財 利 船 廠 有 限 公 司
Cheoy Lee Shipyards Limited
89 & 91 HING WAH STREET WEST, LAI CHI KOK,
P.O. BOX 80040 CHEUNG SHA WAN, KOWLOON
HONG KONG
TEL: (852) 2307 6333 FAX: (852) 2307 5577 CABLE: CHEOYLEE
E-MAIL : info@cheoylee.com

OUR REF : L2005-0539 YOUR REF : HONG KONG 27 June, 2005

The Director of Marine
Marine Department
Local Craft Safety Section
Harbour Building
38 Pier Road
Hong Kong.

By Hand

Dear Sir,

Re: M/L "LAMMA IV" Licence No. 9153

We wish to inform you that we have been instructed by the shipowner, The Hongkong Electric Co., Ltd. that in order to facilitate ease of cleaning and checking the hull plates for any signs of corrosion, they wish to raise the existing ballast weights of the above vessel by a height of 10 inches from the existing position by means of aluminium frames support. The vessel's stability will be checked after completion of the work.

Thank you for your attention, we trust you have no objections to this matter.

The note is
Cheoylee contact CSU/Hg.
at 29/6 to carry out
inclining experiment. 28/6

Yours faithfully,

For and on behalf of
CHEOY LEE SHIPYARDS, LIMITED

Director

S.Y. Lo

SYL/nl

28 JUN 2005

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TEL: (852) 2307 6333 FAX: (852) 2307 5577 CABLE: CHEOYLEE
E-MAIL : info@cheoylee.com

OUR REF : L2005-0787 YOUR REF : HONG KONG 21 September, 2005

The Director of Marine
Marine Department
Local Craft Safety Section
Harbour Building
38 Pier Road
Hong Kong.

BY HAND

Dear Sir,

Re: M/L "LAMMA IV" Licence No. 9153

With reference to our letter L2005-0539 dated 27 June, 2005, please be informed that the aluminium frames support works have been completed and an inclining experiment on the vessel was carried out. We enclose herewith the "Stability Booklet" for your reference.

01/L-7962

Thank you for your attention.

Yours faithfully,

For and on behalf of
CHEOY LEE SHIPYARDS, LIMITED

Director

Exam of Stab
$1235
RN 63621/2005

S.Y. Lo

SYL/nl
Encl.

c.c. The Hongkong Electric Co., Ltd.

(3)

M.V. "LAMMA IV"

28 M ALUM./GRP PASSENGER LAUNCH

STABILITY BOOKLET

Yard No. 4625

Revision: -

Date: July 21, 2005

香港特別行政區海事處
MARINE DEPARTMENT
HKSAR
FILE NO.: SP/L-7962
SIGNATURE:
DATE: 6.1.2005

Cheoy Lee Shipyards Ltd

OFFICE COPY

(1) L-7962 No. 15925 NC 111125

Revision notes

Revision	Date	By	Check By	Note
-	21-Jul-05	HYK	FCC	Issued after inclining experiment.

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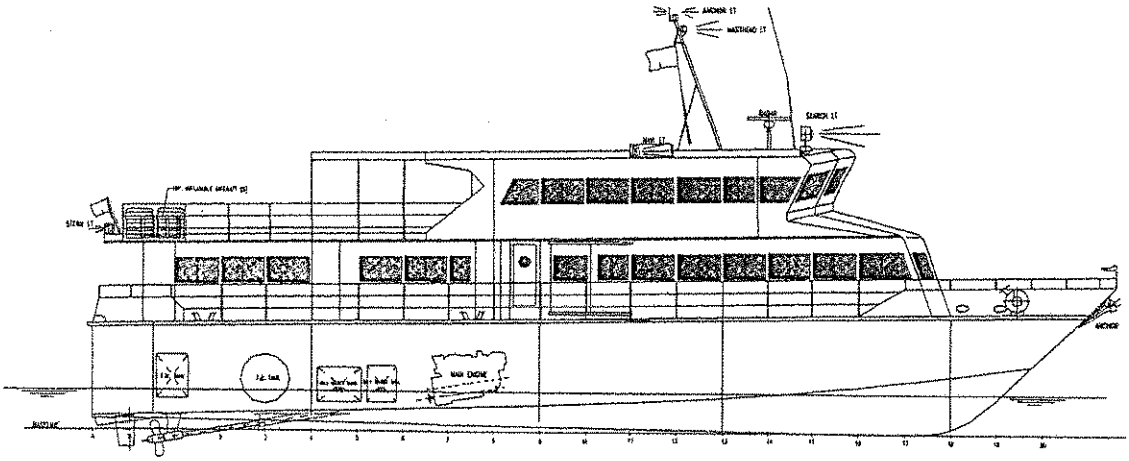
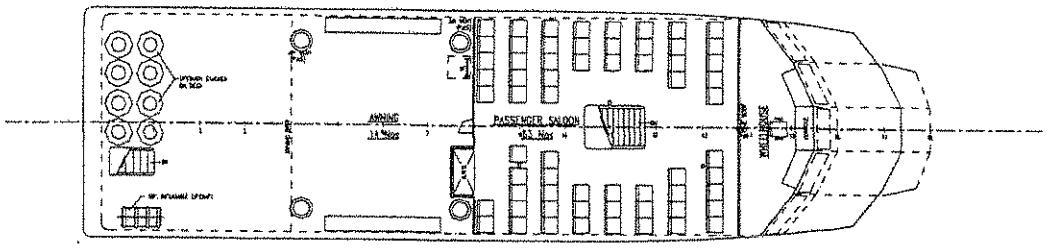
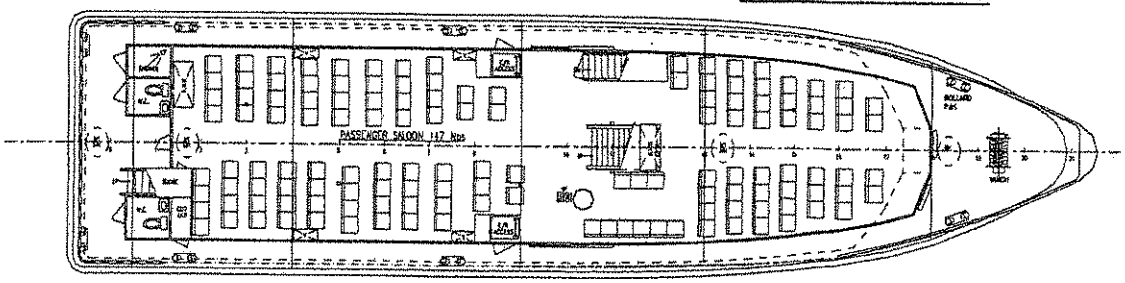
General arrangement



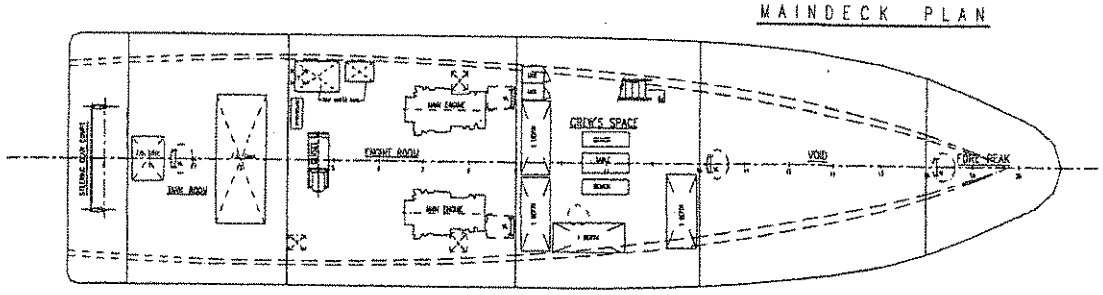
PROFILE



UPPERDECK PLAN



MAINDECK PLAN



UNDERDECK PLAN

Vessel general particulars

- the ship's name "LAMMA IV"
- the ship type mono hull type
- service notation Hong Kong
- the yard number 4625
- the year of delivery 1998
- the moulded dimensions

length overall	28.00	m
length waterline	24.89	m
beam	6.81	m
depth	2.88	m

Datum

In this booklet the following definitions are adopted:

- drafts to moulded base line
- longitudinal co-ordinates to station frame 0, forward negative.
- transverse co-ordinates to vessel center line, starboard positive.
- units used are metres, metric tones (MT), degrees (heel or trim) and radian-metre.
- heels are stated as "stbd" or "port", trims are stated as "aft" or "fwd".

About the booklet

The calculation is carried out using AutoHydro® software, where it determines the vessel's character through a detail geometric model file, which input with 3D parts of the ship.

Metric conversions

Multiply by	To Convert From	To Obtain	
0.03937	millimeters	inches	25.4
0.3937	centimeters	inches	2.54
3.2808	meters	feet	0.3048
2.2046	kilograms	pounds	0.45359
0.0009842	kilograms	tons(2240lbs.)	10 16.047
0.001	kilograms	tonnes	1000
0.9842	tonnes	tons	1.016
2.4998	tonnes /cm	tons /inch	0.4
187.9767	m.rad	feet.de	0.0053
	To Obtain	To Convert From	Multiply by above

Relation Between Weight and Volume				
1000,000,000	mm^3	=	1	m^3
1	cm^3 of freshwater (S.G. 1.0)	=	1	g
1000	c m^3 of freshwater (S.G. 1.0)	=	1	kg
1	m^3 of freshwater (S.G. 1.0)	=	1	tonne
1	m^3 of saltwater (S.G 1.025)	=	1.025	tonnes
1	tonne of saltwater (S.G. 1.025)	=	0.975	m^3

Unprotected Flood Points

Name	L,T,V (m)	Height (m)	Related Tank
(1) engine room door p	10.850f, 2.600p, 3.500	<und>	ENGINE ROOM
(2) engine room door s	10.850f, 2.600s, 3.500	<und>	ENGINE ROOM

Inclining experiment

Place Cheoy Lee Shipyards Limited
Date 2005/7/19, 1:00 pm
Weather Sunny
Specific gravity 1.021
Persons onboard 3 p

Status as inclined

After perpendicular is at transom
Fore perpendicular is at 24.89 (m) forwards of transom
Calculation origin is 1.000 m fwd. of transom at base line

Draft mark reading:-

After central draft	: 1.77 (m) AP
After draft corrected to base line AP	: 1.77 - 0.79 = 0.98 (m)
Forward draft reading 0.3 m after of FP	: 1.05 (m)
Forward draft corrected to base line FP	: 1.051 (m)
The average moment (MT) per radian (rad.)	: 164.9 (MT-m /rad.),
or moment (MT) per degree	: 2.878 (MT-m/deg.)

Floating Status

Draft FP	1.051 m	Heel	zero	GM(Solid)	2.629 m
Draft MS	1.016 m	Equil	Yes	F/S Corr.	0.000 m
Draft AP	0.980 m	Wind	0.0 kn	GM(Fluid)	2.629 m
Trim	fwd 0.071/24.890	Wave	No	KMT	4.939 m
LCG	8.556f m	VCG	2.311 m	TPcm	1.14

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	60.36	8.397f	0.000	2.273
Deadweight	2.38	12.580f	0.000	3.272
Displacement	62.73	8.556f	0.000	2.311

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
WTCO-3 PERSONS ONBOARD	0.20	13.765f	0.000	3.880u
WTCO-INCLINING WEIGHT	2.13	12.445f	0.000	3.220u
WTCO-LUB OIL & PENDULUM	0.04	13.765f	0.000	2.950u
Total Weight:	62.73	8.556f	0.000	2.311u

Displacer Status

Item	Status	Spgr	Displ	LCB	TCB	VCB	Eff

			(MT)	(m)	(m)	(m)	/Perm
HULL	Intact	1.021	62.73	8.561f	0.000	0.699	1.000
SubTotals:			62.73	8.561f	0.000	0.699	

wtco: weight to come off
wtgi: weight to go in

Hydrostatic Properties

Draft is from Baseline.
Trim: fwd 0.071/24.890, No heel, VCG = 2.311

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m /cm)	GML (m)	GM(Solid) (m)
1.009	62.734	8.561f	0.699	9.032f	1.14	1.67	66.223	2.629

Water Specific Gravity = 1.021.
Trim is per 24.89m
Hydrostatic properties as inclined (trimed)

Hydrostatic Properties

Draft is from Baseline.
Trim: fwd 0.071/24.890, No heel, VCG = 2.311

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m /cm)	KML (m)	KMT (m)
1.005	62.310	8.557f	0.697	9.027f	1.14	1.67	68.880	4.960
1.006	62.436	8.558f	0.697	9.029f	1.14	1.67	68.777	4.954
1.007	62.550	8.559f	0.698	9.030f	1.14	1.67	68.684	4.948
1.008	62.664	8.560f	0.698	9.031f	1.14	1.67	68.591	4.943
1.009	62.778	8.561f	0.699	9.032f	1.14	1.67	68.499	4.937
1.010	62.892	8.562f	0.699	9.034f	1.14	1.67	68.407	4.932
1.011	63.006	8.563f	0.700	9.035f	1.14	1.67	68.315	4.926
1.012	63.120	8.563f	0.701	9.036f	1.14	1.67	68.223	4.921

Water Specific Gravity = 1.021.
Trim is per 24.89m

Light ship

Floating Status

Draft FP	0.999 m	Heel	zero	GM(Solid)	2.761 m
Draft MS	0.989 m	Equil	Yes	F/S Corr.	0.000 m
Draft AP	0.980 m	Wind	0.0 kn	GM(Fluid)	2.761 m
Trim	0.019/24.890	Wave	No	KMT	5.034 m
LCG	8.397f m	VCG	2.273 m	TPcm	1.13

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	**60.36**	**8.397f**	**0.000**	**2.273**
Displacement	60.36	8.397f	0.000	2.273

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
Total Weight:	60.36	8.397f	0.000	2.273u

Displacer Status

Item	Status	Spgr	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	Eff /Perm
HULL	Intact	1.021	60.35	8.398f	0.000	0.687	1.000
SubTotals:			60.35	8.398f	0.000	0.687	

Hydrostatic Properties

Draft is from Baseline.
Trim: 0.019/24.890, No heel, VCG = 2.273

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m /cm)	GML (m)	GM(Solid) (m)
0.988	60.352	8.398f	0.687	8.948f	1.13	1.63	67.336	2.761

Water Specific Gravity = 1.021.
Trim is per 24.89m

Inclining experiment record

YARD NO. 4625 INCLINING EXPERIMENT DATA. PAGE 1

VESSEL NAME :- " M.V. LAMMA IV "

DATE :- 19-Jul-05

PLACE:- ALONG SIDE OF SEA WHART AT CHEOY LEE SHIPYARDS.

WEATHER:- FINE

MOORING:- MOORING WITH 2 SLACK LINES EACH LINE AT END

ATTENSION:- M.D.. SURVEYOR./ INSPECTOR MR. T. Y. CHAU

2 CHEOYLEE SHIPYARS' STAFFS :

TOTAL = 3 PERSONS ON BOARD.

DESCRIPTION	WEIGHT.		L.C. G. From stn. 5	V.C.G. Above B. L.
	FRAME NO.	IN KG	IN MM.	IN MM.
Lub oil. Inclining. & planking.	———	40	1320 F	Above m/dk. 63mm.

WEIGHT CONDITION. I NCLINING WEIGHT	WT. CRS	WEIGHT (T)	L.C. G.	V.C.G.
W1				
2 x 42 pce x56 lbs total 84 pces	6390 mm.	2.134	midship	above m/dk. 340 mm
to be arranged at each sides				

TANK CONDITION.	FRAME NO.	sounding	L.C. G.	V.C.G.
FUEL OIL TANK	———	Empty		
FRESH WATER TANK	———	Empty		
OILY WATER TANK	———	Empty		

BILGE CONDITION

COMPARTMENT	FRAME NO.	SOUNDING
FOREPEAK COMPT.	F.E. - 18	Dry
VOID SPACE	18 . - 13	Dry
CREWS SPACE	13. - 9	Dry
ENGINE ROOM	9 . - 4	Dry
TANK SPACE	4 . - 0.5	Dry
STEERING GEAR COMPT.	0.5. - A.E.	Dry

YARD NO. 4625 " M.V. LAMMA IV " PAGE 2 / 2

FINISH.:- THE VESSEL FINISHED WITH ALL DECK FITTINGS EQUIPMENT, ANCHORS, AND CHAIN FIRE FIGHTING, LIFE SAVING APPLIANCES, AND NAVIGATING LIGHTS ARE ALL IN POSITION.

DRAFT:-	PORT	CR.	STBD.	description
FORWERD.:-	1.05 M.	——	1.05 M.	AFT.DRAFT MAKS ARE MEASURED FROM B.L -790MM.
AFT. :-	——	1.77 M.	——	FWD.DRAFT MARKS ARE MEASURED FROM B.L.

MEN ON DECK WHEN DRAFT TAKEN.

SPECIFIC GRAVITY (S.W.) = 1.021

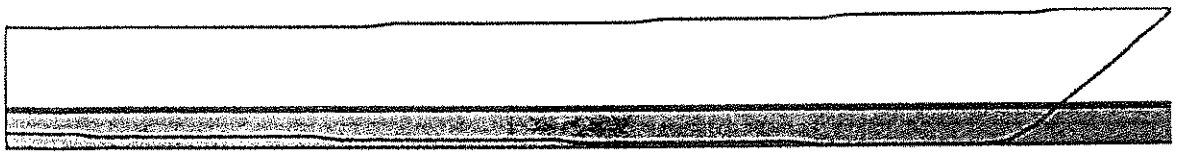
EACH ☐ GROUP PER WT. = 0.5334 TONES (21x56 LBS) Total weight = 4 x (21 x 56 lbs)

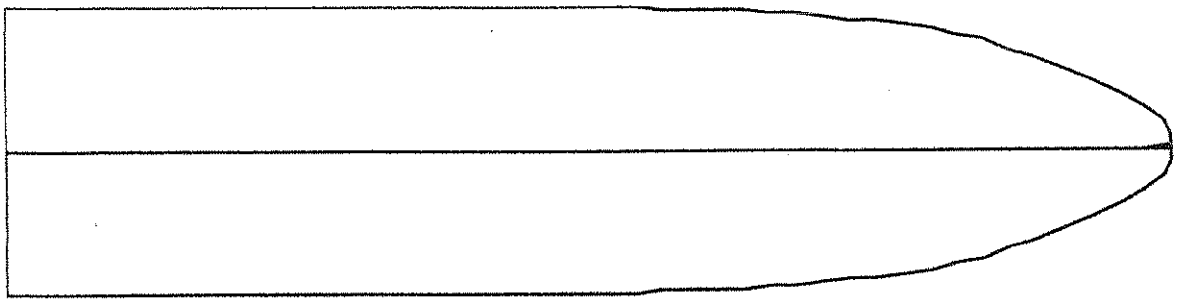
TIME START :- 3:45 ~~AM~~ / PM					LENGTH OF PENDULU 1910 MM.				
	P	WEIGHT	MOVING	S	SHIFT	Moment t-m	Deflection mm	tan θ	mmt/tan θ t-m/rad
1	☐ ☐			☐ ☐	——	——	——	——	——
2	☐		☐	☐ ☐	P TO S	3.4084	39	0.02040	167.1
3			☐ ☐	☐ ☐	P TO S	3.4084	39	0.02040	167.1
4	☐ ☐			☐ ☐	REPLACE	6.8168	78	0.04080	167.1
5	☐ ☐	☐		☐	S TO P	3.4084	39	0.02040	167.1
6	☐ ☐	☐ ☐			S TO P	3.4084	41	0.02150	158.5
7	☐ ☐			☐ ☐	REPLACE	6.8168	80	0.04190	162.7
TIME TEST END :- 4:34 ~~AM~~ / PM								aver.	164.9
								t-m/deg	2.878

Intact stability

Lightship condition

0% fuel, 0% fresh water





Floating Status

Draft FP	0.998 m	Heel	zero	GM(Solid)	2.772 m
Draft MS	0.988 m	Equil	Yes	F/S Corr.	0.000 m
Draft AP	0.978 m	Wind	0.0 kn	GM(Fluid)	2.772 m
Trim	0.020/24.890	Wave	No	KMT	5.045 m
LCG	8.397f m	VCG	2.273 m	TPcm	1.14

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	60.36	8.397f	0.000	2.273
Displacement	60.36	8.397f	0.000	2.273

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
Total Weight:	60.36	8.397f	0.000	2.273u

Displacer Status

Item	Status	Spgr	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	Eff /Perm
HULL	Intact	1.025	60.39	8.398f	0.000	0.686	1.000
SubTotals:			60.39	8.398f	0.000	0.686	

Hydrostatic Properties

Draft is from Baseline.
Trim: 0.020/24.890, No heel, VCG = 2.273

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m /cm)	GML (m)	GM(Solid) (m)
0.986	60.385	8.398f	0.686	8.946f	1.14	1.64	67.517	2.772

Water Specific Gravity = 1.025.
Trim is per 24.89m

Righting Arms vs Heel Angle

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Righting Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.05f	0.979	0.000	0.000	2.513 (1)	Equil
4.00s	0.03f	0.975	0.193	0.007	2.329 (2)	
8.00s	0.01a	0.964	0.376	0.027	2.142 (2)	
12.00s	0.06a	0.937	0.527	0.058	1.959 (2)	
16.00s	0.06a	0.880	0.630	0.099	1.780 (2)	
20.00s	0.01a	0.796	0.697	0.145	1.606 (2)	
24.00s	0.08f	0.688	0.744	0.196	1.437 (2)	
28.00s	0.20f	0.560	0.778	0.249	1.273 (2)	
30.00s	0.27f	0.489	0.792	0.277	1.192 (2)	
32.00s	0.34f	0.413	0.806	0.304	1.113 (2)	
36.00s	0.49f	0.251	0.836	0.362	0.960 (2)	
40.00s	0.63f	0.076	0.868	0.421	0.814 (2)	
44.00s	0.75f	-0.098	0.880	0.482	0.668 (2)	
48.00s	0.83f	-0.270	0.862	0.543	0.522 (2)	
52.00s	0.85f	-0.434	0.811	0.602	0.380 (2)	
56.00s	0.81f	-0.592	0.731	0.656	0.241 (2)	
60.00s	0.73f	-0.745	0.634	0.704	0.105 (2)	
63.12s	0.66f	-0.862	0.550	0.736	-0.001 (2)	FldPt
64.00s	0.64f	-0.894	0.525	0.744	-0.030 (2)	
68.00s	0.53f	-1.038	0.406	0.777	-0.163 (2)	

Weight and C.G. used above include tank loads.
The tank load centers were not allowed to shift with heel and trim changes.

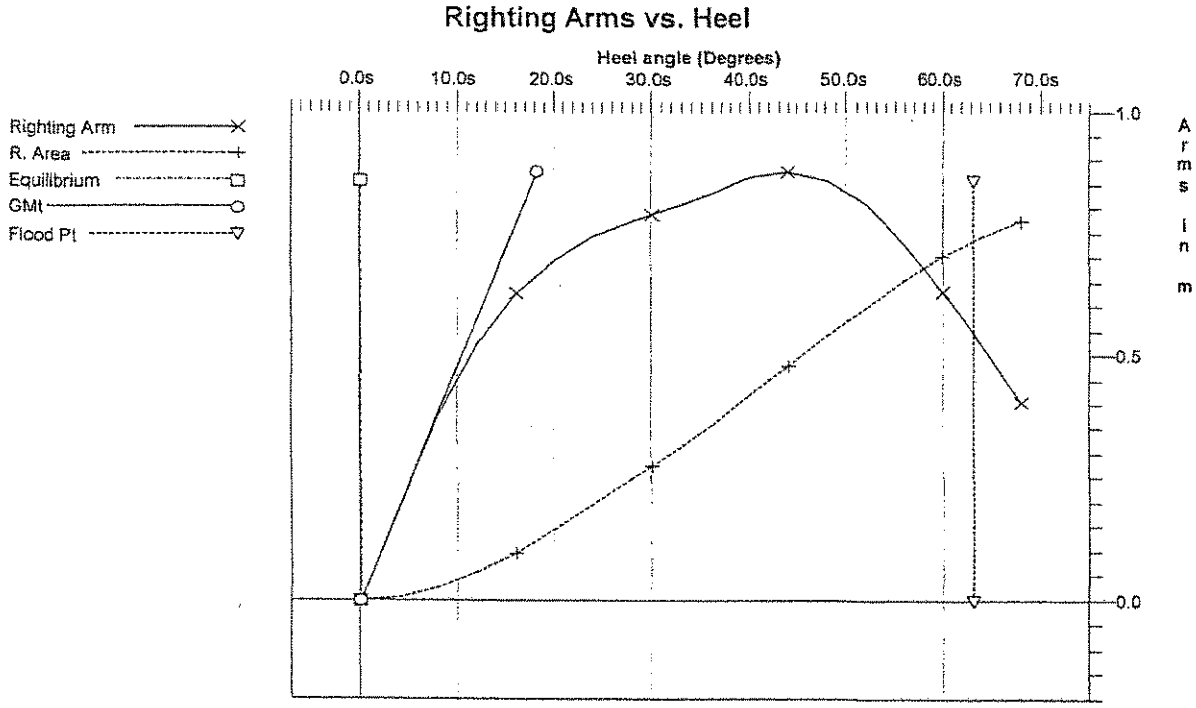
Unprotected Flood Points

Name	L,T,V (m)	Height (m)	Related Tank
(1) engine room door p	10.850f, 2.600p, 3.500	2.513	ENGINE ROOM
(2) engine room door s	10.850f, 2.600s, 3.500	2.329	ENGINE ROOM

Limit Report

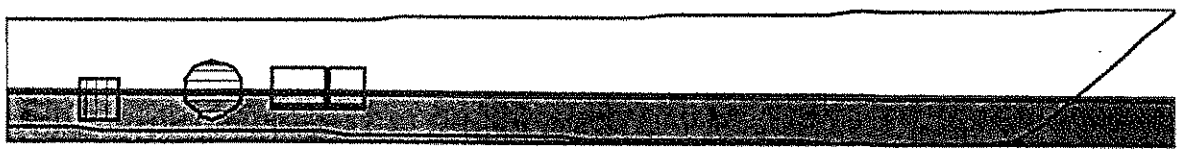
Limit	Min/Max	Actual	Margin	Pass
(1) GM at Equilibrium	>0.300 m	2.772	2.472	Yes
(2) Righting Arm at MaxRA or Abs 30.00 deg	>0.200 m	0.880	0.680	Yes
(3) Absolute Angle at MaxRA	>25.00 deg	44.00	19.00	Yes
(4) Area from Abs 0.00 deg to Abs 30.00	>0.0550 m-R	0.277	0.222	Yes

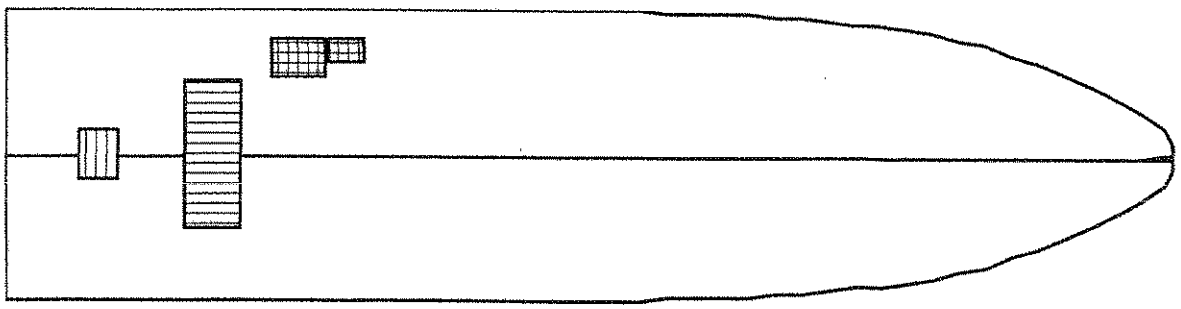
(5) Area from Abs 0.00 deg to Abs 40.00 or Flood	>0.0900 m-R	0.421	0.331	Yes
(6) Area from Abs 30.00 deg to Abs 40.00 or Flood	>0.0300 m-R	0.145	0.115	Yes



Full load departure condition

98% fuel, 100% fresh water





Fluid Legend

Fluid Name	Legend	Weight (MT)	Load%
FUEL OIL		4.17	97.99%
FRESH WATER		1.04	100.00%
oily WATER		.14	10.00%

Floating Status

Draft FP	1.160 m	Heel	port 0.14 deg.	GM(Solid)	1.665 m
Draft MS	1.169 m	Equil	Yes	F/S Corr.	0.022 m
Draft AP	1.179 m	Wind	0.0 kn	GM(Fluid)	1.642 m
Trim	0.020/24.890	Wave	No	KMT	4.280 m
LCG	8.496f m	VCG	2.616 m	TPcm	1.19

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	60.36	8.397f	0.000	2.273
Deadweight	21.62	8.773f	0.015p	3.572
Displacement	81.98	8.496f	0.004p	2.616

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
CREW 8P	0.54	11.445f	0.000	3.642u
PASSENGERS BRIDGE DECK AFT 14P	0.95	7.495f	0.000	6.050u
PASSENGERS BRIDGE DECK FWD 63P	4.28	13.195f	0.000	6.050u
PASSENGERS MAIN DECK CABIN 147P	10.00	9.495f	0.000	3.642u
STORE AND SPARE	0.50	14.445f	0.000	1.800u
Total Fixed:	76.64	8.858f	0.000	2.716u

Tank Status

FUEL OIL (SpGr 0.850)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FO TANK	97.99%	4.17	3.750f	0.001p	1.225	1.000	1.75
Subtotals:	97.99%	4.17	3.750f	0.001p	1.225		1.75

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FW TANK	100.00%	1.04	1.150f	0.000	1.000	0.960	0.00
Subtotals:	100.00%	1.04	1.150f	0.000	1.000		0.00

oily WATER (SpGr 0.980)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
NO1 OILYW TK.P	10.00%	0.09	5.774f	2.252p	0.873	1.000	0.06
NO2 OILYW TK.P	10.00%	0.04	6.899f	2.426p	0.850	1.000	0.01
Subtotals:	10.00%	0.14	6.125f	2.306p	0.866		0.07

Displacer Status

Item	Status	Spgr	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	Eff /Perm
HULL	Intact	1.025	81.96	8.494f	0.008p	0.789	1.000
SubTotals:			81.96	8.494f	0.008p	0.789	

Hydrostatic Properties

Draft is from Baseline.
Trim: 0.020/24.890, heel: port 0.14 deg., VCG = 2.616

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	GML (m)	GM(Fluid) (m)
1.171	81.959	8.494f	0.789	9.211f	1.19	1.77	53.891	1.642

Water Specific Gravity = 1.025.
Trim is per 24.89m

Righting Arms vs Heel Angle

Free Surface Adjustment 0.022
Adjusted VCG 2.638

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Righting Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.05a	1.179	-0.004	0.000	2.330 (1)	
0.14p	0.04a	1.178	0.000	0.000	2.324 (1)	Equil
4.00p	0.05a	1.175	0.111	0.004	2.145 (1)	
8.00p	0.08a	1.162	0.227	0.016	1.956 (1)	
12.00p	0.12a	1.140	0.338	0.035	1.766 (1)	
16.00p	0.17a	1.100	0.429	0.062	1.580 (1)	
20.00p	0.18a	1.033	0.490	0.094	1.401 (1)	
24.00p	0.14a	0.939	0.530	0.130	1.228 (1)	
28.00p	0.07a	0.820	0.558	0.168	1.062 (1)	
30.00p	0.02a	0.753	0.569	0.188	0.982 (1)	
32.00p	0.03f	0.681	0.581	0.208	0.904 (1)	
36.00p	0.10f	0.534	0.590	0.249	0.750 (1)	
40.00p	0.14f	0.388	0.575	0.290	0.595 (1)	
44.00p	0.17f	0.244	0.537	0.329	0.436 (1)	
48.00p	0.18f	0.101	0.482	0.364	0.275 (1)	
52.00p	0.19f	-0.042	0.413	0.396	0.112 (1)	
54.83p	0.17f	-0.141	0.351	0.414	-0.001 (1)	FldPt
56.00p	0.16f	-0.181	0.323	0.421	-0.047 (1)	
60.00p	0.08f	-0.316	0.216	0.440	-0.201 (1)	
64.00p	0.02a	-0.447	0.100	0.451	-0.352 (1)	
67.25p	0.12a	-0.551	0.001	0.454	-0.471 (1)	RaZero
68.00p	0.14a	-0.573	-0.023	0.454	-0.499 (1)	

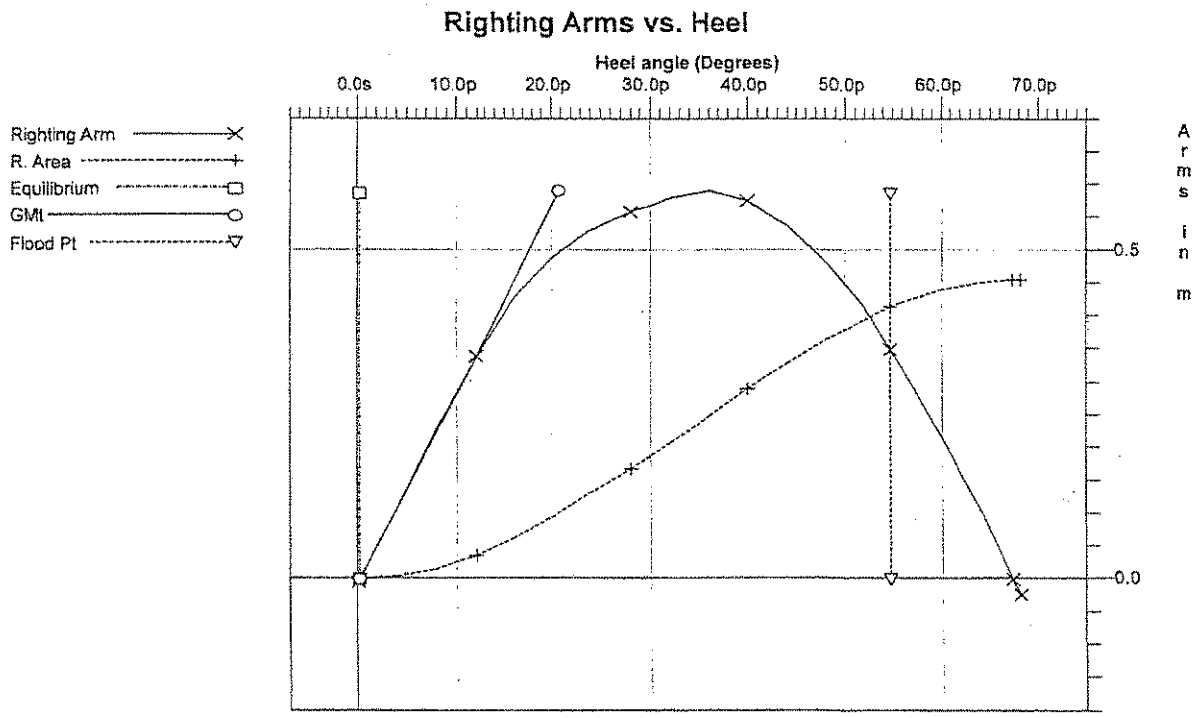
Weight and C.G. used above include tank loads.
The tank load centers were not allowed to shift with heel and trim changes.
A Free Surface Moment of 1.8 m4 was used to adjust the VCG.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)	Related Tank
(1) engine room door p	10.850f, 2.600p, 3.500	2.330	ENGINE ROOM

Limit Report

Limit	Min/Max	Actual	Margin	Pass
(1) GM at Equilibrium	>0.300 m	1.642	1.342	Yes
(2) Righting Arm at MaxRA or Abs 30.00 deg	>0.200 m	0.590	0.390	Yes
(3) Absolute Angle at MaxRA	>25.00 deg	36.00	11.00	Yes
(4) Area from Abs 0.00 deg to Abs 30.00	>0.0550 m-R	0.188	0.133	Yes
(5) Area from Abs 0.00 deg to Abs 40.00 or Flood	>0.0900 m-R	0.290	0.200	Yes
(6) Area from Abs 30.00 deg to Abs 40.00 or Flood	>0.0300 m-R	0.102	0.072	Yes



High speed turning or passenger crowding on one side

High speed turning heeling moment = 0.02*V^2*Displacement* (KG-draft /2)/Lwl = 15.2152 m-MT
V = 20 knot = 10.289 m /s

Passenger crowding heeling moment =7.834 MT-m
Total passengers on awning deck = 224 p
One third of passenger = 74.67 p
Two thirds of passengers = 149.33 p
Total passengers on main deck = 0 p
One forth of the breadth on awning deck = 6.172 / 4 = 1.543 m
Heeling moment due to passengers to on side = 0.068 x (149.33 - 74.67) x 1.543 = 7.834 (m-MT)

The greater of above heeling moments= 15.2152 MT-m

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Heeling Moment Report
Heeling moment:15.22 m-MT to starboard

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Least freeboard is 1.307 m at 1.000a
Least freeboard (to margin line) is 1.231 m at 1.000a

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80% of the angle of deck edge immersion: 23.024 deg.

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Residual Righting Arms vs Heel Angle

Free Surface Adjustment 0.001
Adjusted VCG 2.617

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Freeboard Height (m)	Notes
0.00	0.05a	1.179	-0.183	1.611	
4.00s	0.05a	1.175	-0.067	1.370	
6.27s	0.06a	1.168	0.000	1.232	Equil
8.00s	0.08a	1.162	0.051	1.125	
12.00s	0.12a	1.140	0.164	0.877	
16.00s	0.17a	1.100	0.256	0.636	
20.00s	0.18a	1.033	0.318	0.415	
24.00s	0.14a	0.939	0.359	0.214	
28.00s	0.07a	0.820	0.388	0.032	
28.78s	0.05a	0.795	0.393	-0.001	Deck Imm.
32.00s	0.03f	0.681	0.412	-0.133	
36.00s	0.10f	0.534	0.422	-0.294	
40.00s	0.14f	0.388	0.408	-0.459	
44.00s	0.17f	0.244	0.371	-0.625	
48.00s	0.18f	0.101	0.316	-0.791	
52.00s	0.19f	-0.042	0.248	-0.954	
56.00s	0.16f	-0.181	0.158	-1.117	
60.00s	0.08f	-0.316	0.052	-1.280	
61.80s	0.03f	-0.374	0.001	-1.353	RaZero
64.00s	0.02a	-0.447	-0.064	-1.439	
68.00s	0.14a	-0.574	-0.187	-1.594	

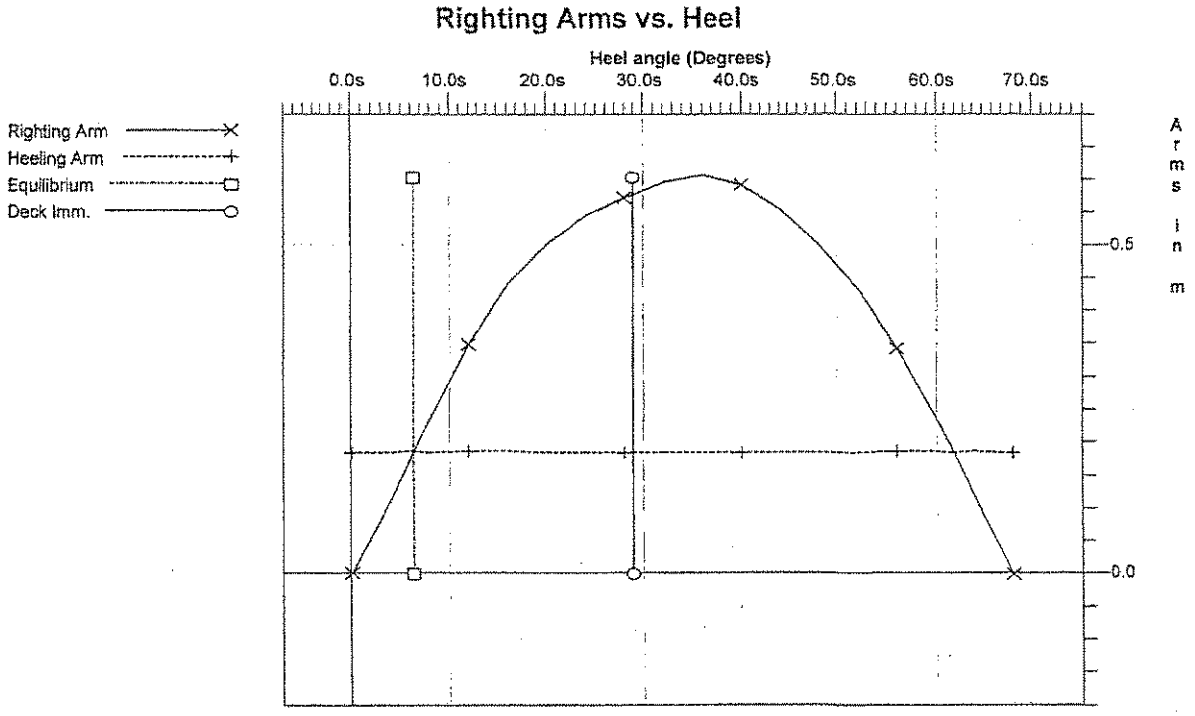
Weight and C.G. used above include tank loads.
The tank load centers were not allowed to shift with heel and trim changes.
A Free Surface Moment of 0.1 m4 was used to adjust the VCG.

Note:
Residual Righting Arms shown above are in excess of the
overturning arms derived from this moment (in m-MT):

Stbd heeling moment = 15.22

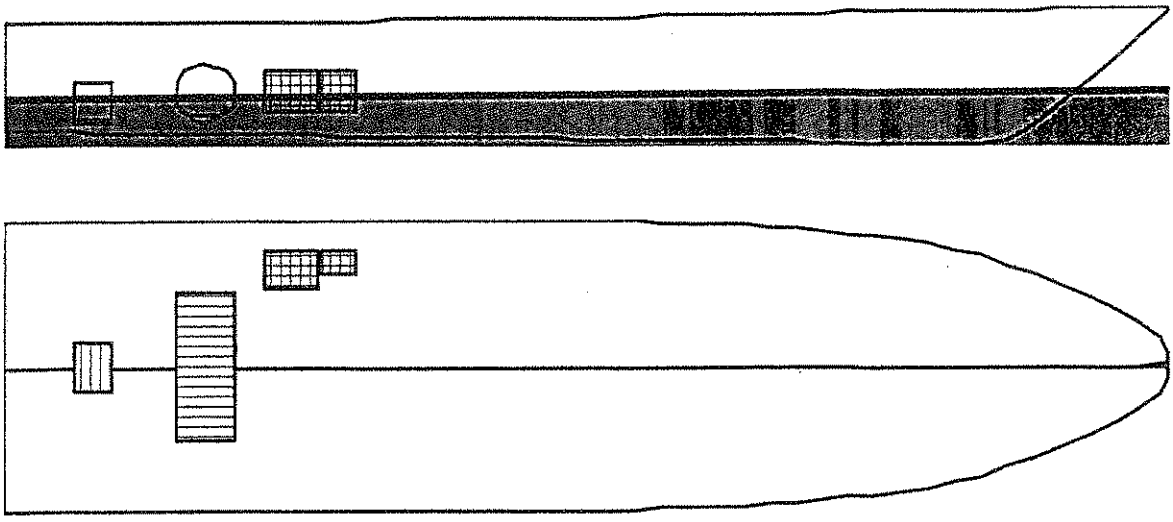
ANGLE AT EQUILIBRIUM LESS THAN 10 DEG., OR 80% OF THE ANGLE OF DECK EDGE IMMERSION 23.024 DEG.

Limit	Min/Max	Actual	Margin	Pass
(1) Absolute Angle at Equilibrium	<7.00 deg	6.27	0.73	Yes
(2) Absolute Angle at Deck Immersion	>10.00 deg	28.78	18.78	Yes
(3) Absolute Angle at Equilibrium	<23.02 deg	6.27	16.75	Yes



Full load arrival condition

10% fuel, 10% fresh water



Fluid Legend

Fluid Name	Legend	Weight (MT)	Load%
FUEL OIL		.43	10.01%
FRESH WATER		.10	10.00%
oily WATER		1.38	100.00%

Floating Status

Draft FP	1.211 m	Heel	port 1.40 deg.	GM(Solid)	1.711 m
Draft MS	1.153 m	Equil	Yes	F/S Corr.	0.037 m
Draft AP	1.095 m	Wind	0.0 kn	GM(Fluid)	1.674 m
Trim	fwd 0.116/24.890	Wave	No	KMT	4.388 m
LCG	8.772f m	VCG	2.678 m	TPcm	1.19

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	60.36	8.397f	0.000	2.273
Deadweight	18.19	10.018f	0.180p	4.020
Displacement	78.55	8.772f	0.042p	2.678

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
CREW 8P	0.54	11.445f	0.000	3.642u
PASSENGERS BRIDGE DECK AFT 14P	0.95	7.495f	0.000	6.050u
PASSENGERS BRIDGE DECK FWD 63P	4.28	13.195f	0.000	6.050u
PASSENGERS MAIN DECK CABIN 147P	10.00	9.495f	0.000	3.642u
STORE AND SPARE	0.50	14.445f	0.000	1.800u
Total Fixed:	76.64	8.858f	0.000	2.716u

Tank Status

FUEL OIL (SpGr 0.850)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FO TANK	10.01%	0.43	3.753f	0.204p	0.692	1.000	2.78
Subtotals:	10.01%	0.43	3.753f	0.204p	0.692		2.78

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FW TANK	10.00%	0.10	1.153f	0.029p	0.550	0.960	0.12
Subtotals:	10.00%	0.10	1.153f	0.029p	0.550		0.12

oily WATER (SpGr 0.980)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
NO1 OILYW TK.P	100.00%	0.95	5.775f	2.250p	1.300	1.000	0.00
NO2 OILYW TK.P	100.00%	0.43	6.900f	2.425p	1.300	1.000	0.00
Subtotals:	100.00%	1.38	6.126f	2.305p	1.300		0.00

Displacer Status

Item	Status	Spgr	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	Eff /Perm
HULL	Intact	1.025	78.56	8.782f	0.088p	0.775	1.000
SubTotals:			78.56	8.782f	0.088p	0.775	

Hydrostatic Properties

Draft is from Baseline.
Trim: fwd 0.116/24.890, heel: port 1.40 deg., VCG = 2.678

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m/cm)	GML (m)	GM(Fluid) (m)
1.142	78.561	8.782f	0.775	9.264f	1.19	1.79	56.697	1.674

Water Specific Gravity = 1.025.
Trim is per 24.89m

Righting Arms vs Heel Angle

Free Surface Adjustment 0.037
Adjusted VCG 2.715

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Righting Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.27f	1.099	-0.042	0.000	2.350 (1)	
1.42p	0.27f	1.098	0.000	-0.001	2.285 (1)	Equil
4.00p	0.26f	1.095	0.076	0.001	2.165 (1)	
8.00p	0.24f	1.083	0.194	0.011	1.976 (1)	
12.00p	0.18f	1.062	0.305	0.028	1.786 (1)	
16.00p	0.15f	1.018	0.387	0.052	1.602 (1)	
20.00p	0.16f	0.946	0.438	0.081	1.424 (1)	
24.00p	0.21f	0.848	0.468	0.113	1.252 (1)	
28.00p	0.29f	0.727	0.488	0.146	1.088 (1)	
30.00p	0.34f	0.659	0.495	0.164	1.008 (1)	
32.00p	0.39f	0.586	0.503	0.181	0.930 (1)	
36.00p	0.49f	0.431	0.515	0.217	0.779 (1)	
36.16p	0.49f	0.425	0.515	0.218	0.774 (1)	MaxRa
40.00p	0.56f	0.277	0.504	0.252	0.627 (1)	
44.00p	0.61f	0.125	0.469	0.286	0.471 (1)	
48.00p	0.65f	-0.026	0.415	0.317	0.313 (1)	
52.00p	0.69f	-0.177	0.346	0.344	0.153 (1)	
56.00p	0.69f	-0.325	0.259	0.365	-0.005 (1)	FldPt
60.00p	0.65f	-0.468	0.153	0.380	-0.157 (1)	
64.00p	0.57f	-0.606	0.037	0.386	-0.306 (1)	
65.21p	0.55f	-0.646	0.001	0.387	-0.350 (1)	RaZero

68.00p	0.48f	-0.739	-0.086	0.385	-0.451 (1)	

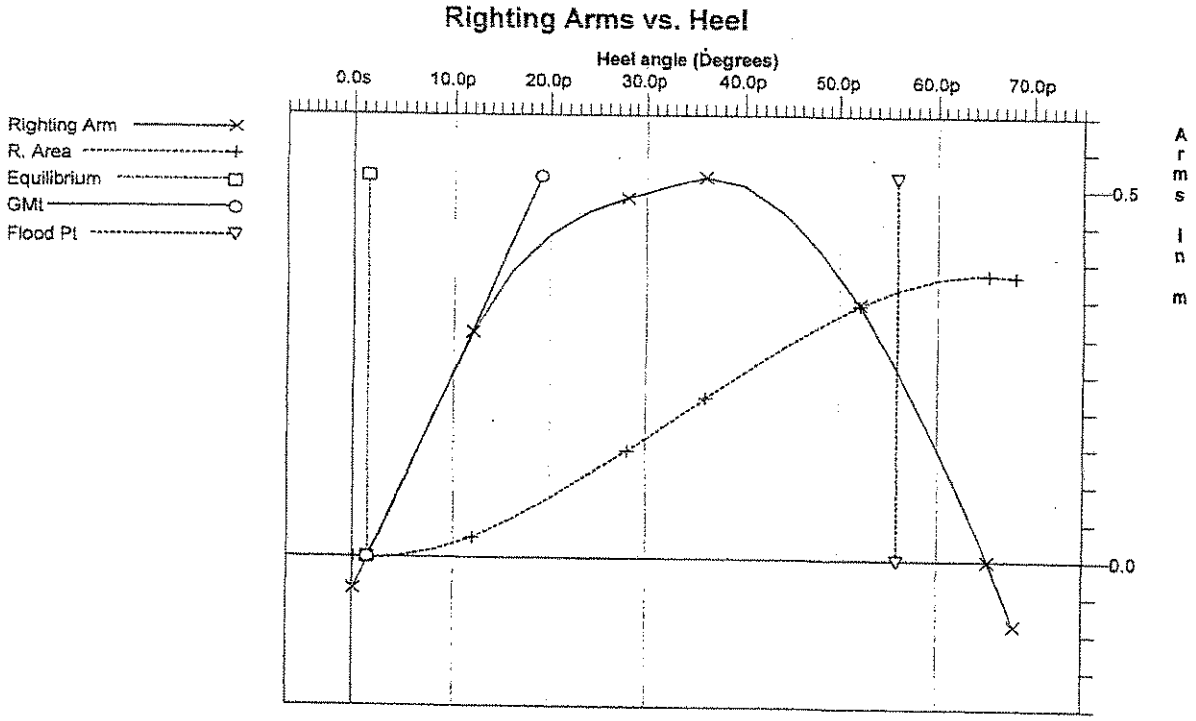
Weight and C.G. used above include tank loads.
The tank load centers were not allowed to shift with heel and trim changes.
A Free Surface Moment of 2.9 m4 was used to adjust the VCG.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)	Related Tank
(1) engine room door p	10.850f, 2.600p, 3.500	2.350	ENGINE ROOM

Limit Report

Limit	Min/Max	Actual	Margin	Pass
(1) GM at Equilibrium	>0.300 m	1.675	1.375	Yes
(2) Righting Arm at MaxRA or Abs 30.00 deg	>0.200 m	0.515	0.315	Yes
(3) Absolute Angle at MaxRA	>25.00 deg	36.16	11.16	Yes
(4) Area from Abs 0.00 deg to Abs 30.00	>0.0550 m-R	0.164	0.109	Yes
(5) Area from Abs 0.00 deg to Abs 40.00 or Flood	>0.0900 m-R	0.252	0.162	Yes
(6) Area from Abs 30.00 deg to Abs 40.00 or Flood	>0.0300 m-R	0.089	0.059	Yes



High speed turning or passenger crowding on one side

High speed turning heeling moment = 0.02*V^2*Displacement* (KG-draft /2)/Lwl = 14.52907 m-MT
V = 20 knot = 10.289 m /s

Passenger crowding heeling moment =7.834 MT-m
Total passengers on awning deck = 224 p

One third of passenger = 74.67 p
Two thirds of passengers = 149.33 p
Total passengers on main deck = 0 p
One forth of the breadth on awning deck = 6.172 / 4 = 1.543 m
Heeling moment due to passengers to on side = 0.068 x (149.33 - 74.67) x 1.543 = 7.834 (m-MT)

The greater of above heeling moments= 14.52907 MT-m

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Heeling Moment Report
Heeling moment:14.53 m-MT to starboard

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Least freeboard is 1.473 m at 1.000a
Least freeboard (to margin line) is 1.397 m at 1.000a

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80% of the angle of deck edge immersion: 24.968 deg.

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Residual Righting Arms vs Heel Angle

Free Surface Adjustment 0.037
Adjusted VCG 2.715

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Freeboard Height (m)	Notes
0.00	0.27f	1.099	-0.148	1.696	
4.00s	0.26f	1.095	-0.031	1.455	
5.05s	0.26f	1.093	0.000	1.391	Equil
8.00s	0.24f	1.083	0.087	1.209	
12.00s	0.18f	1.062	0.197	0.961	
16.00s	0.15f	1.018	0.278	0.724	
20.00s	0.16f	0.946	0.327	0.508	
24.00s	0.21f	0.848	0.355	0.311	
28.00s	0.29f	0.727	0.372	0.132	
31.21s	0.37f	0.615	0.383	-0.001	Deck Imm.
32.00s	0.39f	0.586	0.385	-0.032	
36.00s	0.49f	0.431	0.394	-0.194	
40.00s	0.56f	0.277	0.379	-0.361	
44.00s	0.61f	0.125	0.340	-0.533	
48.00s	0.65f	-0.026	0.282	-0.704	
52.00s	0.69f	-0.177	0.209	-0.873	
56.00s	0.69f	-0.325	0.118	-1.034	
60.00s	0.65f	-0.468	0.007	-1.186	
60.25s	0.65f	-0.476	0.000	-1.195	RaZero
64.00s	0.58f	-0.606	-0.113	-1.330	

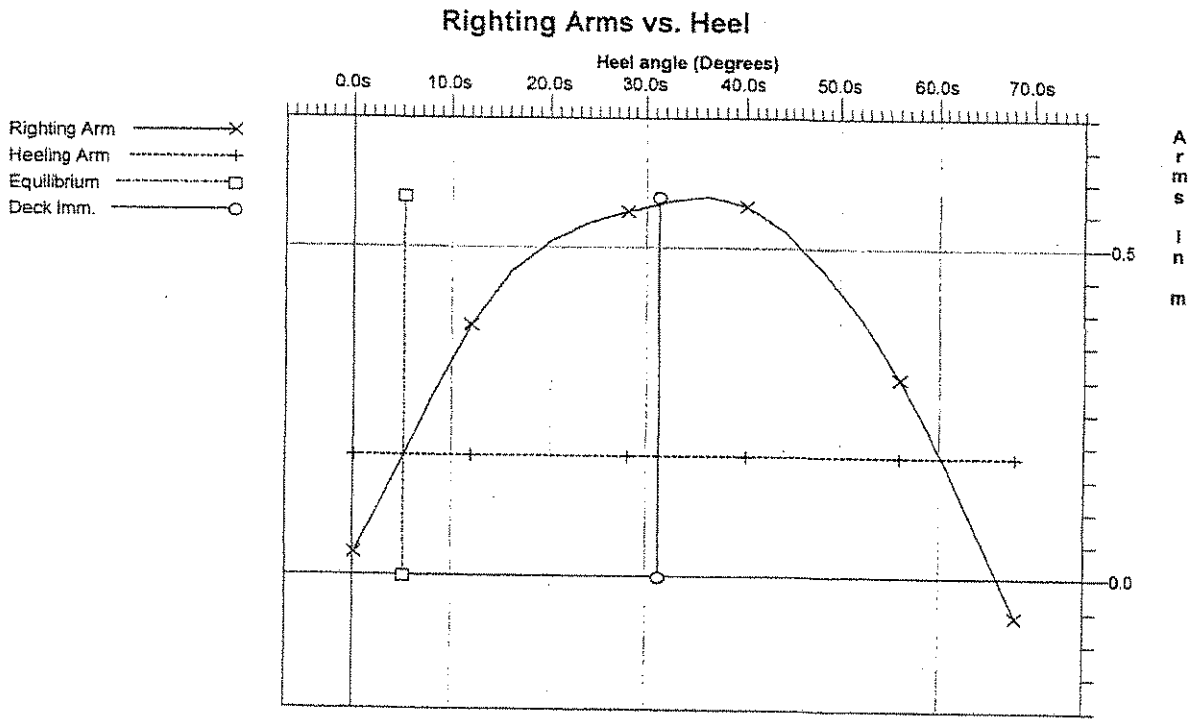
68.00s	0.48f	-0.739	-0.241	-1.466	

Weight and C.G. used above include tank loads.
The tank load centers were not allowed to shift with heel and trim changes.
A Free Surface Moment of 2.9 m4 was used to adjust the VCG.

Note:
Residual Righting Arms shown above are in excess of the overturning arms derived from this moment (in m-MT):
Stbd heeling moment = 14.53

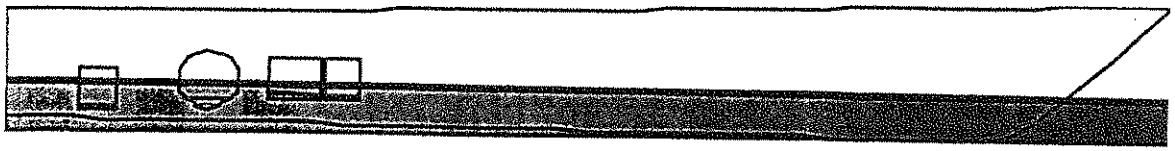
ANGLE AT EQUILIBRIUM LESS THAN 10 DEG., OR 80% OF THE ANGLE OF DECK EDGE IMMERSION 24.968 DEG.

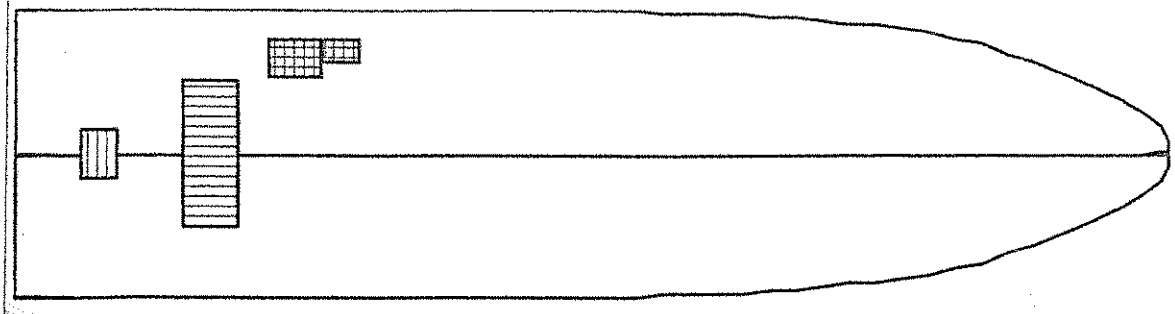
Limit	Min/Max	Actual	Margin	Pass
(1) Absolute Angle at Equilibrium	<7.00 deg	5.05	1.95	Yes
(2) Absolute Angle at Deck Immersion	>10.00 deg	31.21	21.21	Yes
(3) Absolute Angle at Equilibrium	<24.97 deg	5.05	19.92	Yes



Full load arrival and passenger panic condition

10% fuel, 10% fresh water





Fluid Legend

Fluid Name	Legend	Weight (MT)	Load%
FUEL OIL		.43	10.00%
FRESH WATER		.10	10.00%
oily WATER		.14	10.00%

Floating Status

Draft FP	1.052 m	Heel	port 0.18 deg.	GM(Solid)	1.382 m
Draft MS	1.119 m	Equil	Yes	F/S Corr.	0.042 m
Draft AP	1.186 m	Wind	0.0 kn	GM(Fluid)	1.341 m
Trim	aft 0.133/24.890	Wave	No	KMT	4.393 m
LCG	8.203f m	VCG	3.010 m	TPcm	1.17

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	60.36	8.397f	0.000	2.273
Deadweight	16.94	7.512f	0.020p	5.637
Displacement	77.30	8.203f	0.004p	3.010

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
CREW 8P	0.54	11.445f	0.000	3.642u
PASSENGERS BRIDGE DECK AFT 161P	10.95	5.000f	0.000	6.050u
PASSENGERS BRIDGE DECK FWD 63P	4.28	13.195f	0.000	6.050u
STORE AND SPARE	0.50	14.445f	0.000	1.800u
Total Fixed:	76.64	8.241f	0.000	3.030u

Tank Status

FUEL OIL (SpGr 0.850)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FO TANK	10.00%	0.43	3.747f	0.029p	0.690	1.000	3.02
Subtotals:	10.00%	0.43	3.747f	0.029p	0.690		3.02

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FW TANK	10.00%	0.10	1.146f	0.004p	0.550	0.960	0.12
Subtotals:	10.00%	0.10	1.146f	0.004p	0.550		0.12

oily WATER (SpGr 0.980)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
NO1 OILYW TK.P	10.00%	0.09	5.768f	2.252p	0.873	1.000	0.06
NO2 OILYW TK.P	10.00%	0.04	6.897f	2.426p	0.850	1.000	0.01
Subtotals:	10.00%	0.14	6.121f	2.306p	0.866		0.07

Displacer Status

Item	Status	Spgr	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	Eff /Perm
HULL	Intact	1.025	77.27	8.191f	0.011p	0.768	1.000
SubTotals:			77.27	8.191f	0.011p	0.768	

Hydrostatic Properties

Draft is from Baseline.
Trim: aft 0.133/24.890, heel: port 0.18 deg., VCG = 3.010

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m /cm)	GML (m)	GM(Fluid) (m)
1.132	77.275	8.191f	0.768	9.065f	1.17	1.69	54.537	1.341

Water Specific Gravity = 1.025.
Trim is per 24.89m

Righting Arms vs Heel Angle

Free Surface Adjustment 0.042
Adjusted VCG 3.052

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Righting Arm (m)	Area (m-Rad)	Flood Pt Height (m)	Notes
0.00	0.31a	1.181	-0.004	0.000	2.377 (1)	
0.18p	0.31a	1.181	0.000	0.000	2.369 (1)	Equil
4.00p	0.32a	1.177	0.090	0.003	2.193 (1)	
8.00p	0.34a	1.165	0.183	0.012	2.005 (1)	
12.00p	0.40a	1.142	0.269	0.028	1.815 (1)	
16.00p	0.45a	1.102	0.332	0.049	1.630 (1)	
20.00p	0.45a	1.033	0.366	0.074	1.452 (1)	
24.00p	0.40a	0.937	0.378	0.100	1.279 (1)	
26.09p	0.37a	0.877	0.379	0.114	1.192 (1)	MaxRa
28.00p	0.32a	0.818	0.378	0.126	1.113 (1)	
30.00p	0.27a	0.750	0.376	0.140	1.032 (1)	
32.00p	0.21a	0.677	0.373	0.153	0.954 (1)	
36.00p	0.12a	0.527	0.360	0.178	0.800 (1)	

40.00p	0.07a	0.378	0.326	0.202	0.645 (1)	
44.00p	0.04a	0.231	0.271	0.223	0.488 (1)	
48.00p	0.02a	0.085	0.199	0.240	0.329 (1)	
52.00p	0.04a	-0.057	0.110	0.251	0.171 (1)	
55.92p	0.12a	-0.192	0.000	0.255	0.021 (1)	RaZero
56.00p	0.12a	-0.194	-0.002	0.255	0.018 (1)	
56.48p	0.13a	-0.210	-0.017	0.255	0.000 (1)	FldPt
60.00p	0.22a	-0.328	-0.127	0.250	-0.131 (1)	
64.00p	0.35a	-0.458	-0.259	0.237	-0.278 (1)	
68.00p	0.49a	-0.586	-0.397	0.214	-0.422 (1)	

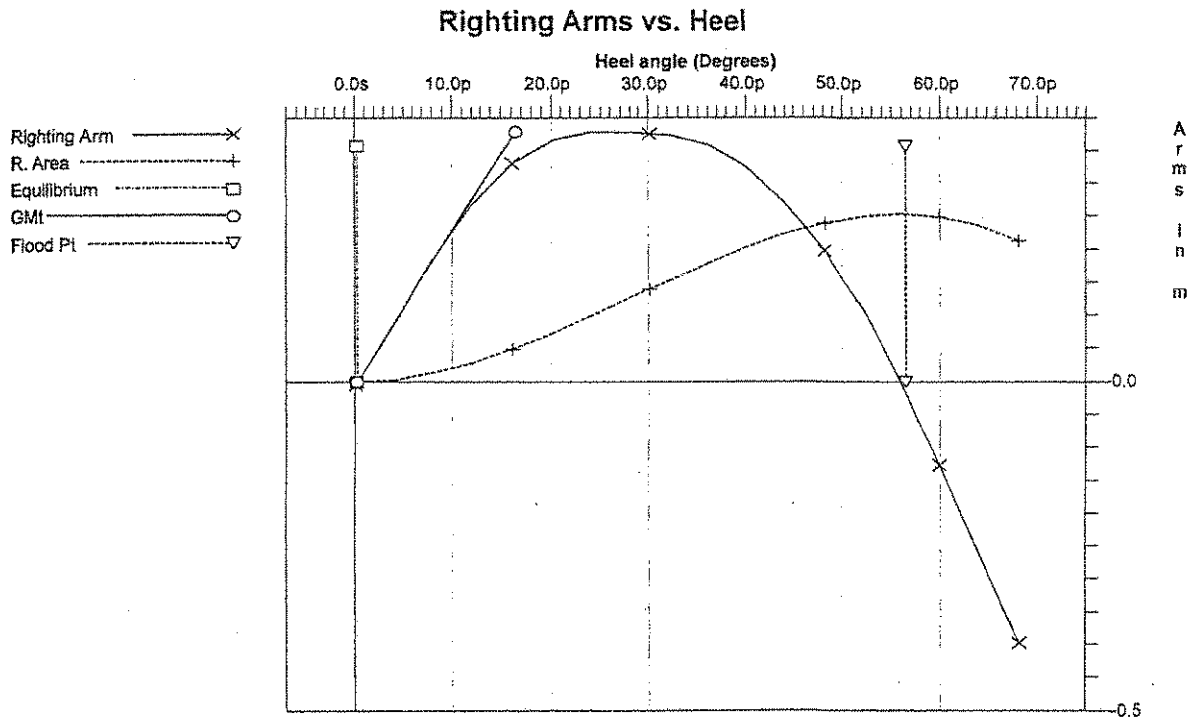
Weight and C.G. used above include tank loads.
The tank load centers were not allowed to shift with heel and trim changes.
A Free Surface Moment of 3.2 m4 was used to adjust the VCG.

Unprotected Flood Points

Name	L,T,V (m)	Height (m)	Related Tank
(1) engine room door p	10.850f, 2.600p, 3.500	2.377	ENGINE ROOM

Limit Report

Limit	Min/Max	Actual	Margin	Pass
(1) GM at Equilibrium	>0.300 m	1.341	1.041	Yes
(2) Righting Arm at MaxRA or Abs 30.00 deg	>0.200 m	0.376	0.176	Yes
(3) Absolute Angle at MaxRA	>25.00 deg	26.09	1.09	Yes
(4) Area from Abs 0.00 deg to Abs 30.00	>0.0550 m-R	0.140	0.085	Yes
(5) Area from Abs 0.00 deg to Abs 40.00 or Flood	>0.0900 m-R	0.202	0.112	Yes
(6) Area from Abs 30.00 deg to Abs 40.00 or Flood	>0.0300 m-R	0.063	0.033	Yes



Passenger crowding on one side

Heeling Moment Report
Heeling moment: 7.83 m-MT to starboard

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Least freeboard is 1.430 m at 1.000a
Least freeboard (to margin line) is 1.354 m at 1.000a

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80% of the angle of deck edge immersion: 22.4 deg.

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Residual Righting Arms vs Heel Angle

Free Surface Adjustment 0.042
Adjusted VCG 3.052

Heel Angle (deg)	Trim Angle (deg)	Origin Depth (m)	Residual Arm (m)	Freeboard Height (m)	Notes
0.00	0.31a	1.181	-0.100	1.605	
4.00s	0.32a	1.177	-0.006	1.364	
4.28s	0.32a	1.176	0.000	1.347	Equil
8.00s	0.34a	1.164	0.087	1.118	
12.00s	0.40a	1.142	0.173	0.870	
16.00s	0.45a	1.101	0.236	0.630	
20.00s	0.45a	1.033	0.269	0.411	
24.00s	0.40a	0.937	0.281	0.211	
26.02s	0.37a	0.879	0.282	0.118	MaxRa
28.00s	0.32a	0.818	0.281	0.030	
28.74s	0.30a	0.793	0.281	-0.001	Deck Imm.
32.00s	0.21a	0.677	0.277	-0.134	
36.00s	0.12a	0.527	0.263	-0.291	
40.00s	0.07a	0.378	0.229	-0.452	
44.00s	0.04a	0.231	0.174	-0.615	
48.00s	0.02a	0.085	0.101	-0.779	
52.00s	0.04a	-0.057	0.012	-0.943	
52.43s	0.05a	-0.071	0.001	-0.961	RaZero
56.00s	0.12a	-0.195	-0.101	-1.109	
60.00s	0.22a	-0.328	-0.226	-1.273	
64.00s	0.35a	-0.458	-0.358	-1.434	
68.00s	0.49a	-0.585	-0.496	-1.588	

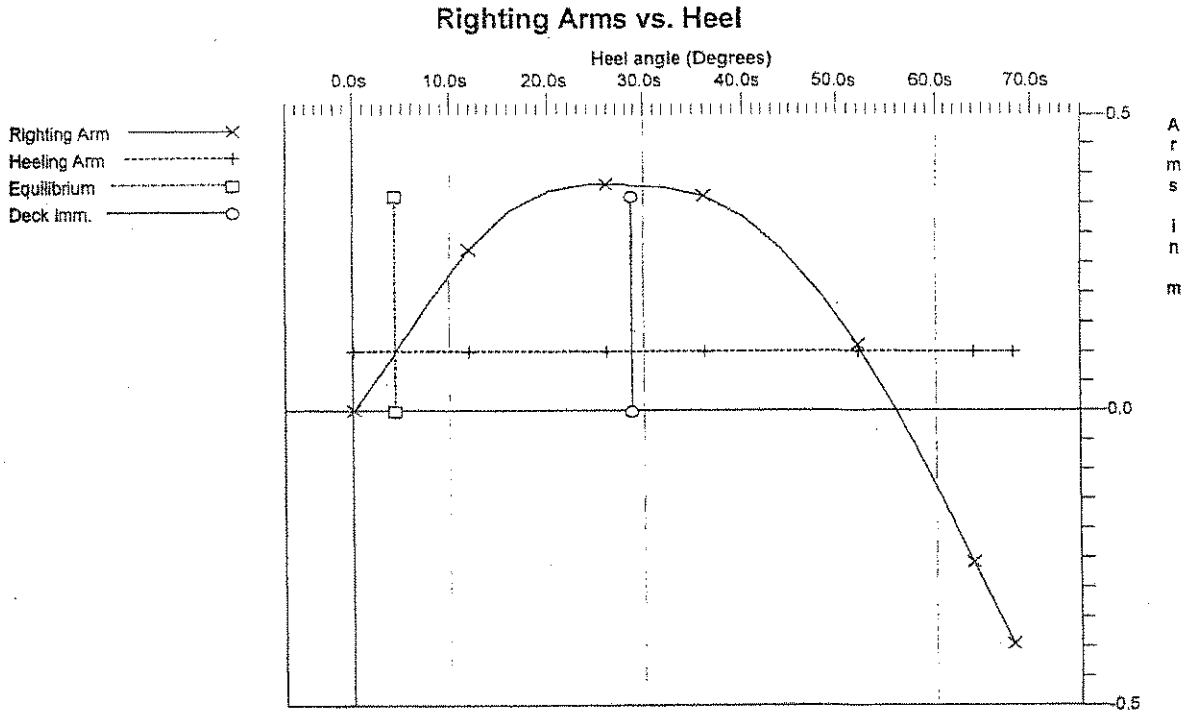
Weight and C.G. used above include tank loads.
The tank load centers were not allowed to shift with heel and trim changes.
A Free Surface Moment of 3.2 m4 was used to adjust the VCG.

Note:

Residual Righting Arms shown above are in excess of the overturning arms derived from this moment (in m-MT):
Stbd heeling moment = 7.83

ANGLE AT EQUILIBRIUM LESS THAN 10 DEG., OR 80% OF THE ANGLE OF DECK EDGE IMMERSION 22.4 DEG.

Limit	Min/Max	Actual	Margin	Pass
(1) Absolute Angle at Equilibrium	<7.00 deg	4.28	2.72	Yes
(2) Absolute Angle at Deck Immersion	>10.00 deg	28.74	18.74	Yes
(3) Absolute Angle at Equilibrium	<22.40 deg	4.28	18.12	Yes



Stability after damage

Condition - Full load departure

98% fuel, 100% fresh water

Floating Status

Draft FP	1.160 m	Heel	port 0.14 deg.	GM(Solid)	1.665 m
Draft MS	1.169 m	Equil	Yes	F/S Corr.	0.022 m
Draft AP	1.179 m	Wind	0.0 kn	GM(Fluid)	1.642 m

Trim	0.019/23.890	Wave	No	KMT	4.280 m
LCG	8.496f m	VCG	2.616 m	TPcm	1.19

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	60.36	8.397f	0.000	2.273
Deadweight	21.62	8.773f	0.015p	3.572
Displacement	81.98	8.496f	0.004p	2.616

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
CREW 8P	0.54	11.445f	0.000	3.642u
PASSENGERS BRIDGE DECK AFT 14P	0.95	7.495f	0.000	6.050u
PASSENGERS BRIDGE DECK FWD 63P	4.28	13.195f	0.000	6.050u
PASSENGERS MAIN DECK CABIN 147P	10.00	9.495f	0.000	3.642u
STORE AND SPARE	0.50	14.445f	0.000	1.800u
Total Fixed:	76.64	8.858f	0.000	2.716u

Tank Status

FUEL OIL (SpGr 0.850)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm
FO TANK	97.99%	4.17	3.750f	0.001p	1.225	1.000
Subtotals:	97.99%	4.17	3.750f	0.001p	1.225	

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm
FW TANK	100.00%	1.04	1.150f	0.000	1.000	0.960
Subtotals:	100.00%	1.04	1.150f	0.000	1.000	

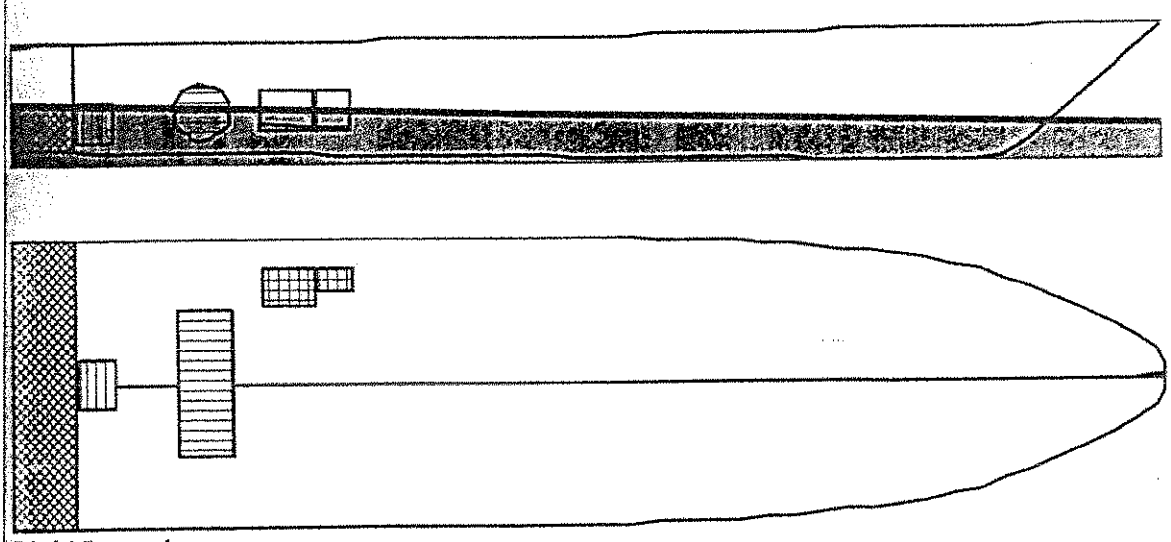
oily WATER (SpGr 0.980)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm
NO1 OILYW TK.P	10.00%	0.09	5.774f	2.252p	0.873	1.000
NO2 OILYW TK.P	10.00%	0.04	6.899f	2.426p	0.850	1.000
Subtotals:	10.00%	0.14	6.125f	2.306p	0.866	

Displacer Status

Item	Status	Spgr	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	Eff /Perm
HULL	Intact	1.025	81.96	8.495f	0.008p	0.789	1.000
SubTotals:			81.96	8.495f	0.008p	0.789	

Damage Case 1 : After Peak damaged



Fluid Legend

Fluid Name	Legend	Weight (MT)	Load%
SEA WATER		9.42	3.00%
FUEL OIL		4.17	97.99%
FRESH WATER		1.04	100.00%
oily WATER		.14	10.00%

Floating Status

Draft FP	0.939 m	Heel	port 0.15 deg.	GM(Solid)	1.438 m
Draft MS	1.191 m	Equil	Yes	F/S Corr.	0.022 m
Draft AP	1.443 m	Wind	0.0 kn	GM(Fluid)	1.416 m
Trim	aft 0.504/23.890	Wave	No	KMT	4.054 m
LCG	8.496f m	VCG	2.616 m	TPcm	1.09

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	60.36	8.397f	0.000	2.273
Deadweight	21.62	8.773f	0.015p	3.572
Displacement	81.98	8.496f	0.004p	2.616

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
CREW 8P	0.54	11.445f	0.000	3.642u
PASSENGERS BRIDGE DECK AFT 14P	0.95	7.495f	0.000	6.050u
PASSENGERS BRIDGE DECK FWD 63P	4.28	13.195f	0.000	6.050u

PASSENGERS MAIN DECK CABIN 147P	10.00	9.495f	0.000	3.642u
STORE AND SPARE	0.50	14.445f	0.000	1.800u
Total Fixed:	76.64	8.858f	0.000	2.716u

Tank Status

FUEL OIL (SpGr 0.850)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FO TANK	97.99%	4.17	3.750f	0.001p	1.225	1.000	1.76
Subtotals:	97.99%	4.17	3.750f	0.001p	1.225		1.76

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FW TANK	100.00%	1.04	1.150f	0.000	1.000	0.960	0.00
Subtotals:	100.00%	1.04	1.150f	0.000	1.000		0.00

oily WATER (SpGr 0.980)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
NO1 OILYW TK.P	10.00%	0.09	5.748f	2.252p	0.873	1.000	0.06
NO2 OILYW TK.P	10.00%	0.04	6.889f	2.426p	0.850	1.000	0.01
Subtotals:	10.00%	0.14	6.104f	2.306p	0.866		0.07

Displacer Status

Item	Status	Spgr	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	Eff /Perm
HULL	Intact	1.025	91.44	7.566f	0.009p	0.844	1.000
AFTER PEAK	Flooded	1.025	-9.42	0.203a	0.008p	0.919	0.950
SubTotals:			82.02	8.459f	0.009p	0.835	

Least freeboard is 1.393 m at 1.000a
Least freeboard (to margin line) is 1.317 m at 1.000a

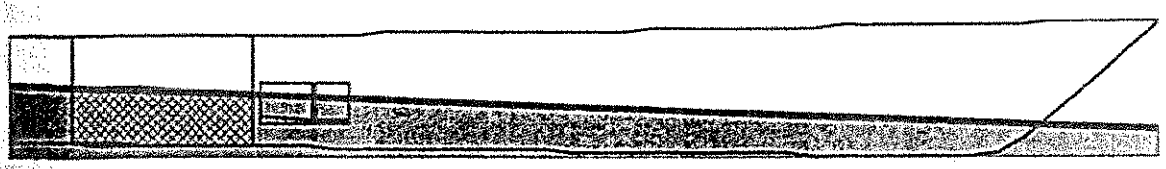
Hydrostatic Properties with Damage

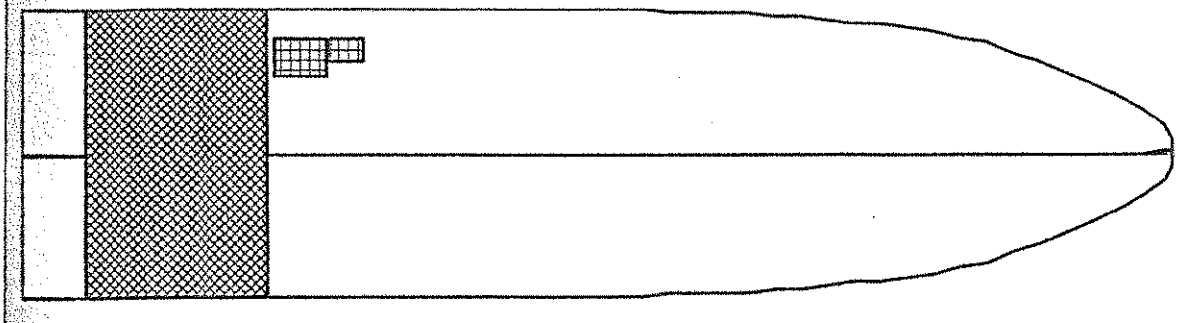
Trim: aft 0.504/23.890, heel: port 0.15 deg.

Depth (m)	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	WPA (m^2)	LCF (m)	BML (m)	BMT (m)
1.443	82.016	8.459f	0.009p	0.835	105.9	9.744f	42.851	3.197

Water Specific Gravity = 1.025.

Damage Case 2 : Tank Space damaged





Fluid Legend

Fluid Name	Legend	Weight (MT)	Load%
SEA WATER		30.81	9.82%
oily WATER		.14	10.00%

Floating Status

Draft FP	0.811 m	Heel	port 0.21 deg.	GM(Solid)	1.090 m
Draft MS	1.274 m	Equil	Yes	F/S Corr.	0.001 m
Draft AP	1.737 m	Wind	0.0 kn	GM(Fluid)	1.089 m
Trim	aft 0.926/23.890	Wave	No	KMT	3.802 m
LCG	8.853f m	VCG	2.713 m	TPcm	0.92

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	60.36	8.397f	0.000	2.273
Deadweight	16.41	10.531f	0.019p	4.331
Displacement	76.77	8.853f	0.004p	2.713

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
CREW 8P	0.54	11.445f	0.000	3.642u
PASSENGERS BRIDGE DECK AFT 14P	0.95	7.495f	0.000	6.050u
PASSENGERS BRIDGE DECK FWD 63P	4.28	13.195f	0.000	6.050u
PASSENGERS MAIN DECK CABIN 147P	10.00	9.495f	0.000	3.642u
STORE AND SPARE	0.50	14.445f	0.000	1.800u
Total Fixed:	76.64	8.858f	0.000	2.716u

Tank Status

oily WATER (SpGr 0.980)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
NO1 OILYW TK.P	10.00%	0.09	5.726f	2.253p	0.873	1.000	0.06
NO2 OILYW TK.P	10.00%	0.04	6.879f	2.426p	0.850	1.000	0.01
Subtotals:	10.00%	0.14	6.086f	2.307p	0.866		0.07

Displacer Status

Item	Status	Spgr	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	Eff /Perm
HULL	Intact	1.025	107.60	7.055f	0.010p	0.937	1.000
TANK SPACE	Flooded	1.025	-30.81	2.746f	0.010p	1.018	0.950
SubTotals:			76.79	8.783f	0.011p	0.905	

Least freeboard is 1.078 m at 1.000a
Least freeboard (to margin line) is 1.002 m at 1.000a

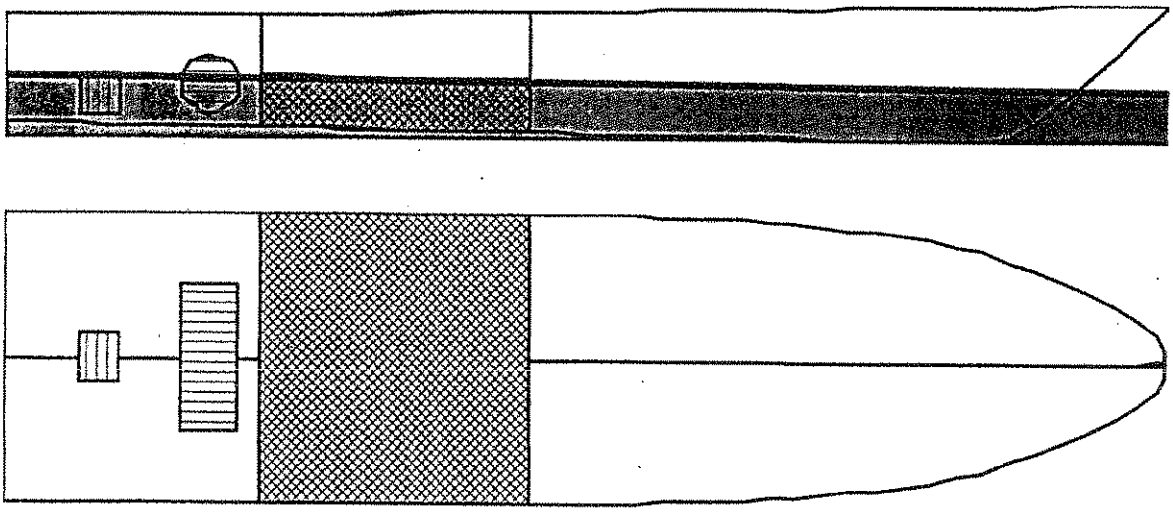
Hydrostatic Properties with Damage

Trim: aft 0.926/23.890, heel: port 0.21 deg.

Depth (m)	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	WPA (m^2)	LCF (m)	BML (m)	BMT (m)
1.735	76.793	8.783f	0.011p	0.905	90.2	10.543f	39.715	2.899

Water Specific Gravity = 1.025.

Damage Case 3 : Engine Room damaged



Fluid Legend

Fluid Name	Legend	Weight (MT)	Load%
SEA WATER		31.02	9.89%
FUEL OIL		4.17	97.99%
FRESH WATER		1.04	100.00%

Floating Status

Draft FP	1.291 m	Heel	zero	GM(Solid)	0.993 m
Draft MS	1.401 m	Equil	Yes	F/S Corr.	0.022 m
Draft AP	1.511 m	Wind	0.0 kn	GM(Fluid)	0.971 m
Trim	aft 0.220/23.890	Wave	No	KMT	3.612 m
LCG	8.500f m	VCG	2.618 m	TPcm	0.92

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	60.36	8.397f	0.000	2.273
Deadweight	21.48	8.790f	0.000	3.589
Displacement	81.84	8.500f	0.000	2.618

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
CREW 8P	0.54	11.445f	0.000	3.642u
PASSENGERS BRIDGE DECK AFT 14P	0.95	7.495f	0.000	6.050u
PASSENGERS BRIDGE DECK FWD 63P	4.28	13.195f	0.000	6.050u
PASSENGERS MAIN DECK CABIN 147P	10.00	9.495f	0.000	3.642u
STORE AND SPARE	0.50	14.445f	0.000	1.800u
Total Fixed:	76.64	8.858f	0.000	2.716u

Tank Status

FUEL OIL (SpGr 0.850)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FO TANK	97.99%	4.17	3.750f	0.000	1.225	1.000	1.83
Subtotals:	97.99%	4.17	3.750f	0.000	1.225		1.83

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FW TANK	100.00%	1.04	1.150f	0.000	1.000	0.960	0.00
Subtotals:	100.00%	1.04	1.150f	0.000	1.000		0.00

Displacer Status

Item	Status	Spgr	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	Eff /Perm
HULL	Intact	1.025	112.84	8.360f	0.000	0.930	1.000
ENGINE ROOM	Flooded	1.025	-31.02	8.029f	0.000	0.934	0.850
SubTotals:			81.82	8.485f	0.000	0.929	

Least freeboard is 1.347 m at 1.000a
Least freeboard (to margin line) is 1.271 m at 1.000a

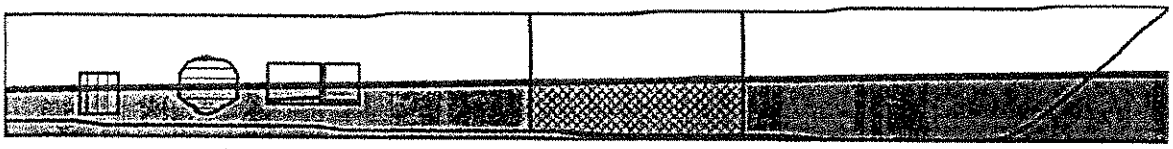
Hydrostatic Properties with Damage

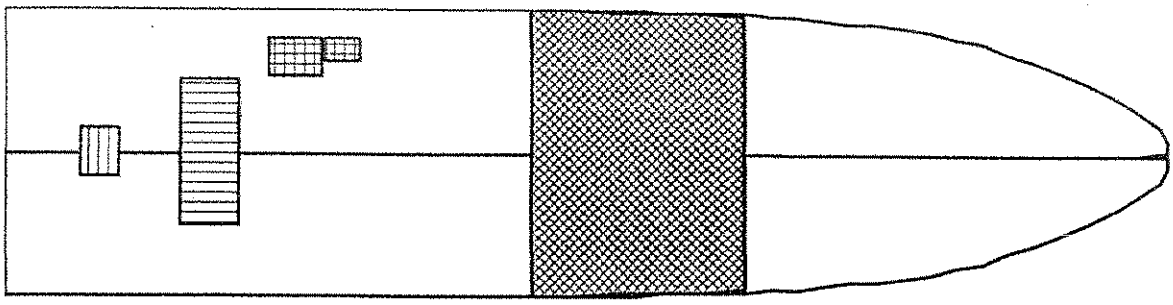
Trim: aft 0.220/23.890, No heel

Depth (m)	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	WPA (m²)	LCF (m)	BML (m)	BMT (m)
1.511	81.816	8.485f	0.000	0.929	89.4	9.813f	57.922	2.660

Water Specific Gravity = 1.025.

Damage Case 4 : Void fr.9 - fr.13 damaged





Fluid Legend

Fluid Name	Legend	Weight (MT)	Load%
SEA WATER		22.47	7.17%
FUEL OIL		4.17	97.99%
FRESH WATER		1.04	100.00%
oily WATER		.14	10.00%

Floating Status

Draft FP	1.626 m	Heel	port 0.18 deg.	GM(Solid)	1.296 m
Draft MS	1.401 m	Equil	Yes	F/S Corr.	0.022 m
Draft AP	1.176 m	Wind	0.0 kn	GM(Fluid)	1.273 m
Trim	fwd 0.451/23.890	Wave	No	KMT	3.911 m
LCG	8.496f m	VCG	2.616 m	TPcm	1.00

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	60.36	8.397f	0.000	2.273
Deadweight	21.62	8.774f	0.015p	3.572
Displacement	81.98	8.496f	0.004p	2.616

Fixed Weight Status

Item	Weight	LCG	TCG	VCG

	(MT)	(m)	(m)	(m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
CREW 8P	0.54	11.445f	0.000	3.642u
PASSENGERS BRIDGE DECK AFT 14P	0.95	7.495f	0.000	6.050u
PASSENGERS BRIDGE DECK FWD 63P	4.28	13.195f	0.000	6.050u
PASSENGERS MAIN DECK CABIN 147P	10.00	9.495f	0.000	3.642u
STORE AND SPARE	0.50	14.445f	0.000	1.800u
Total Fixed:	76.64	8.858f	0.000	2.716u

Tank Status

FUEL OIL (SpGr 0.850)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FO TANK	97.99%	4.17	3.750f	0.001p	1.225	1.000	1.76
Subtotals:	97.99%	4.17	3.750f	0.001p	1.225		1.76

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FW TANK	100.00%	1.04	1.150f	0.000	1.000	0.960	0.00
Subtotals:	100.00%	1.04	1.150f	0.000	1.000		0.00

oily WATER (SpGr 0.980)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
NO1 OILYW TK.P	10.00%	0.09	5.799f	2.252p	0.873	1.000	0.06
NO2 OILYW TK.P	10.00%	0.04	6.910f	2.426p	0.850	1.000	0.01
Subtotals:	10.00%	0.14	6.146f	2.306p	0.866		0.07

Displacer Status

Item	Status	Spgr	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	Eff /Perm
HULL	Intact	1.025	104.45	9.633f	0.009p	0.901	1.000
VOID FR9-FR13	Flooded	1.025	-22.47	13.661f	0.009p	0.954	0.950
SubTotals:			81.98	8.529f	0.009p	0.886	

Least freeboard is 1.590 m at 26.200f
Least freeboard (to margin line) is 1.514 m at 26.200f

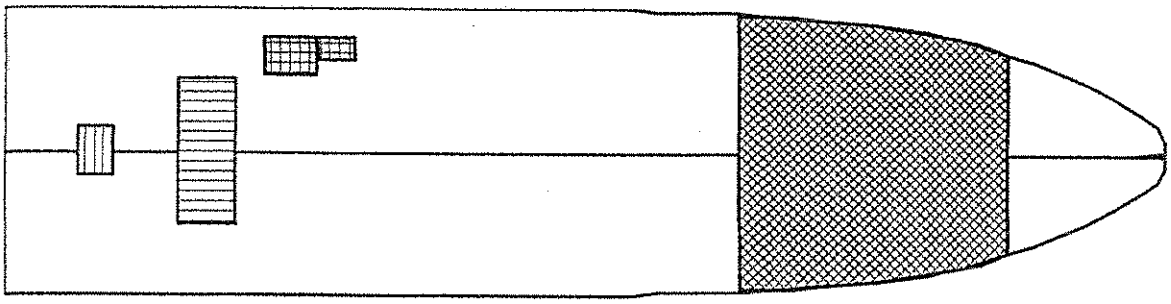
Hydrostatic Properties with Damage

Trim: fwd 0.451/23.890, heel: port 0.18 deg.

Depth (m)	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	WPA (m^2)	LCF (m)	BML (m)	BMT (m)
1.175	81.979	8.529f	0.009p	0.886	97.7	8.704f	57.404	3.003

Water Specific Gravity = 1.025.

Damage Case 5 : Void fr.13-fr.18 damaged



Fluid Legend

Fluid Name	Legend	Weight (MT)	Load%
SEA WATER		19.34	6.17%
FUEL OIL		4.17	97.99%
FRESH WATER		1.04	100.00%
oily WATER		.14	10.00%

Floating Status

Draft FP	1.840 m	Heel	port 0.14 deg.	GM(Solid)	1.653 m
Draft MS	1.412 m	Equil	Yes	F/S Corr.	0.022 m
Draft AP	0.984 m	Wind	0.0 kn	GM(Fluid)	1.631 m
Trim	fwd 0.856/23.890	Wave	No	KMT	4.268 m
LCG	8.496f m	VCG	2.616 m	TPcm	1.05

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	60.36	8.397f	0.000	2.273
Deadweight	21.62	8.774f	0.015p	3.572
Displacement	81.98	8.496f	0.004p	2.616

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
CREW 8P	0.54	11.445f	0.000	3.642u
PASSENGERS BRIDGE DECK AFT 14P	0.95	7.495f	0.000	6.050u
PASSENGERS BRIDGE DECK FWD 63P	4.28	13.195f	0.000	6.050u
PASSENGERS MAIN DECK CABIN 147P	10.00	9.495f	0.000	3.642u
STORE AND SPARE	0.50	14.445f	0.000	1.800u
Total Fixed:	76.64	8.858f	0.000	2.716u

Tank Status

FUEL OIL (SpGr 0.850)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FO TANK	97.99%	4.17	3.750f	0.001p	1.225	1.000	1.76
Subtotals:	97.99%	4.17	3.750f	0.001p	1.225		1.76

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FW TANK	100.00%	1.04	1.150f	0.000	1.000	0.960	0.00
Subtotals:	100.00%	1.04	1.150f	0.000	1.000		0.00

oily WATER (SpGr 0.980)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
NO1 OILYW TK.P	10.00%	0.09	5.820f	2.252p	0.873	1.000	0.06
NO2 OILYW TK.P	10.00%	0.04	6.919f	2.426p	0.850	1.000	0.01
Subtotals:	10.00%	0.14	6.163f	2.306p	0.866		0.07

Displacer Status

Item	Status	Spgr	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	Eff /Perm
HULL	Intact	1.025	101.32	10.528f	0.007p	0.911	1.000
VOID FR13-FR18	Flooded	1.025	-19.34	18.878f	0.004p	1.121	0.950
SubTotals:			81.98	8.559f	0.008p	0.862	

Least freeboard is 1.337 m at 26.200f
Least freeboard (to margin line) is 1.261 m at 26.200f

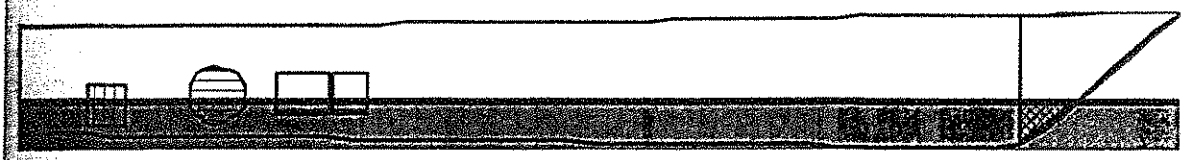
Hydrostatic Properties with Damage

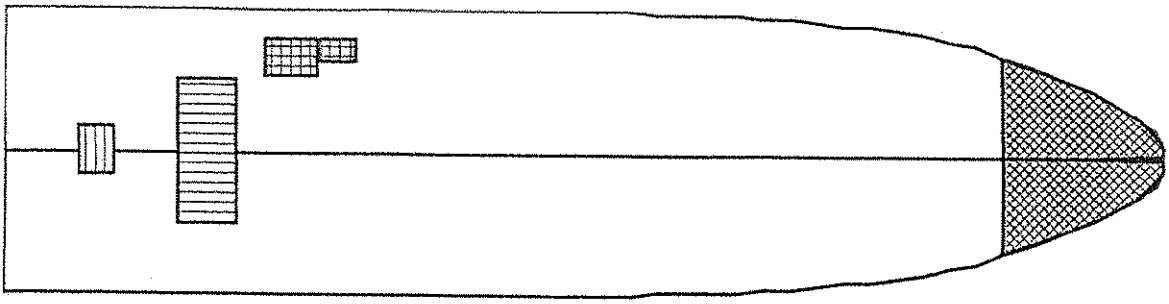
Trim: fwd 0.856/23.890, heel: port 0.14 deg.

Depth (m)	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	WPA (m^2)	LCF (m)	BML (m)	BMT (m)
0.984	81.982	8.559f	0.008p	0.862	102.4	8.016f	39.171	3.386

Water Specific Gravity = 1.025.

Damage Case 6 : Fore Peak damaged





Fluid Legend

Fluid Name	Legend	Weight (MT)	Load%
SEA WATER		.29	0.09%
FUEL OIL		4.17	97.99%
FRESH WATER		1.04	100.00%
oily WATER		.14	10.00%

Floating Status

Draft FP	1.175 m	Heel	port 0.14 deg.	GM(Solid)	1.671 m
Draft MS	1.174 m	Equil	Yes	F/S Corr.	0.022 m
Draft AP	1.173 m	Wind	0.0 kn	GM(Fluid)	1.649 m
Trim	0.003/23.890	Wave	No	KMT	4.287 m
LCG	8.496f m	VCG	2.616 m	TPcm	1.18

Loading Summary

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
Light Ship	60.36	8.397f	0.000	2.273
Deadweight	21.62	8.773f	0.015p	3.572
Displacement	81.98	8.496f	0.004p	2.616

Fixed Weight Status

Item	Weight (MT)	LCG (m)	TCG (m)	VCG (m)
LIGHT SHIP	60.36	8.397f	0.000	2.273u
CREW 8P	0.54	11.445f	0.000	3.642u
PASSENGERS BRIDGE DECK AFT 14P	0.95	7.495f	0.000	6.050u
PASSENGERS BRIDGE DECK FWD 63P	4.28	13.195f	0.000	6.050u
PASSENGERS MAIN DECK CABIN 147P	10.00	9.495f	0.000	3.642u
STORE AND SPARE	0.50	14.445f	0.000	1.800u
Total Fixed:	76.64	8.858f	0.000	2.716u

Tank Status

FUEL OIL (SpGr 0.850)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)

FO TANK	97.99%	4.17	3.750f	0.001p	1.225	1.000	1.75
Subtotals:	97.99%	4.17	3.750f	0.001p	1.225		1.75

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
FW TANK	100.00%	1.04	1.150f	0.000	1.000	0.960	0.00
Subtotals:	100.00%	1.04	1.150f	0.000	1.000		0.00

oily WATER (SpGr 0.980)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm	FSM (MT-m)
NO1 OILYW TK.P	10.00%	0.09	5.775f	2.252p	0.873	1.000	0.06
NO2 OILYW TK.P	10.00%	0.04	6.900f	2.426p	0.850	1.000	0.01
Subtotals:	10.00%	0.14	6.126f	2.306p	0.866		0.07

Displacer Status

Item	Status	Spgr	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	Eff /Perm
HULL	Intact	1.025	82.25	8.547f	0.008p	0.791	1.000
FORE PEAK	Flooded	1.025	-0.29	22.907f	0.000	0.940	0.950
SubTotals:			81.96	8.496f	0.008p	0.790	

Least freeboard is 1.686 m at 1.000a
Least freeboard (to margin line) is 1.610 m at 1.000a

Hydrostatic Properties with Damage

Trim: 0.003/23.890, heel: port 0.14 deg.

Depth (m)	Displ (MT)	LCB (m)	TCB (m)	VCB (m)	WPA (m^2)	LCF (m)	BML (m)	BMT (m)
1.173	81.956	8.496f	0.008p	0.790	115.5	9.146f	54.309	3.474

Water Specific Gravity = 1.025.

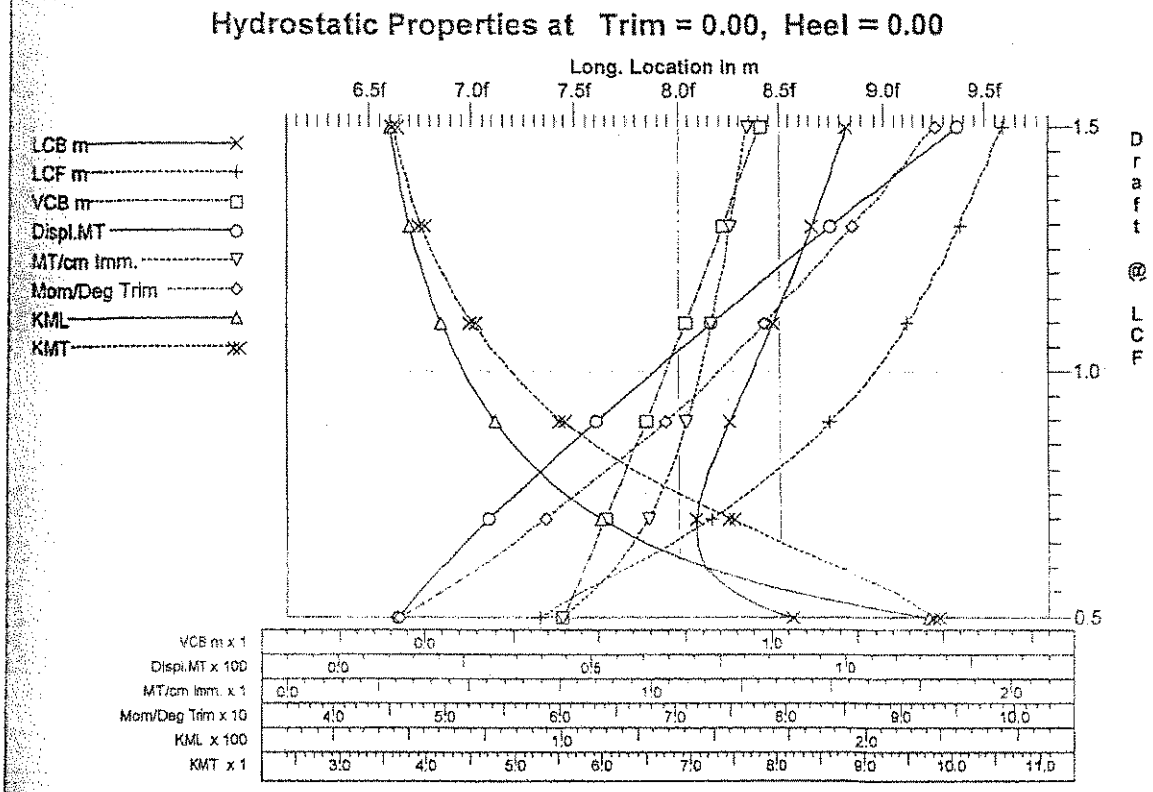
Hydrostatic Properties

Draft is from Baseline.
No Trim, No heel, VCG = 0.000

LCF Draft (m)	Displ (MT)	LCB (m)	VCB (m)	LCF (m)	TPcm (MT/cm)	MTcm (MT-m /deg)	KML (m)	KMT (m)
0.500	11.891	8.564f	0.393	7.321f	0.76	45.91	221.163	9.823
0.525	13.839	8.396f	0.410	7.420f	0.80	47.73	197.605	9.576
0.550	15.884	8.277f	0.427	7.521f	0.84	49.47	178.443	9.371

0.575	18.018	8.194f	0.443	7.633f	0.87	51.11	162.521	9.051
0.600	20.231	8.139f	0.459	7.743f	0.90	52.70	149.228	8.770
0.625	22.518	8.104f	0.474	7.853f	0.93	54.24	137.992	8.436
0.650	24.868	8.086f	0.490	7.958f	0.95	55.74	128.419	8.091
0.675	27.275	8.079f	0.505	8.060f	0.97	57.22	120.188	7.778
0.700	29.734	8.082f	0.520	8.157f	0.99	58.67	113.042	7.472
0.725	32.240	8.091f	0.535	8.248f	1.01	60.09	106.784	7.164
0.750	34.789	8.106f	0.550	8.333f	1.03	61.49	101.258	6.878
0.775	37.375	8.125f	0.565	8.412f	1.04	62.85	96.342	6.612
0.800	39.998	8.146f	0.579	8.487f	1.06	64.19	91.945	6.367
0.825	42.653	8.170f	0.594	8.559f	1.07	65.51	87.993	6.142
0.850	45.339	8.195f	0.608	8.628f	1.08	66.82	84.432	5.936
0.875	48.053	8.222f	0.623	8.695f	1.09	68.12	81.217	5.748
0.900	50.795	8.249f	0.637	8.743f	1.10	69.23	78.081	5.547
0.925	53.564	8.276f	0.651	8.803f	1.11	70.48	75.384	5.388
0.950	56.357	8.304f	0.665	8.862f	1.12	71.74	72.929	5.242
0.975	59.171	8.332f	0.679	8.910f	1.13	72.81	70.494	5.099
1.000	62.008	8.359f	0.694	8.951f	1.14	73.85	68.228	4.962
1.025	64.866	8.386f	0.708	9.005f	1.15	75.08	66.313	4.846
1.050	67.743	8.413f	0.722	9.036f	1.15	75.97	64.248	4.723
1.075	70.640	8.440f	0.736	9.085f	1.16	77.18	62.597	4.624
1.100	73.555	8.466f	0.750	9.116f	1.17	78.08	60.811	4.521
1.125	76.490	8.492f	0.764	9.160f	1.18	79.23	59.342	4.434
1.150	79.440	8.518f	0.777	9.185f	1.18	80.04	57.723	4.345
1.175	82.409	8.543f	0.791	9.230f	1.19	81.24	56.480	4.271
1.200	85.394	8.567f	0.805	9.253f	1.20	82.01	55.022	4.194
1.225	88.395	8.591f	0.819	9.297f	1.20	83.24	53.946	4.130
1.250	91.413	8.615f	0.833	9.318f	1.21	83.98	52.632	4.064
1.275	94.446	8.638f	0.847	9.347f	1.22	84.91	51.507	4.004
1.300	97.496	8.661f	0.860	9.380f	1.22	85.95	50.505	3.950
1.325	100.561	8.683f	0.874	9.400f	1.23	86.68	49.384	3.897
1.350	103.640	8.705f	0.888	9.438f	1.24	87.85	48.563	3.851
1.375	106.737	8.727f	0.902	9.460f	1.24	88.64	47.579	3.806
1.400	109.847	8.748f	0.916	9.479f	1.25	89.38	46.617	3.763
1.425	112.972	8.769f	0.929	9.516f	1.25	90.57	45.927	3.725
1.450	116.113	8.789f	0.943	9.537f	1.26	91.35	45.072	3.689
1.475	119.268	8.810f	0.957	9.556f	1.26	92.10	44.240	3.654
1.500	122.437	8.829f	0.971	9.588f	1.27	93.20	43.608	3.623

Water Specific Gravity = 1.025.



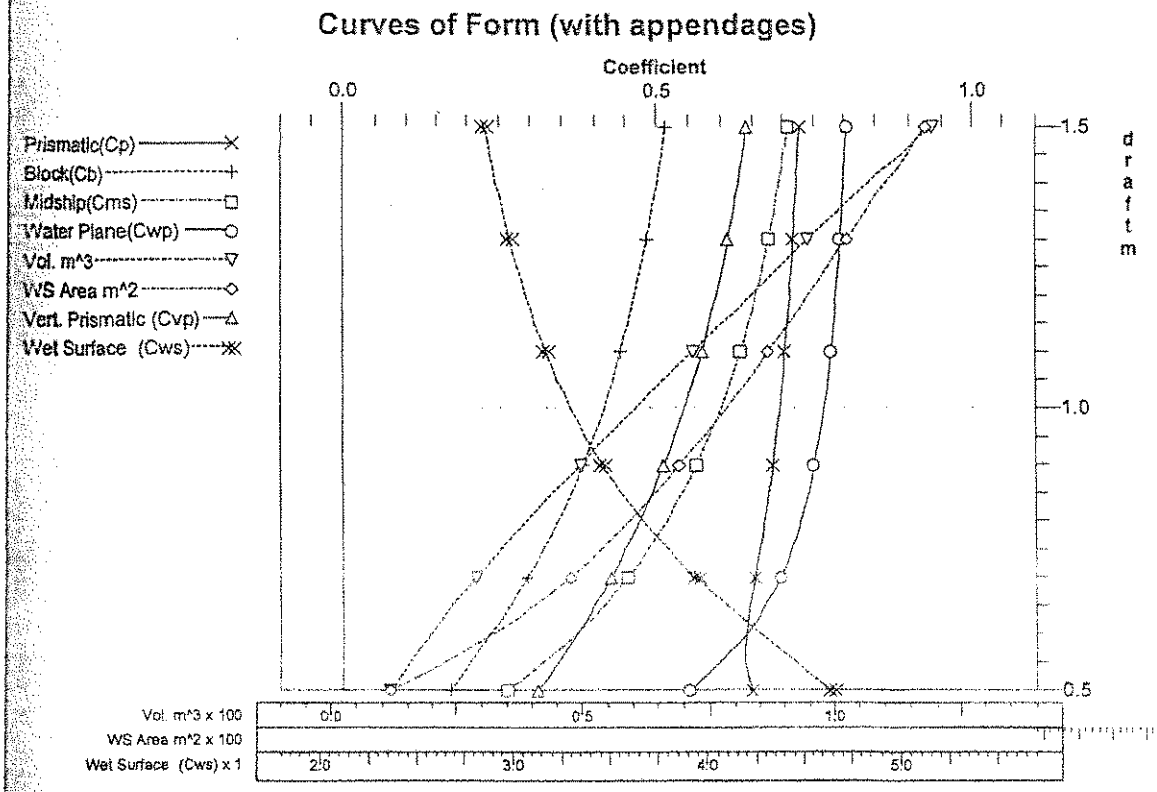
Hull Form Coefficients (with appendages)

Draft is from Baseline
Trim: zero
Heel: zero

Draft	Volume	Coefficients						WS Area
m	m³	Cp	Cb	Cms	Cwp	Cvp	Cws	m²
0.500	11.60	0.647	0.170	0.262	0.548	0.310	4.652	77.99
0.525	13.50	0.638	0.187	0.292	0.573	0.326	4.549	82.33
0.550	15.50	0.634	0.203	0.319	0.595	0.340	4.458	86.48
0.575	17.58	0.634	0.219	0.346	0.616	0.356	4.361	90.16
0.600	19.74	0.636	0.235	0.370	0.636	0.370	4.274	93.69
0.625	21.97	0.639	0.251	0.392	0.653	0.384	4.185	96.84
0.650	24.26	0.642	0.266	0.413	0.667	0.398	4.098	99.71
0.675	26.61	0.646	0.280	0.433	0.681	0.411	4.018	102.46
0.700	29.01	0.650	0.293	0.451	0.692	0.424	3.942	105.01
0.725	31.45	0.655	0.306	0.468	0.702	0.436	3.868	107.35
0.750	33.94	0.659	0.318	0.484	0.711	0.448	3.798	109.57
0.775	36.46	0.663	0.330	0.498	0.719	0.459	3.733	111.68
0.800	39.02	0.666	0.341	0.512	0.726	0.470	3.672	113.71
0.825	41.61	0.670	0.352	0.525	0.733	0.480	3.615	115.67
0.850	44.23	0.674	0.362	0.537	0.739	0.490	3.563	117.60
0.875	46.88	0.677	0.372	0.549	0.745	0.499	3.514	119.49

0.900	49.56	0.680	0.381	0.560	0.748	0.509	3.461	121.07
0.925	52.26	0.683	0.390	0.570	0.753	0.517	3.419	122.88
0.950	54.98	0.686	0.398	0.580	0.758	0.525	3.380	124.66
0.975	57.73	0.689	0.406	0.589	0.762	0.533	3.341	126.35
1.000	60.50	0.692	0.414	0.598	0.765	0.541	3.303	127.93
1.025	63.28	0.695	0.421	0.606	0.769	0.548	3.271	129.67
1.050	66.09	0.697	0.428	0.614	0.771	0.556	3.235	131.12
1.075	68.92	0.699	0.435	0.622	0.774	0.562	3.207	132.81
1.100	71.76	0.702	0.441	0.629	0.776	0.569	3.176	134.27
1.125	74.62	0.704	0.447	0.636	0.779	0.574	3.150	135.90
1.150	77.50	0.706	0.453	0.642	0.781	0.581	3.122	137.30
1.175	80.40	0.708	0.459	0.648	0.784	0.586	3.100	138.95
1.200	83.31	0.709	0.464	0.654	0.785	0.592	3.074	140.33
1.225	86.24	0.711	0.469	0.660	0.788	0.596	3.055	141.97
1.250	89.18	0.713	0.474	0.665	0.789	0.601	3.031	143.34
1.275	92.14	0.714	0.479	0.670	0.790	0.606	3.011	144.80
1.300	95.12	0.716	0.484	0.675	0.792	0.610	2.993	146.31
1.325	98.11	0.717	0.488	0.680	0.794	0.615	2.973	147.67
1.350	101.11	0.719	0.492	0.685	0.796	0.618	2.958	149.22
1.375	104.13	0.720	0.496	0.689	0.797	0.623	2.940	150.61
1.400	107.17	0.722	0.500	0.693	0.798	0.627	2.923	151.98
1.425	110.22	0.723	0.504	0.697	0.800	0.630	2.910	153.51
1.450	113.28	0.724	0.507	0.701	0.801	0.633	2.894	154.89
1.475	116.36	0.725	0.511	0.704	0.802	0.637	2.879	156.26
1.500	119.45	0.726	0.514	0.708	0.804	0.640	2.867	157.74

Note: Coefficients calculated based on waterline length at given draft



Cross Curves of Stability

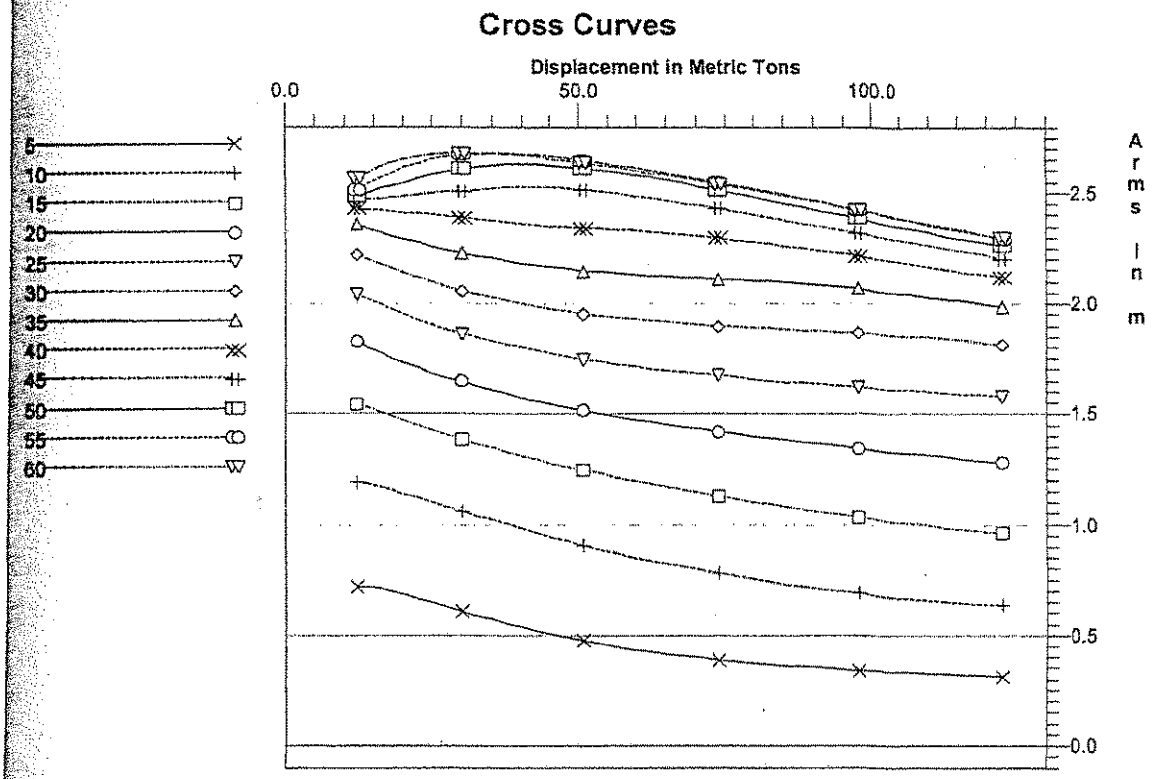
Righting Arms(heel) for VCG = 0.00
Trim zero at heel = 0 (RA Trim = 0)

Displ (MT)	5.000s	10.000s	15.000s	20.000s	25.000s	30.000s
11.891	0.724s	1.194s	1.549s	1.828s	2.049s	2.224s
13.839	0.722s	1.186s	1.531s	1.806s	2.027s	2.204s
15.884	0.715s	1.174s	1.511s	1.783s	2.003s	2.183s
18.018	0.704s	1.159s	1.491s	1.758s	1.979s	2.161s
20.231	0.689s	1.142s	1.470s	1.734s	1.955s	2.140s
22.518	0.672s	1.124s	1.450s	1.711s	1.931s	2.119s
24.868	0.653s	1.104s	1.429s	1.689s	1.909s	2.099s
27.275	0.634s	1.084s	1.409s	1.668s	1.888s	2.080s
29.734	0.614s	1.065s	1.389s	1.648s	1.868s	2.062s
32.240	0.595s	1.045s	1.370s	1.629s	1.850s	2.045s
34.789	0.576s	1.025s	1.351s	1.611s	1.832s	2.029s
37.375	0.558s	1.005s	1.333s	1.594s	1.816s	2.015s
39.998	0.541s	0.986s	1.315s	1.578s	1.802s	2.001s
42.653	0.524s	0.966s	1.298s	1.562s	1.788s	1.989s
45.339	0.509s	0.948s	1.281s	1.548s	1.775s	1.978s

48.053	0.494s	0.929s	1.264s	1.533s	1.762s	1.967s
50.795	0.480s	0.911s	1.248s	1.519s	1.751s	1.958s
53.564	0.466s	0.893s	1.233s	1.506s	1.740s	1.949s
56.357	0.454s	0.875s	1.217s	1.493s	1.729s	1.941s
59.171	0.442s	0.858s	1.202s	1.481s	1.719s	1.934s
62.008	0.432s	0.842s	1.188s	1.469s	1.710s	1.927s
64.866	0.421s	0.826s	1.174s	1.457s	1.701s	1.920s
67.743	0.412s	0.811s	1.160s	1.446s	1.692s	1.914s
70.640	0.403s	0.797s	1.146s	1.435s	1.684s	1.909s
73.555	0.395s	0.783s	1.133s	1.424s	1.676s	1.904s
76.490	0.387s	0.770s	1.120s	1.414s	1.669s	1.899s
79.440	0.380s	0.757s	1.107s	1.404s	1.661s	1.894s
82.409	0.373s	0.745s	1.095s	1.394s	1.654s	1.890s
85.394	0.367s	0.733s	1.082s	1.385s	1.648s	1.886s
88.395	0.361s	0.723s	1.071s	1.376s	1.641s	1.882s
91.413	0.355s	0.712s	1.059s	1.367s	1.635s	1.879s
94.446	0.350s	0.703s	1.048s	1.358s	1.629s	1.875s
97.496	0.345s	0.693s	1.037s	1.349s	1.623s	1.870s
100.561	0.341s	0.685s	1.027s	1.341s	1.618s	1.866s
103.640	0.337s	0.677s	1.017s	1.333s	1.612s	1.860s
106.737	0.333s	0.669s	1.007s	1.325s	1.607s	1.855s
109.847	0.329s	0.662s	0.998s	1.317s	1.602s	1.848s
112.972	0.326s	0.655s	0.989s	1.309s	1.597s	1.842s
116.113	0.323s	0.649s	0.980s	1.301s	1.592s	1.835s
119.268	0.320s	0.643s	0.972s	1.294s	1.587s	1.827s
122.437	0.317s	0.637s	0.964s	1.287s	1.582s	1.819s
Displ (MT)	35.000s	40.000s	45.000s	50.000s	55.000s	60.000s
11.891	2.362s	2.433s	2.467s	2.489s	2.519s	2.569s
13.839	2.346s	2.429s	2.472s	2.504s	2.546s	2.594s
15.884	2.329s	2.424s	2.477s	2.520s	2.572s	2.619s
18.018	2.312s	2.420s	2.483s	2.536s	2.595s	2.640s
20.231	2.295s	2.415s	2.489s	2.553s	2.617s	2.657s
22.518	2.279s	2.409s	2.495s	2.570s	2.637s	2.670s
24.868	2.264s	2.404s	2.500s	2.586s	2.653s	2.679s
27.275	2.249s	2.397s	2.506s	2.600s	2.666s	2.683s
29.734	2.235s	2.389s	2.512s	2.612s	2.674s	2.685s
32.240	2.221s	2.382s	2.517s	2.621s	2.679s	2.685s
34.789	2.209s	2.375s	2.522s	2.628s	2.681s	2.682s
37.375	2.197s	2.369s	2.527s	2.632s	2.680s	2.678s
39.998	2.187s	2.363s	2.530s	2.633s	2.677s	2.672s
42.653	2.177s	2.358s	2.531s	2.632s	2.672s	2.665s
45.339	2.168s	2.353s	2.529s	2.628s	2.666s	2.657s
48.053	2.160s	2.349s	2.525s	2.623s	2.659s	2.649s
50.795	2.153s	2.346s	2.519s	2.616s	2.650s	2.639s
53.564	2.146s	2.343s	2.511s	2.608s	2.641s	2.629s
56.357	2.141s	2.339s	2.501s	2.598s	2.630s	2.618s
59.171	2.136s	2.334s	2.491s	2.588s	2.619s	2.606s
62.008	2.131s	2.328s	2.480s	2.576s	2.607s	2.594s
64.866	2.128s	2.322s	2.469s	2.563s	2.594s	2.582s

7.743	2.124s	2.315s	2.456s	2.549s	2.581s	2.569s
0.640	2.121s	2.307s	2.444s	2.534s	2.567s	2.556s
3.555	2.118s	2.299s	2.431s	2.518s	2.553s	2.543s
6.490	2.114s	2.290s	2.418s	2.502s	2.539s	2.529s
9.440	2.110s	2.281s	2.404s	2.485s	2.524s	2.516s
2.409	2.105s	2.271s	2.391s	2.469s	2.508s	2.501s
5.394	2.099s	2.262s	2.377s	2.453s	2.492s	2.487s
8.395	2.093s	2.251s	2.363s	2.437s	2.476s	2.472s
1.413	2.086s	2.241s	2.350s	2.421s	2.460s	2.458s
4.446	2.079s	2.230s	2.336s	2.405s	2.443s	2.443s
7.496	2.071s	2.219s	2.322s	2.389s	2.426s	2.427s
00.561	2.063s	2.207s	2.308s	2.373s	2.409s	2.412s
03.640	2.054s	2.195s	2.294s	2.358s	2.393s	2.396s
06.737	2.045s	2.183s	2.280s	2.342s	2.376s	2.381s
09.847	2.035s	2.171s	2.266s	2.327s	2.360s	2.365s
12.972	2.025s	2.158s	2.251s	2.311s	2.344s	2.349s
16.113	2.015s	2.146s	2.237s	2.296s	2.328s	2.333s
19.268	2.004s	2.133s	2.222s	2.281s	2.312s	2.317s
22.437	1.993s	2.119s	2.208s	2.265s	2.297s	2.302s

Water Specific Gravity = 1.025.



Tank capacities

Tank Status

SEA WATER (SpGr 1.025)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm
AFTER PEAK	100.00%	23.58	0.199a	0.000	1.672	0.950
TANK SPACE	100.00%	65.79	2.806f	0.000	1.684	0.950
ENGINE ROOM	100.00%	83.42	8.109f	0.000	1.736	0.850
VOID FR9-FR13	100.00%	69.24	13.695f	0.000	1.839	0.950
VOID FR13-FR18	100.00%	62.41	19.027f	0.000	2.045	0.950
FORE PEAK	100.00%	9.19	23.546f	0.000	2.558	0.950
Subtotals:	100.00%	313.63	10.230f	0.000	1.829	

FUEL OIL (SpGr 0.850)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm
FO TANK	100.00%	4.26	3.750f	0.000	1.238	1.000
Subtotals:	100.00%	4.26	3.750f	0.000	1.238	

FRESH WATER (SpGr 1.000)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm
FW TANK	100.00%	1.04	1.150f	0.000	1.000	0.960
Subtotals:	100.00%	1.04	1.150f	0.000	1.000	

oily WATER (SpGr 0.980)

Tank Name	Load (%)	Weight (MT)	LCG (m)	TCG (m)	VCG (m)	Perm
NO1 OILYW TK.P	100.00%	0.95	5.775f	2.250p	1.300	1.000
NO2 OILYW TK.P	100.00%	0.43	6.900f	2.425p	1.300	1.000
Subtotals:	100.00%	1.38	6.126f	2.305p	1.300	

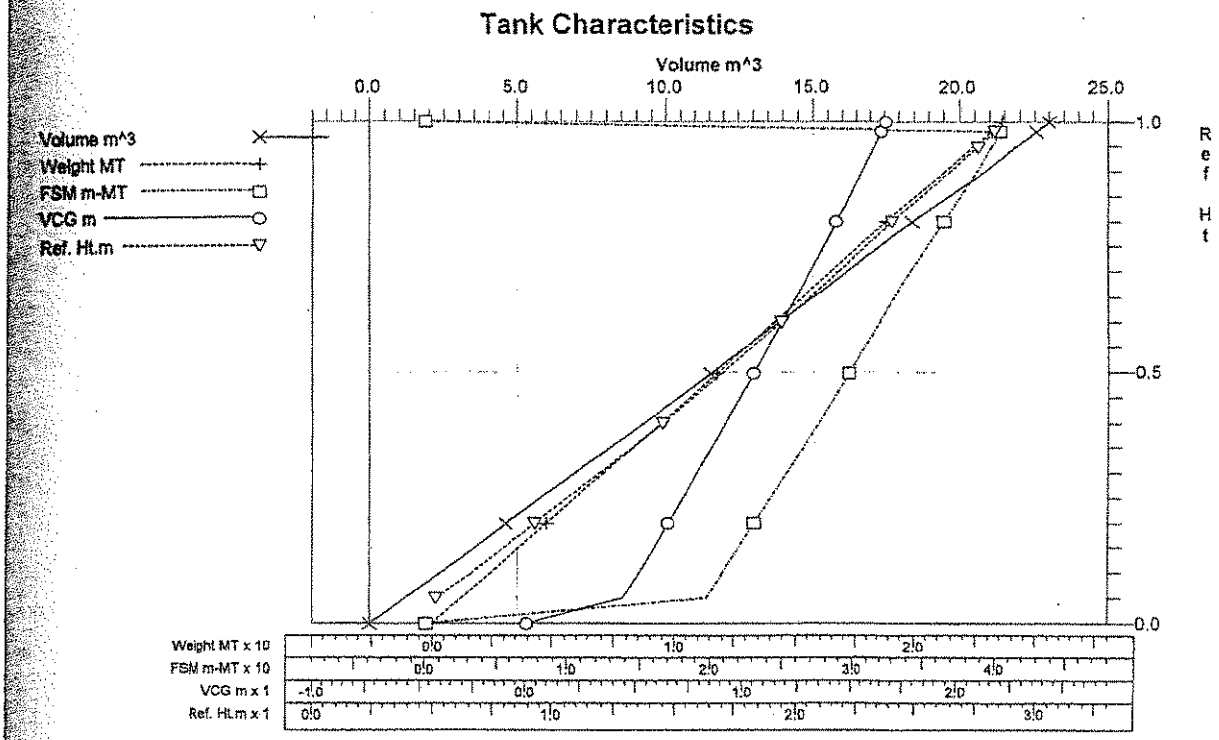
Tank Capacities for AFTER PEAK containing SEA WATER (1.025)

No Trim, No Heel

Ref Ht (m)	Load (%)	Volume (m^3)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (m-MT)
	0.00%	0.00	0.00				
0.51	5.00%	1.15	1.18	0.202a	0.000	0.437	19.74
0.65	10.00%	2.31	2.36	0.200a	0.000	0.510	20.84
0.93	20.00%	4.60	4.71	0.199a	0.000	0.649	23.04
1.19	30.00%	6.90	7.07	0.199a	0.000	0.786	25.27
1.45	40.00%	9.20	9.43	0.199a	0.000	0.919	27.51
1.70	50.00%	11.50	11.79	0.199a	0.000	1.050	29.75
1.94	60.00%	13.80	14.15	0.199a	0.000	1.179	32.00
2.18	70.00%	16.10	16.50	0.199a	0.000	1.305	34.22
2.41	80.00%	18.40	18.86	0.199a	0.000	1.429	36.45
2.64	90.00%	20.70	21.22	0.199a	0.000	1.551	38.64
2.76	95.00%	21.85	22.40	0.199a	0.000	1.612	39.73
2.82	98.00%	22.55	23.11	0.199a	0.000	1.648	40.39
	100.00%	23.00	23.58	0.199a	0.000	1.672	

Reference Point

Part	Long.(m)	Trans.(m)	Vert.(m)
AFTER PEAK	0.000	0.000	0.000



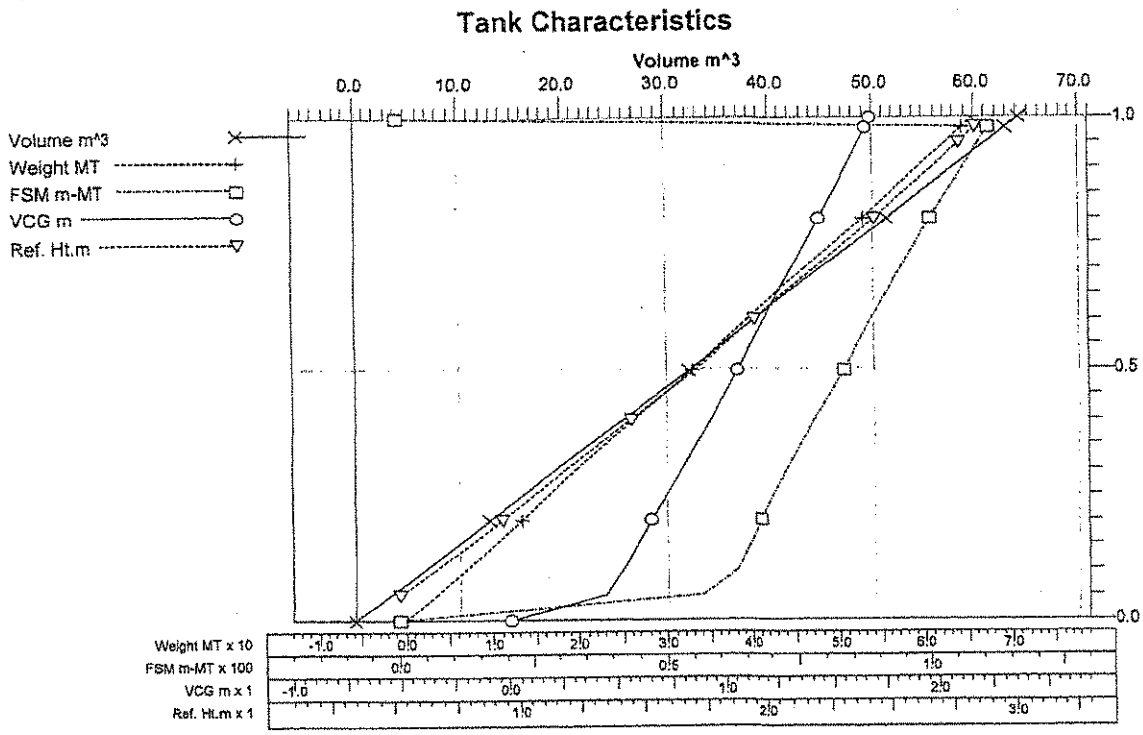
Tank Capacities for TANK SPACE containing SEA WATER (1.025)

No Trim, No Heel

Ref Ht (m)	Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (m-MT)
	0.00%	0.00	0.00				
0.53	5.00%	3.22	3.30	2.731f	0.000	0.440	56.60
0.66	10.00%	6.42	6.58	2.770f	0.000	0.517	63.06
0.93	20.00%	12.84	13.16	2.790f	0.000	0.658	67.91
1.20	30.00%	19.25	19.74	2.796f	0.000	0.794	72.87
1.46	40.00%	25.67	26.31	2.798f	0.000	0.927	78.01
1.71	50.00%	32.09	32.89	2.799f	0.000	1.058	83.31
1.95	60.00%	38.51	39.47	2.800f	0.000	1.187	88.78
2.20	70.00%	44.93	46.05	2.800f	0.000	1.314	94.42
2.43	80.00%	51.35	52.63	2.800f	0.000	1.439	100.23
2.67	90.00%	57.77	59.21	2.800f	0.000	1.563	106.17
2.78	95.00%	60.98	62.50	2.800f	0.000	1.624	109.20
2.85	98.00%	62.92	64.49	2.800f	0.000	1.660	111.05
	100.00%	64.19	65.79	2.806f	0.000	1.684	

Reference Point

Part	Long.(m)	Trans.(m)	Vert.(m)
TANK SPACE	0.000	0.000	0.000



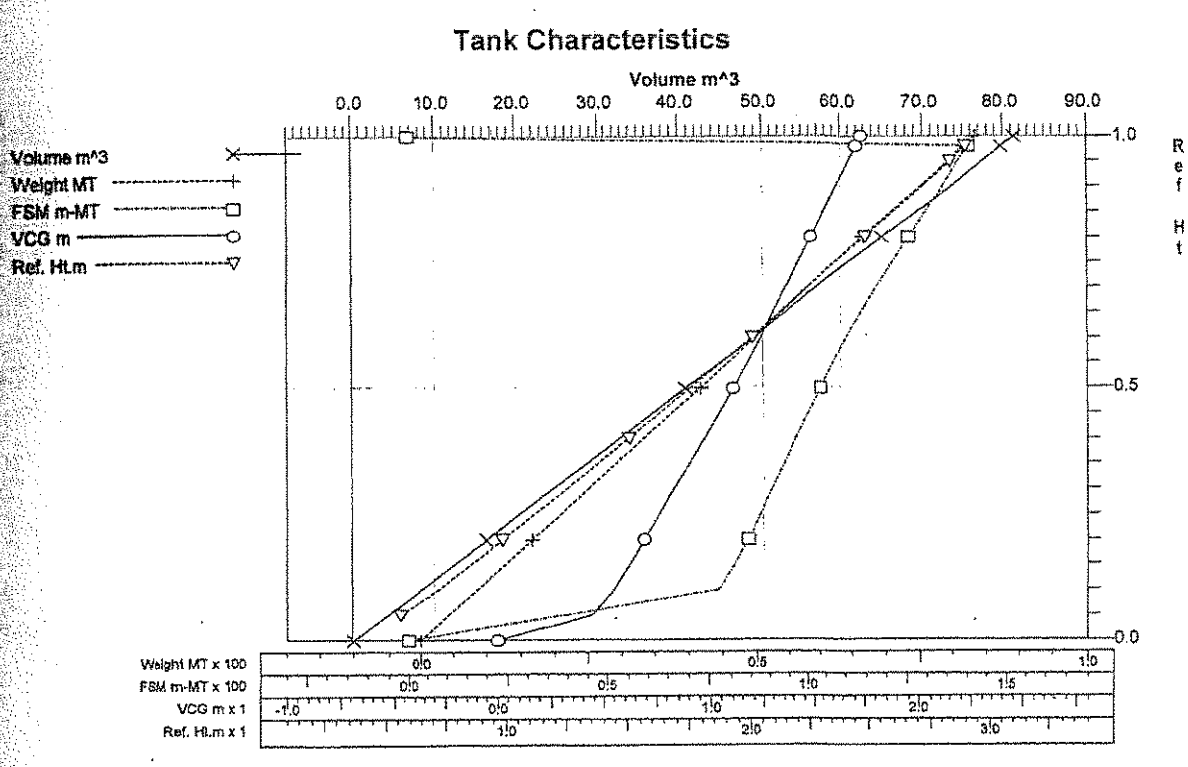
Tank Capacities for ENGINE ROOM containing SEA WATER (1.025)

No Trim, No Heel

Ref Ht (m)	Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (m-MT)
	0.00%	0.00	0.00				
0.56	5.00%	4.07	4.18	7.996f	0.000	0.442	39.88
0.71	10.00%	8.14	8.34	7.974f	0.000	0.541	77.00
0.98	20.00%	16.28	16.68	8.030f	0.000	0.695	84.47
1.25	30.00%	24.41	25.02	8.051f	0.000	0.836	90.48
1.51	40.00%	32.55	33.37	8.063f	0.000	0.972	96.81
1.76	50.00%	40.69	41.71	8.071f	0.000	1.104	103.51
2.01	60.00%	48.83	50.05	8.077f	0.000	1.235	110.50
2.25	70.00%	56.97	58.39	8.082f	0.000	1.363	117.94
2.49	80.00%	65.11	66.73	8.086f	0.000	1.489	125.66
2.72	90.00%	73.24	75.08	8.089f	0.000	1.613	133.88
2.84	95.00%	77.31	79.25	8.091f	0.000	1.675	138.11
2.91	98.00%	79.76	81.75	8.092f	0.000	1.711	140.68
	100.00%	81.38	83.42	8.109f	0.000	1.736	

Reference Point

Part	Long.(m)	Trans.(m)	Vert.(m)
ENGINE ROOM	0.000	0.000	0.000



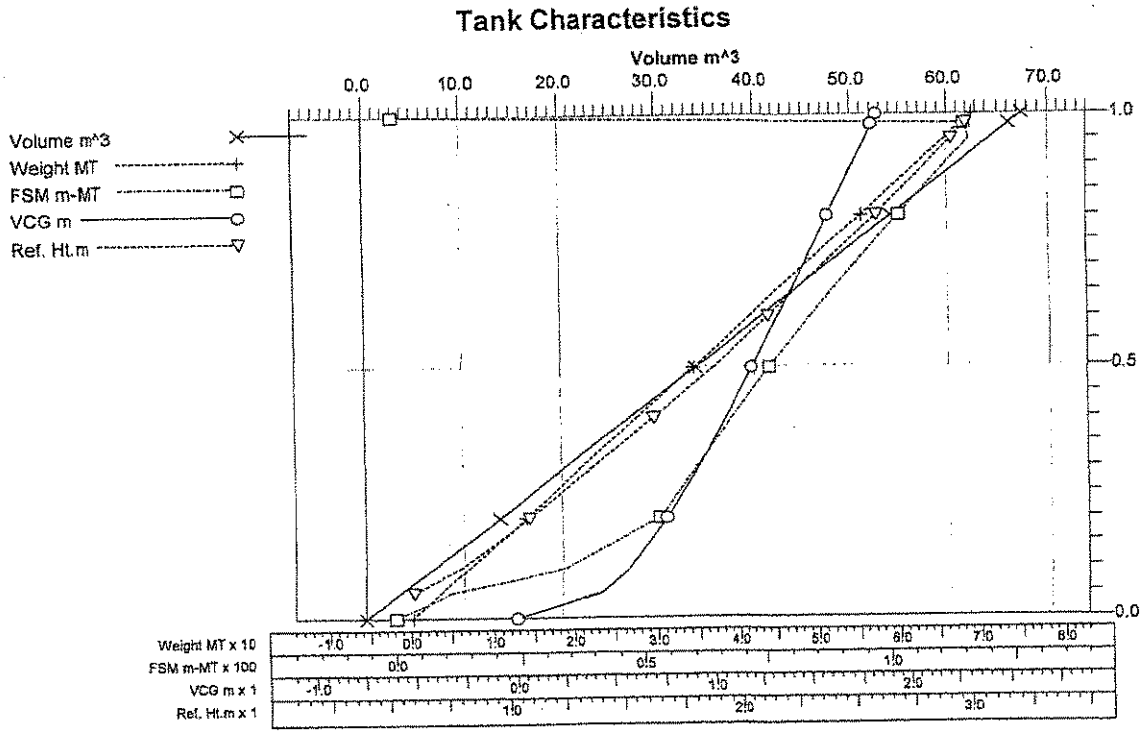
Tank Capacities for VOID FR9-FR13 containing SEA WATER (1.025)

No Trim, No Heel

Ref Ht (m)	Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (m-MT)
	0.00%	0.00	0.00				
0.60	5.00%	3.38	3.46	13.613f	0.000	0.437	11.26
0.80	10.00%	6.75	6.92	13.566f	0.000	0.570	34.08
1.09	20.00%	13.51	13.85	13.586f	0.000	0.759	53.15
1.37	30.00%	20.26	20.77	13.612f	0.000	0.917	60.27
1.63	40.00%	27.02	27.69	13.628f	0.000	1.063	67.81
1.89	50.00%	33.77	34.62	13.639f	0.000	1.202	75.79
2.13	60.00%	40.53	41.54	13.649f	0.000	1.337	84.12
2.37	70.00%	47.28	48.47	13.657f	0.000	1.467	92.92
2.60	80.00%	54.04	55.39	13.664f	0.000	1.594	102.09
2.82	90.00%	60.80	62.32	13.670f	0.000	1.718	111.61
2.93	95.00%	64.18	65.78	13.673f	0.000	1.778	116.51
2.99	98.00%	66.20	67.86	13.674f	0.000	1.815	115.65
	100.00%	67.55	69.24	13.695f	0.000	1.839	

Reference Point

Part	Long.(m)	Trans.(m)	Vert.(m)
VOID FR9-FR13	0.000	0.000	0.000



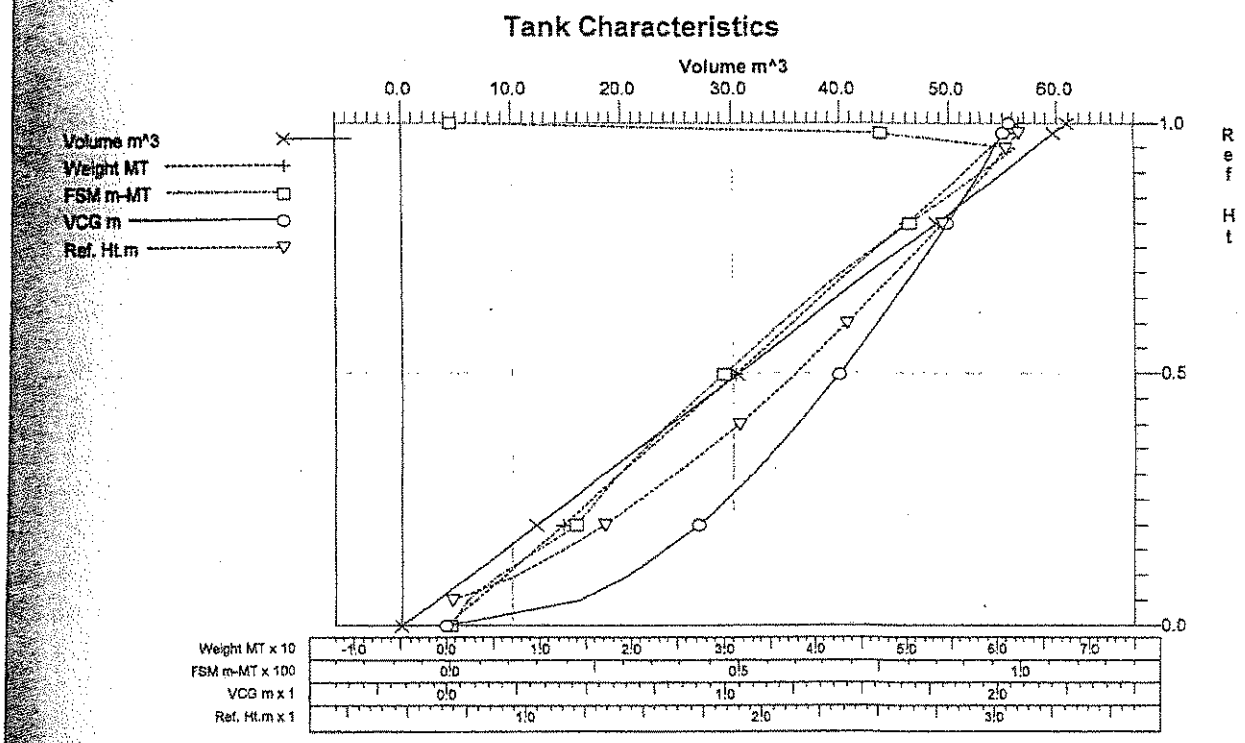
Tank Capacities for VOID FR13-FR18 containing SEA WATER (1.025)

No Trim. No Heel

Ref Ht (m)	Load (%)	Volume (m^3)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (m-MT)
	0.00%	0.00	0.00				
0.69	5.00%	3.05	3.12	18.726f	0.000	0.475	2.84
0.96	10.00%	6.09	6.24	18.709f	0.000	0.655	8.16
1.33	20.00%	12.17	12.48	18.703f	0.000	0.906	21.53
1.63	30.00%	18.26	18.72	18.750f	0.000	1.100	29.34
1.90	40.00%	24.35	24.96	18.801f	0.000	1.268	38.07
2.14	50.00%	30.43	31.19	18.845f	0.000	1.420	47.42
2.37	60.00%	36.53	37.44	18.883f	0.000	1.560	57.59
2.58	70.00%	42.61	43.68	18.915f	0.000	1.691	68.54
2.78	80.00%	48.70	49.91	18.944f	0.000	1.814	80.21
2.96	90.00%	54.79	56.16	18.969f	0.000	1.932	92.65
3.05	95.00%	57.84	59.28	18.981f	0.000	1.989	99.14
3.11	98.00%	59.66	61.15	18.992f	0.000	2.022	75.27
	100.00%	60.88	62.41	19.027f	0.000	2.045	

Reference Point

Part	Long.(m)	Trans.(m)	Vert.(m)
VOID FR13-FR18	0.000	0.000	0.000



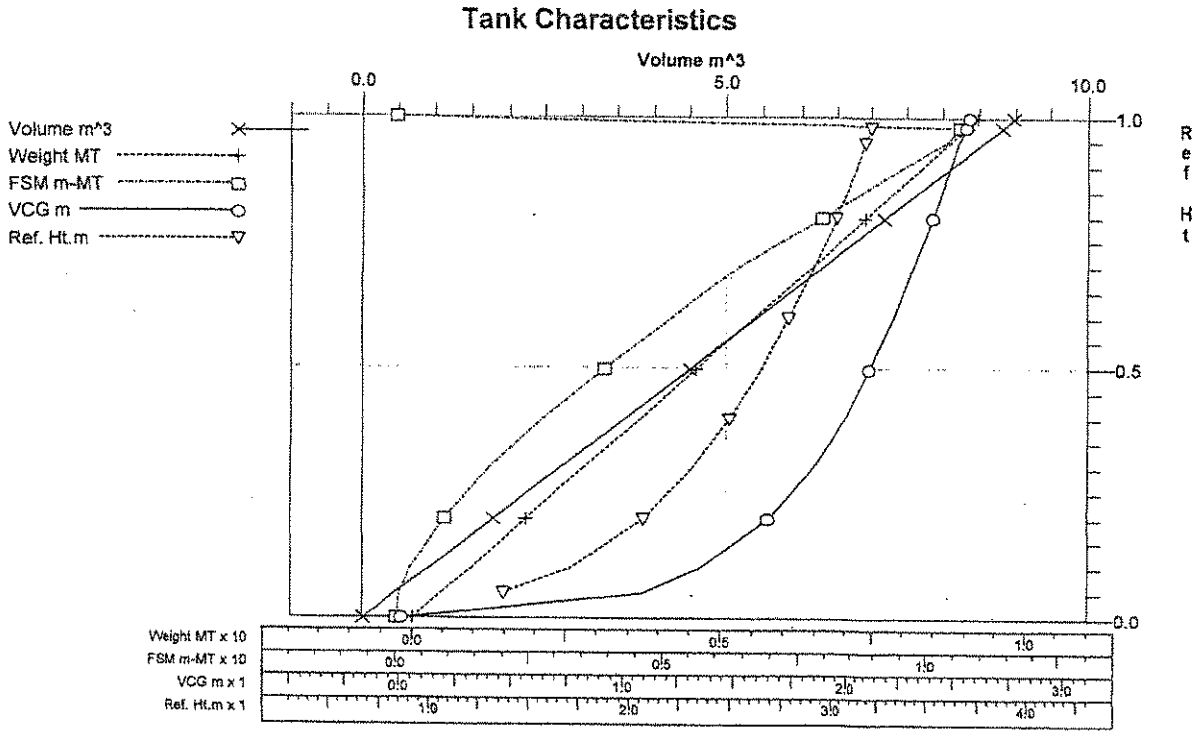
Tank Capacities for FORE PEAK containing SEA WATER (1.025)

No Trim, No Heel

Ref Ht (m)	Load (%)	Volume (m^3)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (m-MT)
	0.00%	0.00	0.00				
1.36	5.00%	0.45	0.46	22.964f	0.000	1.080	0.06
1.69	10.00%	0.90	0.92	23.069f	0.000	1.335	0.24
2.06	20.00%	1.79	1.84	23.168f	0.000	1.640	0.87
2.31	30.00%	2.69	2.76	23.247f	0.000	1.836	1.72
2.50	40.00%	3.59	3.68	23.318f	0.000	1.986	2.73
2.65	50.00%	4.48	4.60	23.380f	0.000	2.110	3.87
2.78	60.00%	5.38	5.51	23.436f	0.000	2.216	5.14
2.90	70.00%	6.28	6.43	23.467f	0.000	2.309	6.41
3.02	80.00%	7.17	7.35	23.492f	0.000	2.394	7.90
3.12	90.00%	8.07	8.27	23.514f	0.000	2.472	9.50
3.18	95.00%	8.52	8.73	23.523f	0.000	2.509	10.33
3.21	98.00%	8.79	9.01	23.529f	0.000	2.542	10.56
	100.00%	8.97	9.19	23.546f	0.000	2.558	

Reference Point

Part	Long.(m)	Trans.(m)	Vert.(m)
FORE PEAK	0.000	0.000	0.000



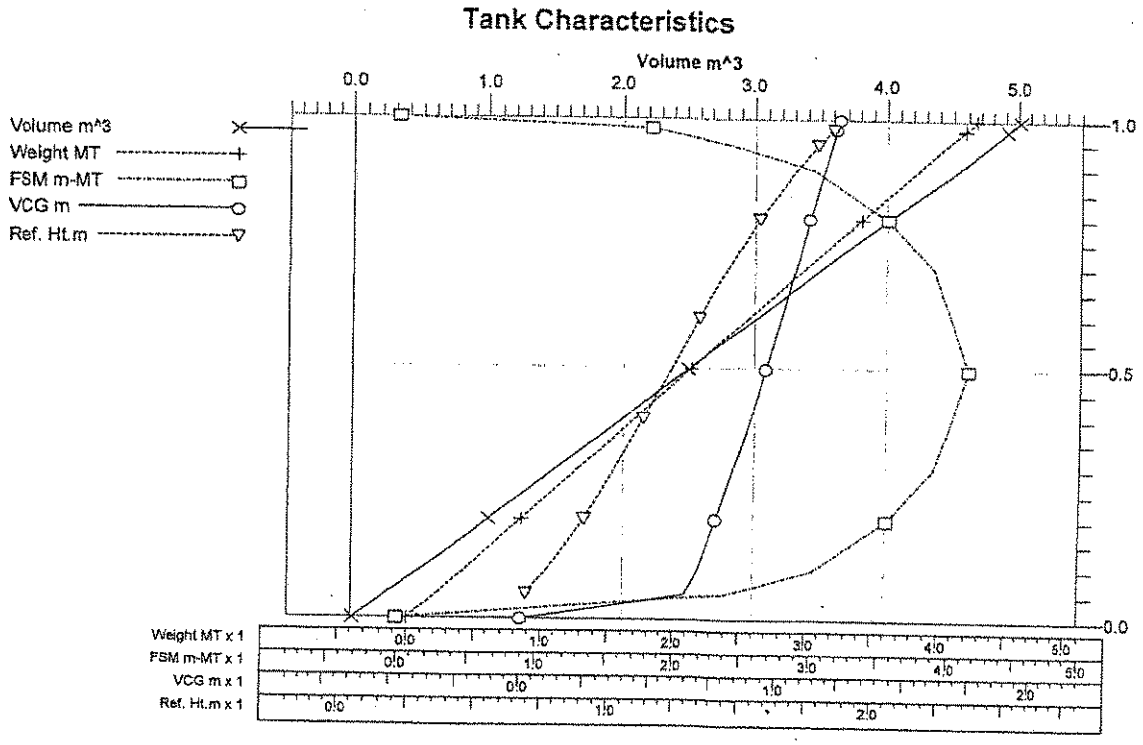
Tank Capacities for FO TANK containing FUEL OIL (0.850)

No Trim, No Heel

Ref Ht (m)	Load (%)	Volume (m^3)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (m-MT)
	0.00%	0.00	0.00				
0.69	5.00%	0.25	0.21	3.750f	0.000	0.642	2.39
0.77	10.00%	0.50	0.43	3.750f	0.000	0.690	3.01
0.91	20.00%	1.00	0.85	3.750f	0.000	0.767	3.55
1.02	30.00%	1.50	1.28	3.750f	0.000	0.834	3.89
1.13	40.00%	2.00	1.70	3.750f	0.000	0.895	4.02
1.24	50.00%	2.50	2.13	3.750f	0.000	0.953	4.14
1.34	60.00%	3.01	2.55	3.750f	0.000	1.009	4.02
1.45	70.00%	3.51	2.98	3.750f	0.000	1.065	3.89
1.57	80.00%	4.01	3.40	3.750f	0.000	1.120	3.55
1.70	90.00%	4.51	3.83	3.750f	0.000	1.177	3.01
1.78	95.00%	4.76	4.04	3.750f	0.000	1.207	2.39
1.84	98.00%	4.91	4.17	3.750f	0.000	1.225	1.83
	100.00%	5.01	4.26	3.750f	0.000	1.238	

Reference Point

Part	Long.(m)	Trans.(m)	Vert.(m)
FO TANK	0.000	0.000	0.000



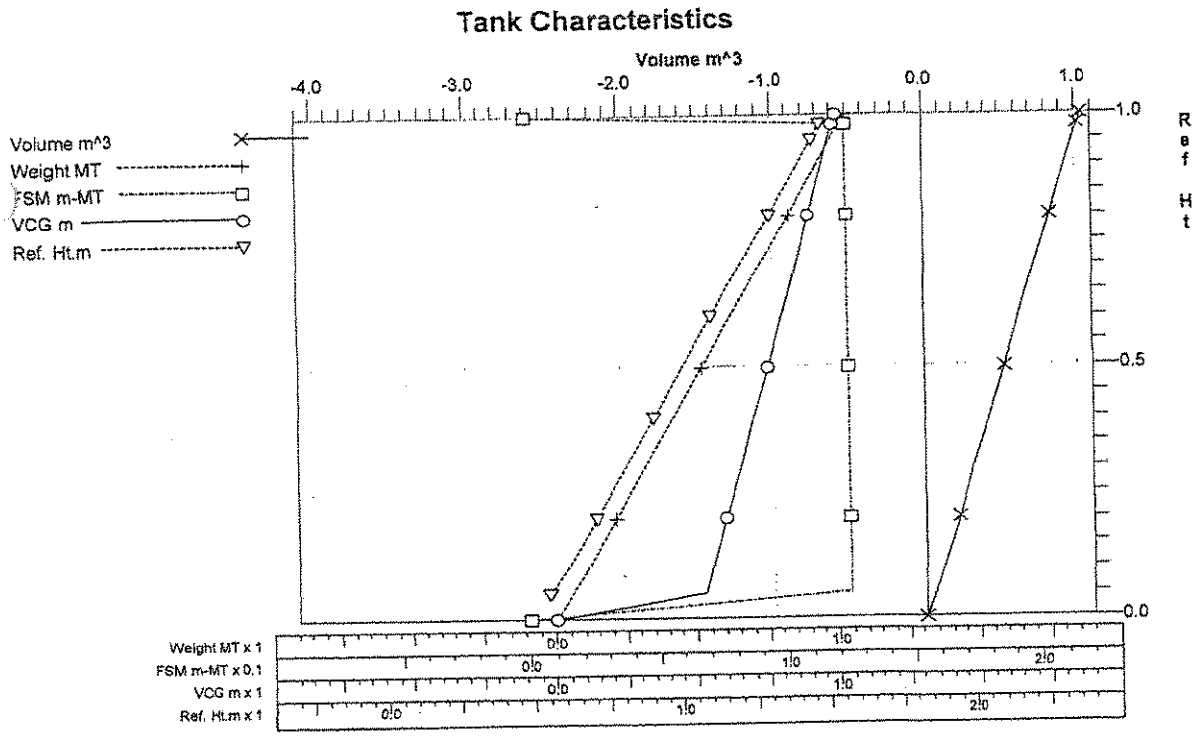
Tank Capacities for FW TANK containing FRESH WATER (1.000)

No Trim, No Heel

Ref Ht (m)	Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (m-MT)
	0.00%	0.00	0.00				
0.55	5.00%	0.05	0.05	1.150f	0.000	0.525	0.12
0.60	10.00%	0.10	0.10	1.150f	0.000	0.550	0.12
0.70	20.00%	0.21	0.21	1.150f	0.000	0.600	0.12
0.80	30.00%	0.31	0.31	1.150f	0.000	0.650	0.12
0.90	40.00%	0.41	0.41	1.150f	0.000	0.700	0.12
1.00	50.00%	0.52	0.52	1.150f	0.000	0.750	0.12
1.10	60.00%	0.62	0.62	1.150f	0.000	0.800	0.12
1.20	70.00%	0.73	0.73	1.150f	0.000	0.850	0.12
1.30	80.00%	0.83	0.83	1.150f	0.000	0.900	0.12
[illegible]	90.00%	0.93	0.93	1.150f	0.000	0.950	0.12
1.45	95.00%	0.99	0.99	1.150f	0.000	0.975	0.12
1.48	98.00%	1.02	1.02	1.150f	0.000	0.990	0.12
	100.00%	1.04	1.04	1.150f	0.000	1.000	

Reference Point

Part	Long.(m)	Trans.(m)	Vert.(m)
FW TANK	0.000	0.000	0.000



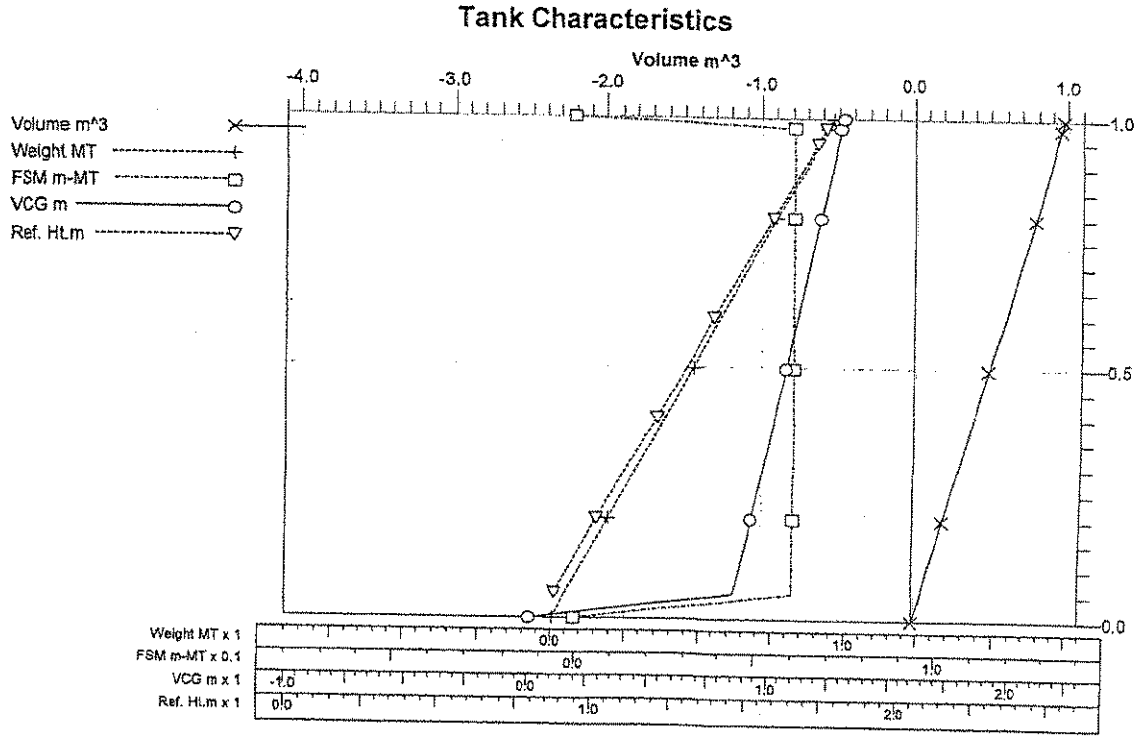
Tank Capacities for NO1 OILYW TK.P containing oily WATER (0.980)

No Trim, No Heel

Ref Ht (m)	Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (m-MT)
	0.00%	0.00	0.00				
0.87	5.00%	0.05	0.05	5.775f	2.250p	0.849	0.06
0.92	10.00%	0.10	0.09	5.775f	2.250p	0.873	0.06
1.02	20.00%	0.19	0.19	5.775f	2.250p	0.920	0.06
1.11	30.00%	0.29	0.28	5.775f	2.250p	0.968	0.06
1.20	40.00%	0.39	0.38	5.775f	2.250p	1.015	0.06
1.30	50.00%	0.48	0.47	5.775f	2.250p	1.063	0.06
1.39	60.00%	0.58	0.57	5.775f	2.250p	1.110	0.06
1.49	70.00%	0.68	0.66	5.775f	2.250p	1.158	0.06
1.58	80.00%	0.77	0.76	5.775f	2.250p	1.205	0.06
1.68	90.00%	0.87	0.85	5.775f	2.250p	1.252	0.06
1.73	95.00%	0.92	0.90	5.775f	2.250p	1.276	0.06
1.76	98.00%	0.95	0.93	5.775f	2.250p	1.290	0.06
	100.00%	0.97	0.95	5.775f	2.250p	1.300	

Reference Point

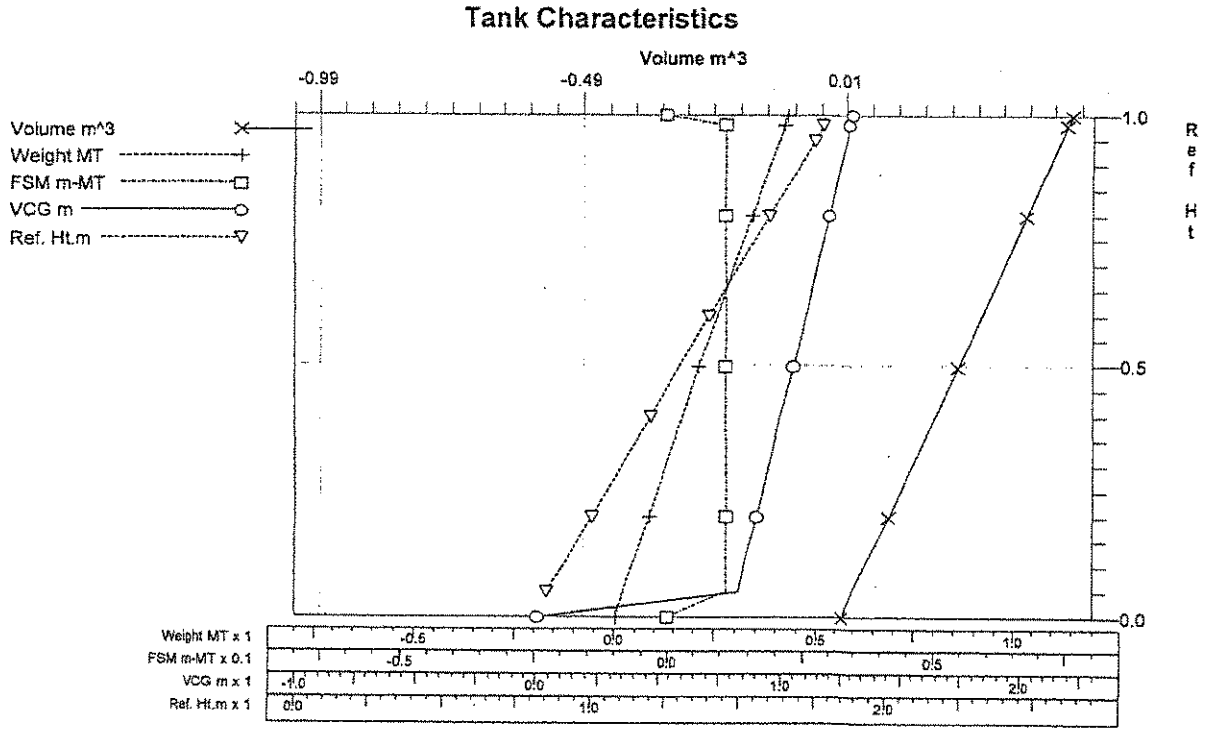
Part	Long.(m)	Trans.(m)	Vert.(m)
NO1 OILYW TK.P	0.000	0.000	0.000



Tank Capacities for NO2 OILYW TK.P containing oily WATER (0.980)

No Trim, No Heel

Ref Ht (m)	Load (%)	Volume (m³)	Weight (MT)	Lcg (m)	Tcg (m)	Vcg (m)	Fsm (m-MT)
	0.00%	0.00	0.00				
0.85	5.00%	0.02	0.02	6.900f	2.425p	0.825	0.01
0.90	10.00%	0.04	0.04	6.900f	2.425p	0.850	0.01
1.00	20.00%	0.09	0.09	6.900f	2.425p	0.900	0.01
1.10	30.00%	0.13	0.13	6.900f	2.425p	0.950	0.01
1.20	40.00%	0.18	0.17	6.900f	2.425p	1.000	0.01
1.30	50.00%	0.22	0.22	6.900f	2.425p	1.050	0.01
1.40	60.00%	0.26	0.26	6.900f	2.425p	1.100	0.01
1.50	70.00%	0.31	0.30	6.900f	2.425p	1.150	0.01
1.60	80.00%	0.35	0.34	6.900f	2.425p	1.200	0.01
1.70	90.00%	0.40	0.39	6.900f	2.425p	1.250	0.01
1.75	95.00%	0.42	0.41	6.900f	2.425p	1.275	0.01
1.78	98.00%	0.43	0.42	6.900f	2.425p	1.290	0.01
	100.00%	0.44	0.43	6.900f	2.425p	1.300	

Reference Point

Part	Long.(m)	Trans.(m)	Vert.(m)
NO2 OILYW TK.P	0.000	0.000	0.000