	9-2-60 LJS		
	6	2.	VCG & LCG (TOTALS) DELETED NOTE ADDED ON FREE SURFACE			
	789	3.	CURVE DRAWN WITH HEAVIER LINE.			
	8	4.	STOWAGE UNITS INDICATED NOTE ON FREE SURFACE. ADDED			
	9,10	5.	DECK CARGO INDICATED ON PROFILE LOADING IN DOUBLE BAYONS			
	10	6.	CHANGED TO 1200 TONS. DECK CARGO NOTED.			
	C	1.	REVISED IN ACCORDANCE WITH U.S.C.G. COMMENTS LTR. OF 8 SEPT 60			
D	1,7,8,9,10	1.	LOADING CONDITIONS CORRECTED TO AGREE WITH REVISED LIGHT SHIP WEIGHT.	11/9/60 LJS		
	4,7,9	2.	CAPACITIES OF #3 HOLD & DB TANKS & VCG'S OF CARGO OIL TKS. & EO. SETT. TKS. CORRECTED IN ACCORDANCE WITH CAPACITY PLAN.			
	4	3.	FREE SURFACE CORR @ 98% REVISED FOR DO TANKS #1,2,4 & B3, AND CARGO OIL TANKS.			
	3	4.	TRANSVERSE KM CORRECTED IN ACCORDANCE WITH HYDROSTATIC CURVES.			
	7,8,9,10	5.	ALL VERT. C.G.'S REFERRED TO MLD. BASE LINE.			
	9,10	6.	DELETED S.W. NO. 5 D.B. P/S.			
10	7.	INDICATED S.W. NO. 6 D.B. P/S (SEE NEXT SHEET FOR ALT "E")				

5 USCG-WASH
3-STIANSEN } STIANSEN } HUGHES
4 USCG-WASH
6 MARAD-WASH. }
2-ARL 1 }
2-AEL }
3 J.J.H.-NY }
1 " " BFB }
1 " " CZUDAK }
1-VD MARAD }
11/14/60 }
NOV 17 1960 }
AUG 31 1960 }
2 C/B-HUGHES }
11/1/60 }

6 MARAD-WASH ← MAIL
1-VD MARAD
11/14/60
NOV 17 1960
(FOR LATER PRINTS SEE NEXT SHEET)

1-VA USCG-WASH
6 MARAD-WASH. }
1-MARAD-CRIG
8-30-60
AUG 31 1960
2 C/B-HUGHES
11/1/60

ALT B
6-USCG-STIANSEN
7-2-60
3-10 (CONTINUED)
7-6-60
ALT C
6-B/W - STIANSEN
9-13-60
6-AEL (to Hughes)
9/15/60
SEP 28 1960
2-ARL
3-J.J.H. NY
1-J.J.H. RES
6-MARAD-WASH MAIL
-CZUDAK
1-VD MARAD
1-E. HUGHES

M. A. PLAN NO. 56-529-1-7

007.4
SUB

APPROVED
Subject to comments in
Comments (MTM) letter of
SEP 13 1962

TRIM & STABILITY BOOKLET

MARITIME ADMINISTRATION
DESIGN C3-S-38a
SINGLE SCREW CARGO VESSEL

FOR
AMERICAN EXPORT LINES, INC.

BUILDER
NEW YORK SHIPBUILDING CORP.
CAMDEN, NEW JERSEY
DEPARTMENT

DRAWN BY F. T.
CHECKED BY LJS
SCALE
DATE 24-JUNE-60

APPROVED
R. E. Hunt
CHIEF DRAFTSMAN
DEPT. HEAD

BUILDERS PLAN NO. 530-800-28

ALT. F

APPROVALS

BY	DATE	DESCRIPTION
M.A.	19 SEPT. 60	LTR. FILE 811
A.B.S.		NOT RECD
U.S.C.G.	8 SEPT 60	LTR MHT-4 (ALT. E' MMT-A 6 JAN. 1961)
U.S.P.H.S.		NOT RECD
AMER. EXP. LINES	9 SEPT 60	LTR FILE 381/D820

57	531	NEW YORK SHIPBUILDING CORP.
56	530	NEW YORK SHIPBUILDING CORP.

M. A. HULL NO.	YARD HULL NO.	BUILDING YARD
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ALTERATIONS

ALT	SHT.	ITEM	DESCRIPTION	APPROVAL		
				BUILDER BY	M. A. BY	OWNER BY
E	COVER & SHT. I	1.	MADE BOOKLET APPLICABLE TO NYE CONT. NO. 531 "SS. EXPORT ADVENTURER"			
	7-10 & BLANK FORM	2.	REVISED LIGHT SHIP WEIGHT & VCG SO AS TO BE PERTINENT TO BOTH VESSELS, ALSO REVISED CARGO LOADING IN #4 HOLD & TRIM DATA.			
	OP. INST. SHT.	3.	REVISED PARAGRAPH NOS IN OPERATING INSTRUCTIONS.	12/21/60 MARAD	MARAD EYE JAN 25 1961	J.J.H. LETWILER 387/H/1961 JAN 3 1961
F	SHT. II	1.	ADDED "SHORT FORM", SHT. II & BLANK FORM			
	OP. INST. SHT	2.	REVISED "OPERATING INSTRUCTIONS", PAR. #2 & ADDED PARA. #14.			
	TITLE & COVER	3.	REMOVED "PRELIMINARY" DESIGNATION FROM TITLE & COVER SHEETS.			
	SHT I	4.	ADDED REF. LINE FOR VCG AS PER MARAD COMMENTS.			
	SHTS. 7,8,9,10	5.	"EXPORT ADVENTURER" ADDED TO SHTS. 7 THRU 10 AS PER MARAD COMMENTS.	2/17/61 MARAD		

5 USCG-WASH DEL TO
3 STANSEN

6 MARAD-WASH
2 AEL
3 J.H. NY
1 J.H. NY
1 CZUDAK

5 USCG-WASH
6 MARAD-WASH
3 STANSEN
2 AEL
3 J.H. NY
1 CZUDAK

2/16/61

8 STANSEN
12/28/60

4 - TO STANSEN
FOR AEL
1/25/61
JAN 26 1961

TRIM AND STABILITY BOOKLET

• FOR

SINGLE SCREW CARGO VESSELS

MARITIME ADMINISTRATION

DESIGN C3-S-38a

"EXPORT AMBASSADOR"
"EXPORT ADVENTURER"

PREPARED BY
NEW YORK SHIPBUILDING CORPORATION
CAMDEN, NEW JERSEY U.S.A.
JUNE 1960

APPROVED BY

MARITIME ADMINISTRATION - DATE

UNITED STATES COAST GUARD DATE

OPERATING INSTRUCTIONS
C3-S-38a
SINGLE SCREW CARGO VESSEL

1. THESE INSTRUCTIONS HAVE BEEN PREPARED AS AN AID TO OPERATING PERSONNEL IN CONNECTION WITH THE USE OF THIS TRIM AND STABILITY BOOKLET.
2. SHEET NOS. 1, 2 AND 3 OF THE TRIM AND STABILITY BOOKLET PROVIDE A TABLE OF PRINCIPAL CHARACTERISTICS, A TRIM TABLE AND HYDROSTATIC PROPERTIES FOR THESE SHIPS. SHEET NO. 4 LISTS THE CAPACITIES OF CARGO SPACES AND TANKS. IN ADDITION THIS SHEET CONTAINS THE FREE SURFACE CORRECTIONS FOR TANKS 98% FULL OR SLACK. SHEET NO. 5 INDICATES THE APPROXIMATE GAIN IN GM OBTAINED BY BALLASTING INDIVIDUAL TANKS AT VARIOUS DISPLACEMENTS. SHEET NO. 6 INDICATES THE GM REQUIRED FOR U.S. MARITIME ADMINISTRATION ONE COMPARTMENT STANDARD OF DAMAGE. SHEETS NOS. 7 THRU 10 CONTAIN EXAMPLES OF THE DIRECT METHOD FOR CALCULATING TRIM AND STABILITY. SHEET 11 IS AN EXAMPLE OF THE SHORT FORM METHOD OF FIGURING REQUIRED DOUBLE BOTTOM TANKAGE. INCLUDED AT THE END OF THE BOOKLET ARE SEVERAL SETS OF BLANK FORMS FOR CALCULATING TRIM AND STABILITY BY THE DIRECT METHOD AND FOR FIGURING REQUIRED DOUBLE BOTTOM TANKAGE BY THE SHORT FORM.
3. IN CALCULATING A VESSEL'S STABILITY BY THE DIRECT METHOD, THE TONNAGE, CENTERS OF GRAVITY WHERE REQUIRED AND FREE SURFACE VALUES WHERE APPLICABLE OF THE DRY CARGO, SPECIAL OR DANGEROUS CARGO, REFRIGERATED CARGO, DECK CARGO, FUEL OIL OR BALLAST CARGO OIL, FRESH WATER AND MISCELLANEOUS TANKS ARE ENTERED INTO THE LOADING TABLE AS SHOWN ON SHEETS NOS. 7 AND 9. THE DATA FOR EACH TANK CONTAINING LIQUID, UNLESS FULLY HEADED, MUST INCLUDE THE APPROPRIATE FREE SURFACE CORRECTION, 98% FULL OR SLACK, AS SHOWN FOR THE TANK ON SHEET NO. 4. THE LOADING TABLE, SHEET NOS. 7 AND 9 ARE THEN SUMMED UP WITH RESPECT TO TONNAGE, VERTICAL AND LONGITUDINAL MOMENTS AND FREE SURFACE. (MOMENT IS THE PRODUCT OF WEIGHT OF EACH ITEM IN TONS BY ITS CENTER OF GRAVITY DISTANCE. THE SUMMARY IS THEN TRANSFERRED TO THE CONDITION SHEETS, SHEET NOS. 8 AND 10, AND ADDED TO THE WEIGHTS AND MOMENTS OF THE LIGHT SHIP, CREW PASSENGERS AND EFFECTS AND STORES. IF IN OPERATION THE WEIGHT OF CREW PASSENGERS AND EFFECTS OR STORES ARE DIFFERENT THAN THOSE LISTED, THE ACTUAL WEIGHT SHOULD BE ENTERED USING THE CENTERS OF GRAVITY AS SHOWN. THE CENTER OF GRAVITY FOR THE STORES IS BASED ON THE ASSUMPTION THAT ALL STORES WILL BE CARRIED IN THE MIDSHIP AREA ON 2ND DECK, FRAMES 86 TO 114. THE TOTAL WEIGHT OF ALL THE ITEMS IN THE CONDITION SHEET, SHEET NOS. 8 AND 10, IS THE DISPLACEMENT OF THE VESSEL. THE KC AND LCG ARE DETERMINED BY DIVIDING THE RESPECTIVE MOMENT SUMMATIONS BY THE DISPLACEMENT OF THE VESSEL. THE MEAN S.W. DRAFT CORRESPONDING TO THE TOTAL DISPLACEMENT IS READ FROM THE HYDROSTATIC TABLE, SHEET NO. 3, AS IS THE KM, CORRESPONDING TO THE MEAN S.W. DRAFT. THE KG IS SUBTRACTED FROM THE KC TO GIVE THE GM OF THE VESSEL UNCORRECTED FOR FREE SURFACE. THE CORRECTION FOR FREE SURFACE IS OBTAINED BY DIVIDING THE TOTAL OF THE F.S. CORRECTION BY THE TOTAL DISPLACEMENT AND IS SUBTRACTED FROM THE UNCORRECTED GM TO GIVE THE CORRECTED AVAILABLE GM. THIS CORRECTED GM SHOULD BE COMPARED WITH THE REQUIRED GM FOR U.S. MARITIME ADMINISTRATION ONE COMPARTMENT STANDARD OF DAMAGE AS GIVEN ON SHEET 6 FOR THE MEAN S.W. DRAFT OF THE VESSEL. A GM AVAILABLE GREATER THAN THE GM REQUIRED INDICATES SUFFICIENT STABILITY TO MEET ONE COMPARTMENT DAMAGE. A GM AVAILABLE LESS THAN THE GM REQUIRED INDICATES INSUFFICIENT STABILITY TO MEET ONE COMPARTMENT DAMAGE. SUCH A CONDITION SHOULD BE ANTICIPATED AND AVOIDED BY PREVIOUSLY BALLASTING SUFFICIENT TANKS SO AS TO PROVIDE A POSITIVE MARGIN OF STABILITY IN THE EVENT OF DAMAGE, SIMILARLY TO WHAT HAS BEEN DONE IN THE EXAMPLE ON SHEET 9 AND 10.
4. WHEN TANKS ARE REQUIRED TO BE BALLASTED FOR STABILITY PURPOSES, THEY SHOULD BE COMPLETELY FILLED AS RAPIDLY AS POSSIBLE, KEPT PRESSURED UP AT ALL TIMES AND THEREAFTER CARRIED FULL UNTIL INCREASED OPERATING DISCHARGE OF BALLAST. AS AN AID TO ESTIMATING THE INCREASE IN GM AS A RESULT OF BALLASTING WITH SALT WATER, A TABLE SHOWING THE APPROXIMATE GAIN IN GM IS INCLUDED ON SHEET NO. 5. FOR EXAMPLE, THE GAIN IN GM BY BALLASTING NO. 5 DOUBLE BOTTOM CENTERLINE TANK IS 0.40, ASSUMING 16,000 TONS FOR THE DISPLACEMENT OF THE VESSEL. HOWEVER, THE LOSS IN GM WHILE BALLASTING DUE TO FREE SURFACE EFFECTS IS 0.10 FEET, WHICH LOSS MUST BE SUBTRACTED FROM THE UNCORRECTED AVAILABLE GM TO OBTAIN THE CORRECTED AVAILABLE GM DURING BALLASTING. THE ABOVE DEMONSTRATES THE IMPORTANCE OF THE ABOVE REQUIREMENT THAT BALLAST TANKS SHOULD BE FILLED AND PRESSURED UP AS RAPIDLY AS POSSIBLE TO ELIMINATE THE ADVERSE EFFECT OF FREE SURFACE. (FOR FREE SURFACE CORRECTION SEE NOTES ON SHEETS 4 AND 5.)
5. FOR A FULL CARGO DISTRIBUTED AS SHOWN ON CONDITION SHEET, NO. 8, THE MEAN S.W. DRAFT SHOULD BE SUCH THAT BEFORE THE FUEL OIL IN THE DOUBLE BOTTOM TANKS FALLS BELOW 980 TONS, SALT WATER BALLAST SHALL BE TAKEN ON BOARD. EACH BALLAST TANK FILLED, A COMPARABLE AMOUNT OF FUEL OIL MAY BE PUMPED FROM THE DOUBLE BOTTOM WITHOUT FURTHER BALLASTING.

OPERATING INSTRUCTIONS (CONTINUED)

C3-S-38a

SINGLE SCREW CARGO VESSEL

6. IN THE FULL LOAD CONDITION WITH A HOMOGENEOUS CARGO THE VESSEL WILL TRIM BY THE BOW. THIS CONDITION SHOULD BE AVOIDED BY LOADING A GREATER WEIGHT OF CARGO IN THE AFTER HOLDS.
7. EXCLUDING THE FUEL OIL SETTLERS, NO MORE THAN ONE PAIR OF TANKS FOR EACH TYPE OF CONSUMABLE LIQUID ON BOARD VESSEL SHALL BE SLACK AT ONE TIME.
8. THE BILGES SHOULD BE PUMPED PERIODICALLY TO KEEP THE FREE SURFACE OF LIQUIDS ON BOARD THE VESSEL TO A MINIMUM.
9. CROSS CONNECTIONS BETWEEN ALL TANKS SHALL BE KEPT CLOSED WHEN THE VESSEL IS AT SEA.
10. ALL SIDE PORTS BELOW THE MAIN DECK SHALL BE CLOSED AND SECURED BEFORE LEAVING PORT.
11. THIS BOOKLET DOES NOT AUTHORIZE THE CARRIAGE OF GRAIN OR BULK CARGO.
12. THE UNIT OF WEIGHT USED HEREIN IS THE LONG TON OF 2240 POUNDS.

13. ON THE CONDITION SHEETS, NOS. 8 AND 10, A METHOD HAS BEEN PROVIDED FOR CALCULATING THE TRIM OF THE VESSEL. THE WEIGHT OF THE VESSEL INCLUDING ALL CONTENTS AND ITS LONGITUDINAL CENTER OF GRAVITY (LCG) IS CALCULATED AS DESCRIBED IN PARA. NO. 3 ABOVE. THE DISPLACEMENT IS ENTERED INTO THE TOP OF THE BOX ENTITLED "TRIM", AND THE (LCG) IS CENTERED IN ITEM NO. 2. THE MEAN SALT WATER DRAFT, WHICH IS THE KEEL DRAFT AT THE LONGITUDINAL CENTER OF FLOTATION (LCF), CORRESPONDING TO THE DISPLACEMENT IS DETERMINED FROM THEY HYDROSTATIC PROPERTIES, SHEET NO. 3 AND THIS VALUE IS ENTERED IN ITEM NO. 1. AT THE SAME TIME THE VALUES FOR THE LONGITUDINAL CENTER OF BUOYANCY (LCB), MOMENT TO TRIM ONE INCH AND THE LONGITUDINAL CENTER OF FLOTATION (LCF) ARE READ AT THE MEAN SALT WATER DRAFT AND ENTERED IN ITEMS NOS. 3, 5 AND 8 RESPECTIVELY. THE TRIM LEVER, ITEM NO. 4, IS THE DIFFERENCE BETWEEN THE DISTANCES FROM THE FORWARD PERPENDICULAR OF THE (LCG) AND THE (LCB). THE VESSEL TRIMS BY THE STERN FOR A POSITIVE VALUE AND BY THE BOW FOR A NEGATIVE VALUE. THE TRIM IN FEET FOR A LEVER BETWEEN THE PERPENDICULARS OF 476.0 FEET, ITEM NO. 6, IS OBTAINED BY DIVIDING THE DISPLACEMENT BY 12 AND MULTIPLYING THE QUOTIENT BY THE TRIM LEVER, ITEM NO. 4 AND DIVIDING BY THE MOMENT TO TRIM ONE INCH, ITEM NO. 5. THE TRIM BETWEEN DRAFT MARKS, ITEM NO. 7, A DISTANCE OF 432.5 FEET IS OBTAINED BY MULTIPLYING ITEM NO. 6 BY .92. THE CORRECTION IN THE DRAFT AT THE FORWARD MARKS IS THEN THE DISTANCE OF THE LCF FROM THE FORWARD MARKS, ITEM NO. 9, MULTIPLIED BY THE TRIM BETWEEN MARKS, ITEM NO. 7 AND DIVIDED BY THE LENGTH BETWEEN MARKS OF 432.5 FEET. (THE FORWARD DRAFT MARKS ARE LOCATED 6.5 FEET AFT OF THE FORE PERPENDICULAR). THE CORRECTION IN THE DRAFT AT THE AFT MARKS IS THEN THE DIFFERENCE BETWEEN THE TRIM BETWEEN MARKS, ITEM NO. 7 AND THE CORRECTION TO THE DRAFT AT THE FORWARD MARKS, ITEM NO. 10. IF THE TRIM IS BY THE STERN, THE CORRECTION TO THE FORWARD DRAFT, ITEM NO. 10, IS SUBTRACTED FROM THE DRAFT AT THE LCF, ITEM NO. 1. AND THE CORRECTION TO THE STERN MARKS, ITEM NO. 11, IS ADDED TO THE DRAFT AT THE LCF, ITEM NO. 1. IF THE TRIM IS BY THE BOW, THE CORRECTIONS TO THE DRAFT MARKS ARE OPPOSITE IN SIGN.

14. ON THE SHORT FORM, SHEET 11, AN EXAMPLE HAS BEEN WORKED WITH THE SAME CARGO LOAD AS THE "FULL LOAD-ARRIVAL" CONDITION ON SHEETS 9 AND 10. THE REQUIRED TANKAGE AS SHOWN ON THE SHORT FORM IS 1241 TONS BY THE DIRECT METHOD 977 TONS WAS FOUND TO PRODUCE SUFFICIENT GM. IT SHOULD BE NOTED THAT THESE EXAMPLES REFLECT THE CORRECTIONS OF THE DIRECT METHOD.

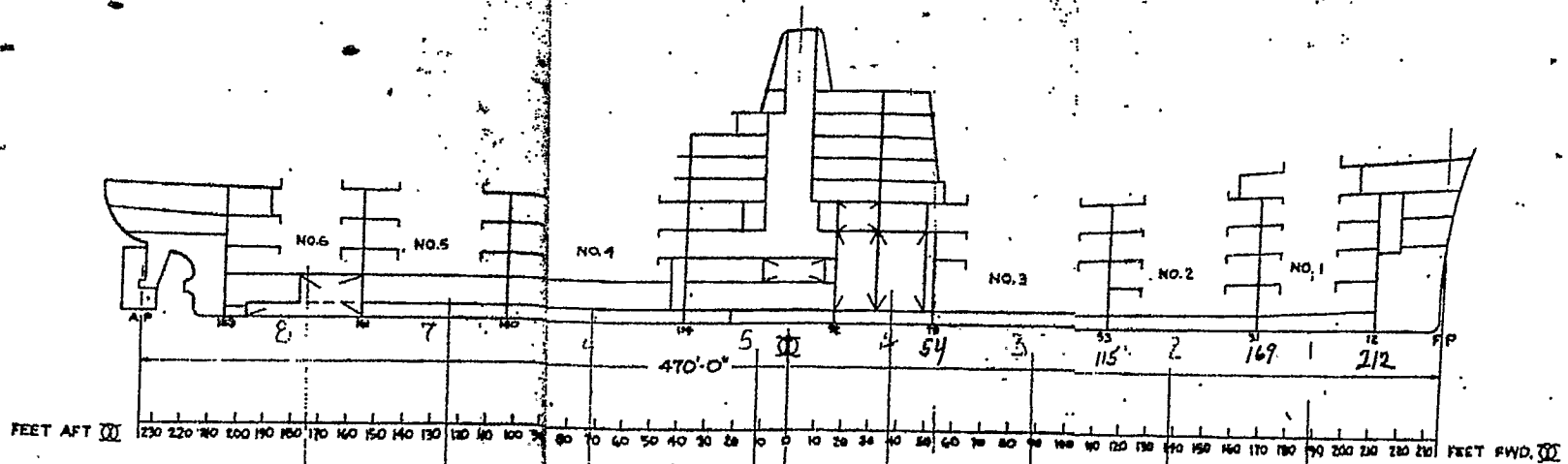
TABLE OF PRINCIPAL CHARACTERISTICS

LENGTH, OVERALL	492'-6"	LIGHTSHIP	6575* TONS
LENGTH, B.P.	470'-0"	LIGHTSHIP VCG (ABV. KEEL)	32.30* FT.
LENGTH, 20 STATIONS	470'-0"	LIGHTSHIP LCG AFT FP	239.42 FT.
BEAM, MLD.	73'-0"	PASSENGERS	12
DEPTH TO MAIN DK., MLD.	42'-2"	CREW	64
DEPTH TO 2ND DK., MLD.	33'-0 $\frac{1}{2}$ "	GRAIN CUBIC	646,215 CU.FT.
BULKHEAD DECK	MAIN DECK	BALE CUBIC	562,103 " "
MACHINERY	TURBINE	REEFER CUBIC	24,293 " "
DESIGNED SEA SPEED	18 $\frac{1}{2}$ KNOTS	CARGO OIL	1452 TONS
SHAFT HORSEPOWER:		FUEL OIL (DB'S & SETT.)	2230 TONS
NORMAL	12,500	FRESH WATER	85 TONS
MAXIMUM	13,750	NO. OF HOLDS	6
KEEL DRAFT, SUMMER		GROSS TONNAGE (U.S.)	10588.80
LOAD LINE	28'-1 $\frac{5}{8}$ "	NET TONNAGE (U.S.)	6500
TOTAL DISPLACEMENT,			
SUMMER LOAD LINE	17570 TONS		

* NOTE: LIGHT SHIP WEIGHT & VCG ARE A COMPOSITE OF THE SS. EXPORT AMBASSADOR & SS. EXPORT ADVENTURER. THE LIGHT SHIP WEIGHT OF THE EXPORT AMBASSADOR IS 6550 TONS AS DETERMINED BY THE INCLINING EXPERIMENT PERFORMED ON AUG. 20, 1960. THE LIGHT SHIP WEIGHT OF THE SS. EXPORT ADVENTURER IS 6603 TONS AS DETERMINED BY THE DEADWEIGHT SURVEY CONDUCTED ON DECEMBER 30, 1960.

TRIM TABLE

C3-S-38a



28'-0" DRAFT

FWD MARKS	-583	-542	-515	-481	-447	-413	-372	-335	-297	-257	-217	-177	-137	-97	-57	-17	23	63	103	143	183	223	263	303	343	383	423	463	503	543	583	FWD MARKS	
AFT MARKS	+124	+137	+150	+162	+174	+186	+199	+212	+225	+238	+251	+264	+277	+290	+303	+316	+329	+342	+355	+368	+381	+394	+407	+420	+433	+446	+459	+472	+485	+498	+511	+524	AFT MARKS

20'-0" DRAFT

FWD MARKS	-781	-732	-682	-632	-582	-532	-482	-432	-382	-332	-282	-232	-182	-132	-82	-32	18	68	118	168	218	268	318	368	418	468	518	568	618	668	718	768	FWD MARKS
AFT MARKS	+103	+117	+131	+145	+159	+173	+187	+201	+215	+229	+243	+257	+271	+285	+299	+313	+327	+341	+355	+369	+383	+397	+411	+425	+439	+453	+467	+481	+495	+509	+523	+537	AFT MARKS

TABLE OF CORRECTIONS IN INCHES TO DRAFTS FWD. AND AFT FOR EACH 100 TONS LOADED AT ANY DISTANCE FROM AMIDSHIPS

SCALE: 1" = 50 FT.

EXAMPLE: FIND CHANGE IN TRIM AFTER LOADING 100 TONS IN NO. 4 HOLD (70' AFT OF AMIDSHIPS)

	INITIAL DRAFT	FWD MARKS	19'-6"	AFT MARKS	20'-6"
	CORRECTION		- 0'-1 13/8"		+ 0'-4 39/8"
	NEW DRAFT		19'-4 7/8"		20'-10 3/8"

NOTES 1. THE CORRECTIONS HAVE BEEN COMPUTED FOR THE TWO DRAFTS 8 FT. APART TO FACILITATE INTERPOLATION, BUT IN PRACTICE IT WILL BE ACCURATE ENOUGH TO REFER TO THE TABLE NEAREST THE SHIP'S DRAFT.

2. WHEN DISCHARGING, USE THE TABLE AS IN LOADING AND REVERSE PLUS AND MINUS SIGNS.

HYDROSTATIC PROPERTIES

C3-S-38a

MEAN DRAFT BOTTOM OF KEEL	TOTAL DISP S.W. TONS	TRANSVERSE KM- MLD FEET	TONS PER INCH IMMERSION	MOMENT TO TRIM 1" FT TONS	L.C.B AFT F.P FEET	L.C.F AFT F.P FEET	MEAN DRAFT BOTTOM OF KEEL
30	19000	30.5	63				
		30.4		1600			30
		30.3			234	248	
29	18000	30.2	62	1550			29
		30.1				247	
28		30.0		1500	233	246	28
	17000	30.0	61			245	
27				1450		244	27
		29.9				243	
26	16000		60	1400	232	242	26
						241	
25	15000	29.8	59	1350			25
						240	
24				1300			24
			58		231	239	
23	14000	29.9				238	23
		30.0		1250			
22						237	22
	13000		57				
21				1200		236	21
					230		
20	12000	30.5	56			235	20
				1150			
19	11000	31.0					19
						234	
18		31.5	55				18
		32.0					
17	10000			1100	229	233	17
		33.0					
16	9000						16
			54			232	
15		34.0					15
14	8000	35.0					14
						231	
13		36.0	53	1050	228		13
12	7000	37.0					12
		38.0					
		39.0				230	
11	6000	40.0					11
		41.0	52				
		42.0					
10		43.0					10
		44.0		1000			
	5000	45.0				229	
			51		227		

TABLE OF CAPACITIES AND FREE SURFACE CORRECTIONS
C3-S-38a

DRY CARGO

OLD NO.	COMPARTMENT	FRAMES	GRAIN CU. FT.	BALE CU. FT.	V.C.G.	L.C.G.
1	FOCSE	15-31	10,438	9,806	54.6	46.7
	2ND DECK	12-31	14,301	12,571	44.3	47.9
	3RD DECK	12-31	12,135	10,007	34.0	48.7
	ORLOP DECK	12-31	10,106	8,152	22.8	49.0
	TANK TOP	12-31	8,907	6,706	11.3	49.3
	TOTAL		55,807	47,242		
2	2ND DECK	31-53	32,843	30,038	42.0	95.5
	3RD DECK	31-53	31,830	27,889	31.4	96.2
	ORLOP DECK	31-53	27,905	23,820	21.0	96.3
	TANK TOP	31-53	25,519	20,898	10.2	96.3
	TOTAL		118,097	102,645		
3	2ND DECK	53-79	46,607	38,616	39.7	154.3
	3RD DECK	53-78	47,656	42,500	29.1	153.3
	TANK TOP	53-78	79,690	70,954	14.3	153.2
		TOTAL		173,953	152,070	
4	2ND DECK	114-136	21,576	20,771	38.8	302.5
	3RD DECK	114-140	50,748	43,513	27.7	306.4
	TANK TOP	114-140	71,245	61,480	13.9	306.4
		TOTAL		143,569	125,764	
5	2ND DECK	144-161	16,622	15,798	38.8	368.0
	3RD DECK	140-161	36,754	31,249	28.5	364.3
	TANK TOP	140-161	42,716	36,902	15.0	363.1
		TOTAL		96,092	83,949	
6	2ND DECK	161-183	22,177	20,446	40.0	408.6
	3RD DECK	161-183	24,454	20,456	30.0	414.1
	TANK TOP	161-183	11,986	9,531	19.6	411.7
		TOTAL		58,617	50,433	
	TOTAL DRY CARGO		646,215	562,103	26.3	222.4
	SPECIAL CARGO (STRONG RM.) FR. 176-183 2ND DK.			6,233	40.7	432.4
	DANGEROUS CARGO FR 17-31 P MN.DK.			1,864	53.5	58.4
	DANGEROUS CARGO FR 17-31 S MN.DK.			1,820	53.5	58.4
	DANGEROUS CARGO FR 177-183 P MN.DK.			1,348	49.5	433.2
	DANGEROUS CARGO FR 177-183 S MN.DK.			1,244	49.5	435.3
	TOTAL SPECIAL & DANGEROUS CARGO			12,509		
	GRAND TOTAL DRY CARGO			574,612		

REFRIGERATED CARGO ...

OLD NO.	COMPARTMENT	CUBIC FT.	V.C.G.	L.C.G.
4	FR. 114-140 2ND DK. P	6,744.6	37.8	306.5
	FR. 114-140 2ND DK. S	6,715.2	37.8	306.5
	TOTAL NO. 4 HOLD	13,459.8		
5	FR 140-161 2ND DK. P	5,297.5	38.6	364.2
	FR 140-161 2ND DK. S	5,284.6	38.6	364.2
	TOTAL NO. 5 HOLD	10,582.1		
	CARGO MEAT FR. 94-98 2ND DK. S	251.2	38.6	229.0
	TOTAL REFRIG. CARGO	24,293.1		

DECK CARGO

V.C.G. FOR DECK CARGO WILL BE 46.5 FT. (MEAN HEIGHT OF MAIN DECK) PLUS ONE HALF THE HEIGHT OF THE CARGO.

NOTE: FUEL OIL 38.0 CU.FT./TON
FRESH WATER 36.0 CU.FT./TON
SALT WATER 35.0 CU.FT./TON

* CARGO OIL AT SPEC. GRAV. = 1.0
(FOR CORRECT FREE SURFACE MULTIPLY BY ACTUAL SP. GR. OF OIL.)

CARGO OIL

COMPARTMENT				BARRELS 100%	TONS # 100%	V.C.G.	L.C.G.	FREE SURFACE SLACK 98%	
CARGO OIL	INBD	S	FR 79-86	1950.6	304.3	19.0	195.2	417	398
CARGO OIL	INBD	P	FR 79-86	1891.8	295.1	19.4	195.2	417	400
CARGO OIL	OUTBD	S	FR 79-86	1306.2	203.8	19.1	195.2	130	130
CARGO OIL	OUTBD	P	FR 79-86	1306.2	203.8	19.1	195.2	130	130
CARGO OIL	INBD	S	FR 86-92	1453.1	226.7	18.9	211.5	248	233
CARGO OIL	INBD	P	FR 86-92	1401.2	218.6	19.3	211.5	248	237
	TOTAL CARGO OIL			9309.1	1452.3				

FUEL OIL OR BALLAST

D.B. NO.	COMPARTMENT	BARRELS 98%	TONS F.O. 98%	TONS S.W. 100%	V.C.G.	L.C.G.	FREE SURFACE SLACK 98%	
1	DB Q FR 12-31	507.3	75.1	83.1	3.3	44.8	461	98
	DB P FR. 31-53	622.3	92.1	102.0	2.3	94.8	826	165
2	DB S FR 31-53	622.3	92.1	102.0	2.3	94.8	826	165
	DB Q FR. 53-78	1475.3	218.3	241.7	2.3	152.7	3700	611
3	DB P FR. 53-78	519.0	76.8	85.0	2.5	157.3	471	100
	DB S FR. 53-78	519.0	76.8	85.0	2.5	157.3	471	100
4	DB Q FR. 78-92	824.2	122.0	135.0	2.3	201.5	2075	307
	DB P FR. 78-92	443.9	65.7	72.7	2.4	201.9	632	135
5	DB S FR. 78-92	443.9	65.7	72.7	2.4	201.9	632	135
	DB Q FR. 93-108	845.3	125.1	138.5	2.3	240.2	2221	329
6	DB P FR. 92-114	732.1	108.4	119.9	2.5	246.2	718	149
	DB S FR. 92-114	722.2	106.9	118.3	2.5	246.2	718	149
7	DB Q FR. 114-140	1471.9	217.8	241.2	2.3	306.5	3849	635
	DB P FR. 114-140	538.9	79.8	88.3	2.7	300.5	463	100
8	DB S FR. 114-140	538.9	79.8	88.3	2.7	300.5	463	100
	DB P FR. 140-161	538.3	79.7	88.2	2.6	361.6	605	148
9	DB S FR. 140-161	538.3	79.7	88.2	2.6	361.6	605	148
	DB P FR. 161-180	540.0	79.9	88.5	7.0	404.6	84	34
10	DB S FR. 161-180	442.2	65.5	72.5	6.8	404.8	34	20
		TOTAL F.O. OR BAL.	12,885.3	1907.2	2111.2	2.8	232.1	
	F.O. SETTLERS P	1089.7	161.3	-	19.0	211.5	106	106
	F.O. SETTLERS S	1089.7	161.3	-	19.0	211.5	106	106
	TOTAL INCL. SETT.	15,064.7	2229.8					
	FORE PEAK			103.9	13.5	12.0	13	
	AFT PEAK			273.7	30.2	455.6	794	
	COFFERDAM FR 7B 79 &			147.3	19.1	184.3	227.9	
	TOTAL BAL INCL. PEAKS & C.D.			2636.0				

FRESH WATER

COMPARTMENT				TONS F.W. 100%	V.C.G.	L.C.G.	FREE SURFACE SLACK
POTABLE WATER	FR 86-92	P		26.8	38.3	211.4	25
POTABLE WATER	FR 86-92	S		26.8	38.3	211.4	25
DISTILLED WATER	FR. 93-102	S		31.5	19.0	232.8	11
	TOTAL FRESH WATER			85.1			

MISCELLANEOUS

COMPARTMENT				GALLONS 98%	TONS 98%	V.C.G.	L.C.G.	FREE SURFACE SLACK
L.O. STORAGE	FR. 111-114	S		3004.9	10.3	19.0	270.2	5
DIESEL OIL	FR. 114-116	Q		500	1.6	50.3	276.7	4

ENTER APPROPRIATE FREE SURFACE IN F.S. COLUMN OF LOADING TABLE. FOR FREE SURFACE CORRECTION TO DOUBLE BOTTOM TANKS WITH SALT WATER SEE NOTE ON SHEET NO. 4

GAIN IN GM BY BALLASTING (FEET)

03-S - 38a

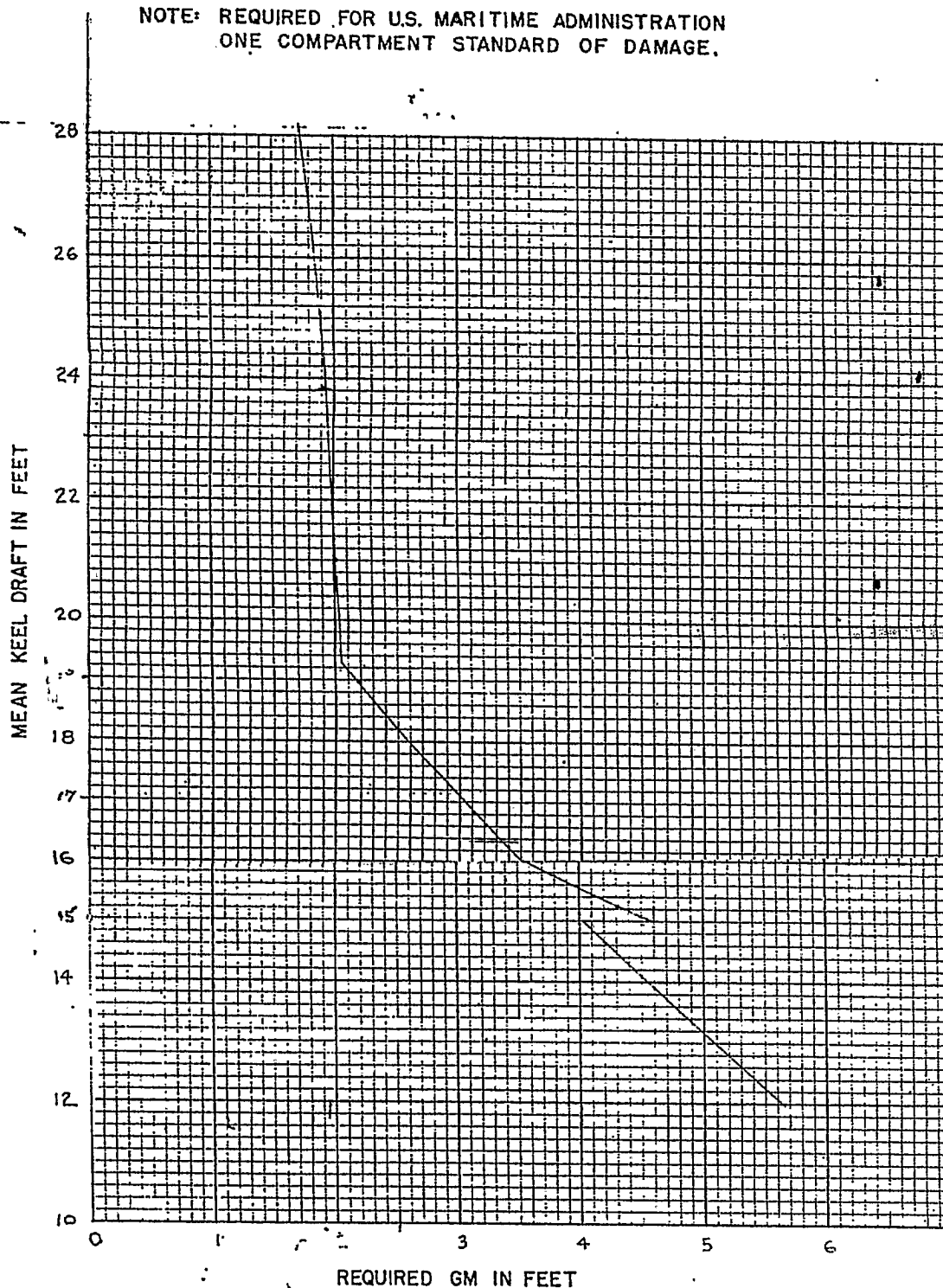
DIS- PLACEMENT	TANK	No.1 DB CL	No.2 DB P or S	No.3 DB CL	No.3 DB P or S	No.4 DB CL	No.4 DB P or S	No.5 DB CL	No.5 DB P or S	No.6 DB CL	No.6 DB P or S	No.7 DB P or S	No.8 DB P	No.8 DB S	FORE PEAK	AFT PEAK
	TONS	83	101	241	85	135	73	138	119	241	98	88	88	72	104	274
7,000		.10	.15	.30	.10	.15	.10	.20	.15	.30	.10	.10	.05	.05	-.10	-.70
7,500		"	"	"	"	"	"	"	"	"	"	"	"	"	-.05	"
8,000		"	"	.35	.15	.20	"	"	"	.35	.15	.15	.10	"	0	-.50
8,500		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
9,000		.15	"	.40	"	"	"	"	.20	.40	"	"	"	.10	"	-.35
9,500		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
10,000		"	"	"	"	"	"	"	.15	"	"	"	"	"	.05	-.30
10,500		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
11,000		"	"	"	"	.25	"	.25	"	"	"	"	"	"	"	-.25
11,500		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
12,000		"	"	"	"	"	"	"	"	"	"	"	"	"	.10	-.15
12,500		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
13,000		"	"	"	"	"	"	"	"	"	"	"	"	"	"	-.10
13,500		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
14,000		"	"	"	"	"	"	"	"	"	"	"	"	"	"	-.05
14,500		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
15,000		"	"	"	"	"	.15	"	"	"	"	"	"	"	"	"
15,500		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
16,000		"	"	"	"	"	"	"	"	"	"	"	"	"	"	0
16,500		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
17,000		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
17,500		"	"	"	"	"	"	"	"	"	"	"	"	"	"	"

NOTE: SINCE THE ABOVE VALUES FOR GAIN IN GM DO NOT INCLUDE AN ALLOWANCE FOR LOSS IN GM DUE TO FREE SURFACE WHILE BALLASTING, AN APPROPRIATE CORRECTION MUST BE MADE FOR THIS LOSS IN GM. THE LOSS IN GM IS OBTAINED BY DIVIDING THE SLACK FREE SURFACE VALUES AS SHOWN ON SHEET NO. 4 BY THE DISPLACEMENT IN TONS AND MULTIPLYING THE QUOTIENT BY 1.085 FOR ALL DOUBLE BOTTOM TANKS. THE FACTOR 1.085 CONVERTS THE FREE SURFACE VALUES, WHICH ARE BASED UPON FUEL OIL, TO SALT WATER. THE FREE SURFACE VALUES FOR THE PEAK TANKS ARE BASED UPON SALT WATER.

REQUIRED GM CURVE

C3-S-38a

NOTE: REQUIRED FOR U.S. MARITIME ADMINISTRATION
ONE COMPARTMENT STANDARD OF DAMAGE.



SHEET NO. 6

THE REQUIRED GM VALUES GIVEN IN THIS DIAGRAM MUST BE MAINTAINED IN ORDER TO ENABLE THE SHIP UNDER AVERAGE OPERATING CONDITIONS, TO SUSTAIN DAMAGE IN ANY ONE COMPARTMENT WITHOUT REACHING A CONDITION OF NEGATIVE STABILITY AFTER DAMAGE, AND WITHOUT HEELING WHICH MIGHT RESULT IN FLOODING ANY OTHER UNDAMAGED COMPARTMENT.

LOADING TABLE - VOYAGE NO. FULL LOAD DEPARTURE

VESSEL EXPORT AMBASSADOR/ADVENTURER

DRY CARGO

HOLD	Bale Cap.	FT ³ /TON Stow.	Tons	VCG	Moment	LCG-PP	Moment
No. 1 Fcslc	9,806	90.0	109	54.6	5951	46.7	5090
2nd Dk.	12,571	90.0	140	44.3	6202	47.9	6706
3rd Dk.	10,007	90.0	111	34.0	3774	48.7	5406
Orlop Dk.	8,152	90.0	90	22.8	2052	49.0	4410
Tank Top	6,706	90.0	74	11.3	836	49.3	3648
No. 2 2nd Dk.	30,038	90.0	334	42.0	14028	95.5	31897
3rd Dk.	27,889	90.0	310	31.4	9734	96.2	29822
Orlop Dk.	23,820	90.0	265	21.0	5565	96.3	25519
Tank Top	20,898	90.0	232	10.2	2366	96.3	22342
No. 3 2nd Dk.	38,616	90.0	429	39.7	17031	154.3	66195
3rd Dk.	42,500	90.0	472	29.1	13735	153.3	72358
Tank Top	70,954	90.0	788	14.3	11268	153.2	120722
No. 4 2nd Dk.	20,771	85.1	244	38.8	9467	302.5	73819
3rd Dk.	43,513	85.1	511	27.7	14159	306.4	156570
Tank Top	61,480	85.1	723	13.9	10050	306.4	221527
No. 5 2nd Dk.	15,798	83.7	189	38.8	7333	368.0	69552
3rd Dk.	31,249	83.7	373	28.5	10631	364.3	135884
Tank Top	36,902	83.7	441	15.0	6615	363.1	160127
No. 6 2nd Dk.	20,446	83.7	244	40.0	9760	408.6	99698
3rd Dk.	20,456	83.7	244	30.0	7320	414.1	101040
Tank Top	9,531	83.7	114	19.6	2234	411.7	46934
TOTAL	562,103		6437	26.4	170107	226.7	1459257

SPECIAL OR DANGEROUS CARGO

SPACE	Bale Cap.	FT ³ /TON Stow.	Tons	VCG	Moment	LCG-PP	Moment
Fr. 176-183	6,233	70.0	89	40.7	3622	432.4	38484
Fr. 17-31 (P)	1,864	70.0	27	53.5	1445	58.4	1577
Fr. 17-31 (S)	1,820	70.0	26	53.5	1391	58.4	1518
Fr. 177-183 (P)	1,348	70.0	19	49.5	940	433.2	8231
Fr. 177-183 (S)	1,244	70.0	18	49.5	891	435.3	7853
TOTAL	12,509		179	46.3	8289	322.0	57645

REFRIGERATED CARGO

HOLD	Cu. Ft.	FT ³ /TON Stow.	Tons	VCG	Moment	LCG-PP	Moment
No. 4 2nd Dk. P	6,745	93.7	72	37.8	2729	306.5	22068
2nd Dk. S	6,715	93.3	72	37.8	2729	306.5	22068
No. 5 2nd Dk. P	5,297	89.8	59	38.6	2277	364.2	21488
2nd Dk. S	5,285	89.6	59	38.6	2277	364.2	21488
Cargo Meat	251	91.0	3	38.6	116	229.0	687
TOTAL	24,293		265	38.2	10128	331.3	87799

DECK CARGO (VCG = 46.5' + 1/2 THE HEIGHT OF THE DECK CARGO)

LOCATION	Cu. Ft.	FT ³ /TON Stow.	Tons	VCG	Moment	LCG-PP	Moment
OPP #4 HATCH 1/2 - 1/2 HIGH	9000	56.0	171	50.5	8636	306.5	52412
OPP #5 HATCH 1/2 - 1/2 HIGH	7200	56.0	129	50.5	6514	306.5	47278
TOTAL	16200		300	50.5	15150	332.3	99690

FUEL OIL OR BALLAST

TANK	% Full	Cont.	F.S.	Tons	VCG	Moment	LCG-PP	Moment
No. 1 DB - CL	98	F.O.	98	75	3.3	248	44.8	3360
No. 2 DB - P	98	F.O.	165	92	2.3	212	94.8	8722
- S	98	F.O.	165	92	2.3	212	94.8	8722
No. 3 DB - P	98	F.O.	100	77	2.5	193	157.3	12112
- CL	98	F.O.	611	218	2.3	501	152.7	33289
- S	98	F.O.	100	77	2.5	193	157.3	12112
No. 4 DB - P	98	F.O.	135	66	2.4	158	201.9	13325
- CL	98	F.O.	307	122	2.3	281	201.5	24583
- S	98	F.O.	135	66	2.4	158	201.9	13325
No. 5 DB - P	98	F.O.	149	108	2.5	270	246.2	26590
- CL	98	F.O.	329	125	2.3	287	240.2	30025
- S	98	F.O.	149	107	2.5	268	246.2	26343
No. 6 DB - P	98	F.O.	100	80	2.7	216	300.5	24040
- CL	98	F.O.	218	218	2.3	501	306.5	66817
- S	98	F.O.	100	80	2.7	216	300.5	24040
No. 7 DB - P	98	F.O.	148	80	2.6	208	361.6	28928
- S	98	F.O.	148	80	2.6	208	361.6	28928
No. 8 DT - P	98	F.O.	34	80	7.0	560	404.6	32368
- S	98	F.O.	20	65	6.8	442	404.6	26312
F.O. Settler P	98	F.O.	106	161	19.0	3059	211.5	134052
F.O. Settler S	98	F.O.	106	161	19.0	3059	211.5	134052
Fore Peak	0				13.5		12.0	
Aft Peak	0				30.2		455.6	
TOTAL			7054	2230	5.1	11450	229.6	512045

CARGO OIL

TANK	% Full	Cont.	F.S.	Tons	VCG	Moment	LCG-PP	Moment
Fr. 79-86 Inbd. P	98	C.O.	398	289	19.4	5607	195.2	56413
" " S	98	C.O.	400	298	19.0	5662	195.2	58170
" Outbd. P	98	C.O.	130	200	19.1	3820	195.2	39040
" " S	98	C.O.	130	200	19.1	3820	195.2	39040
Fr. 86-92 Inbd. P	98	C.O.	233	214	19.3	4130	211.5	45261
" " S	98	C.O.	237	222	18.9	4196	211.5	46953
TOTAL			1528	1423	19.1	27235	200.2	284877

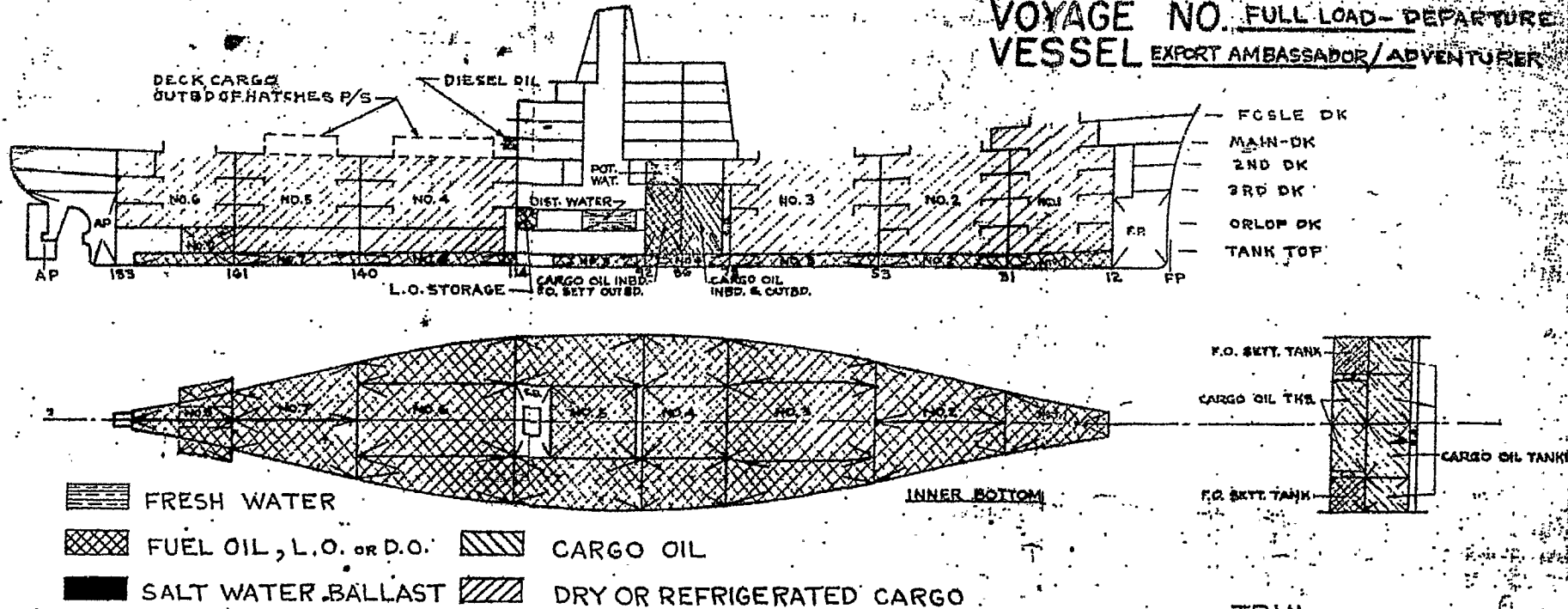
FRESH WATER

TANK	% Full	Cont.	F.S.	Tons	VCG	Moment	LCG-PP	Moment
Pot. Water P	100	F.W.	25	27	38.3	1034	211.4	5708
" " S	100	F.W.	25	27	38.3	1034	211.4	5708
Dist. Water	100	F.W.	11	31	19.0	589	232.8	7217
TOTAL			61	85	31.3	2657	219.2	18683

MISCELLANEOUS

TANK	% Full	Cont.	F.S.	Tons	VCG	Moment	LCG-PP	Moment
L.O. Storage	98	L.O.	5	10	19.0	190	270.2	2702
Diesel Oil	98	D.O.	4	2	50.3	100	276.7	553
TOTAL			9	12	79.2	290	27.3	3255

VOYAGE NO. FULL LOAD - DEPARTURE
VESSEL EXPORT AMBASSADOR/ADVENTURER



- FRESH WATER
- FUEL OIL, L.O. or D.O.
- CARGO OIL
- SALT WATER BALLAST
- DRY OR REFRIGERATED CARGO

ITEM	TONS	VCG	MOMENT	LCG-FP	MOMENT ²	F.S.
LIGHT SHIP	6575	32.30	212,400	239.42	15,741.87	
CREW PASSENGERS & EFFECTS	14	60.0	840	229.0	3206	
STORES	50	38.0	1900	232.0	11600	
DRY CARGO	6437	26.4	170,107	226.7	14,592.57	
SPECIAL OR DANGEROUS CARGO	179	46.3	8289	322.0	57645	
REFRIGERATED CARGO	265	38.2	10,128	331.3	87799	
DECK CARGO	300	50.5	15,150	332.3	99690	
FUEL OIL OR BALLAST	2230	5.1	11,450	229.6	512,045	7054
CARGO OIL	1423	19.1	27,235	200.2	284,877	1528
FRESH WATER	85	31.3	2,657	213.5	18,633	61
MISCELLANEOUS TANKS	12	24.2	290	268.8	3,255	9
TOTAL	17,570	26.2	460,446	234.0	4,112,194	8652

NOTE: FOR MAXIMUM FREE SURFACE CORRECTION, THE F.O. SETTLERS (P&S), NO. 6 DB-6, POTABLE WATER (P&S), AND THE DISTILLED WATER TANKS ARE ASSUMED SLACK. THE FREE SURFACE CORRECTION FOR 98% FULL HAS BEEN USED FOR THE REMAINING FUEL OIL TANKS AS WELL AS THE CARGO OIL AND MISCELLANEOUS TANKS.

TRIM

TOTAL WGT. (TONS) = DISPLACEMENT (Δ)	= 17,570 TONS
① KEEL DRAFT AT LCF (USE SHT. 3)	= 28.13 FT
② LCG AFT FP	= 234.0 FT
③ LCB AFT FP (USE SHT. 3)	= 233.1 FT
④ TRIM LEVER: ② - ③	= +0.9 FT (+ = TRIM AFT)
	(- = TRIM FWD)
⑤ MOMENT TO TRIM L (USE SHT. 3)	= 1502 FT TONS
⑥ TRIM (FOR LBP = 470') = $\frac{1}{2} \times ④ + ⑤$	= 0.85 FT
⑦ TRIM (BTW. MARKS) = $0.92 \times ⑥$	= 0.81 FT
⑧ LCF AFT FP (USE SHT. 3)	= 246.1 FT
⑨ LCF AFT FWD MARKS = ⑧ - 6.5'	= 239.6 FT
⑩ CORRECTION IN FWD DRAFT = $⑦ \times ⑨ \div 432.5$	= +0.45 FT
⑪ CORRECTION IN AFT DRAFT = $⑦ - ⑩$	= +0.36 FT
⑫ KEEL DRAFT AT FWD MARKS *	= 27.68 FT
⑬ KEEL DRAFT AT AFT MARKS **	= 28.49 FT

STABILITY

① K _M (USE SHT. 3)	= 30.1 FT
② K _B = VCG (ABOVE MLD. B.L.)	= 26.2 FT
③ GM (UNCORRECTED) = ① - ②	= 3.9 FT
④ F.S. CORRECTION = TOT. F.S. COL + Δ	= 0.5 FT
⑤ GM AVAILABLE = ③ - ④	= 3.4 FT
⑥ GM REQUIRED (USE SHT. 6)	= 1.7 FT

* ① - ⑩ FOR TRIM BY STERN
** ① + ⑪ FOR TRIM BY STERN

SHEET NO. 8

LOADING TABLE - VOYAGE NO. FOUR EIGHT NARRIVA

VESSEL EXPORT AMBASSADOR/ADVENTURER

DRY CARGO

HOLD	Bale Cap.	FT/TON Stow.	Tons	VCG	Moment	LCG-PP	Moment
No. 1 Fore	9,806	90.0	109	54.6	5951	46.7	5090
2nd Dk.	12,571	90.0	140	44.3	6292	47.9	6706
3rd Dk.	10,007	90.0	111	34.0	3774	48.7	5406
Orlop Dk.	8,152	90.0	90	22.8	2052	49.0	4410
Tank Top	6,706	90.0	74	11.3	836	49.3	3648
No. 2 2nd Dk.	30,038	90.0	334	42.0	14028	95.5	31837
3rd Dk.	27,889	90.0	310	31.4	9734	96.2	29822
Orlop Dk.	23,820	90.0	265	21.0	5565	96.3	25519
Tank Top	20,898	90.0	232	10.2	2366	96.3	22342
No. 3 2nd Dk.	38,616	90.0	429	39.7	17031	154.3	66195
3rd Dk.	42,500	90.0	472	29.1	13735	153.3	72358
Tank Top	70,954	90.0	788	14.3	11268	153.2	120722
No. 4 2nd Dk.	20,771	85.1	244	38.8	9467	302.5	73810
3rd Dk.	43,513	85.1	511	27.7	14155	306.4	156570
Tank Top	61,480	85.1	723	13.9	10050	306.4	221527
No. 5 2nd Dk.	15,798	83.7	189	38.8	7333	368.0	69552
3rd Dk.	31,249	83.7	373	28.5	10631	364.3	135884
Tank Top	36,902	83.7	441	15.0	6615	363.1	160127
No. 6 2nd Dk.	20,446	83.7	244	40.0	9760	408.6	99698
3rd Dk.	20,456	83.7	244	30.0	7320	411.1	101040
Tank Top	9,531	83.7	114	19.6	3234	411.7	46934
TOTAL	562,103		6437	26.4	170107	226.7	1459257

SPECIAL OR DANGEROUS CARGO

SPACE	Bale Cap.	FT/TON Stow.	Tons	VCG	Moment	LCG-PP	Moment
Fr. 176-183	6,233	70.0	89	40.7	3622	432.4	38484
Fr. 17-31 (P)	1,864	70.0	27	53.5	1445	58.4	1577
Fr. 17-31 (S)	1,820	70.0	26	53.5	1391	58.4	1518
Fr. 177-183 (P)	1,348	70.0	19	49.5	940	433.2	8231
Fr. 177-183 (S)	1,244	70.0	18	49.5	891	435.3	7853
TOTAL	12,509		179	46.3	8289	322.0	57645

REFRIGERATED CARGO

HOLD	Cu. Ft.	FT/TON Stow.	Tons	VCG	Moment	LCG-PP	Moment
No. 4 2nd Dk. P	6,745	93.7	72	37.8	2737	306.5	22068
2nd Dk. S	6,715	93.3	72	37.8	2729	306.5	22068
No. 5 2nd Dk. P	5,297	89.8	59	38.6	2277	364.2	21488
2nd Dk. S	5,285	89.6	59	38.6	2277	364.2	21488
Cargo Meat	251	91.0	3	38.6	116	229.0	687
TOTAL	24,293		265	38.2	10128	331.3	87799

DECK CARGO (VCG = 46.5' + 1/2 THE HEIGHT OF THE DECK CARGO)

LOCATION	Cu. Ft.	FT/TON Stow.	Tons	VCG	Moment	LCG-PP	Moment
OFF 4 HATCH 7/8' HIGH	9600	56.0	171	50.5	8636	306.5	52412
OFF 5 HATCH 7/8' HIGH	7200	56.0	129	50.5	6514	306.5	47278
TOTAL	16800		300	50.5	15150	332.3	99690

FUEL OIL OR BALLAST

TANK	% Full	Cont.	F.S.	Tons	VCG	Moment	LCG-PP	Moment
No. 1 DB - CL					2.3		44.8	
No. 2 DB - P					2.3		94.8	
- S					2.3		94.8	
No. 3 DB - P					2.5		157.3	
- CL	100	SW	-	242	2.3	557	152.7	3695
- S					2.5		157.3	
No. 4 DB - P					2.4		201.9	
- CL	100	SW	-	135	2.3	310	201.5	27202
- S					2.4		201.9	
No. 5 DB - P					2.5		246.2	
- CL	100	S.W.	-	138	2.3	317	240.2	33140
- S					2.5		246.2	
No. 6 DB - P	100	S.W.	-	88	2.7	238	300.5	26444
- CL	50	F.O.	3849	110	2.3	253	306.5	38718
- S	100	S.W.	-	88	2.7	238	300.5	26444
No. 7 DB - P	100	S.W.	-	88	2.6	229	361.6	31821
- S	100	S.W.	-	88	2.6	229	361.6	31821
No. 8 DT - P					7.0		404.6	
- S					5.8		404.6	
F.O. Settler P	50	F.O.	106	80	19.0	1520	211.5	16920
F.O. Settler S	50	F.O.	106	80	19.0	1520	211.5	16920
Fore Peak					13.5		12.0	
Aft Peak					30.2		455.6	
TOTAL			4061	1137	4.8	5411	247.5	263388

CARGO OIL

TANK	% Full	Cont.	F.S.	Tons	VCG	Moment	LCG-PP	Moment
Fr. 79-86 Inbd. P	98	C.O.	398	289	19.4	5607	195.2	56413
" " " S	98	C.O.	400	298	19.0	5662	195.2	58170
" Outbd. P	98	C.O.	130	200	19.1	3820	195.2	39040
" " " S	98	C.O.	130	200	19.1	3820	195.2	39040
Fr. 86-92 Inbd. P	98	C.O.	233	214	19.2	4130	211.5	45261
" " " S	98	C.O.	237	222	18.9	4196	211.5	46953
TOTAL			1528	1423	19.1	27235	200.2	284877

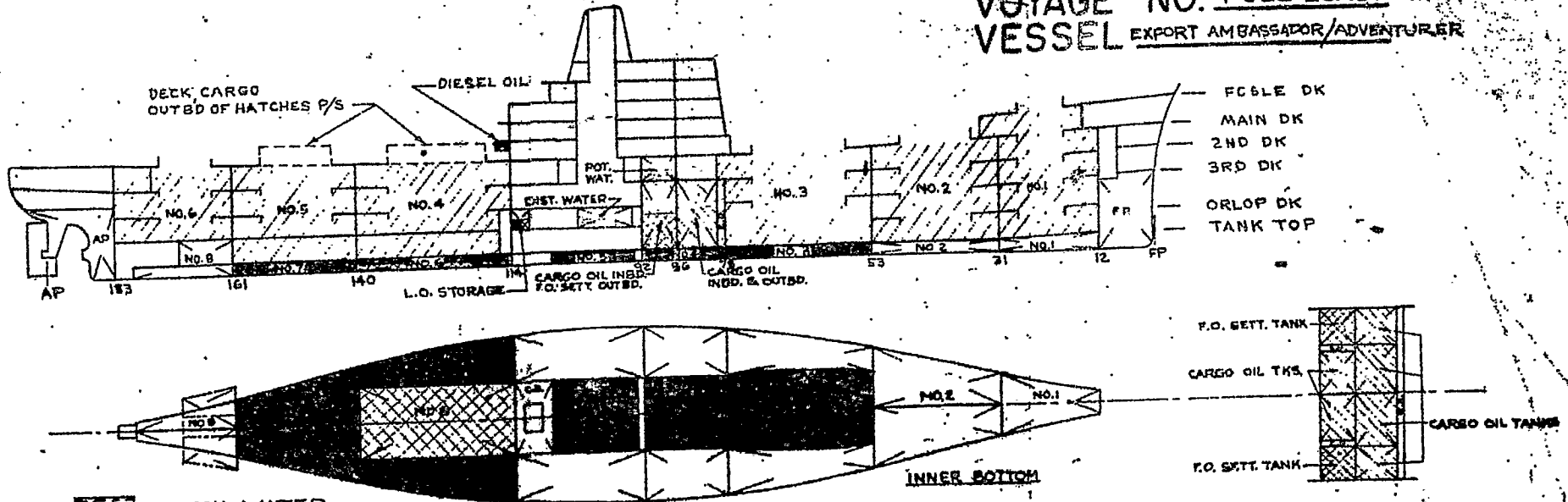
FRESH WATER

TANK	% Full	Cont.	F.S.	Tons	VCG	Moment	LCG-PP	Moment
Pot. Water P	50	F.W.	25	13	38.3	498	211.4	2743
" " " S	50	F.W.	25	13	38.3	498	211.4	2743
Dist. Water	50	F.W.	11	16	19.0	304	232.8	5728
TOTAL			61	42	31.0	1300	219.5	9214

MISCELLANEOUS

TANK	% Full	Cont.	F.S.	Tons	VCG	Moment	LCG-PP	Moment
L.O. Storage	50	L.O.	5	5	19.0	95	270.2	1351
Diesel Oil	98	D.O.	4	2	50.3	100	276.7	553
TOTAL			9	7	27.9	195	272.0	1904

VOYAGE NO. FULL LOAD-ARRIVAL
VESSEL EXPORT AMBASSADOR/ADVENTURER



- FRESH WATER
- FUEL OIL, L.O. or D.O.
- SALT WATER BALLAST
- CARGO OIL
- DRY OR REFRIGERATED CARGO

ITEM	TONS	VCG'	MOMENT	LCG-FP	MOMENT	F.S.
LIGHT SHIP	6575	32.30	212,400	239.42	1,574,187	
CREW, PASSENGERS & EFFECTS	14	60.0	840	229.0	3,206	
STORES	25	38.0	950	232.0	5,800	
DRY CARGO	6437	26.4	170,107	226.7	1,459,257	
SPECIAL OR DANGEROUS CARGO	179	46.3	8,289	322.0	57,645	
REFRIGERATED CARGO	265	38.3	10,128	331.3	87,799	
DECK CARGO	300	50.5	15,150	332.3	99,690	
FUEL OIL OR BALLAST	1137	4.8	5,411	247.5	281,388	4061
CARGO OIL	1425	19.1	27,235	200.2	284,877	1528
FRESH WATER	42	31.0	1,300	219.5	9,221	61
MISCELLANEOUS TANKS	7	27.9	195	272.0	1,904	9
TOTAL	16404	27.5	452,005	235.6	3,864,974	5659

TRIM

- TOTAL WGT (TONS) = DISPLACEMENT (Δ) = 16404 TONS
- ① KEEL DRAFT AT LCF (USE SHT. 3) = 26.55 FT
- ② LCG AFT FP = 235.61 FT
- ③ LCB AFT FP (USE SHT. 3) = 232.33 FT
- ④ TRIM LEVER ② - ③ = +3.28 FT (= TRIM AFT)
(- = TRIM FWD)
- ⑤ MOMENT TO TRIM 1" (USE SHT. 3) = 14.7 FT-TONS
- ⑥ TRIM (FOR LBP = 470') = $\frac{1}{12} \times ④ + ⑤ = 3.5$ FT
- ⑦ TRIM (BTW. MARKS) = 0.92 × ⑥ = 2.9 FT
- ⑧ LCF AFT FP (USE SHT. 3) = 243.75 FT
- ⑨ LCF AFT FWD MARKS = ⑧ - 6.5' = 237.25 FT
- ⑩ CORRECTION IN FWD DRAFT ⑨ × ⑦ + 432.5 = +1.59 FT
- ⑪ CORRECTION IN AFT DRAFT ⑩ - ⑩ = +1.31 FT
- ⑫ KEEL DRAFT AT FWD MARKS * = 24.96 FT
- ⑬ KEEL DRAFT AT AFT MARKS ** = 27.86 FT

STABILITY

- ① KM (USE SHT. 3) = 29.9 FT
- ② KG = VCG (ABOVE MLD. BASE LINE) = 27.5 FT
- ③ GM (UNCORRECTED) = ① - ② = 2.4 FT
- ④ F.S. CORRECTION = TOT. F.S. COL + Δ = .3 FT
- ⑤ GM AVAILABLE = ③ - ④ = 2.1 FT
- ⑥ GM REQUIRED (USE SHT. 6) = 1.8 FT

*: ① - ⑩ FOR TRIM BY STERN
 **: ① + ⑩ FOR TRIM BY STERN

C3-S-38a

VOYAGE No. FULL LOAD ARRIVAL

DOUBLE BOTTOM TANKAGE REQUIREMENTS IN TONS TO MEET ONE COMPT. DAMAGE FOR NORMAL CONDITIONS OF LOADING

VESSEL EXPORT AMBASSADOR/ADVENTURER

1. ENTER CARGO & DEEP TANK #8 WEIGHTS IN APPROPRIATE SPACES AND OBTAIN TOTALS FOR EACH COLUMN.

COLUMN 1	
UPPER TWEEN DK. LAYER	TONS
NO. 1 FCSLE	109
NO. 1 2ND DK	140
NO. 2 " "	334
NO. 3 " "	429
NO. 4 " "	244
NO. 5 " "	189
NO. 6 " "	244
REFRIGERATED CARGO	265
SPEC. & DANGER. CARGO	179
TOTAL	2133

COLUMN 3	
HOLD LAYER	TONS
NO. 1 ORLOP DECK	90
NO. 1 TANK TOP	74
NO. 2 ORLOP DECK	265
NO. 2 TANK TOP	232
NO. 3 " "	798
NO. 4 " "	723
NO. 5 " "	841
NO. 6 " "	114
NO. 8 DEEP TANK	-
TOTAL	2727

COLUMN 2	
LOWER TWEEN DK. LAYER	TONS
NO. 1 3RD. DECK	111
NO. 2 " "	310
NO. 3 " "	472
NO. 4 " "	511
NO. 5 " "	373
NO. 6 " "	244
TOTAL	2021

COLUMN 4	
CARGO OIL TANKS	TONS
FR. 79-86 INBD. - PORT	289
" " - STBD	298
" " OUTBD. - PORT	200
" " - STBD.	200
FR. 86-92 INBD. - PORT	214
" " - STBD.	222
TOTAL	1423

2. ENTER SUMMATION OF COL.'S 1, 2 & 3; DIFFERENCE OF COL. 3 - COL. 1; TOTALS OF CARGO OIL AND DECK CARGO.

SUMMATION OF COL. 1 + COL. 2 + COL. 3
EXCESS OF HOLD LAYER OVER UPPER TWEEN
DECK LAYER (COL. 3 - COL. 1).
SUMMATION OF CARGO OIL (COL. 4).
DECK CARGO

6881
+594
1423
300

3. ENTER TABLE AT APPROPRIATE LINE IN COL. 'A' AND READ COL.'S 'B', 'C' AND 'D' FOR REQUIRED DOUBLE BOTTOM TANKAGE. INTERPOLATE FOR INTERMEDIATE VALUES.

A SUMMATION OF COL. 1 + COL. 2 + COL. 3	B EXCESS OF HOLD LAYER OVER UPPER TWEEN DECK LAYER (COL. 3 - COL. 1)						C ADDITIONAL D.B. TANKAGE REQ'D PER 100 TONS OF DK. CARGO	D REDUCTION IN REQ'D D.B. TANKAGE PER 100 T OF CARGO OIL
	+1500	+1000	+500	0	-500	-1000		
1000		0	580	820	1100	1360	100	-18
2000	0	220	580	870	1220	1500	110	-14
3000	90	430	710	1050	1300	1710	120	-10
4000	250	540	960	1260	1650	1950	130	-6
5000	510	880	1180	1550	1840	2190	130	-12
6000	790	1060	1400	1660	1970	2220	110	-20
7000	850	1160	1400	1700	1940	2220	90	-28
8000	880	1110	1400	1620	1890	2110	70	-34
9000	790	1050	1270	1530	1750*	2010*	60	-38
10,000	720*	930*	1170*	1370*			50	-42

* TONNAGE SHOWN WOULD BE IN EXCESS OF SUMMER LOAD LINE DISPLACEMENT. FIGURE IS PROVIDED TO FACILITATE INTERPOLATION.

4. ENTER READINGS FROM ABOVE IN APPROPRIATE SPACES BELOW, MULTIPLYING READINGS FROM COL. 'C' AND 'D' BY THE APPROPRIATE TONNAGE IN HUNDREDS. THE ALGEBRAIC SUM IS THE REQUIRED DOUBLE BOTTOM TANKAGE.

REQUIRED TANKAGE FROM TABLE (30 * 92) 1353
+ REQUIRED TANKAGE FOR 300 TONS OF DECK CARGO 276
TOTAL 1629
- REDUCTION IN TANKAGE FOR 1423 TONS OF CARGO OIL 384
TOTAL REQUIRED TANKAGE IN DOUBLE BOTTOM 1245

SHEET No. 11

LOADING TABLE - VOYAGE NO. _____

DRY CARGO

VESSEL _____

FUEL OIL OR BALLAST

HOLD	Bale Cap.	FT. ³ / _{TON} Stow.	Tons	VCG	Moment	LCG-PP	Moment
No. 1 Fore	9,806			54.6		46.7	
2nd Dk.	12,571			44.3		47.9	
3rd Dk.	10,007			34.0		48.7	
Orlop Dk.	8,152			22.8		49.0	
Tank Top	6,706			11.3		49.3	
No. 2 2nd Dk.	30,038			42.0		95.5	
3rd Dk.	27,889			31.4		95.2	
Orlop Dk.	23,820			21.0		96.3	
Tank Top	20,898			10.2		96.3	
No. 3 2nd Dk.	38,616			39.7		154.3	
3rd Dk.	42,500			29.1		153.3	
Tank Top	70,254			14.3		153.2	
No. 4 2nd Dk.	20,771			38.8		302.5	
3rd Dk.	43,513			27.7		306.4	
Tank Top	61,480			13.9		306.4	
No. 5 2nd Dk.	15,798			38.8		368.0	
3rd Dk.	31,249			28.5		364.3	
Tank Top	36,902			15.0		363.1	
No. 6 2nd Dk.	20,446			40.0		408.6	
3rd Dk.	20,456			30.0		414.1	
Tank Top	9,531			19.6		411.7	
TOTAL	562,103						

SPECIAL OR DANGEROUS CARGO

SPACE	Bale Cap.	FT. ³ / _{TON} Stow.	Tons	VCG	Moment	LCG-PP	Moment
Fr. 176-183	6,233			40.7		432.4	
Fr. 17-31 (P)	1,864			53.5		58.4	
Fr. 17-31 (S)	1,820			53.5		58.4	
Fr. 177-183 (P)	1,348			49.5		433.2	
Fr. 177-183 (S)	1,244			49.5		435.3	
TOTAL	12,509						

REFRIGERATED CARGO

HOLD	Cu. Ft.	FT. ³ / _{TON} Stow.	Tons	VCG	Moment	LCG-PP	Moment
No. 4 2nd Dk. P	6,745			37.8		306.5	
2nd Dk. S	6,715			37.8		306.5	
No. 5 2nd Dk. P	5,297			38.6		364.2	
2nd Dk. S	5,285			38.6		364.2	
Cargo Meat	251			38.6		229.0	
TOTAL	24,293						

DECK CARGO (VCG = 46.5' + 1/2 THE HEIGHT OF THE DECK CARGO)

LOCATION	Cu. Ft.	FT. ³ / _{TON} Stow.	Tons	VCG	Moment	LCG-PP	Moment
TOTAL							

TANK	% Full	Cont.	F.S.	Tons	VCG	Moment	LCG-PP	Moment
No. 1 DB - CL				3.3			44.8	
No. 2 DB - P				2.3			94.8	
- S				2.3			94.8	
No. 3 DB - P				2.5			157.3	
- CL				2.3			152.7	
- S				2.5			157.3	
No. 4 DB - P				2.4			201.9	
- CL				2.3			201.5	
- S				2.4			201.9	
No. 5 DB - P				2.5			246.2	
- CL				2.3			240.2	
- S				2.5			246.2	
No. 6 DB - P				2.7			300.5	
- CL				2.3			306.5	
- S				2.7			300.5	
No. 7 DB - P				2.6			361.6	
- S				2.6			361.6	
No. 8 DT - P				7.0			404.6	
- S				6.8			404.8	
F.O. Settler P				19.0			211.5	
F.O. Settler S				19.0			211.5	
Fore Peak				13.5			12.0	
Aft Peak				30.2			455.6	
TOTAL								

CARGO OIL

TANK	% Full	Cont.	F.S.	Tons	VCG	Moment	LCG-PP	Moment
Fr. 79-86 Inbd. P				19.4			195.2	
" " S				19.0			195.2	
" Outbd. P				19.1			195.2	
" " S				19.1			195.2	
Fr. 86-92 Inbd. P				19.3			211.5	
" " S				18.9			211.5	
TOTAL								

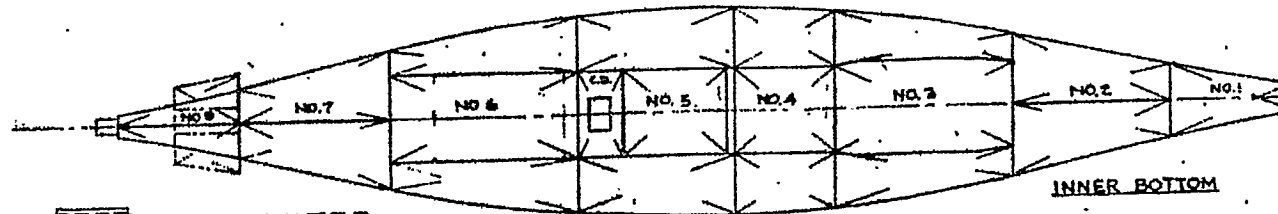
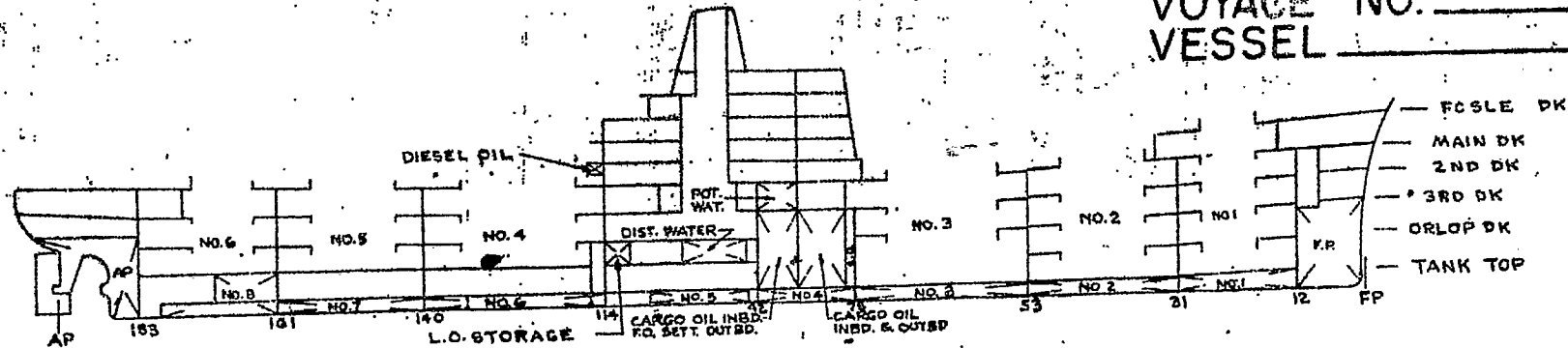
FRESH WATER

TANK	% Full	Cont.	F.S.	Tons	VCG	Moment	LCG-PP	Moment
Pot. Water P				38.3			211.4	
" " S				38.3			211.4	
Dist. Water				19.0			232.8	
TOTAL								

MISCELLANEOUS

TANK	% Full	Cont.	F.S.	Tons	VCG	Moment	LCG-PP	Moment
L.O. Storage				19.0			270.2	
Diesel Oil				50.3			276.7	
TOTAL								

VOYAGE NO. _____
VESSEL _____



- FRESH WATER
- FUEL OIL, L.O. OR D.O.
- CARGO OIL
- SALT WATER BALLAST
- DRY OR REFRIGERATED CARGO

ITEM	TONS	VCG	MOMENT	LCG-FP	MOMENT	F.S.
LIGHT SHIP	6575	32.30	212,400	239.42	1,574,187	
CREW, PASSENGERS & EFFECTS						
STORES						
DRY CARGO						
SPECIAL OR DANGEROUS CARGO						
REFRIGERATED CARGO						
DECK CARGO						
FUEL OIL OR BALLAST						
CARGO OIL						
FRESH WATER						
MISCELLANEOUS TANKS						
TOTAL						

TRIM

TOTAL WGT. (TONS) = DISPLACEMENT (A) =	TONS
① KEEL DRAFT AT LCF (USE SHT. 3) =	FT.
② LCG AFT FP	FT.
③ LCB AFT FP (USE SHT. 3)	FT.
④ TRIM LEVER (② - ③) =	FT. (+ = TRIM AFT) (- = TRIM FWD)
⑤ MOMENT TO TRIM 1" (USE SHT. 3) =	FT-TONS
⑥ TRIM (FOR LBP = 470') = $\frac{1}{12} \times ④ \div ⑤$ =	FT.
⑦ TRIM (BTW. MARKS) = $0.92 \times ⑥$ =	FT.
⑧ LCF AFT FP (USE SHT. 3)	FT.
⑨ LCF AFT FWD MARKS = ⑧ - 6.5' =	FT.
⑩ CORRECTION IN FWD DRAFT (⑧ x ⑦) ÷ 432.5 =	FT.
⑪ CORRECTION IN AFT DRAFT (⑦ - ⑩) =	FT.
⑫ KEEL DRAFT AT FWD MARKS *	FT.
⑬ KEEL DRAFT AT AFT MARKS **	FT.

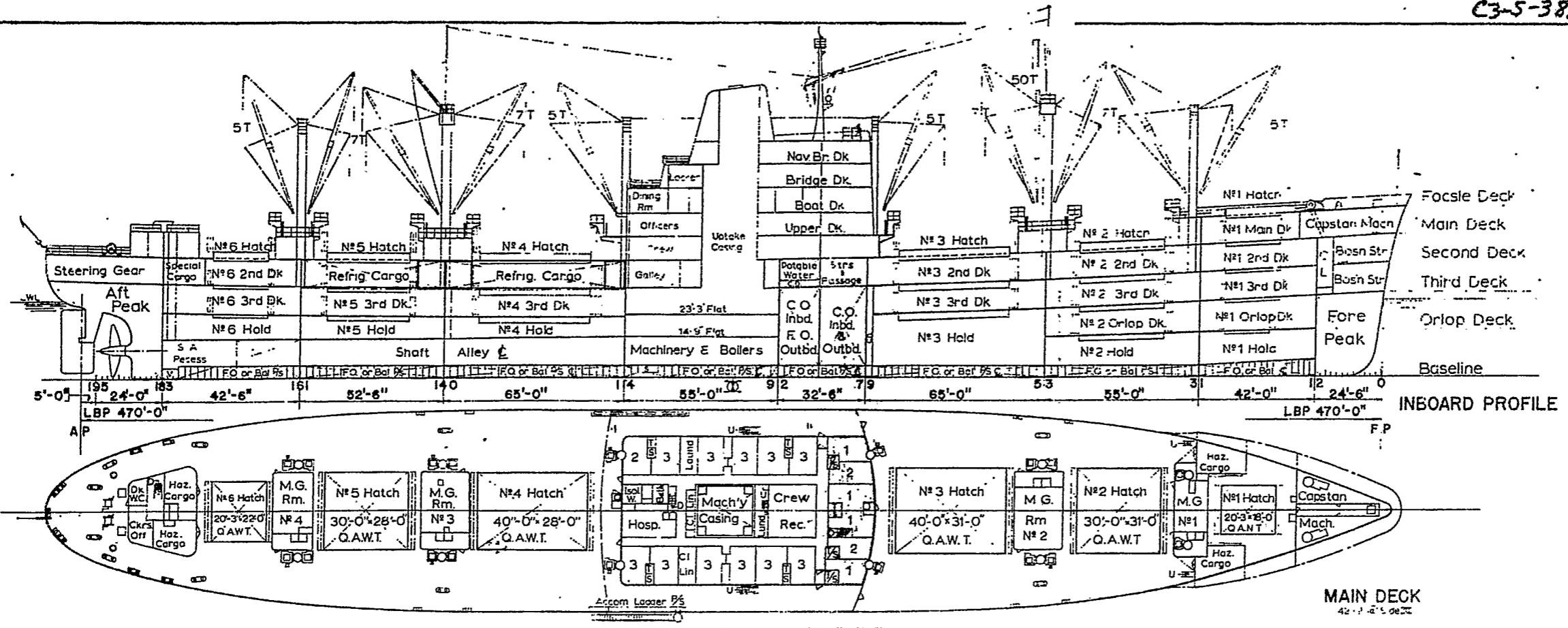
STABILITY

① KM (USE SHT. 3)	FT.
② KG = VCG (ABOVE MID. BASE LINE)	FT.
③ GM (UNCORRECTED) = ① - ②	FT.
④ F.S. CORRECTION = TOT. F.S. COL. ÷ Δ	FT.
⑤ GM AVAILABLE = ③ - ④	FT.
⑥ GM REQUIRED (USE SHT. 6)	FT.

* ① - ⑩ FOR TRIM BY STERN
** ④ + ⑪ FOR TRIM BY STERN

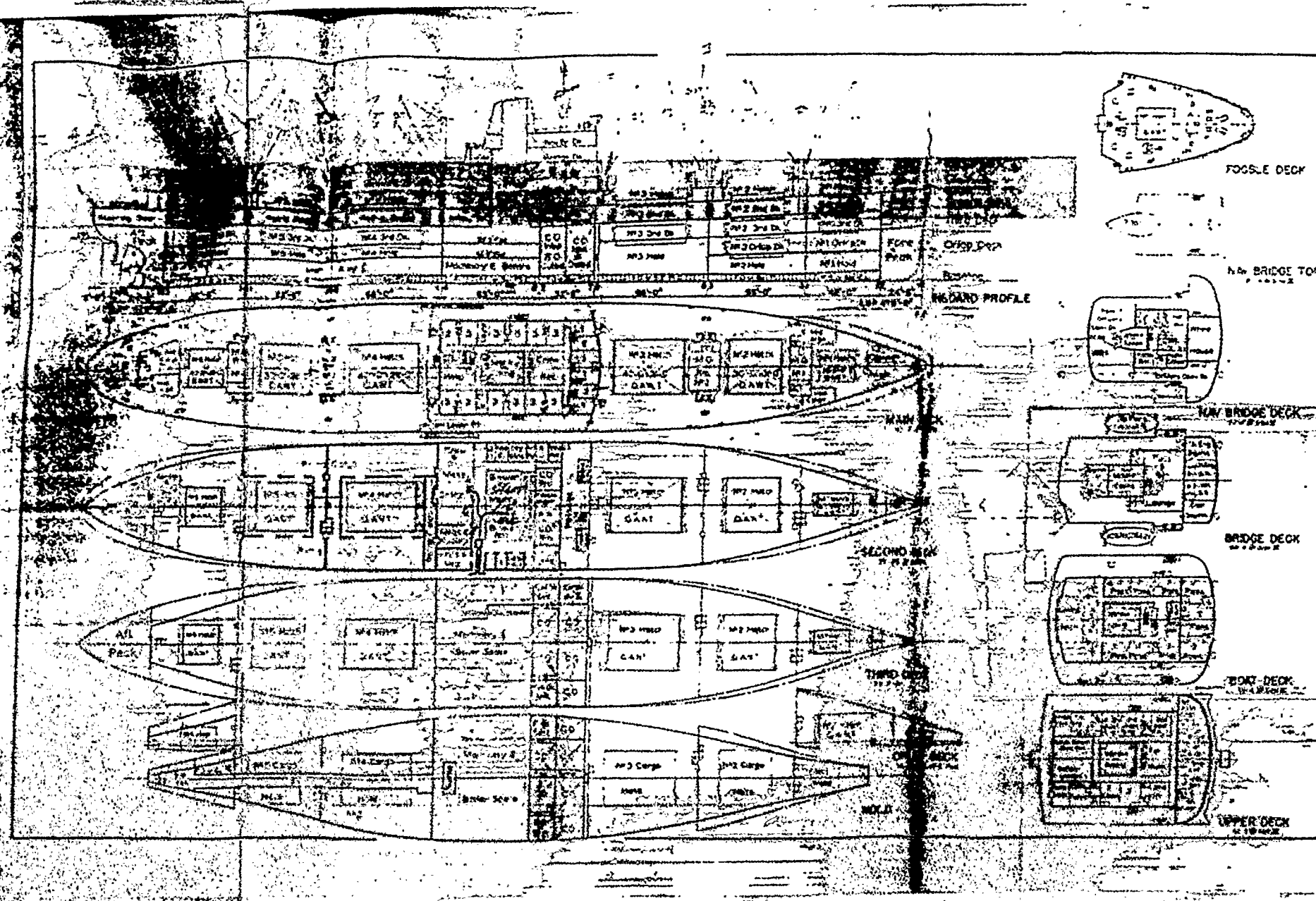
SHEET NO. _____

C3-5-38a



INBOARD PROFILE

MAIN DECK



PRINCIPAL CHARACTERISTICS	
Length Overall	472'-6"
Length Waterline	473'-0"
Length Between Perpendiculars	470'-0"
Breadth Moulded	73'-0"
Depth to Main Deck at Side	42'-3"
Draft to Main Deck	27'-0"
Draft to Bottom	28'-0"
Displacement, Light Ship	6,000
Fuel Oil Tons	7,477
Fresh Water Tons	54
Stores Tons	71
Reserve Buoyancy Tons	14
Deck Cargo Tons	1,252
Deck Cargo Capacity Tons	375
Deck Cargo Capacity Tons	7,497
Deck Cargo Capacity Tons	15,117
Deck Cargo Capacity Tons	12,811
Deck Cargo Capacity Tons	45,000
Deck Cargo Capacity Tons	28,775
Deck Cargo Capacity Tons	64
Deck Cargo Capacity Tons	12,500
Deck Cargo Capacity Tons	18
Deck Cargo Capacity Tons	22
Deck Cargo Capacity Tons	22
Deck Cargo Capacity Tons	22
Deck Cargo Capacity Tons	22

OFFICE OF SHIP CONSTRUCTION
MARITIME ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

AMERICAN EXPORT LINES INC.
SINGLE SCREW CARGO VESSEL

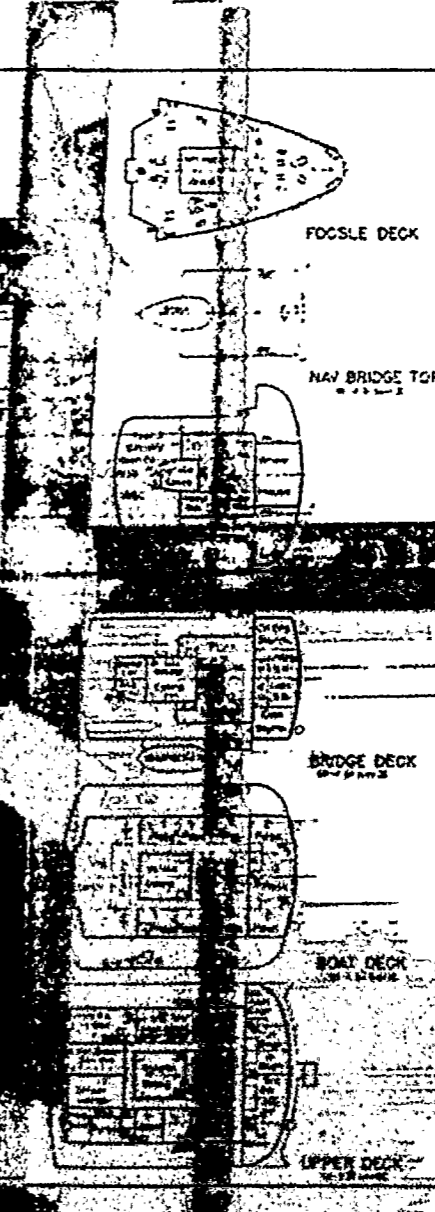
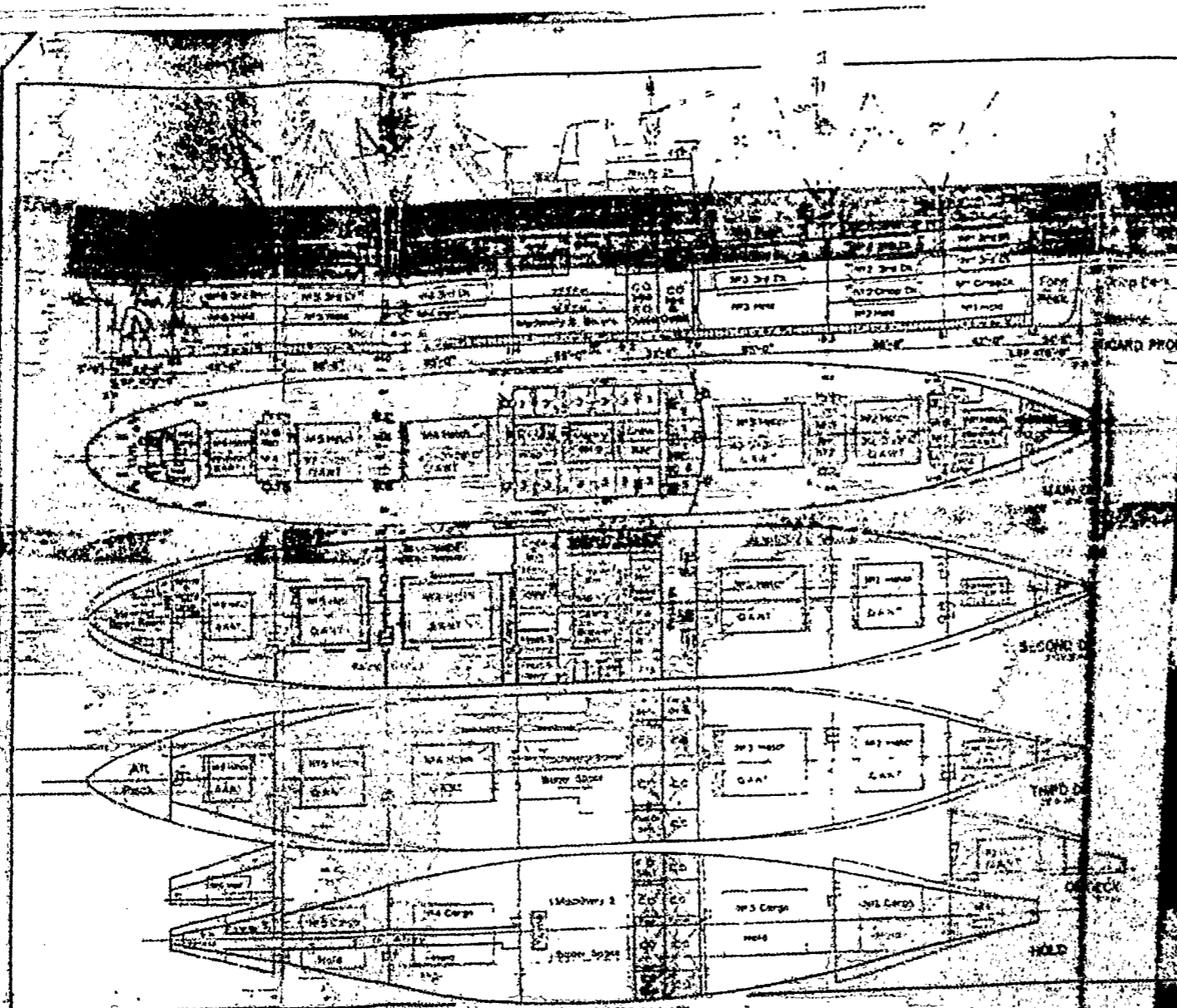
NA DESIGN NO. 2-1044

SCALE
0 50 100

Date issued: _____ Approved by: _____
Drawn by: _____

NA PLAN NO. CS-1044-50-01

Notes: _____



PRINCIPAL CHARACTERISTICS	
Length Overall	402'-0"
Length Between Perpendiculars	473'-0"
Beam	73'-0"
Depth to Main Deck at Side	42'-0"
Draft Full Load	27'-0"
Draft Seating	28'-0"
Displacement Light Ship	6,600
Fuel Oil Tons	7,400
Fresh Water Tons	164
Stores Tons	74
Personnel & Effects Tons	14
Dry Cargo Tons	6,250
Refrigerated Cargo Tons	320
Deck Cargo Tons	1,100
Light Cargo Deadweight	7,000
Light Deadweight	12,200
Two Stowage Full Load	16,500
Cargo Volume Bale	55,000
Cargo Volume Refrigerated	70,000
Passenger Accommodations	24
Crew Accommodations	24
Shut Horsepower Normal	12,500
Service Speed-Knots	18
Propeller Diameter	30
Propeller Mach Two High Speed Device	1

OFFICE OF SHIP CONSTRUCTION
MARINE ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

AMERICAN EXPORT LINES, INC.
SINGLE SCREW CARGO VESSEL

SCALE
1" = 100'

DATE: 1944
DRAWN BY: [Name]
CHECKED BY: [Name]

PLAN NO. CO-1000-10-1