

TECHNICAL RESOURCES CENTER - P.C.C.



00001161526



# Appendices to Preliminary ACP-max Tanker and Bulk Carrier Design

(SSPA report 2001-2682-1)


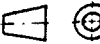
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PROHIBIDA LA REPRODUCCION SIN AUTORIZACION  
DEL AUTOR

## Appendix A: Hull Form Drawings

7260

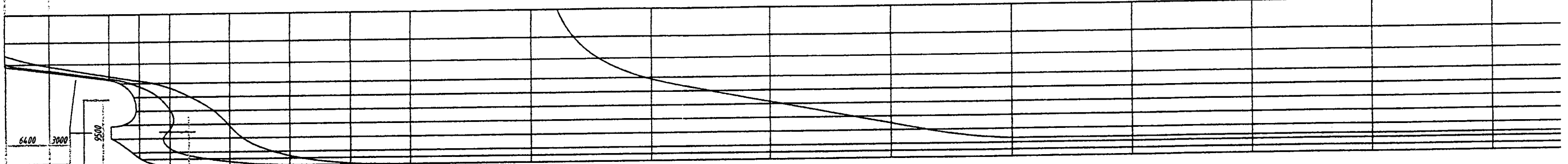
56388

LDA = 365.76 m (1200 fot)  
 Lpp = 352.00 m  
 B = 56.388 m (185 fot)  
 T = 14.850 m  
 Cb = 0.8250  
 LCB = 3.5 % (rel Lpp/2)

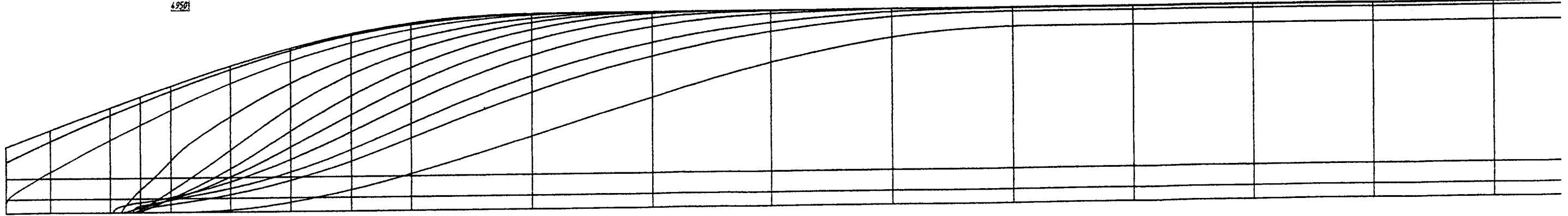
Itemref	Quantity	Title/Name, designation, material, dimension etc			Article No./Reference
Designed by <i>MAB</i>	Checked by	File No <i>20012682</i>	Filename <i>Hull Form.dwg</i>	Date <i>2002-05-24</i>	Scale <i>1:600</i>
 <b>SSPA</b> KONSTRUKTIONS AVDELNINGEN		<i>APC-Max Bulk Carrier</i>			
		<i>Hull Form</i>	Edition <i>1</i>	Sheet <i>1/1</i>	

6500

352000



4950



## **Appendix B: Main Engine Data**



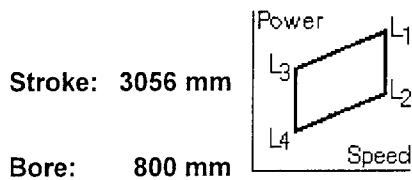


# S80MC

## Installation Drawings.

Download [Installation Drawings for S80MC](#) engine in DXF and PDF formats. (Updated : 2002-03-18)

### General



	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>
Speed	79 r/min	79 r/min	59 r/min	59 r/min
mep	18 bar	11.5 bar	18 bar	11.5 bar

### Power

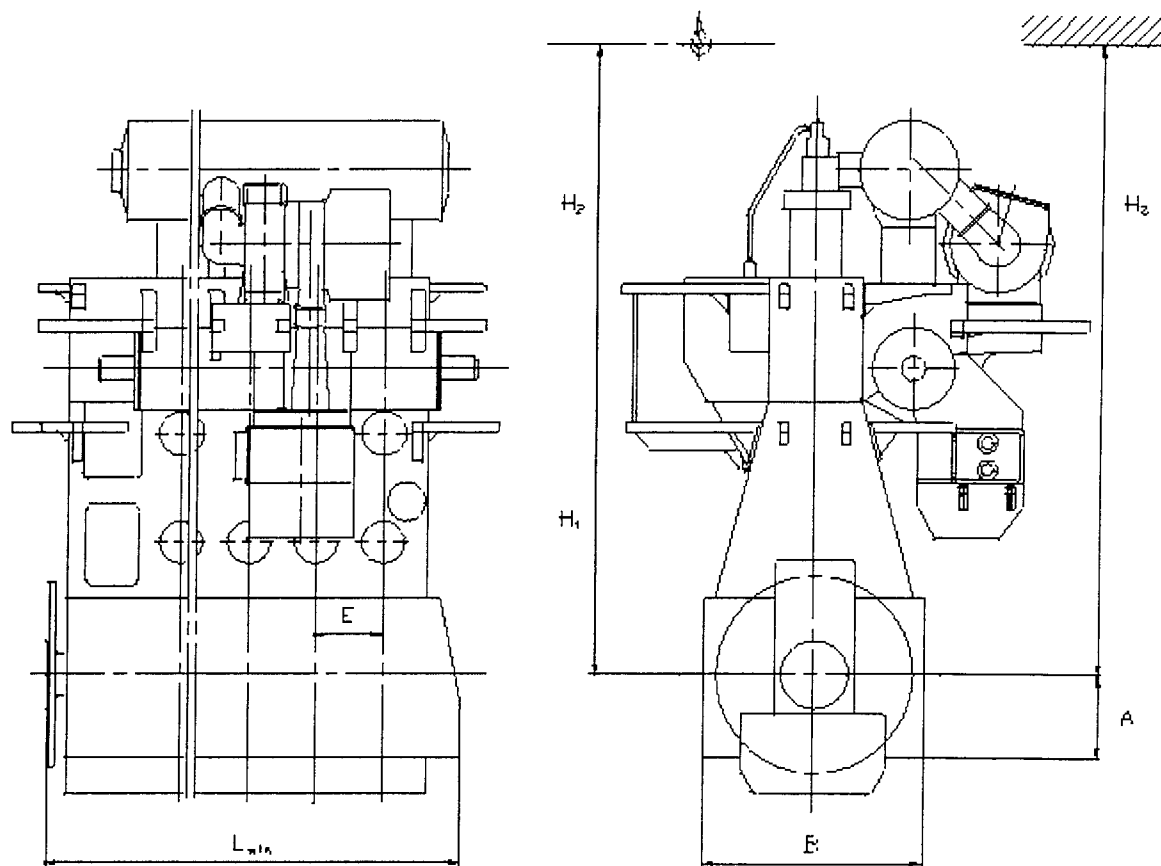
Cylinder	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>
4	14560 kW 19800 BHP	9320 kW	10880 kW	6960 kW
5	18200 kW 24750 BHP	11650 kW	13600 kW	8700 kW
6	21840 kW 29700 BHP	13980 kW	16320 kW	10440 kW
7	25480 kW 34650 BHP	16310 kW	19040 kW	12180 kW
8	29120 kW 39600 BHP	18640 kW	21760 kW	13920 kW
9	32760 kW 44550 BHP	20970 kW	24480 kW	15660 kW
10	36400 kW 49500 BHP	23300 kW	27200 kW	17400 kW
11	40040 kW 54450 BHP	25630 kW	39920 kW	19140 kW
12	43680 kW 59400 BHP	27960 kW	32640 kW	20880 kW

## Specific Fuel Oil Consumption (SFOC)

g/kWh	167	155	167	155
g/BHPH	123	114	123	114

Lubricating oil consumption	approximately 6-9 kg/cyl. 24h
Cylinder oil consumption	0.95-1.5 g/kWh ~ 0.7-1.1 g/BHPH

## Mass and Dimensions



### Legend :

**A** (Centreline of crankshaft to foot flange of bedplate): 1736 mm

**B** (Bedplate width): 4824 mm

**E** (Cylinder distance): 1424 mm

**H1** (Normal lifting procedure): 14125 mm

**H2** (Reduced height lifting procedure): 13250 mm

**H3** (With electrical double jib crane): 12950 mm

Cylinder	$L_{min}$	Dry mass* (tons)
4	8529	657
5	9953	777
6	11377	885



7	12851	996
8	14005	1105
9	16719	1223
10	18143	1343
11	19567	1458
12	20991	1564

\*The mass can vary up to 10% depending on the design and options chosen.

All data is subject to confirmation

MAN B&W Diesel A/S  
Products - Marine Power - Two-stroke Engines



## Specific Fuel Oil Consumption (SFOC)

The figures given in this WEB-site represent the values obtained when the engine and turbocharger are matched with a view to obtaining the lowest possible SFOC values and fulfilling the IMO NO<sub>x</sub> emission limitations.


The SFOC figures are given in **g/kWh** with a tolerance of 5% and are based on use of a fuel with a lower calorific value of 42,700 kJ/kg (10,200 kcal/kg) at ISO conditions:

- 1000 mbar ambient air pressure
- 25 °C ambient air temperature
- 25 °C cooling water temperature

SFOC and NO<sub>x</sub> are interrelated parameters, so an engine offered without fulfilling the IMO NO<sub>x</sub> limitations is subject to a tolerance of only 3% of the SFOC.

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## **Appendix C: SafeHull Calculations for Tanker**

 <b>ABS</b> <small>FOUNDED 1842</small> <small>AMERICAN BUREAU OF SHIPPING &amp; AFFILIATED COMPANIES</small>	<b>Steel Vessels</b>  <b>Rules</b>	<b>SafeHull Phase A - Tanker</b> Version: V7.00 (2001 Rules)	Date: 17-maj-2002 Time: 10:04:59
		<b>Project Name: ACP-T2</b>	Page: 2


## 2.0 Longitudinal Strength:

### 2.1 Hull Girder Bending Moments Amidships

Still Water Sagging BM (Msws) =	-820,000	(tf-m)
Still Water Hogging BM (Mswh) =	820,000	(tf-m)
ABS Vertical Wave Sagging BM (Mws) =	-1,199,246	(tf-m)
ABS Vertical Wave Hogging BM (Mwh) =	1,120,028	(tf-m)
Total Vertical Bending Moment (Mt) =	2,019,246	(tf-m)

### 2.2 Cross Section Information:

LSC Group #	Longitudinal Location. (m) from AP	Description
1	182.000	Mid Ship Section

 <b>ABS</b> <small>FOUNDED 1882</small> <small>AMERICAN BUREAU OF SHIPPING &amp; AFFILIATED COMPANIES</small>	<i>Steel Vessels</i>	<b>SafeHull Phase A - Tanker</b>	Date: 17-maj-2002
	<i>Rules</i>	Version: V7.00 (2001 Rules)	Time: 10:04:59
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### 1.0 General Ship Information:

Title: ACP-Max Tanker

Scantling Length (L) : 340.000 (m)

Length between Perpendiculars : 352.000 (m)

Breadth (B) : 56.400 (m)

Depth (D) : 22.000 (m)

Draft : 14.850 (m)

Cb: .8250

Speed : 17.00 (knots)


Proportions: L/B: 6.03 ; B/D: 2.56

### 1.1 Midship Section Information:

Radius of Bilge : 2.500 (m)

Side Frame Spacing : 4.800 (m)

Floor Spacing : 4.800 (m)


 <b>ABS</b> <small>FOUNDED 1942</small> <small>AMERICAN BUREAU OF SHIPPING &amp; AFFILIATED COMPANIES</small>	<i>Steel Vessels</i>	<b>SafeHull Phase A - Tanker</b>	Date: 17-maj-2002
	<i>Rules</i>	Version: V7.00 (2001 Rules)	Time: 10:04:59
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**2.3 Hull-Girder Section Modulus Requirements:**

Group No:	Location	Material	Gross Reqd SM (SMr, cm <sup>2</sup> -m)	Gross Design SM (SMA, cm <sup>2</sup> -m)	SMA/SMr
1	Bottom	HT32	882,854	1,069,074	1.211
	Deck	HT32	882,854	949,040	1.075

**2.4 Material Reference Table:**

Mat. No.	Mat. ID	Yield Stress (kgf/cm <sup>2</sup> )	Ultimate Stress (kgf/cm <sup>2</sup> )	Q-Factor	Sm
1	MILD	2400.	4100.	1.000	1.000
2	HT32	3200.	4500.	0.780	0.950
3	HT36	3600.	5000.	0.720	0.908
4	HT40	4000.	5200.	0.680	0.875

 <b>ABS</b> <small>FOUNDED 1882</small> <small>AMERICAN BUREAU OF SHIPPING &amp; AFFILIATED COMPANIES</small>	<b>Steel Vessels</b>	<b>SafeHull Phase A - Tanker</b>	Date: 17-maj-2002
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### 3.0 Longitudinal Scantlings


LSC Group #            1

X-Coordinate from AP =    182.000    (m)

Description :            Mid Ship Section


### 3.1 Extent of Structure Materials:

Extent Range	Distance Above Base Line (m) From	to	Required Material
1	22.000	20.118	HT32
2	20.118	.574	MILD
3	.574	.000	HT32

 <b>ABS</b> <small>FOUNDED 1842</small> <small>AMERICAN BUREAU OF SHIPPING &amp; AFFILIATED COMPANIES</small>	<b>Steel Vessels</b>	<b>SafeHull Phase A - Tanker</b>	Date: 17-maj-2002 Time: 10:04:59
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### 3.2 Longitudinal Scantling (Plating) Requirements:

Plate #	Location	Plate ID	Material	Req. Net Thick. (mm)	Offered Net Thick. (mm)	Req. Gross Thick. (mm)	Req. Gross to 0.5 mm (mm)	Offered Gross Thickness (mm)
1	Keel Plate	KPL-01	HT32	16.80	34.00	17.80	18.00	35.00
2	Bottom	BTM-01	HT32	15.30	34.00	16.30	16.50	35.00
3	Bottom	BTM-02	HT32	16.00	34.00	17.00	17.00	35.00
4	Bottom	BTM-03	HT32	16.00	34.00	17.00	17.00	35.00
5	Bottom	BTM-04	HT32	15.63	34.00	16.63	16.50	35.00
6	Bilge	BLG-01	HT32	16.00	29.00	17.00	17.00	30.00
7	Bilge	BLG-02	HT32	16.00	29.00	17.00	17.00	30.00
8	Bilge	BLG-03	HT32	16.00	29.00	17.00	17.00	30.00
9	Bilge	BLG-04	HT32	16.00	29.00	17.00	17.00	30.00
10	Side Shell	SHL-01	HT32	15.06	18.50	16.56	16.50	20.00
11	Side Shell	SHL-02	MIL	16.95	17.50	18.45	18.50	19.00
12	Side Shell	SHL-03	MIL	17.15	17.50	18.65	18.50	19.00
13	Side Shell	SHL-04	HT32	15.24	17.50	16.74	16.50	19.00
14	Sheer Strake	SHS-01	HT32	18.01	38.50	19.51	19.50	40.00
15	Upper Deck	DEC-01	HT32	17.86	38.00	19.86	20.00	40.00
16	Upper Deck	DEC-02	HT32	23.28	39.00	24.28	24.50	40.00
17	Upper Deck	DEC-03	HT32	18.58	44.00	19.58	19.50	45.00
18	Inner Bottom	INB-01	HT32	15.06	33.50	16.56	16.50	35.00
19	Inner Bottom	INB-02	HT32	15.06	33.50	16.56	16.50	35.00
20	Inner Bottom	INB-03	HT32	15.06	33.50	16.56	16.50	35.00
21	Inner Skin	INS-01	HT32	13.91	18.50	15.41	15.50	20.00
22	Inner Skin	INS-02	MIL	14.77	15.50	16.27	16.50	17.00


 <b>ABS</b> <small>FOUNDED 1842</small> <small>AMERICAN BUREAU OF SHIPPING &amp; AFFILIATED COMPANIES</small>	<i>Steel Vessels</i>	<b>SafeHull Phase A - Tanker</b>		Date: 17-maj-2002	
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23	Inner Skin	INS-03	MIL	13.06	15.50	14.56	14.50	17.00
24	Inner Skin	INS-04	HT32	14.49	38.50	15.99	16.00	40.00
25	WT Bot. Grd.	BGR-01	HT32	15.63	20.00	17.63	17.50	22.00
26	WT Bot. Grd.	BGR-02	HT32	15.63	20.00	17.63	17.50	22.00
27	NT Bot. Grd.	NBG-01	HT32	15.63	20.00	17.63	17.50	22.00
28	NT Stringer	NTS-01	MIL	10.00	13.00	12.00	12.00	15.00
29	NT Stringer	NTS-02	MIL	10.00	13.00	12.00	12.00	15.00
30	Other Bhd	OTH-01	MIL	17.05	18.00	18.05	18.00	19.00
31	Other Bhd	OTH-02	MIL	14.60	15.00	15.60	15.50	16.00
32	Other Bhd	OTH-03	MIL	13.68	15.00	14.68	14.50	16.00
33	Other Bhd	OTH-04	HT32	15.07	39.00	16.07	16.00	40.00

\*\*\*\*\*Note\*\*\*\*\*


REQUIRED\_GROSS t(mm) = REQUIRED\_NET\_t(mm) + MINIMUM\_CORROSION\_MARGIN



 <b>ABS</b> <small>FOUNDED 1882</small> <small>AMERICAN BUREAU OF SHIPPING &amp; AFFILIATED COMPANIES</small>	<i>Steel Vessels</i>	<b>SafeHull Phase A - Tanker</b>	Date: 17-maj-2002
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### 3.3 Longitudinal Scantling (Stiffener) Requirements:

Stiffener #	Location	Stiffener ID	Stiffener Description	Material	Req. Net SM (cm3)	Offered Net SM (cm3)	Req. Gross SM (cm3)	Offered Gross SM (cm3)
1	Keel Plate	KPL- 101	T580x200x25x25	HT32	1,965	4,608	2,119	4,970
2	Bottom	BTM- 101	T580x200x25x25	HT32	1,965	4,608	2,119	4,970
3	Bottom	BTM- 102	T580x200x25x25	HT32	1,965	4,608	2,119	4,970
4	Bottom	BTM- 103	T580x200x25x25	HT32	1,965	4,608	2,119	4,970
5	Bottom	BTM- 104	T580x200x25x25	HT32	1,965	4,608	2,119	4,970
6	Bottom	BTM- 105	T580x200x25x25	HT32	1,965	4,608	2,119	4,970
7	Bottom	BTM- 106	T580x200x25x25	HT32	1,965	4,608	2,119	4,970
8	Bottom	BTM- 107	T580x200x25x25	HT32	1,965	4,608	2,119	4,970
9	Bottom	BTM- 108	T580x200x25x25	HT32	1,965	4,608	2,119	4,970
10	Bottom	BTM- 109	T580x200x25x25	HT32	1,965	4,608	2,119	4,970
11	Bottom	BTM- 110	T580x200x25x25	HT32	1,965	4,608	2,119	4,970
12	Bottom	BTM- 211	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
13	Bottom	BTM- 212	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
14	Bottom	BTM- 213	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
15	Bottom	BTM- 214	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
16	Bottom	BTM- 215	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
17	Bottom	BTM- 216	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
18	Bottom	BTM- 217	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
19	Bottom	BTM- 218	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
20	Bottom	BTM- 219	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
21	Bottom	BTM- 220	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
22	Bottom	BTM- 321	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
23	Bottom	BTM- 322	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
24	Bottom	BTM- 323	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
25	Bottom	BTM- 324	T580x200x25x25	HT32	2,148	4,608	2,317	4,970
26	Bottom	BTM- 325	T580x200x25x25	HT32	2,124	4,608	2,290	4,970

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27	Bottom	BTM- 426 T580x200x25x25	HT32	2,099	4,608	2,264	4,970
28	Side Shell	SHL- 101 T500x150x13x20	HT32	1,824	2,035	2,058	2,296
29	Side Shell	SHL- 102 T500x150x13x20	HT32	1,745	2,035	1,969	2,296
30	Side Shell	SHL- 103 T500x150x13x15	HT32	1,675	1,770	1,863	1,969
31	Side Shell	SHL- 104 T500x150x13x15	HT32	1,612	1,770	1,794	1,969
32	Side Shell	SHL- 205 T450x150x13x16	HT32	1,521	1,587	1,682	1,754
33	Side Shell	SHL- 206 T450x150x13x16	HT32	1,385	1,587	1,531	1,754
34	Side Shell	SHL- 307 T450x150x13x16	HT32	1,219	1,587	1,348	1,754
35	Side Shell	SHL- 308 T450x150x13x16	HT32	1,157	1,587	1,279	1,754
36	Side Shell	SHL- 309 T400x160x13x16	MILD	1,386	1,416	1,527	1,561
37	Side Shell	SHL- 310 T400x160x13x16	MILD	1,307	1,416	1,440	1,561
38	Side Shell	SHL- 311 T400x160x13x16	MILD	1,228	1,416	1,353	1,561
39	Side Shell	SHL- 312 T400x160x13x16	MILD	1,184	1,416	1,305	1,561
40	Side Shell	SHL- 313 T400x160x13x16	MILD	1,161	1,416	1,280	1,561
41	Side Shell	SHL- 414 T400x160x13x16	MILD	1,006	1,416	1,108	1,561
42	Side Shell	SHL- 415 T250x150x15x20	MILD	866	923	932	994
43	Side Shell	SHL- 416 T250x150x15x20	MILD	749	923	807	994
44	Side Shell	SHL- 417 L250x100x13/18	HT32	528	612	581	673
45	Side Shell	SHL- 418 L250x100x13/18	HT32	464	612	511	673
46	Sheer Strake	SHS- 101 L250x100x13/18	HT32	400	680	441	749
47	Sheer Strake	SHS- 102 L250x100x13/18	HT32	367	680	405	749
48	Upper Deck	DEC- 101 FB 400x40	HT32	427	1,864	452	1,971
49	Upper Deck	DEC- 102 FB 400x40	HT32	422	1,864	446	1,971
50	Upper Deck	DEC- 103 FB 400x40	HT32	417	1,864	441	1,971
51	Upper Deck	DEC- 204 FB 400x40	HT32	617	1,896	641	1,971
52	Upper Deck	DEC- 205 FB 400x40	HT32	543	1,896	565	1,971
53	Upper Deck	DEC- 206 FB 400x40	HT32	539	1,896	560	1,971
54	Upper Deck	DEC- 207 FB 400x40	HT32	535	1,896	556	1,971
55	Upper Deck	DEC- 208 FB 400x40	HT32	530	1,896	551	1,971
56	Upper Deck	DEC- 209 FB 400x40	HT32	526	1,896	547	1,971
57	Upper Deck	DEC- 210 FB 400x40	HT32	522	1,896	542	1,971



*Steel Vessels*

*Rules*

**SafeHull Phase A - Tanker**

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58	Upper Deck	DEC- 211	FB 400x40	HT32	517	1,896	538	1,971
59	Upper Deck	DEC- 212	FB 400x40	HT32	513	1,896	533	1,971
60	Upper Deck	DEC- 213	FB 400x40	HT32	509	1,896	529	1,971
61	Upper Deck	DEC- 214	FB 400x40	HT32	505	1,896	525	1,971
62	Upper Deck	DEC- 215	FB 400x40	HT32	500	1,896	520	1,971
63	Upper Deck	DEC- 216	FB 400x40	HT32	496	1,896	516	1,971
64	Upper Deck	DEC- 217	FB 400x40	HT32	492	1,896	511	1,971
65	Upper Deck	DEC- 218	FB 400x40	HT32	487	1,896	507	1,971
66	Upper Deck	DEC- 319	FB 400x40	HT32	483	1,950	502	2,027
67	Upper Deck	DEC- 320	FB 400x40	HT32	483	1,950	502	2,027
68	Upper Deck	DEC- 321	FB 400x40	HT32	483	1,950	502	2,027
69	Upper Deck	DEC- 322	FB 400x40	HT32	483	1,950	502	2,027
70	Upper Deck	DEC- 323	FB 400x40	HT32	483	1,950	502	2,027
71	Upper Deck	DEC- 324	FB 400x40	HT32	483	1,950	502	2,027
72	Upper Deck	DEC- 325	FB 400x40	HT32	483	1,950	502	2,027
73	Upper Deck	DEC- 326	FB 400x40	HT32	483	1,950	502	2,027
74	Upper Deck	DEC- 327	FB 400x40	HT32	483	1,950	502	2,027
75	Upper Deck	DEC- 328	FB 400x40	HT32	483	1,950	502	2,027
76	Upper Deck	DEC- 329	FB 400x40	HT32	483	1,950	502	2,027
77	Upper Deck	DEC- 330	FB 400x40	HT32	483	1,950	502	2,027
78	Inner Bottom	INB- 101	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
79	Inner Bottom	INB- 202	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
80	Inner Bottom	INB- 203	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
81	Inner Bottom	INB- 204	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
82	Inner Bottom	INB- 205	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
83	Inner Bottom	INB- 206	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
84	Inner Bottom	INB- 207	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
85	Inner Bottom	INB- 208	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
86	Inner Bottom	INB- 209	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
87	Inner Bottom	INB- 210	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
88	Inner Bottom	INB- 211	T580x200x25x25	HT32	2,170	4,598	2,345	4,970



**Steel Vessels**

**Rules**

**SafeHull Phase A - Tanker**

Version: V7.00 (2001 Rules)

Project Name: **ACP-T2**

Date: 17-maj-2002

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89	Inner Bottom	INB- 312	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
90	Inner Bottom	INB- 313	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
91	Inner Bottom	INB- 314	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
92	Inner Bottom	INB- 315	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
93	Inner Bottom	INB- 316	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
94	Inner Bottom	INB- 317	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
95	Inner Bottom	INB- 318	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
96	Inner Bottom	INB- 319	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
97	Inner Bottom	INB- 320	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
98	Inner Bottom	INB- 321	T580x200x25x25	HT32	2,170	4,598	2,345	4,970
99	Inner Skin	INS- 101	T450x150x13x16	HT32	1,395	1,537	1,603	1,766
100	Inner Skin	INS- 102	T450x150x13x16	HT32	1,374	1,537	1,579	1,766
101	Inner Skin	INS- 103	T400x160x13x16	HT32	1,354	1,368	1,555	1,571
102	Inner Skin	INS- 104	T400x160x13x16	HT32	1,333	1,368	1,531	1,571
103	Inner Skin	INS- 105	T400x160x13x16	HT32	1,313	1,368	1,507	1,571
104	Inner Skin	INS- 106	T400x160x13x16	HT32	1,285	1,368	1,476	1,571
105	Inner Skin	INS- 207	T420x150x13x20	MILD	1,598	1,650	1,741	1,797
106	Inner Skin	INS- 208	T420x150x13x20	MILD	1,530	1,650	1,667	1,797
107	Inner Skin	INS- 209	T420x150x13x20	MILD	1,461	1,650	1,592	1,797
108	Inner Skin	INS- 210	T400x160x13x16	MILD	1,392	1,397	1,534	1,539
109	Inner Skin	INS- 211	T400x160x13x16	MILD	1,323	1,397	1,458	1,539
110	Inner Skin	INS- 212	T400x160x13x16	MILD	1,254	1,397	1,382	1,539
111	Inner Skin	INS- 213	T400x160x13x16	MILD	1,184	1,397	1,305	1,539
112	Inner Skin	INS- 314	T400x160x13x16	MILD	1,044	1,397	1,151	1,539
113	Inner Skin	INS- 315	T400x160x13x16	MILD	974	1,397	1,074	1,539
114	Inner Skin	INS- 316	T370x100x13x16	MILD	904	957	1,006	1,065
115	Inner Skin	INS- 317	T370x100x13x16	MILD	833	957	927	1,065
116	Inner Skin	INS- 318	L250x100x13/18	HT32	602	604	662	664
117	Inner Skin	INS- 419	L250x100x13/18	HT32	545	680	601	749
118	Inner Skin	INS- 420	L250x100x13/18	HT32	489	680	539	749
119	Inner Skin	INS- 421	L250x100x13/18	HT32	305	680	336	749



*Steel Vessels*

*Rules*

**SafeHull Phase A - Tanker**

Version: V7.00 (2001 Rules)

**Project Name: ACP-T2**

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120	WT Bot. Grd.	BGR- 101	T420x150x13x16	HT32	1,219	1,415	1,405	1,630
121	WT Bot. Grd.	BGR- 102	T420x150x13x16	HT32	1,124	1,415	1,295	1,630
122	WT Bot. Grd.	BGR- 103	T420x150x13x16	HT32	1,081	1,415	1,246	1,630
123	WT Bot. Grd.	BGR- 104	T420x150x13x16	HT32	1,236	1,425	1,424	1,642
124	WT Bot. Grd.	BGR- 205	T500x150x13x20	HT32	1,918	2,070	2,171	2,343
125	WT Bot. Grd.	BGR- 206	T500x150x13x20	HT32	1,765	2,070	1,998	2,343
126	WT Bot. Grd.	BGR- 207	T420x150x13x20	HT32	1,627	1,654	1,839	1,869
127	WT Bot. Grd.	BGR- 208	T420x150x13x20	HT32	1,540	1,654	1,741	1,869
128	Other Bhd	OTH- 101	T500x150x13x20	MILD	1,958	2,122	2,106	2,281
129	Other Bhd	OTH- 102	T500x150x13x20	MILD	1,893	2,122	2,036	2,281
130	Other Bhd	OTH- 103	T500x150x13x20	MILD	1,828	2,122	1,966	2,281
131	Other Bhd	OTH- 104	T500x150x13x15	MILD	1,762	1,793	1,923	1,956
132	Other Bhd	OTH- 105	T500x150x13x15	MILD	1,697	1,793	1,851	1,956
133	Other Bhd	OTH- 106	T500x150x13x15	MILD	1,631	1,793	1,779	1,956
134	Other Bhd	OTH- 207	T450x150x13x16	MILD	1,564	1,579	1,700	1,716
135	Other Bhd	OTH- 208	T450x150x13x16	MILD	1,498	1,579	1,627	1,716
136	Other Bhd	OTH- 209	T450x150x13x16	MILD	1,431	1,579	1,555	1,716
137	Other Bhd	OTH- 210	T400x160x13x16	MILD	1,363	1,409	1,479	1,528
138	Other Bhd	OTH- 211	T400x160x13x16	MILD	1,296	1,409	1,405	1,528
139	Other Bhd	OTH- 212	T400x160x13x16	MILD	1,228	1,409	1,332	1,528
140	Other Bhd	OTH- 213	T400x160x13x16	MILD	1,160	1,409	1,258	1,528
141	Other Bhd	OTH- 314	T400x160x13x16	MILD	1,092	1,409	1,184	1,528
142	Other Bhd	OTH- 315	T400x160x13x16	MILD	1,023	1,409	1,110	1,528
143	Other Bhd	OTH- 316	T370x100x13x16	MILD	954	969	1,041	1,057
144	Other Bhd	OTH- 317	T370x100x13x16	MILD	885	969	965	1,057
145	Other Bhd	OTH- 318	T370x100x13x16	MILD	816	969	890	1,057
146	Other Bhd	OTH- 419	L250x100x13/18	HT32	589	692	638	749
147	Other Bhd	OTH- 420	L250x100x13/18	HT32	534	692	578	749
148	Other Bhd	OTH- 421	L250x100x13/18	HT32	380	692	412	749

\*\*\*\*\*Note\*\*\*\*\*

REQUIRED GROSS SM (cm3) = REQUIRED\_NET\_SM(cm3) x OFERED\_GROSS\_SM / OFFERED\_NET\_SM

 <b>ABS</b> <small>FOUNDED 1882</small> <small>AMERICAN BUREAU OF SHIPPING &amp; AFFILIATED COMPANIES</small>	<i>Steel Vessels</i>	<b>SafeHull Phase A - Tanker</b>	Date: 17-maj-2002
	<i>Rules</i>	Version: V7.00 (2001 Rules)	Time: 10:04:59
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**3.4 Moment of Inertia (Stiffener within 0.1D from Deck) Requirements:**

Stiffener #.	Location	Stiffener ID	Description	Material	Z (m)	Y (m)	Req. Net IX (cm4)	Offered Net IX (cm4)
1	SHEERSTRK	SHS- 101	L250x100x13/18	HT32	28.200	20.080	13,795.000	17,295.000
2	SHEERSTRK	SHS- 102	L250x100x13/18	HT32	28.200	20.960	14,904.000	17,470.000
3	UPPER DECK	DEC- 101	FB 400x40	HT32	27.356	22.050	17,000.000	70,093.000
4	UPPER DECK	DEC- 102	FB 400x40	HT32	26.517	22.100	16,959.000	70,035.000
5	UPPER DECK	DEC- 103	FB 400x40	HT32	25.679	22.150	16,959.000	70,035.000
6	UPPER DECK	DEC- 204	FB 400x40	HT32	23.739	22.262	19,456.000	74,083.000
7	UPPER DECK	DEC- 205	FB 400x40	HT32	22.861	22.311	17,895.000	72,184.000
8	UPPER DECK	DEC- 206	FB 400x40	HT32	21.982	22.360	17,895.000	72,184.000
9	UPPER DECK	DEC- 207	FB 400x40	HT32	21.103	22.409	17,895.000	72,184.000
10	UPPER DECK	DEC- 208	FB 400x40	HT32	20.225	22.459	17,895.000	72,184.000
11	UPPER DECK	DEC- 209	FB 400x40	HT32	19.346	22.508	17,895.000	72,184.000
12	UPPER DECK	DEC- 210	FB 400x40	HT32	18.468	22.557	17,895.000	72,184.000
13	UPPER DECK	DEC- 211	FB 400x40	HT32	17.589	22.606	17,895.000	72,184.000
14	UPPER DECK	DEC- 212	FB 400x40	HT32	16.710	22.655	17,895.000	72,184.000
15	UPPER DECK	DEC- 213	FB 400x40	HT32	15.832	22.705	17,895.000	72,184.000
16	UPPER DECK	DEC- 214	FB 400x40	HT32	14.953	22.754	17,895.000	72,184.000
17	UPPER DECK	DEC- 215	FB 400x40	HT32	14.074	22.803	17,895.000	72,184.000
18	UPPER DECK	DEC- 216	FB 400x40	HT32	13.196	22.852	17,895.000	72,184.000
19	UPPER DECK	DEC- 217	FB 400x40	HT32	12.317	22.902	17,895.000	72,184.000
20	UPPER DECK	DEC- 218	FB 400x40	HT32	11.439	22.951	17,895.000	72,184.000
21	UPPER DECK	DEC- 319	FB 400x40	HT32	9.680	23.000	19,478.000	75,459.000
22	UPPER DECK	DEC- 320	FB 400x40	HT32	8.800	23.000	19,478.000	75,459.000
23	UPPER DECK	DEC- 321	FB 400x40	HT32	7.920	23.000	19,478.000	75,459.000
24	UPPER DECK	DEC- 322	FB 400x40	HT32	7.040	23.000	19,478.000	75,459.000
25	UPPER DECK	DEC- 323	FB 400x40	HT32	6.160	23.000	19,478.000	75,459.000
26	UPPER DECK	DEC- 324	FB 400x40	HT32	5.280	23.000	19,478.000	75,459.000
27	UPPER DECK	DEC- 325	FB 400x40	HT32	4.400	23.000	19,478.000	75,459.000
28	UPPER DECK	DEC- 326	FB 400x40	HT32	3.520	23.000	19,478.000	75,459.000
29	UPPER DECK	DEC- 327	FB 400x40	HT32	2.640	23.000	19,478.000	75,459.000
30	UPPER DECK	DEC- 328	FB 400x40	HT32	1.760	23.000	19,478.000	75,459.000
31	UPPER DECK	DEC- 329	FB 400x40	HT32	.880	23.000	19,478.000	75,459.000
32	UPPER DECK	DEC- 330	FB 400x40	HT32	.000	23.000	19,478.000	75,459.000
33	INNER SKIN	INS- 419	L250x100x13/18	HT32	24.840	20.080	13,795.000	17,295.000
34	INNER SKIN	INS- 420	L250x100x13/18	HT32	24.840	20.960	13,795.000	17,295.000
35	INNER SKIN	INS- 421	L250x100x13/18	HT32	24.840	21.840	10,193.000	16,521.000
36	OTHER BHD	OTH- 318	T370x100x13x16	MILD	10.560	19.840	4,463.000	31,083.000
37	OTHER BHD	OTH- 419	L250x100x13/18	HT32	10.560	20.720	13,999.000	17,622.000
38	OTHER BHD	OTH- 420	L250x100x13/18	HT32	10.560	21.600	13,999.000	17,622.000

ABS/SAFEHULL/SEMCALC V7.00 (2001 Rules)  
SECTION MODULUS CALCULATIONS FOR HULL GIRDER  
SHIP : ACP-Max Tanker

[ A ] PLATING --- NET

ID	B	TP	A	YY	A*YY	A*YY^2	XI0	XX	A*XX	A*XX^2	YI0
	m	cm	cm2	m	cm2-m	cm2-m2	cm2-m2	m	cm-m	cm2-m2	cm2-m2
<b>KEEL PLATE</b>											
KPL-01	1.200	3.400	408.00	-0.017	-6.9	0.	0.	0.600	244.8	147.	49.
<b>BOTTOM</b>											
BTM-01	9.360	3.400	3182.40	-0.017	-54.1	1.	0.	5.880	18712.5	110030.	23234.
BTM-02	9.680	3.400	3291.20	-0.017	-56.0	1.	0.	15.400	50684.5	780541.	25699.
BTM-03	4.400	3.400	1496.00	-0.017	-25.4	0.	0.	22.440	33570.2	753316.	2414.
BTM-04	1.060	3.400	360.40	-0.017	-6.1	0.	0.	25.170	9071.3	228324.	34.
<b>BILGE</b>											
BLG-01	0.979	2.900	283.80	0.081	22.9	2.	1.	26.183	7430.7	194556.	22.
BLG-02	0.973	2.900	282.31	0.448	126.5	57.	7.	27.073	7643.1	206922.	15.
BLG-03	0.973	2.900	282.31	1.127	318.2	359.	15.	27.752	7834.8	217432.	7.
BLG-04	0.979	2.900	283.80	2.017	572.5	1155.	22.	28.119	7980.2	224398.	1.
<b>SIDE</b>											
SHL-01	2.760	1.850	510.60	3.880	1981.1	7687.	324.	28.209	14403.6	406316.	0.
SHL-02	2.500	1.750	437.50	6.510	2848.1	18541.	228.	28.209	12341.3	348133.	0.
SHL-03	7.040	1.750	1232.00	11.280	13897.0	156758.	5088.	28.209	34753.2	980344.	0.
SHL-04	4.700	1.750	822.50	17.150	14105.9	241916.	1514.	28.209	23201.7	654491.	0.
<b>SHEER STRAKE</b>											
SHS-01	2.500	3.850	962.50	20.750	19971.9	414416.	501.	28.219	27161.0	766464.	0.
<b>UPPER DECK</b>											
DEC-01	3.366	3.800	1279.06	22.119	28291.5	625779.	4.	26.521	33922.1	899653.	1203.
DEC-02	14.302	3.900	5577.93	22.619	126169.9	2853896.	298.	17.701	98735.5	1747726.	94787.
DEC-03	10.560	4.400	4646.40	23.022	106969.4	2462650.	1.	5.280	24533.0	129534.	43178.
<b>INNER BOTTOM</b>											
INB-01	1.200	3.350	402.00	4.017	1614.7	6486.	0.	0.600	241.2	145.	48.
INB-02	9.360	3.350	3135.60	4.017	12594.9	50591.	0.	5.880	18437.3	108412.	22892.
INB-03	9.680	3.350	3242.80	4.017	13025.5	52320.	0.	15.400	49939.1	769062.	25322.
<b>INNER SKIN BULKHEAD</b>											
INS-01	5.941	1.850	1099.12	5.887	6470.7	38094.	1295.	22.534	24767.7	558119.	1938.
INS-02	7.040	1.550	1091.20	11.280	12308.7	138843.	4507.	24.832	27097.0	672878.	0.
INS-03	4.900	1.550	759.50	17.250	13101.4	225999.	1520.	24.832	18860.1	468339.	0.
INS-04	2.500	3.850	962.50	20.950	20164.4	422444.	501.	24.821	23890.0	592967.	0.
<b>WT BOTTOM GIRDER</b>											
BGR-01	4.000	2.000	400.00	2.000	800.0	1600.	533.	0.010	4.0	0.	0.
<b>WT BOTTOM GIRDER</b>											
BGR-02	4.000	2.000	800.00	2.000	1600.0	3200.	1067.	10.570	8456.0	89380.	0.
<b>NON-TIGHT BHD</b>											
NBG-01	4.000	2.000	800.00	2.000	1600.0	3200.	1067.	20.250	16200.0	328050.	0.
<b>NON-TIGHT STRINGER</b>											
NTS-01	3.360	1.300	436.80	7.766	3392.4	26347.	0.	26.520	11583.9	307206.	411.
<b>NON-TIGHT STRINGER</b>											
NTS-02	3.360	1.300	436.80	14.807	6467.5	95761.	0.	26.520	11583.9	307206.	411.
<b>OTHER BULKHEAD</b>											
OTH-01	5.280	1.800	950.40	6.640	6310.7	41903.	2208.	10.569	10044.8	106163.	0.
OTH-02	6.160	1.500	924.00	12.360	11420.6	141159.	2922.	10.568	9764.4	103185.	0.
OTH-03	4.560	1.500	684.00	17.720	12120.5	214775.	1185.	10.568	7228.2	76384.	0.

[ B ] STIFFENERS - NET, W/O SMALL OPENING ON STIFFENER

ID	MSID	XLB	OPNG	A	YY	A*YY	A*YY^2	XI0	XX	A*XX	A*XX^2	YI0	
			cm	cm2	m	cm2-m	cm2-m2	m	cm2-m	cm2-m2	cm2-m2	cm2-m2	
KEEL PLATE													
KPL-	101	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	0.88	158.	139.	0.
BOTTOM													
BTM-	101	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	1.76	316.	556.	0.
BTM-	102	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	2.64	474.	1250.	0.
BTM-	103	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	3.52	631.	2223.	0.
BTM-	104	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	4.40	789.	3473.	0.
BTM-	105	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	5.28	947.	5001.	0.
BTM-	106	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	6.16	1105.	6807.	0.
BTM-	107	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	7.04	1263.	8891.	0.
BTM-	108	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	7.92	1421.	11253.	0.
BTM-	109	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	8.80	1579.	13893.	0.
BTM-	110	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	9.68	1737.	16810.	0.
BTM-	211	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	11.44	2052.	23479.	0.
BTM-	212	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	12.32	2210.	27230.	0.
BTM-	213	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	13.20	2368.	31259.	0.
BTM-	214	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	14.08	2526.	35565.	0.
BTM-	215	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	14.96	2684.	40150.	0.
BTM-	216	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	15.84	2842.	45012.	0.
BTM-	217	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	16.72	3000.	50153.	0.
BTM-	218	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	17.60	3157.	55571.	0.
BTM-	219	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	18.48	3315.	61267.	0.
BTM-	220	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	19.36	3473.	67241.	0.
BTM-	321	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	21.12	3789.	80022.	0.
BTM-	322	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	22.00	3947.	86830.	0.
BTM-	323	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	22.88	4105.	93915.	0.
BTM-	324	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	23.76	4263.	101278.	0.
BTM-	325	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	24.64	4420.	108919.	0.
BTM-	426	13	T580x200x25x25	0.0	179.40	0.37	65.9	24.	7.	25.50	4575.	116655.	0.
SIDE													
SHL-	101	2	T500x150x13x20	0.0	82.00	2.54	208.3	529.	0.	27.86	2285.	63668.	2.
SHL-	102	2	T500x150x13x20	0.0	82.00	3.41	279.6	954.	0.	27.86	2285.	63668.	2.
SHL-	103	3	T500x150x13x15	0.0	76.00	4.28	325.3	1392.	0.	27.88	2119.	59070.	2.
SHL-	104	3	T500x150x13x15	0.0	76.00	5.15	391.4	2016.	0.	27.88	2119.	59070.	2.
SHL-	205	27	T450x150x13x16	0.0	72.00	6.02	433.4	2609.	0.	27.90	2009.	56055.	2.
SHL-	206	27	T450x150x13x16	0.0	72.00	6.89	496.1	3418.	0.	27.90	2009.	56055.	2.
SHL-	307	27	T450x150x13x16	0.0	72.00	8.64	622.1	5375.	0.	27.90	2009.	56055.	2.
SHL-	308	27	T450x150x13x16	0.0	72.00	9.52	685.4	6525.	0.	27.90	2009.	56055.	2.
SHL-	309	7	T400x160x13x16	0.0	68.00	10.40	707.2	7355.	0.	27.93	1899.	53033.	1.
SHL-	310	7	T400x160x13x16	0.0	68.00	11.28	767.0	8652.	0.	27.93	1899.	53033.	1.
SHL-	311	7	T400x160x13x16	0.0	68.00	12.16	826.9	10055.	0.	27.93	1899.	53033.	1.
SHL-	312	7	T400x160x13x16	0.0	68.00	13.04	886.7	11563.	0.	27.93	1899.	53033.	1.
SHL-	313	7	T400x160x13x16	0.0	68.00	13.92	946.6	13176.	0.	27.93	1899.	53033.	1.
SHL-	414	7	T400x160x13x16	0.0	68.00	15.68	1066.2	16719.	0.	27.93	1899.	53033.	1.
SHL-	415	5	T250x150x15x20	0.0	61.00	16.56	1010.2	16728.	0.	28.01	1709.	47866.	0.
SHL-	416	5	T250x150x15x20	0.0	61.00	17.44	1063.8	18553.	0.	28.01	1709.	47866.	0.
SHL-	417	28	L250x100x13/18	0.0	44.50	18.32	815.2	14935.	0.	28.03	1247.	34964.	0.
SHL-	418	28	L250x100x13/18	0.0	44.50	19.20	854.4	16404.	0.	28.03	1247.	34964.	0.
SHEER STRAKE													
SHS-	101	28	L250x100x13/18	0.0	44.50	20.08	893.6	17943.	0.	28.03	1247.	34964.	0.
SHS-	102	28	L250x100x13/18	0.0	44.50	20.96	932.7	19550.	0.	28.03	1247.	34964.	0.
UPPER DECK													
DEC-	101	31	FB 400x40	0.0	152.00	21.85	3321.3	72572.	2.	27.34	4156.	113647.	0.
DEC-	102	31	FB 400x40	0.0	152.00	21.90	3328.9	72904.	2.	26.51	4029.	106783.	0.
DEC-	103	31	FB 400x40	0.0	152.00	21.95	3336.5	73237.	2.	25.67	3901.	100134.	0.



DEC-207	31	FB 400x40	0.0	154.00	22.21	3420.3	75963.	2.	21.09	3248.	68512.	0.
DEC-208	31	FB 400x40	0.0	154.00	22.26	3427.9	76300.	2.	20.21	3113.	62923.	0.
DEC-209	31	FB 400x40	0.0	154.00	22.31	3435.4	76638.	2.	19.34	2978.	57572.	0.
DEC-210	31	FB 400x40	0.0	154.00	22.36	3443.0	76977.	2.	18.46	2842.	52458.	0.
DEC-211	31	FB 400x40	0.0	154.00	22.41	3450.6	77316.	2.	17.58	2707.	47583.	0.
DEC-212	31	FB 400x40	0.0	154.00	22.46	3458.2	77656.	2.	16.70	2572.	42945.	0.
DEC-213	31	FB 400x40	0.0	154.00	22.50	3465.8	77997.	2.	15.82	2436.	38545.	0.
DEC-214	31	FB 400x40	0.0	154.00	22.55	3473.3	78339.	2.	14.94	2301.	34382.	0.
DEC-215	31	FB 400x40	0.0	154.00	22.60	3480.9	78681.	2.	14.06	2166.	30458.	0.
DEC-216	31	FB 400x40	0.0	154.00	22.65	3488.5	79024.	2.	13.18	2030.	26771.	0.
DEC-217	31	FB 400x40	0.0	154.00	22.70	3496.1	79368.	2.	12.31	1895.	23322.	0.
DEC-218	31	FB 400x40	0.0	154.00	22.75	3503.7	79712.	2.	11.43	1760.	20110.	0.
DEC-319	31	FB 400x40	0.0	154.00	22.80	3511.2	80055.	2.	9.68	1491.	14430.	0.
DEC-320	31	FB 400x40	0.0	154.00	22.80	3511.2	80055.	2.	8.80	1355.	11926.	0.
DEC-321	31	FB 400x40	0.0	154.00	22.80	3511.2	80055.	2.	7.92	1220.	9660.	0.
DEC-322	31	FB 400x40	0.0	154.00	22.80	3511.2	80055.	2.	7.04	1084.	7632.	0.
DEC-323	31	FB 400x40	0.0	154.00	22.80	3511.2	80055.	2.	6.16	949.	5844.	0.
DEC-324	31	FB 400x40	0.0	154.00	22.80	3511.2	80055.	2.	5.28	813.	4293.	0.
DEC-325	31	FB 400x40	0.0	154.00	22.80	3511.2	80055.	2.	4.40	678.	2981.	0.
DEC-326	31	FB 400x40	0.0	154.00	22.80	3511.2	80055.	2.	3.52	542.	1908.	0.
DEC-327	31	FB 400x40	0.0	154.00	22.80	3511.2	80055.	2.	2.64	407.	1073.	0.
DEC-328	31	FB 400x40	0.0	154.00	22.80	3511.2	80055.	2.	1.76	271.	477.	0.
DEC-329	31	FB 400x40	0.0	154.00	22.80	3511.2	80055.	2.	0.88	136.	119.	0.
DEC-330	31	FB 400x40	0.0	77.00	22.80	1755.6	40028.	1.	0.00	0.	0.	0.

INNER BOTTOM

INB-101	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	0.88	158.	139.	0.
INB-202	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	1.76	316.	556.	0.
INB-203	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	2.64	474.	1250.	0.
INB-204	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	3.52	631.	2223.	0.
INB-205	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	4.40	789.	3473.	0.
INB-206	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	5.28	947.	5001.	0.
INB-207	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	6.16	1105.	6807.	0.
INB-208	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	7.04	1263.	8891.	0.
INB-209	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	7.92	1421.	11253.	0.
INB-210	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	8.80	1579.	13893.	0.
INB-211	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	9.68	1737.	16810.	0.
INB-312	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	11.44	2052.	23479.	0.
INB-313	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	12.32	2210.	27230.	0.
INB-314	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	13.20	2368.	31259.	0.
INB-315	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	14.08	2526.	35565.	0.
INB-316	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	14.96	2684.	40150.	0.
INB-317	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	15.84	2842.	45012.	0.
INB-318	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	16.72	3000.	50153.	0.
INB-319	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	17.60	3157.	55571.	0.
INB-320	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	18.48	3315.	61267.	0.
INB-321	13	T580x200x25x25	0.0	179.40	3.63	651.7	2367.	7.	19.36	3473.	67241.	0.

INNER SKIN BULKHEAD

INS-101	27	T450x150x13x16	0.0	70.50	4.31	303.9	1310.	1.	21.08	1486.	31340.	1.
INS-102	27	T450x150x13x16	0.0	70.50	4.85	341.8	1657.	1.	21.74	1533.	33328.	1.
INS-103	7	T400x160x13x16	0.0	66.40	5.40	358.9	1940.	1.	22.39	1486.	33273.	1.
INS-104	7	T400x160x13x16	0.0	66.40	5.94	394.6	2345.	1.	23.04	1530.	35258.	1.
INS-105	7	T400x160x13x16	0.0	66.40	6.48	430.3	2789.	1.	23.70	1574.	37301.	1.
INS-106	7	T400x160x13x16	0.0	66.40	7.02	466.0	3271.	1.	24.36	1617.	39401.	1.
INS-207	10	T420x150x13x20	0.0	74.70	8.64	645.4	5576.	0.	25.13	1877.	47188.	2.
INS-208	10	T420x150x13x20	0.0	74.70	9.52	711.1	6770.	0.	25.13	1877.	47188.	2.
INS-209	10	T420x150x13x20	0.0	74.70	10.40	776.9	8080.	0.	25.13	1877.	47188.	2.
INS-210	7	T400x160x13x16	0.0	68.00	11.28	767.0	8652.	0.	25.11	1708.	42886.	1.
INS-211	7	T400x160x13x16	0.0	68.00	12.16	826.9	10055.	0.	25.11	1708.	42886.	1.
INS-212	7	T400x160x13x16	0.0	68.00	13.04	886.7	11563.	0.	25.11	1708.	42886.	1.
INS-213	7	T400x160x13x16	0.0	68.00	13.92	946.6	13176.	0.	25.11	1708.	42886.	1.
INS-314	7	T400x160x13x16	0.0	68.00	15.68	1066.2	16719.	0.	25.11	1708.	42886.	1.
INS-315	7	T400x160x13x16	0.0	68.00	16.56	1126.1	18648.	0.	25.11	1708.	42886.	1.
INS-316	4	T370x100x13x16	0.0	55.70	17.44	971.4	16941.	0.	25.08	1397.	35027.	1.
INS-317	4	T370x100x13x16	0.0	55.70	18.32	1020.4	18694.	0.	25.08	1397.	35027.	1.
INS-318	28	L250x100x13/18	0.0	44.50	19.20	854.4	16404.	0.	25.01	1113.	27834.	0.
INS-419	28	L250x100x13/18	0.0	44.50	20.08	893.6	17943.	0.	25.01	1113.	27834.	0.
INS-420	28	L250x100x13/18	0.0	44.50	20.96	932.7	19550.	0.	25.01	1113.	27834.	0.
INS-421	28	L250x100x13/18	0.0	44.50	21.84	971.9	21226.	0.	25.01	1113.	27834.	0.

BGR- 102	29	T420x150x13x16	0.0	33.60	1.60	53.8	86.	0.	-0.28	-9.	3.	1.
BGR- 103	29	T420x150x13x16	0.0	33.60	2.40	80.6	194.	0.	-0.28	-9.	3.	1.
BGR- 104	29	T420x150x13x16	0.0	33.60	3.20	107.5	344.	0.	-0.28	-9.	3.	1.

WT BOTTOM GIRDER

BGR- 205	30	T500x150x13x20	0.0	82.00	0.80	65.6	52.	0.	10.22	838.	8573.	2.
BGR- 206	30	T500x150x13x20	0.0	82.00	1.60	131.2	210.	0.	10.22	838.	8573.	2.
BGR- 207	10	T420x150x13x20	0.0	73.20	2.40	175.7	422.	0.	10.27	752.	7719.	1.
BGR- 208	10	T420x150x13x20	0.0	73.20	3.20	234.2	750.	0.	10.27	752.	7719.	1.

NON-TIGHT BHD

NBG- 101	11	FB200x20	0.0	36.00	0.80	28.8	23.	0.	20.14	725.	14602.	0.
NBG- 102	11	FB200x20	0.0	36.00	1.60	57.6	92.	0.	20.14	725.	14602.	0.
NBG- 103	11	FB200x20	0.0	36.00	2.40	86.4	207.	0.	20.14	725.	14602.	0.
NBG- 104	11	FB200x20	0.0	36.00	3.20	115.2	369.	0.	20.14	725.	14602.	0.

NON-TIGHT STRINGER

NTS- 101	12	L250x90x12/16	0.0	40.10	7.60	304.7	2315.	0.	27.36	1097.	30018.	0.
NTS- 102	12	L250x90x12/16	0.0	40.10	7.60	304.7	2315.	0.	26.52	1063.	28203.	0.
NTS- 103	12	L250x90x12/16	0.0	40.10	7.60	304.7	2315.	0.	25.68	1030.	26444.	0.

NON-TIGHT STRINGER

NTS- 204	12	L250x90x12/16	0.0	40.10	14.64	587.0	8592.	0.	27.36	1097.	30018.	0.
NTS- 205	12	L250x90x12/16	0.0	40.10	14.64	587.0	8592.	0.	26.52	1063.	28203.	0.
NTS- 206	12	L250x90x12/16	0.0	40.10	14.64	587.0	8592.	0.	25.68	1030.	26444.	0.

OTHER BULKHEAD

OTH- 101	2	T500x150x13x20	0.0	86.00	4.88	419.7	2048.	0.	10.22	879.	8990.	2.
OTH- 102	2	T500x150x13x20	0.0	86.00	5.76	495.4	2853.	0.	10.22	879.	8990.	2.
OTH- 103	2	T500x150x13x20	0.0	86.00	6.64	571.0	3792.	0.	10.22	879.	8990.	2.
OTH- 104	3	T500x150x13x15	0.0	78.50	7.52	590.3	4439.	0.	10.24	804.	8233.	2.
OTH- 105	3	T500x150x13x15	0.0	78.50	8.40	659.4	5539.	0.	10.24	804.	8233.	2.
OTH- 106	3	T500x150x13x15	0.0	78.50	9.28	728.5	6760.	0.	10.24	804.	8233.	2.
OTH- 207	27	T450x150x13x16	0.0	74.25	10.16	754.4	7665.	0.	10.26	762.	7823.	2.
OTH- 208	27	T450x150x13x16	0.0	74.25	11.04	819.7	9050.	0.	10.26	762.	7823.	2.
OTH- 209	27	T450x150x13x16	0.0	74.25	11.92	885.1	10550.	0.	10.26	762.	7823.	2.
OTH- 210	7	T400x160x13x16	0.0	70.00	12.80	896.0	11469.	0.	10.29	720.	7410.	1.
OTH- 211	7	T400x160x13x16	0.0	70.00	13.68	957.6	13100.	0.	10.29	720.	7410.	1.
OTH- 212	7	T400x160x13x16	0.0	70.00	14.56	1019.2	14840.	0.	10.29	720.	7410.	1.
OTH- 213	7	T400x160x13x16	0.0	70.00	15.44	1080.8	16688.	0.	10.29	720.	7410.	1.
OTH- 314	7	T400x160x13x16	0.0	70.00	16.32	1142.4	18644.	0.	10.29	720.	7410.	1.
OTH- 315	7	T400x160x13x16	0.0	70.00	17.20	1204.0	20709.	0.	10.29	720.	7410.	1.
OTH- 316	4	T370x100x13x16	0.0	57.55	18.08	1040.5	18812.	0.	10.32	594.	6135.	1.
OTH- 317	4	T370x100x13x16	0.0	57.55	18.96	1091.1	20688.	0.	10.32	594.	6135.	1.
OTH- 318	4	T370x100x13x16	0.0	57.55	19.84	1141.8	22653.	0.	10.32	594.	6135.	1.
OTH- 419	28	L250x100x13/18	0.0	45.75	20.72	947.9	19641.	0.	10.39	475.	4940.	0.
OTH- 420	28	L250x100x13/18	0.0	45.75	21.60	988.2	21345.	0.	10.39	475.	4940.	0.
OTH- 421	28	L250x100x13/18	0.0	45.75	22.48	1028.5	23120.	0.	10.39	475.	4940.	0.

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TOTAL, STIFFENER			18063.86	9.40	169794.5	3077222.	399.	14.34	259113.	4956813.	94.	
TOTAL PLATE & STIFFENER			60697.30	10.43	633067.8	11863992.	26086.	15.19	921812.	18223592.	241760.	

ABS/SAFEHULL/SEMCALC V7.00 (2001 Rules)  
SECTION MODULUS CALCULATIONS FOR HULL GIRDER  
SHIP : ACP-Max Tanker

SUMMARY OF HULL GIRDER PROPERTIES -- NET, W/O SMALL OPENING ON STIFFENER

DEPTH, MOLDED	=	22.000 (m)
BEAM, MOLDED	=	56.400 (m)
SECTIONAL AREA	=	121394.594 (cm <sup>2</sup> )
NEUTRAL AXIS ABOVE BASELINE	=	10.430 (m)
FIRST MOMENT ABOUT NEUTRAL AXIS	=	1266136. (cm <sup>2</sup> -m)
MOMENT OF INERTIA ABOUT NEUTRAL AXIS, X-X	=	10574469. (cm <sup>2</sup> -m <sup>2</sup> )
SECTION MODULUS AT DECK	=	913949. (cm <sup>2</sup> -m)
SECTION MODULUS AT BOTTOM	=	1013859. (cm <sup>2</sup> -m)
MOMENT OF INERTIA ABOUT CL	=	36930704. (cm <sup>2</sup> -m <sup>2</sup> )
SECTION MODULUS AT SIDE SHELL	=	1309599. (cm <sup>2</sup> -m)

ABS/SAFEHULL/SEMCALC V7.00 (2001 Rules)

SECTION MODULUS CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max Tanker

SUMMARY OF FIRST MOMENT ABOUT NEUTRAL AXIS FOR SECTION AT EACH LOWER SEAM ON SIDE SHELL OR ON LONGITUDINAL BHD  
 NEUTRAL AXIS OF HULL GIRDER = 10.430 (m) ABOVE BASELINE

NOSEAM	PLTNO	SECTIONS	Yc AREA		VCG		MOMENTO		Y-NA		MOMENT
			abv BL	abv BL	abt BL	off NA	abt NA	abt NA	abt NA		
			(m)	(cm2)	(m)	(cm2-m)	(m)	(cm2-m)	(m)	(cm2-m)	
1	10	SIDE	2.500	32820.06	0.301	9879.	10.129	332431.			
2	11	SIDE	5.260	59485.98	1.913	113790.	8.517	506644.			
3	12	SIDE	7.760	64669.70	2.315	149694.	8.115	524805.			
4	13	SIDE	14.800	75773.20	3.677	278608.	6.753	511700.			
5	14	SHEER STRAKE	19.500	82077.20	4.713	386803.	5.717	469255.			
6	21	INNER SKIN BULKHEAD	4.000	56584.25	1.772	100290.	8.658	489879.			
7	22	INNER SKIN BULKHEAD	7.760	64669.70	2.315	149694.	8.115	524805.			
8	23	INNER SKIN BULKHEAD	14.800	75773.20	3.677	278608.	6.753	511700.			
9	24	INNER SKIN BULKHEAD	19.700	82353.20	4.763	392213.	5.667	466724.			
10	30	OTHER BULKHEAD	4.000	56584.25	1.772	100290.	8.658	489879.			
11	31	OTHER BULKHEAD	9.280	66827.49	2.517	168214.	7.913	528791.			
12	32	OTHER BULKHEAD	15.440	76527.59	3.790	290059.	6.640	508117.			
13	33	OTHER BULKHEAD	20.000	83020.30	4.884	405453.	5.546	460441.			
14		LOCATION AT NEUTRAL AXIS, 10.430	68658.72		2.714	186364.	7.716	529741.			

ABS/SAFEHULL/SEMCALC V7.00 (2001 Rules)  
SECTION MODULUS CALCULATIONS FOR HULL GIRDER  
SHIP : ACP-Max Tanker

## [ A ] PLATING --- AS BUILT

ID	B	TP	A	YY	A*YY	A*YY^2	XI0	XX	A*XX	A*XX^2	YI0
	m	cm	cm2	m	cm2-m	cm2-m2	cm2-m2	m	cm-m	cm2-m2	cm2-m2
KEEL PLATE											
KPL-01	1.200	3.500	420.00	-0.018	-7.4	0.	0.	0.600	252.0	151.	50.
BOTTOM											
BTM-01	9.360	3.500	3276.00	-0.018	-57.3	1.	0.	5.880	19262.9	113266.	23917.
BTM-02	9.680	3.500	3388.00	-0.018	-59.3	1.	0.	15.400	52175.2	803498.	26455.
BTM-03	4.400	3.500	1540.00	-0.018	-26.9	0.	0.	22.440	34557.6	775472.	2485.
BTM-04	1.060	3.500	371.00	-0.018	-6.5	0.	0.	25.170	9338.1	235040.	35.
BILGE											
BLG-01	0.979	3.000	293.59	0.080	23.6	2.	1.	26.183	7686.9	201267.	23.
BLG-02	0.973	3.000	292.05	0.448	130.7	58.	7.	27.073	7906.8	214062.	16.
BLG-03	0.973	3.000	292.05	1.127	329.0	371.	16.	27.752	8105.1	224937.	7.
BLG-04	0.979	3.000	293.59	2.017	592.2	1194.	23.	28.120	8255.6	232144.	1.
SIDE											
SHL-01	2.760	2.000	552.00	3.880	2141.8	8310.	350.	28.210	15571.9	439284.	0.
SHL-02	2.500	1.900	475.00	6.510	3092.3	20131.	247.	28.210	13399.5	377994.	0.
SHL-03	7.040	1.900	1337.60	11.280	15088.1	170194.	5524.	28.210	37733.0	1064430.	0.
SHL-04	4.700	1.900	893.00	17.150	15314.9	262651.	1644.	28.210	25191.1	710628.	0.
SHEER STRAKE											
SHS-01	2.500	4.000	1000.00	20.750	20750.0	430563.	521.	28.220	28220.0	796369.	0.
UPPER DECK											
DEC-01	3.366	4.000	1346.38	22.120	29781.9	658774.	5.	26.521	35707.6	947007.	1267.
DEC-02	14.302	4.000	5720.96	22.620	129407.9	2927202.	306.	17.701	101267.3	1792545.	97217.
DEC-03	10.560	4.500	4752.00	23.022	109402.9	2518729.	1.	5.280	25090.6	132478.	44159.
INNER BOTTOM											
INB-01	1.200	3.500	420.00	4.017	1687.4	6779.	0.	0.600	252.0	151.	50.
INB-02	9.360	3.500	3276.00	4.017	13161.3	52876.	0.	5.880	19262.9	113266.	23917.
INB-03	9.680	3.500	3388.00	4.017	13611.3	54683.	0.	15.400	52175.2	803498.	26455.
INNER SKIN BULKHEAD											
INS-01	5.941	2.000	1188.24	5.888	6996.0	41191.	1400.	22.534	26775.3	603346.	2095.
INS-02	7.040	1.700	1196.80	11.280	13499.9	152279.	4943.	24.832	29718.3	737951.	0.
INS-03	4.900	1.700	833.00	17.250	14369.3	247870.	1667.	24.832	20684.6	513631.	0.
INS-04	2.500	4.000	1000.00	20.950	20950.0	438903.	521.	24.820	24820.0	616032.	0.
WT BOTTOM GIRDER											
BGR-01	4.000	2.200	440.00	2.000	880.0	1760.	587.	0.011	4.8	0.	0.
WT BOTTOM GIRDER											
BGR-02	4.000	2.200	880.00	2.000	1760.0	3520.	1173.	10.571	9302.5	98337.	0.
NON-TIGHT BHD											
NBG-01	4.000	2.200	880.00	2.000	1760.0	3520.	1173.	20.251	17820.9	360891.	0.
NON-TIGHT STRINGER											
NTS-01	3.366	1.500	504.00	7.768	3914.8	30408.	0.	26.520	13366.1	354469.	474.
NON-TIGHT STRINGER											
NTS-02	3.366	1.500	504.00	14.807	7463.0	110508.	0.	26.520	13366.1	354469.	474.
OTHER BULKHEAD											
OTH-01	5.280	1.900	1003.20	6.640	6661.2	44231.	2331.	10.569	10603.3	112072.	0.
OTH-02	6.160	1.600	985.60	12.360	12182.0	150570.	3117.	10.568	10415.8	110074.	0.
OTH-03	4.560	1.600	729.60	17.720	12928.5	229093.	1264.	10.568	7710.4	81184.	0.

ABS/SAFEHULL/SEMCALC V7.00 (2001 Rules)  
SECTION MODULUS CALCULATIONS FOR HULL GIRDER  
SHIP : ACP-Max Tanker

[ B ] STIFFENERS - AS BUILT, W/O SMALL OPENING ON STIFFENER

ID	MSID	XLB	OPNG	A	YY	A*YY	A*YY^2	XI0	XX	A*XX	A*XX^2	YI0
			cm	cm2	m	cm2-m	cm2-m2	m	cm2-m	cm2-m2	cm2-m2	
KEEL PLATE												
KPL- 101	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	0.88	172.	151.	0.
BOTTOM												
BTM- 101	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	1.76	343.	604.	0.
BTM- 102	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	2.64	515.	1359.	0.
BTM- 103	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	3.52	686.	2416.	0.
BTM- 104	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	4.40	858.	3775.	0.
BTM- 105	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	5.28	1030.	5436.	0.
BTM- 106	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	6.16	1201.	7399.	0.
BTM- 107	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	7.04	1373.	9665.	0.
BTM- 108	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	7.92	1544.	12232.	0.
BTM- 109	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	8.80	1716.	15101.	0.
BTM- 110	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	9.68	1888.	18272.	0.
BTM- 211	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	11.44	2231.	25520.	0.
BTM- 212	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	12.32	2402.	29598.	0.
BTM- 213	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	13.20	2574.	33977.	0.
BTM- 214	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	14.08	2746.	38658.	0.
BTM- 215	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	14.96	2917.	43641.	0.
BTM- 216	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	15.84	3089.	48927.	0.
BTM- 217	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	16.72	3260.	54514.	0.
BTM- 218	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	17.60	3432.	60403.	0.
BTM- 219	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	18.48	3604.	66595.	0.
BTM- 220	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	19.36	3775.	73088.	0.
BTM- 321	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	21.12	4118.	86981.	0.
BTM- 322	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	22.00	4290.	94380.	0.
BTM- 323	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	22.88	4462.	102081.	0.
BTM- 324	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	23.76	4633.	110085.	0.
BTM- 325	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	24.64	4805.	118390.	0.
BTM- 426	13	T580x200x25x25	0.0	195.00	0.37	71.7	26.	7.	25.50	4973.	126799.	0.
SIDE												
SHL- 101	2	T500x150x13x20	0.0	95.00	2.54	241.3	613.	0.	27.87	2647.	73779.	3.
SHL- 102	2	T500x150x13x20	0.0	95.00	3.41	324.0	1105.	0.	27.87	2647.	73779.	3.
SHL- 103	3	T500x150x13x15	0.0	87.50	4.28	374.5	1603.	0.	27.88	2440.	68032.	2.
SHL- 104	3	T500x150x13x15	0.0	87.50	5.15	450.6	2321.	0.	27.88	2440.	68032.	2.
SHL- 205	27	T450x150x13x16	0.0	82.50	6.02	496.7	2990.	0.	27.91	2302.	64252.	2.
SHL- 206	27	T450x150x13x16	0.0	82.50	6.89	568.4	3916.	0.	27.91	2302.	64252.	2.
SHL- 307	27	T450x150x13x16	0.0	82.50	8.64	712.8	6159.	0.	27.91	2302.	64252.	2.
SHL- 308	27	T450x150x13x16	0.0	82.50	9.52	785.4	7477.	0.	27.91	2302.	64252.	2.
SHL- 309	7	T400x160x13x16	0.0	77.60	10.40	807.0	8393.	0.	27.93	2167.	60541.	1.
SHL- 310	7	T400x160x13x16	0.0	77.60	11.28	875.3	9874.	0.	27.93	2167.	60541.	1.
SHL- 311	7	T400x160x13x16	0.0	77.60	12.16	943.6	11474.	0.	27.93	2167.	60541.	1.
SHL- 312	7	T400x160x13x16	0.0	77.60	13.04	1011.9	13195.	0.	27.93	2167.	60541.	1.
SHL- 313	7	T400x160x13x16	0.0	77.60	13.92	1080.2	15036.	0.	27.93	2167.	60541.	1.
SHL- 414	7	T400x160x13x16	0.0	77.60	15.68	1216.8	19079.	0.	27.93	2167.	60541.	1.
SHL- 415	5	T250x150x15x20	0.0	67.50	16.56	1117.8	18511.	0.	28.02	1891.	52977.	1.
SHL- 416	5	T250x150x15x20	0.0	67.50	17.44	1177.2	20530.	0.	28.02	1891.	52977.	1.
SHL- 417	28	L250x100x13/18	0.0	50.50	18.32	925.2	16949.	0.	28.03	1416.	39687.	0.
SHL- 418	28	L250x100x13/18	0.0	50.50	19.20	969.6	18616.	0.	28.03	1416.	39687.	0.
SHEER STRAKE												
SHS- 101	28	L250x100x13/18	0.0	50.50	20.08	1014.0	20362.	0.	28.03	1416.	39687.	0.
SHS- 102	28	L250x100x13/18	0.0	50.50	20.96	1058.5	22186.	0.	28.03	1416.	39687.	0.
UPPER DECK												
DEC- 101	31	FB 400x40	0.0	160.00	21.85	3496.1	76392.	2.	27.34	4375.	119628.	0.
DEC- 102	31	FB 400x40	0.0	160.00	21.90	3504.1	76741.	2.	26.51	4241.	112404.	0.
DEC- 103	31	FB 400x40	0.0	160.00	21.95	3512.1	77092.	2.	25.67	4107.	105404.	0.

DEC-207	31	FB 400x40	0.0	160.00	22.21	3553.5	78923.	2.	21.09	3375.	71181.	0.
DEC-208	31	FB 400x40	0.0	160.00	22.26	3561.4	79273.	2.	20.21	3234.	65375.	0.
DEC-209	31	FB 400x40	0.0	160.00	22.31	3569.3	79624.	2.	19.34	3094.	59815.	0.
DEC-210	31	FB 400x40	0.0	160.00	22.36	3577.2	79976.	2.	18.46	2953.	54502.	0.
DEC-211	31	FB 400x40	0.0	160.00	22.41	3585.0	80328.	2.	17.58	2812.	49437.	0.
DEC-212	31	FB 400x40	0.0	160.00	22.46	3592.9	80682.	2.	16.70	2672.	44618.	0.
DEC-213	31	FB 400x40	0.0	160.00	22.50	3600.8	81036.	2.	15.82	2531.	40046.	0.
DEC-214	31	FB 400x40	0.0	160.00	22.55	3608.7	81391.	2.	14.94	2391.	35722.	0.
DEC-215	31	FB 400x40	0.0	160.00	22.60	3616.5	81746.	2.	14.06	2250.	31644.	0.
DEC-216	31	FB 400x40	0.0	160.00	22.65	3624.4	82103.	2.	13.18	2110.	27814.	0.
DEC-217	31	FB 400x40	0.0	160.00	22.70	3632.3	82460.	2.	12.31	1969.	24230.	0.
DEC-218	31	FB 400x40	0.0	160.00	22.75	3640.2	82818.	2.	11.43	1828.	20894.	0.
DEC-319	31	FB 400x40	0.0	160.00	22.80	3648.0	83174.	2.	9.68	1549.	14992.	0.
DEC-320	31	FB 400x40	0.0	160.00	22.80	3648.0	83174.	2.	8.80	1408.	12390.	0.
DEC-321	31	FB 400x40	0.0	160.00	22.80	3648.0	83174.	2.	7.92	1267.	10036.	0.
DEC-322	31	FB 400x40	0.0	160.00	22.80	3648.0	83174.	2.	7.04	1126.	7930.	0.
DEC-323	31	FB 400x40	0.0	160.00	22.80	3648.0	83174.	2.	6.16	986.	6071.	0.
DEC-324	31	FB 400x40	0.0	160.00	22.80	3648.0	83174.	2.	5.28	845.	4461.	0.
DEC-325	31	FB 400x40	0.0	160.00	22.80	3648.0	83174.	2.	4.40	704.	3098.	0.
DEC-326	31	FB 400x40	0.0	160.00	22.80	3648.0	83174.	2.	3.52	563.	1982.	0.
DEC-327	31	FB 400x40	0.0	160.00	22.80	3648.0	83174.	2.	2.64	422.	1115.	0.
DEC-328	31	FB 400x40	0.0	160.00	22.80	3648.0	83174.	2.	1.76	282.	496.	0.
DEC-329	31	FB 400x40	0.0	160.00	22.80	3648.0	83174.	2.	0.88	141.	124.	0.
DEC-330	31	FB 400x40	0.0	80.00	22.80	1824.0	41587.	1.	0.00	0.	0.	0.

INNER BOTTOM

INB-101	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	0.88	172.	151.	0.
INB-202	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	1.76	343.	604.	0.
INB-203	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	2.64	515.	1359.	0.
INB-204	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	3.52	686.	2416.	0.
INB-205	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	4.40	858.	3775.	0.
INB-206	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	5.28	1030.	5436.	0.
INB-207	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	6.16	1201.	7399.	0.
INB-208	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	7.04	1373.	9665.	0.
INB-209	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	7.92	1544.	12232.	0.
INB-210	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	8.80	1716.	15101.	0.
INB-211	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	9.68	1888.	18272.	0.
INB-312	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	11.44	2231.	25520.	0.
INB-313	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	12.32	2402.	29598.	0.
INB-314	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	13.20	2574.	33977.	0.
INB-315	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	14.08	2746.	38658.	0.
INB-316	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	14.96	2917.	43641.	0.
INB-317	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	15.84	3089.	48927.	0.
INB-318	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	16.72	3260.	54514.	0.
INB-319	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	17.60	3432.	60403.	0.
INB-320	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	18.48	3604.	66595.	0.
INB-321	13	T580x200x25x25	0.0	195.00	3.63	708.3	2573.	7.	19.36	3775.	73088.	0.

INNER SKIN BULKHEAD

INS-101	27	T450x150x13x16	0.0	82.50	4.31	355.7	1533.	1.	21.08	1739.	36672.	1.
INS-102	27	T450x150x13x16	0.0	82.50	4.85	400.1	1940.	1.	21.74	1794.	38997.	1.
INS-103	7	T400x160x13x16	0.0	77.60	5.41	419.5	2268.	1.	22.38	1737.	38882.	1.
INS-104	7	T400x160x13x16	0.0	77.60	5.94	461.2	2741.	1.	23.04	1788.	41202.	1.
INS-105	7	T400x160x13x16	0.0	77.60	6.48	503.0	3260.	1.	23.70	1839.	43589.	1.
INS-106	7	T400x160x13x16	0.0	77.60	7.02	544.7	3824.	1.	24.36	1890.	46044.	1.
INS-207	10	T420x150x13x20	0.0	84.60	8.64	730.9	6315.	0.	25.13	2126.	53418.	2.
INS-208	10	T420x150x13x20	0.0	84.60	9.52	805.4	7667.	0.	25.13	2126.	53418.	2.
INS-209	10	T420x150x13x20	0.0	84.60	10.40	879.8	9150.	0.	25.13	2126.	53418.	2.
INS-210	7	T400x160x13x16	0.0	77.60	11.28	875.3	9874.	0.	25.11	1948.	48922.	1.
INS-211	7	T400x160x13x16	0.0	77.60	12.16	943.6	11474.	0.	25.11	1948.	48922.	1.
INS-212	7	T400x160x13x16	0.0	77.60	13.04	1011.9	13195.	0.	25.11	1948.	48922.	1.
INS-213	7	T400x160x13x16	0.0	77.60	13.92	1080.2	15036.	0.	25.11	1948.	48922.	1.
INS-314	7	T400x160x13x16	0.0	77.60	15.68	1216.8	19079.	0.	25.11	1948.	48922.	1.
INS-315	7	T400x160x13x16	0.0	77.60	16.56	1285.1	21281.	0.	25.11	1948.	48922.	1.
INS-316	4	T370x100x13x16	0.0	64.10	17.44	1117.9	19496.	0.	25.07	1607.	40297.	1.
INS-317	4	T370x100x13x16	0.0	64.10	18.32	1174.3	21513.	0.	25.07	1607.	40297.	1.
INS-318	28	L250x100x13/18	0.0	50.50	19.20	969.6	18616.	0.	25.01	1263.	31579.	0.
INS-419	28	L250x100x13/18	0.0	50.50	20.08	1014.0	20362.	0.	25.01	1263.	31579.	0.
INS-420	28	L250x100x13/18	0.0	50.50	20.96	1058.5	22186.	0.	25.01	1263.	31579.	0.
INS-421	28	L250x100x13/18	0.0	50.50	21.84	1102.9	24088.	0.	25.01	1263.	31579.	0.

BGR- 102	29	T420x150x13x16	0.0	39.30	1.60	62.9	101.	0.	-0.28	-11.	3.	1.
BGR- 103	29	T420x150x13x16	0.0	39.30	2.40	94.3	226.	0.	-0.28	-11.	3.	1.
BGR- 104	29	T420x150x13x16	0.0	39.30	3.20	125.8	402.	0.	-0.28	-11.	3.	1.

WT BOTTOM GIRDER

BGR- 205	30	T500x150x13x20	0.0	95.00	0.80	76.0	61.	0.	10.23	972.	9938.	3.
BGR- 206	30	T500x150x13x20	0.0	95.00	1.60	152.0	243.	0.	10.23	972.	9938.	3.
BGR- 207	10	T420x150x13x20	0.0	84.60	2.40	203.0	487.	0.	10.27	869.	8926.	2.
BGR- 208	10	T420x150x13x20	0.0	84.60	3.20	270.7	866.	0.	10.27	869.	8926.	2.

NON-TIGHT BHD

NBG- 101	11	FB200x20	0.0	40.00	0.80	32.0	26.	0.	20.14	806.	16225.	0.
NBG- 102	11	FB200x20	0.0	40.00	1.60	64.0	102.	0.	20.14	806.	16225.	0.
NBG- 103	11	FB200x20	0.0	40.00	2.40	96.0	230.	0.	20.14	806.	16225.	0.
NBG- 104	11	FB200x20	0.0	40.00	3.20	128.0	410.	0.	20.14	806.	16225.	0.

NON-TIGHT STRINGER

NTS- 101	12	L250x90x12/16	0.0	44.40	7.60	337.3	2563.	0.	27.36	1215.	33236.	0.
NTS- 102	12	L250x90x12/16	0.0	44.40	7.60	337.3	2563.	0.	26.52	1177.	31227.	0.
NTS- 103	12	L250x90x12/16	0.0	44.40	7.60	337.3	2563.	0.	25.68	1140.	29280.	0.

NON-TIGHT STRINGER

NTS- 204	12	L250x90x12/16	0.0	44.40	14.64	649.9	9512.	0.	27.36	1215.	33236.	0.
NTS- 205	12	L250x90x12/16	0.0	44.40	14.64	649.9	9512.	0.	26.52	1177.	31227.	0.
NTS- 206	12	L250x90x12/16	0.0	44.40	14.64	649.9	9512.	0.	25.68	1140.	29280.	0.

OTHER BULKHEAD

OTH- 101	2	T500x150x13x20	0.0	95.00	4.88	463.6	2262.	0.	10.23	972.	9938.	3.
OTH- 102	2	T500x150x13x20	0.0	95.00	5.76	547.2	3152.	0.	10.23	972.	9938.	3.
OTH- 103	2	T500x150x13x20	0.0	95.00	6.64	630.8	4189.	0.	10.23	972.	9938.	3.
OTH- 104	3	T500x150x13x15	0.0	87.50	7.52	658.0	4948.	0.	10.24	896.	9182.	2.
OTH- 105	3	T500x150x13x15	0.0	87.50	8.40	735.0	6174.	0.	10.24	896.	9182.	2.
OTH- 106	3	T500x150x13x15	0.0	87.50	9.28	812.0	7535.	0.	10.24	896.	9182.	2.
OTH- 207	27	T450x150x13x16	0.0	82.50	10.16	838.2	8516.	0.	10.27	847.	8697.	2.
OTH- 208	27	T450x150x13x16	0.0	82.50	11.04	910.8	10055.	0.	10.27	847.	8697.	2.
OTH- 209	27	T450x150x13x16	0.0	82.50	11.92	983.4	11722.	0.	10.27	847.	8697.	2.
OTH- 210	7	T400x160x13x16	0.0	77.60	12.80	993.3	12714.	0.	10.29	799.	8219.	1.
OTH- 211	7	T400x160x13x16	0.0	77.60	13.68	1061.6	14522.	0.	10.29	799.	8219.	1.
OTH- 212	7	T400x160x13x16	0.0	77.60	14.56	1129.9	16451.	0.	10.29	799.	8219.	1.
OTH- 213	7	T400x160x13x16	0.0	77.60	15.44	1198.1	18499.	0.	10.29	799.	8219.	1.
OTH- 314	7	T400x160x13x16	0.0	77.60	16.32	1266.4	20668.	0.	10.29	799.	8219.	1.
OTH- 315	7	T400x160x13x16	0.0	77.60	17.20	1334.7	22957.	0.	10.29	799.	8219.	1.
OTH- 316	4	T370x100x13x16	0.0	64.10	18.08	1158.9	20953.	0.	10.33	662.	6836.	1.
OTH- 317	4	T370x100x13x16	0.0	64.10	18.96	1215.3	23043.	0.	10.33	662.	6836.	1.
OTH- 318	4	T370x100x13x16	0.0	64.10	19.84	1271.7	25231.	0.	10.33	662.	6836.	1.
OTH- 419	28	L250x100x13/18	0.0	50.50	20.72	1046.4	21681.	0.	10.39	525.	5455.	0.
OTH- 420	28	L250x100x13/18	0.0	50.50	21.60	1090.8	23561.	0.	10.39	525.	5455.	0.
OTH- 421	28	L250x100x13/18	0.0	50.50	22.48	1135.2	25520.	0.	10.39	525.	5455.	0.

TOTAL, STIFFENER			19649.80	9.26	181930.5	3265559.	432.	14.43	283571.	5452069.	106.	
TOTAL PLATE & STIFFENER			64321.44	10.35	665452.9	12386629.	28154.	15.27	982266.	19506636.	249206.	



ABS/SAFEHULL/SEMCALC V7.00 (2001 Rules)  
SECTION MODULUS CALCULATIONS FOR HULL GIRDER  
SHIP : ACP-Max Tanker

SUMMARY OF HULL GIRDER PROPERTIES — AS BUILT, W/O SMALL OPENING ON STIFFENER

DEPTH, MOLDED	=	22.000 (m)
BEAM, MOLDED	=	56.400 (m)
SECTIONAL AREA	=	128642.883 (cm <sup>2</sup> )
NEUTRAL AXIS ABOVE BASELINE	=	10.346 (m)
FIRST MOMENT ABOUT NEUTRAL AXIS	=	1330906. (cm <sup>2</sup> -m)
MOMENT OF INERTIA ABOUT NEUTRAL AXIS, X-X	=	11060359. (cm <sup>2</sup> -m <sup>2</sup> )
SECTION MODULUS AT DECK	=	949040. (cm <sup>2</sup> -m)
SECTION MODULUS AT BOTTOM	=	1069074. (cm <sup>2</sup> -m)
MOMENT OF INERTIA ABOUT CL	=	39511684. (cm <sup>2</sup> -m <sup>2</sup> )
SECTION MODULUS AT SIDE SHELL	=	1401124. (cm <sup>2</sup> -m)

ABS/SAFEHULL/\_WEIGHT V7.00 (2001 Rules)

SECTION WEIGHT CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max Tanker

FILE : ACP-T2.OWD

## Gross Summary

ACP-Max Tanker Scantling group 1 ( x = 170.000 m from AP )

(Scantling group length = 352.000 m)

## Gross plates Group 1

ID	Breadth m	Thickness cm	Area cm2	Weight tonnes	Center of mass Y(m)	Z(m)
KPL-01	1.200	3.500	420.000	116.054	-0.018	0.600
BTM-01	9.360	3.500	3276.000	905.224	-0.018	5.880
BTM-02	9.680	3.500	3388.000	936.172	-0.018	15.400
BTM-03	4.400	3.500	1540.000	425.533	-0.018	22.440
BTM-04	1.060	3.500	371.000	102.515	-0.018	25.170
BLG-01	0.979	3.000	293.586	81.124	0.080	26.183
BLG-02	0.973	3.000	292.050	80.699	0.448	27.073
BLG-03	0.973	3.000	292.050	80.699	1.127	27.752
BLG-04	0.979	3.000	293.586	81.124	2.017	28.120
SHL-01	2.760	2.000	552.000	152.529	3.880	28.210
SHL-02	2.500	1.900	475.000	131.252	6.510	28.210
SHL-03	7.040	1.900	1337.600	369.606	11.280	28.210
SHL-04	4.700	1.900	893.000	246.754	17.150	28.210
SHS-01	2.500	4.000	1000.000	276.320	20.750	28.220
DEC-01	3.366	4.000	1346.379	372.031	22.120	26.521
DEC-02	14.302	4.000	5720.957	1580.815	22.620	17.701
DEC-03	10.560	4.500	4752.000	1313.073	23.022	5.280
INB-01	1.200	3.500	420.000	116.054	4.017	0.600
INB-02	9.360	3.500	3276.000	905.224	4.017	5.880
INB-03	9.680	3.500	3388.000	936.172	4.017	15.400
INS-01	5.941	2.000	1188.236	328.333	5.888	22.534
INS-02	7.040	1.700	1196.800	330.700	11.280	24.832
INS-03	4.900	1.700	833.000	230.175	17.250	24.832
INS-04	2.500	4.000	1000.000	276.320	20.950	24.820
BGR-01	4.000	2.200	440.000	121.581	2.000	0.011
BGR-02	4.000	2.200	880.000	243.162	2.000	10.571
NBG-01	4.000	2.200	880.000	243.162	2.000	20.251
NTS-01	3.360	1.500	504.000	139.265	7.768	26.520
NTS-02	3.360	1.500	504.000	139.265	14.807	26.520
OTH-01	5.280	1.900	1003.200	277.204	6.640	10.569
OTH-02	6.160	1.600	985.600	272.341	12.360	10.568
OTH-03	4.560	1.600	729.600	201.603	17.720	10.568
OTH-04	3.000	4.000	1200.000	331.584	21.500	10.580
Gross Plate Total			44671.645	12343.668	10.824	15.641

## Gross Stiffeners Group 1

ID	ID Stiffener # Description	Area cm2	Weight tonnes	Center of mass Y(m)	Z(m)	
KPL- 101	13 T580x200x25x25		195.000	53.882	0.368	0.880
BTM- 101	13 T580x200x25x25		195.000	53.882	0.368	1.760
BTM- 102	13 T580x200x25x25		195.000	53.882	0.368	2.640
BTM- 103	13 T580x200x25x25		195.000	53.882	0.368	3.520
BTM- 104	13 T580x200x25x25		195.000	53.882	0.368	4.400
BTM- 105	13 T580x200x25x25		195.000	53.882	0.368	5.280
BTM- 106	13 T580x200x25x25		195.000	53.882	0.368	6.160
BTM- 107	13 T580x200x25x25		195.000	53.882	0.368	7.040
BTM- 108	13 T580x200x25x25		195.000	53.882	0.368	7.920
BTM- 109	13 T580x200x25x25		195.000	53.882	0.368	8.800

ABS/SAFEHULL\_WEIGHT V7.00 (2001 Rules)

SECTION WEIGHT CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max Tanker

FILE : ACP-T2.OWD

## Gross Summary

ACP-Max Tanker Scantling group 1 ( x = 170.000 m from AP )

(Scantling group length = 352.000 m)

## Gross Stiffeners Group 1

ID	ID Stiffener #	Description	Area cm2	Weight tonnes	Center of mass Y(m) Z(m)	
BTM- 110	13	T580x200x25x25	195.000	53.882	0.368	9.680
BTM- 211	13	T580x200x25x25	195.000	53.882	0.368	11.440
BTM- 212	13	T580x200x25x25	195.000	53.882	0.368	12.320
BTM- 213	13	T580x200x25x25	195.000	53.882	0.368	13.200
BTM- 214	13	T580x200x25x25	195.000	53.882	0.368	14.080
BTM- 215	13	T580x200x25x25	195.000	53.882	0.368	14.960
BTM- 216	13	T580x200x25x25	195.000	53.882	0.368	15.840
BTM- 217	13	T580x200x25x25	195.000	53.882	0.368	16.720
BTM- 218	13	T580x200x25x25	195.000	53.882	0.368	17.600
BTM- 219	13	T580x200x25x25	195.000	53.882	0.368	18.480
BTM- 220	13	T580x200x25x25	195.000	53.882	0.368	19.360
BTM- 321	13	T580x200x25x25	195.000	53.882	0.368	21.120
BTM- 322	13	T580x200x25x25	195.000	53.882	0.368	22.000
BTM- 323	13	T580x200x25x25	195.000	53.882	0.368	22.880
BTM- 324	13	T580x200x25x25	195.000	53.882	0.368	23.760
BTM- 325	13	T580x200x25x25	195.000	53.882	0.368	24.640
BTM- 426	13	T580x200x25x25	195.000	53.882	0.368	25.500
SHL- 101	2	T500x150x13x20	95.000	26.250	2.540	27.868
SHL- 102	2	T500x150x13x20	95.000	26.250	3.410	27.868
SHL- 103	3	T500x150x13x15	87.500	24.178	4.280	27.884
SHL- 104	3	T500x150x13x15	87.500	24.178	5.150	27.884
SHL- 205	27	T450x150x13x16	82.500	22.796	6.020	27.907
SHL- 206	27	T450x150x13x16	82.500	22.796	6.890	27.907
SHL- 307	27	T450x150x13x16	82.500	22.796	8.640	27.907
SHL- 308	27	T450x150x13x16	82.500	22.796	9.520	27.907
SHL- 309	7	T400x160x13x16	77.600	21.442	10.400	27.931
SHL- 310	7	T400x160x13x16	77.600	21.442	11.280	27.931
SHL- 311	7	T400x160x13x16	77.600	21.442	12.160	27.931
SHL- 312	7	T400x160x13x16	77.600	21.442	13.040	27.931
SHL- 313	7	T400x160x13x16	77.600	21.442	13.920	27.931
SHL- 414	7	T400x160x13x16	77.600	21.442	15.680	27.931
SHL- 415	5	T250x150x15x20	67.500	18.652	16.560	28.015
SHL- 416	5	T250x150x15x20	67.500	18.652	17.440	28.015
SHL- 417	28	L250x100x13/18	50.500	13.954	18.320	28.034
SHL- 418	28	L250x100x13/18	50.500	13.954	19.200	28.034
SHS- 101	28	L250x100x13/18	50.500	13.954	20.080	28.034
SHS- 102	28	L250x100x13/18	50.500	13.954	20.960	28.034
DEC- 101	31	FB 400x40	160.000	44.211	21.851	27.344
DEC- 102	31	FB 400x40	160.000	44.211	21.901	26.505
DEC- 103	31	FB 400x40	160.000	44.211	21.950	25.667
DEC- 204	31	FB 400x40	160.000	44.211	22.062	23.728
DEC- 205	31	FB 400x40	160.000	44.211	22.111	22.850
DEC- 206	31	FB 400x40	160.000	44.211	22.160	21.971
DEC- 207	31	FB 400x40	160.000	44.211	22.210	21.092
DEC- 208	31	FB 400x40	160.000	44.211	22.259	20.214
DEC- 209	31	FB 400x40	160.000	44.211	22.308	19.335
DEC- 210	31	FB 400x40	160.000	44.211	22.357	18.456
DEC- 211	31	FB 400x40	160.000	44.211	22.407	17.578
DEC- 212	31	FB 400x40	160.000	44.211	22.456	16.699
DEC- 213	31	FB 400x40	160.000	44.211	22.505	15.821
DEC- 214	31	FB 400x40	160.000	44.211	22.554	14.942
DEC- 215	31	FB 400x40	160.000	44.211	22.603	14.063
DEC- 216	31	FB 400x40	160.000	44.211	22.653	13.185

Gross Summary  
 ACP-Max Tanker Scantling group 1 ( x = 170.000 m from AP )  
 (Scantling group length = 352.000 m)

Gross Stiffeners Group 1

ID	ID	Stiffener	Area	Weight	Center of mass	
#	Description	cm2	tonnes	Y(m)	Z(m)	
DEC- 217	31	FB 400x40	160.000	44.211	22.702	12.306
DEC- 218	31	FB 400x40	160.000	44.211	22.751	11.427
DEC- 319	31	FB 400x40	160.000	44.211	22.800	9.680
DEC- 320	31	FB 400x40	160.000	44.211	22.800	8.800
DEC- 321	31	FB 400x40	160.000	44.211	22.800	7.920
DEC- 322	31	FB 400x40	160.000	44.211	22.800	7.040
DEC- 323	31	FB 400x40	160.000	44.211	22.800	6.160
DEC- 324	31	FB 400x40	160.000	44.211	22.800	5.280
DEC- 325	31	FB 400x40	160.000	44.211	22.800	4.400
DEC- 326	31	FB 400x40	160.000	44.211	22.800	3.520
DEC- 327	31	FB 400x40	160.000	44.211	22.800	2.640
DEC- 328	31	FB 400x40	160.000	44.211	22.800	1.760
DEC- 329	31	FB 400x40	160.000	44.211	22.800	0.880
DEC- 330	31	FB 400x40	80.000	22.106	22.800	0.000
INB- 101	13	T580x200x25x25	195.000	53.882	3.632	0.880
INB- 202	13	T580x200x25x25	195.000	53.882	3.632	1.760
INB- 203	13	T580x200x25x25	195.000	53.882	3.632	2.640
INB- 204	13	T580x200x25x25	195.000	53.882	3.632	3.520
INB- 205	13	T580x200x25x25	195.000	53.882	3.632	4.400
INB- 206	13	T580x200x25x25	195.000	53.882	3.632	5.280
INB- 207	13	T580x200x25x25	195.000	53.882	3.632	6.160
INB- 208	13	T580x200x25x25	195.000	53.882	3.632	7.040
INB- 209	13	T580x200x25x25	195.000	53.882	3.632	7.920
INB- 210	13	T580x200x25x25	195.000	53.882	3.632	8.800
INB- 211	13	T580x200x25x25	195.000	53.882	3.632	9.680
INB- 312	13	T580x200x25x25	195.000	53.882	3.632	11.440
INB- 313	13	T580x200x25x25	195.000	53.882	3.632	12.320
INB- 314	13	T580x200x25x25	195.000	53.882	3.632	13.200
INB- 315	13	T580x200x25x25	195.000	53.882	3.632	14.080
INB- 316	13	T580x200x25x25	195.000	53.882	3.632	14.960
INB- 317	13	T580x200x25x25	195.000	53.882	3.632	15.840
INB- 318	13	T580x200x25x25	195.000	53.882	3.632	16.720
INB- 319	13	T580x200x25x25	195.000	53.882	3.632	17.600
INB- 320	13	T580x200x25x25	195.000	53.882	3.632	18.480
INB- 321	13	T580x200x25x25	195.000	53.882	3.632	19.360
INS- 101	27	T450x150x13x16	82.500	22.796	4.311	21.083
INS- 102	27	T450x150x13x16	82.500	22.796	4.849	21.742
INS- 103	7	T400x160x13x16	77.600	21.442	5.406	22.384
INS- 104	7	T400x160x13x16	77.600	21.442	5.944	23.042
INS- 105	7	T400x160x13x16	77.600	21.442	6.482	23.701
INS- 106	7	T400x160x13x16	77.600	21.442	7.020	24.359
INS- 207	10	T420x150x13x20	84.600	23.377	8.640	25.128
INS- 208	10	T420x150x13x20	84.600	23.377	9.520	25.128
INS- 209	10	T420x150x13x20	84.600	23.377	10.400	25.128
INS- 210	7	T400x160x13x16	77.600	21.442	11.280	25.109
INS- 211	7	T400x160x13x16	77.600	21.442	12.160	25.109
INS- 212	7	T400x160x13x16	77.600	21.442	13.040	25.109
INS- 213	7	T400x160x13x16	77.600	21.442	13.920	25.109
INS- 314	7	T400x160x13x16	77.600	21.442	15.680	25.109
INS- 315	7	T400x160x13x16	77.600	21.442	16.560	25.109
INS- 316	4	T370x100x13x16	64.100	17.712	17.440	25.073
INS- 317	4	T370x100x13x16	64.100	17.712	18.320	25.073
INS- 318	28	L250x100x13/18	50.500	13.954	19.200	25.006

ABS/SAFEHULL/\_WEIGHT V7.00 (2001 Rules)

SECTION WEIGHT CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max Tanker

FILE : ACP-T2.OWD

## Gross Summary

ACP-Max Tanker Scantling group 1 ( x = 170.000 m from AP )

(Scantling group length = 352.000 m)

## Gross Stiffeners Group 1

ID	ID #	Stiffener Description	Area cm2	Weight tonnes	Center of mass		
					Y(m)	Z(m)	
INS- 419	28	L250x100x13/18		50.500	13.954	20.080	25.006
INS- 420	28	L250x100x13/18		50.500	13.954	20.960	25.006
INS- 421	28	L250x100x13/18		50.500	13.954	21.840	25.006
BGR- 101	29	T420x150x13x16		39.300	10.859	0.800	-0.277
BGR- 102	29	T420x150x13x16		39.300	10.859	1.600	-0.277
BGR- 103	29	T420x150x13x16		39.300	10.859	2.400	-0.277
BGR- 104	29	T420x150x13x16		39.300	10.859	3.200	-0.277
BGR- 205	30	T500x150x13x20		95.000	26.250	0.800	10.228
BGR- 206	30	T500x150x13x20		95.000	26.250	1.600	10.228
BGR- 207	10	T420x150x13x20		84.600	23.377	2.400	10.272
BGR- 208	10	T420x150x13x20		84.600	23.377	3.200	10.272
NBG- 101	11	FB200x20		40.000	11.053	0.800	20.140
NBG- 102	11	FB200x20		40.000	11.053	1.600	20.140
NBG- 103	11	FB200x20		40.000	11.053	2.400	20.140
NBG- 104	11	FB200x20		40.000	11.053	3.200	20.140
NTS- 101	12	L250x90x12/16		44.400	12.269	7.597	27.360
NTS- 102	12	L250x90x12/16		44.400	12.269	7.597	26.520
NTS- 103	12	L250x90x12/16		44.400	12.269	7.597	25.680
NTS- 204	12	L250x90x12/16		44.400	12.269	14.637	27.360
NTS- 205	12	L250x90x12/16		44.400	12.269	14.637	26.520
NTS- 206	12	L250x90x12/16		44.400	12.269	14.637	25.680
OTH- 101	2	T500x150x13x20		95.000	26.250	4.880	10.228
OTH- 102	2	T500x150x13x20		95.000	26.250	5.760	10.228
OTH- 103	2	T500x150x13x20		95.000	26.250	6.640	10.228
OTH- 104	3	T500x150x13x15		87.500	24.178	7.520	10.244
OTH- 105	3	T500x150x13x15		87.500	24.178	8.400	10.244
OTH- 106	3	T500x150x13x15		87.500	24.178	9.280	10.244
OTH- 207	27	T450x150x13x16		82.500	22.796	10.160	10.267
OTH- 208	27	T450x150x13x16		82.500	22.796	11.040	10.267
OTH- 209	27	T450x150x13x16		82.500	22.796	11.920	10.267
OTH- 210	7	T400x160x13x16		77.600	21.442	12.800	10.291
OTH- 211	7	T400x160x13x16		77.600	21.442	13.680	10.291
OTH- 212	7	T400x160x13x16		77.600	21.442	14.560	10.291
OTH- 213	7	T400x160x13x16		77.600	21.442	15.440	10.291
OTH- 314	7	T400x160x13x16		77.600	21.442	16.320	10.291
OTH- 315	7	T400x160x13x16		77.600	21.442	17.200	10.291
OTH- 316	4	T370x100x13x16		64.100	17.712	18.080	10.327
OTH- 317	4	T370x100x13x16		64.100	17.712	18.960	10.327
OTH- 318	4	T370x100x13x16		64.100	17.712	19.840	10.327
OTH- 419	28	L250x100x13/18		50.500	13.954	20.720	10.394
OTH- 420	28	L250x100x13/18		50.500	13.954	21.600	10.394
OTH- 421	28	L250x100x13/18		50.500	13.954	22.480	10.394
Gross Stiffeners Total				19649.797	5429.627	9.259	14.431
Gross Total				64321.441	17773.295	10.346	15.271

ABS/SAFEHULL/ WEIGHT V7.00 (2001 Rules)

SECTION WEIGHT CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max Tanker

FILE : ACP-T2.OWD


Gross Summary

ACP-Max Tanker            Scantling group 1 ( x = 170.000 m from AP )  
(Scantling group length = 352.000 m)

DEPTH, MOLDED            =    22.000 m  
BEAM, MOLDED             =    56.400 m  
SECTIONAL AREA           = 128642.977 cm<sup>2</sup>  
STEEL DENSITY            =    7.850 tonnes/m<sup>3</sup>  
NEUTRAL AXIS ABOVE BASELINE       =    10.346 m

WEIGHT OF PLATES        (HALF SHIP) = 12343.668 tonnes  
WEIGHT OF STIFFENERS    (HALF SHIP) = 5429.627 tonnes  
TOTAL WEIGHT OF SCANTLINGS (FULL SHIP) = 35546.688 tonnes

# Appendix D: SafeHull Calculations for Bulk Carrier

	<i>Steel Vessels</i>	<b>SafeHull Phase A - Bulk Carrier</b>	Date: 17-maj-2002
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**1.0 General Ship Information:**

Title: ACP-Max bulk carrier

Scantling Length (L) : 340.000 (m)

Length between Perpendiculars : 352.000 (m)

Breadth (B) : 56.400 (m)

Depth (D) : 23.000 (m)

Draft : 14.850 (m)

Cb: .8250

Speed : 15.00 (knots)

Proportions: L/B: 6.03 ; B/D: 2.45

**1.1 Midship Section Information:**

Radius of Bilge : 2.500 (m)


Side Frame Spacing : .920 (m)

Floor Spacing : 2.760 (m)

Upper Wing Tank Web Spacing: 5.520 (m)

Lower Wing Tank Web Spacing: 2.760 (m)



 <b>ABS</b> <small>FOUNDED 1862</small> <small>AMERICAN BUREAU OF SHIPPING &amp; AFFILIATED COMPANIES</small>	<b>Steel Vessels</b>  <b>Rules</b>	<b>SafeHull Phase A - Bulk Carrier</b> Version: 7.00 (2001 Rules)	Date: 17-maj-2002 Time: 10:02:59
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**2.0 Longitudinal Strength:**

**2.1 Hull Girder Bending Moments Amidships**

Still Water Sagging BM (M <sub>sws</sub> ) =	-920,000	(tf-m)
Still Water Hogging BM (M <sub>swh</sub> ) =	920,000	(tf-m)
ABS Vertical Wave Sagging BM (M <sub>ws</sub> ) =	-1,199,246	(tf-m)
ABS Vertical Wave Hogging BM (M <sub>wh</sub> ) =	1,120,028	(tf-m)
Total Vertical Bending Moment (M <sub>t</sub> ) =	2,119,246	(tf-m)

**2.2 Cross Section Information:**

LSC Group #	Longitudinal Location. (m) from AP	Description
1	182.000	Midship section


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### 2.3 Hull-Girder Section Modulus Requirements:

Group No:	Location	Material	Gross Req'd SM (SMr, cm <sup>2</sup> -m)	Gross Design SM (SMa, cm <sup>2</sup> -m)	SMa/SMr
1	Bottom	HT32	926,576	1,053,429	1.137
	Deck	HT32	926,576	932,771	1.007

### 2.4 Material Reference Table:

Mat. No.	Mat. ID	Yield Stress (kgf/cm <sup>2</sup> )	Ultimate Stress (kgf/cm <sup>2</sup> )	Q-Factor	Sm
1	MILD	2400.	4100.	1.000	1.000
2	HT32	3200.	4500.	0.780	0.950
3	HT36	3600.	5000.	0.720	0.908
4	HT40	4000.	5200.	0.680	0.875

 <b>ABS</b> <small>FOUNDED 1842 AMERICAN BUREAU OF SHIPPING &amp; AFFILIATED COMPANIES</small>	<i>Steel Vessels</i>	<b>SafeHull Phase A - Bulk Carrier</b>	Date: 17-maj-2002
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### 3.0 Longitudinal Scantlings


LSC Group #            1

X-Coordinate from AP =    182.000    (m)

Description :            Midship section

### 3.1 Extent of Structure Materials:

Extent Range	Distance Above Base Line (m) From	to	Required Material
1	23.000	20.380	HT32
2	20.380	1.220	MILD
3	1.220	.000	HT32

 <b>ABS</b> <small>FOUNDED 1862</small> <small>AMERICAN BUREAU OF SHIPPING &amp; AFFILIATED COMPANIES</small>	<i>Steel Vessels</i>	<b>SafeHull Phase A - Bulk Carrier</b>	Date: 17-maj-2002
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### 3.2 Longitudinal Scantling (Plating) Requirements:

Plate #	Location	Plate ID	Material	Req. Net Thick. (mm)	Offered Net Thick. (mm)	Req. Gross Thick. (mm)	Req. Gross to 0.5 mm (mm)	Offered Gross Thickness (mm)
1	Keel Plate	KPL-01	HT32	17.08	34.00	18.08	18.00	35.00
2	Bottom	BTM-01	HT32	15.58	34.00	16.58	16.50	35.00
3	Bottom	BTM-02	HT32	15.58	34.00	16.58	16.50	35.00
4	Bottom	BTM-03	HT32	15.58	34.00	16.58	16.50	35.00
5	Bottom	BTM-04	HT32	15.58	34.00	16.58	16.50	35.00
6	Bottom	BTM-05	HT32	15.58	34.00	16.58	16.50	35.00
7	Bilge	BLG-01	HT32	15.58	34.00	16.58	16.50	35.00
8	Bilge	BLG-02	HT32	15.58	34.00	16.58	16.50	35.00
9	Bilge	BLG-03	HT32	15.58	34.00	16.58	16.50	35.00
10	Bilge	BLG-04	HT32	15.58	34.00	16.58	16.50	35.00
11	Side Shell	SHL-01	HT32	8.50	28.50	10.00	10.00	30.00
12	Side Shell	SHL-02	HT36	13.78	28.50	15.28	15.50	30.00
13	Side Shell	SHL-03	HT36	16.94	28.50	18.44	18.50	30.00
14	Side Shell	SHL-04	HT36	13.62	48.50	15.12	15.00	50.00
15	Sheer Strake	SHS-01	HT32	14.56	53.00	16.56	16.50	55.00
16	Upper Deck	DEC-01	HT32	28.87	53.00	30.87	31.00	55.00
17	Inner Bottom	INB-01	HT32	14.74	33.00	16.74	16.50	35.00
18	Inner Bottom	INB-02	HT32	14.74	33.00	16.74	16.50	35.00
19	Inner Bottom	INB-03	HT32	14.74	33.00	16.74	16.50	35.00
20	Inner Bottom	INB-04	HT32	14.74	33.00	16.74	16.50	35.00
21	Inner Bottom	INB-05	HT32	17.20	33.00	19.20	19.00	35.00
22	Lower Slp Pl	LWT-01	HT32	17.20	28.00	19.20	19.00	30.00



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23	Lower Slp Pl	LWT-02	HT32	17.70	28.00	19.70	19.50	30.00
24	Upper Slp Pl	UWT-01	HT32	15.10	53.50	16.60	16.50	55.00
25	Upper Slp Pl	UWT-02	HT32	12.79	53.50	14.29	14.50	55.00
26	Upper Slp Pl	UWT-03	HT32	19.55	53.00	21.55	21.50	55.00
27	Upper Slp Pl	UWT-04	HT32	11.99	53.00	13.99	14.00	55.00
28	Bottom Grd.	BGR-01	HT32	12.16	23.00	14.16	14.00	25.00
29	N/T Side Grd	NBG-01	HT32	10.53	23.00	12.53	12.50	25.00
30	N/T Side Grd	NBG-02	HT32	10.53	23.00	12.53	12.50	25.00
31	N/T Side Grd	NBG-03	HT32	10.53	23.00	12.53	12.50	25.00
32	N/T Side Grd	NBG-04	HT32	10.53	23.00	12.53	12.50	25.00

\*\*\*\*\*Note\*\*\*\*\*

REQUIRED\_GROSS t(mm) = REQUIRED\_NET\_t(mm) + MINIMUM\_CORROSION\_MARGIN



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**3.3 Longitudinal Scantling (Stiffener) Requirements:**

Stiffener #	Location	Stiffener ID	Stiffener Description	Material	Req. Net SM (cm3)	Offered Net SM (cm3)	Req. Gross SM (cm3)	Offered Gross SM (cm3)
1	Keel Plate	KPL- 101	T400x100x30x15	HT32	463	1,696	493	1,805
2	Keel Plate	KPL- 102	T400x100x30x15	HT32	477	1,696	508	1,805
3	Bottom	BTM- 101	T400x100x30x15	HT32	477	1,664	518	1,805
4	Bottom	BTM- 102	T400x100x30x15	HT32	477	1,664	518	1,805
5	Bottom	BTM- 103	T400x100x30x15	HT32	477	1,664	518	1,805
6	Bottom	BTM- 104	T400x100x30x15	HT32	477	1,664	518	1,805
7	Bottom	BTM- 205	T400x100x30x15	HT32	477	1,664	518	1,805
8	Bottom	BTM- 206	T400x100x30x15	HT32	477	1,664	518	1,805
9	Bottom	BTM- 207	T400x100x30x15	HT32	477	1,664	518	1,805
10	Bottom	BTM- 208	T400x100x30x15	HT32	477	1,664	518	1,805
11	Bottom	BTM- 309	T400x100x30x15	HT32	477	1,664	518	1,805
12	Bottom	BTM- 310	T400x100x30x15	HT32	477	1,664	518	1,805
13	Bottom	BTM- 311	T400x100x30x15	HT32	477	1,664	518	1,805
14	Bottom	BTM- 312	T400x100x30x15	HT32	477	1,664	518	1,805
15	Bottom	BTM- 313	T400x100x30x15	HT32	477	1,664	518	1,805
16	Bottom	BTM- 414	T400x100x30x15	HT32	477	1,664	518	1,805
17	Bottom	BTM- 415	T400x100x30x15	HT32	477	1,664	518	1,805
18	Bottom	BTM- 416	T400x100x30x15	HT32	477	1,664	518	1,805
19	Bottom	BTM- 417	T400x100x30x15	HT32	477	1,664	518	1,805
20	Bottom	BTM- 418	T400x100x30x15	HT32	477	1,664	518	1,805
21	Bottom	BTM- 519	T400x100x30x15	HT32	477	1,664	518	1,805
22	Bottom	BTM- 520	T400x100x30x15	HT32	477	1,664	518	1,805
23	Bottom	BTM- 521	T400x100x30x15	HT32	477	1,664	518	1,805
24	Bottom	BTM- 522	T400x100x30x15	HT32	477	1,664	518	1,805
25	Bottom	BTM- 523	T400x100x30x15	HT32	477	1,664	518	1,805
26	Side Shell	SHL- 101	L300x90x10/15	HT32	110	561	125	638



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27	Side Shell	SHL- 202	L300x90x10/15	HT32	335	561	381	638
28	Side Shell	SHL- 203	L300x90x10/15	HT32	311	561	354	638
29	Side Shell	SHL- 204	L300x90x10/15	HT32	288	561	328	638
30	Side Shell	SHL- 205	L300x90x10/15	HT32	281	561	320	638
31	Side Shell	SHL- 206	L300x90x10/15	HT32	277	561	315	638
32	Side Shell	SHL- 207	L300x90x10/15	HT32	272	561	310	638
33	Side Shell	SHL- 208	L300x90x10/15	HT32	268	561	305	638
34	Side Shell	SHL- 409	L400x100x13/18	HT32	1,126	1,315	1,254	1,465
35	Side Shell	SHL- 410	L400x100x13/18	HT32	1,045	1,315	1,165	1,465
36	Side Shell	SHL- 411	L400x100x13/18	HT32	965	1,315	1,075	1,465
37	Side Shell	SHL- 412	L350x100x12/17	HT32	884	1,024	990	1,146
38	Side Shell	SHL- 413	L350x100x12/17	HT32	803	1,024	899	1,146
39	Sheer Strake	SHS- 101	FB350x25	HT32	721	1,031	786	1,123
40	Sheer Strake	SHS- 102	FB350x25	HT32	639	1,031	696	1,123
41	Sheer Strake	SHS- 103	FB350x25	HT32	499	1,031	544	1,123
42	Upper Deck	DEC- 101	FB 500x55	HT32	391	4,061	408	4,230
43	Upper Deck	DEC- 102	FB 500x55	HT32	386	4,061	402	4,230
44	Upper Deck	DEC- 103	FB 500x55	HT32	381	4,061	397	4,230
45	Upper Deck	DEC- 104	FB 500x55	HT32	376	4,061	391	4,230
46	Upper Deck	DEC- 105	FB 500x55	HT32	370	4,061	386	4,230
47	Upper Deck	DEC- 106	FB 500x55	HT32	365	4,061	380	4,230
48	Upper Deck	DEC- 107	FB 500x55	HT32	360	4,061	375	4,230
49	Upper Deck	DEC- 108	FB 500x55	HT32	355	4,061	369	4,230
50	Upper Deck	DEC- 109	FB 500x55	HT32	349	4,061	364	4,230
51	Upper Deck	DEC- 110	FB 500x55	HT32	344	4,061	359	4,230
52	Upper Deck	DEC- 111	FB 500x55	HT32	339	4,061	353	4,230
53	Upper Deck	DEC- 112	FB 500x55	HT32	334	4,061	348	4,230
54	Upper Deck	DEC- 113	FB 500x55	HT32	328	4,061	342	4,230
55	Upper Deck	DEC- 114	FB 500x55	HT32	323	4,061	337	4,230
56	Upper Deck	DEC- 115	FB 500x55	HT32	415	4,061	432	4,230
57	Inner Bottom	INB- 101	T400x100x30x15	HT32	518	1,686	554	1,805



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58	Inner Bottom	INB- 102	T400x100x30x15	HT32	533	1,686	571	1,805
59	Inner Bottom	INB- 203	T400x100x30x15	HT32	533	1,654	582	1,805
60	Inner Bottom	INB- 204	T400x100x30x15	HT32	533	1,654	582	1,805
61	Inner Bottom	INB- 205	T400x100x30x15	HT32	533	1,654	582	1,805
62	Inner Bottom	INB- 206	T400x100x30x15	HT32	533	1,654	582	1,805
63	Inner Bottom	INB- 307	T400x100x30x15	HT32	533	1,654	582	1,805
64	Inner Bottom	INB- 308	T400x100x30x15	HT32	533	1,654	582	1,805
65	Inner Bottom	INB- 309	T400x100x30x15	HT32	533	1,654	582	1,805
66	Inner Bottom	INB- 310	T400x100x30x15	HT32	533	1,654	582	1,805
67	Inner Bottom	INB- 411	T400x100x30x15	HT32	533	1,654	582	1,805
68	Inner Bottom	INB- 412	T400x100x30x15	HT32	533	1,654	582	1,805
69	Inner Bottom	INB- 413	T400x100x30x15	HT32	533	1,654	582	1,805
70	Inner Bottom	INB- 414	T400x100x30x15	HT32	533	1,654	582	1,805
71	Inner Bottom	INB- 415	T400x100x30x15	HT32	533	1,654	582	1,805
72	Inner Bottom	INB- 516	T400x100x30x15	HT32	572	1,654	625	1,805
73	Inner Bottom	INB- 517	T400x100x30x15	HT32	572	1,654	625	1,805
74	Inner Bottom	INB- 518	T400x100x30x15	HT32	572	1,654	625	1,805
75	Inner Bottom	INB- 519	T400x100x30x15	HT32	572	1,654	625	1,805
76	Inner Bottom	INB- 520	T400x100x30x15	HT32	572	1,654	625	1,805
77	Lower Slp Pl	LWT- 101	L300x90x11/16	HT32	602	648	675	728
78	Lower Slp Pl	LWT- 102	L300x90x11/16	HT32	572	648	643	728
79	Lower Slp Pl	LWT- 103	L300x90x11/16	HT32	545	648	612	728
80	Lower Slp Pl	LWT- 104	L300x90x11/16	HT32	520	648	583	728
81	Lower Slp Pl	LWT- 105	L300x90x11/16	HT32	496	648	556	728
82	Lower Slp Pl	LWT- 106	L300x90x11/16	HT32	485	648	545	728
83	Lower Slp Pl	LWT- 107	L300x90x11/16	HT32	478	648	536	728
84	Lower Slp Pl	LWT- 208	L300x90x11/16	HT32	471	648	528	728
85	Lower Slp Pl	LWT- 209	L300x90x11/16	HT32	463	648	520	728
86	Lower Slp Pl	LWT- 210	L300x90x11/16	HT32	456	648	512	728
87	Upper Slp Pl	UWT- 101	FB400x40	HT32	1,606	2,082	1,673	2,169
88	Upper Slp Pl	UWT- 102	FB400x40	HT32	1,554	2,082	1,618	2,169



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89	Upper Slp Pl	UWT- 103 FB400x30	HT32	1,501	1,590	1,583	1,676
90	Upper Slp Pl	UWT- 104 FB400x30	HT32	1,449	1,590	1,528	1,676
91	Upper Slp Pl	UWT- 105 FB400x30	HT32	1,398	1,590	1,474	1,676
92	Upper Slp Pl	UWT- 206 FB400x30	HT32	1,346	1,590	1,419	1,676
93	Upper Slp Pl	UWT- 207 FB400x30	HT32	1,293	1,590	1,363	1,676
94	Upper Slp Pl	UWT- 208 FB400x30	HT32	1,241	1,590	1,308	1,676
95	Upper Slp Pl	UWT- 209 FB400x30	HT32	1,189	1,590	1,254	1,676
96	Upper Slp Pl	UWT- 210 FB350x30	HT32	1,138	1,257	1,201	1,327
97	Upper Slp Pl	UWT- 211 FB350x30	HT32	1,087	1,257	1,147	1,327
98	Upper Slp Pl	UWT- 212 FB350x30	HT32	1,036	1,257	1,093	1,327
99	Upper Slp Pl	UWT- 313 FB350x30	HT32	986	1,254	1,043	1,327
100	Upper Slp Pl	UWT- 314 FB350x30	HT32	935	1,254	989	1,327
101	Upper Slp Pl	UWT- 315 FB350x30	HT32	885	1,234	951	1,327
102	Upper Slp Pl	UWT- 316 FB350x30	HT32	835	1,234	898	1,327
103	Upper Slp Pl	UWT- 317 FB350x30	HT32	920	1,234	989	1,327
104	Bottom Grd.	BGR- 101 FB320x25	HT32	396	666	433	727
105	Bottom Grd.	BGR- 102 FB320x25	HT32	366	666	400	727
106	Bottom Grd.	BGR- 103 FB320x25	HT32	338	666	369	727

\*\*\*\*\*Note\*\*\*\*\*

REQUIRED GROSS SM (cm3) = REQUIRED\_NET\_SM(cm3) x OFERED\_GROSS\_SM / OFFERED\_NET\_SM



Steel Vessels

Rules

SafeHull Phase A - Bulk Carrier

Version: 7.00 (2001 Rules)

Project Name: ACP-B2

Date: 17-maj-2002

Time: 10:02:59

Page: 11

**3.4 Moment of Inertia (Stiffener within 0.1D from Deck) Requirements:**

Stiffener #.	Location	Stiffener ID	Description	Material	Z (m)	Y (m)	Req. Net IX (cm4)	Offered Net IX (cm4)
1	SHEERSTRK	SHS- 101	FB350x25	HT32	28.200	20.725	25,878.000	37,002.000
2	SHEERSTRK	SHS- 102	FB350x25	HT32	28.200	21.575	25,878.000	37,002.000
3	SHEERSTRK	SHS- 103	FB350x25	HT32	28.200	22.425	22,326.000	36,043.000
4	UPPER DECK	DEC- 101	FB 500x55	HT32	27.351	23.042	34,869.000	183,825.000
5	UPPER DECK	DEC- 102	FB 500x55	HT32	26.502	23.084	34,869.000	183,825.000
6	UPPER DECK	DEC- 103	FB 500x55	HT32	25.653	23.126	34,869.000	183,825.000
7	UPPER DECK	DEC- 104	FB 500x55	HT32	24.804	23.169	34,869.000	183,825.000
8	UPPER DECK	DEC- 105	FB 500x55	HT32	23.955	23.211	34,869.000	183,825.000
9	UPPER DECK	DEC- 106	FB 500x55	HT32	23.106	23.253	34,869.000	183,825.000
10	UPPER DECK	DEC- 107	FB 500x55	HT32	22.257	23.295	34,869.000	183,825.000
11	UPPER DECK	DEC- 108	FB 500x55	HT32	21.408	23.337	34,869.000	183,825.000
12	UPPER DECK	DEC- 109	FB 500x55	HT32	20.559	23.379	34,869.000	183,825.000
13	UPPER DECK	DEC- 110	FB 500x55	HT32	19.710	23.421	34,869.000	183,825.000
14	UPPER DECK	DEC- 111	FB 500x55	HT32	18.862	23.464	34,869.000	183,825.000
15	UPPER DECK	DEC- 112	FB 500x55	HT32	18.013	23.506	34,869.000	183,825.000
16	UPPER DECK	DEC- 113	FB 500x55	HT32	17.164	23.548	34,869.000	183,825.000
17	UPPER DECK	DEC- 114	FB 500x55	HT32	16.315	23.590	34,869.000	183,825.000
18	UPPER DECK	DEC- 115	FB 500x55	HT32	15.466	23.632	41,551.000	196,212.000
19	U W T BHD	UWT- 313	FB350x30	HT32	18.051	20.759	26,816.000	44,396.000
20	U W T BHD	UWT- 314	FB350x30	HT32	17.311	21.179	26,816.000	44,396.000
21	U W T BHD	UWT- 315	FB350x30	HT32	16.572	21.598	26,730.000	43,740.000
22	U W T BHD	UWT- 316	FB350x30	HT32	15.833	22.017	26,730.000	43,740.000
23	U W T BHD	UWT- 317	FB350x30	HT32	15.093	22.437	30,499.000	44,799.000

ABS/SAFEHULL/BSEMCALC V7.00 (2001 Rules)

SECTION MODULUS CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max bulk carrier

## [ A ] PLATING — NET

ID	B	TP	A	YY	A*YY	A*YY^2	XI0	XX	A*XX	A*XX^2	YI0
	m	cm	cm2	m	cm2-m	cm2-m2	cm2-m2	m	cm-m	cm2-m2	cm2-m2
KEEL PLATE											
KPL-01	2.500	3.400	850.00	-0.017	-14.5	0.	0.	1.250	1062.5	1328.	443.
BOTTOM											
BTM-01	4.250	3.400	1445.00	-0.017	-24.6	0.	0.	4.625	6683.1	30909.	2175.
BTM-02	4.250	3.400	1445.00	-0.017	-24.6	0.	0.	8.875	12824.4	113816.	2175.
BTM-03	5.100	3.400	1734.00	-0.017	-29.5	1.	0.	13.550	23495.7	318367.	3758.
BTM-04	5.100	3.400	1734.00	-0.017	-29.5	1.	0.	18.650	32339.1	603124.	3758.
BTM-05	4.500	3.400	1530.00	-0.017	-26.0	0.	0.	23.450	35878.5	841351.	2582.
BILGE											
BLG-01	0.979	3.400	332.73	0.078	26.1	2.	1.	26.183	8712.0	228109.	26.
BLG-02	0.973	3.400	330.99	0.446	147.6	66.	8.	27.074	8961.4	242623.	18.
BLG-03	0.973	3.400	330.99	1.126	372.6	419.	18.	27.754	9186.3	254959.	8.
BLG-04	0.979	3.400	332.73	2.017	671.0	1353.	26.	28.122	9357.0	263133.	1.
SIDE											
SHL-01	0.500	2.850	142.50	2.750	391.9	1078.	3.	28.214	4020.5	113436.	0.
SHL-02	7.500	2.850	2137.50	6.750	14428.1	97390.	10020.	28.214	60308.0	1701544.	0.
SHL-03	4.500	2.850	1282.50	12.750	16351.9	208486.	2164.	28.214	36184.8	1020926.	0.
SHL-04	5.500	4.850	2667.50	17.750	47348.1	840429.	6724.	28.224	75288.2	2124953.	1.
SHEER STRAKE											
SHS-01	2.500	5.300	1325.00	21.750	28818.8	626808.	690.	28.227	37400.1	1055674.	0.
UPPER DECK											
DEC-01	14.117	5.300	7482.20	23.376	174907.5	4088720.	307.	21.151	158258.5	3347375.	123961.
PLATING WITHIN LINE OF OP											
INNER BOTTOM											
INB-01	2.500	3.300	825.00	3.016	2488.6	7507.	0.	1.250	1031.3	1289.	430.
INB-02	4.250	3.300	1402.50	3.016	4230.6	12762.	0.	4.625	6486.6	30000.	2111.
INB-03	4.250	3.300	1402.50	3.016	4230.6	12762.	0.	8.875	12447.2	110469.	2111.
INB-04	5.100	3.300	1683.00	3.016	5076.8	15314.	0.	13.550	22804.7	309003.	3648.
INB-05	5.100	3.300	1683.00	3.016	5076.8	15314.	0.	18.650	31388.0	585385.	3648.
LOWER WING TANK SLOPING P											
LWT-01	5.950	2.800	1666.08	5.185	8637.9	44784.	2627.	23.220	38686.1	898282.	2289.
LWT-02	4.309	2.800	1206.48	8.935	10779.3	96308.	998.	26.720	32236.7	861358.	869.
UPPER WING TANK SLOPING P											
UWT-01	4.877	5.350	2609.23	16.182	42221.8	683223.	1263.	26.067	68014.2	1772910.	3909.
UWT-02	5.943	5.350	3179.26	18.852	59934.5	1129870.	2275.	21.362	67914.7	1450782.	7082.
UWT-03	5.392	5.300	2857.66	21.647	61859.7	1339074.	1685.	16.432	46956.9	771593.	5238.
UWT-04	0.700	5.300	371.00	23.350	8662.9	202278.	15.	14.074	5221.3	73482.	0.
WT BOTTOM GIRDER											
BGR-01	3.000	2.300	690.00	1.500	1035.0	1553.	518.	2.489	1717.1	4273.	0.
NON-TIGHT BHD											
NBG-01	3.000	2.300	690.00	1.500	1035.0	1553.	518.	6.761	4665.4	31545.	0.
NON-TIGHT BHD											
NBG-02	3.000	2.300	690.00	1.500	1035.0	1553.	518.	11.012	7597.9	83665.	0.
NON-TIGHT BHD											
NBG-03	3.000	2.300	690.00	1.500	1035.0	1553.	518.	16.111	11116.9	179111.	0.

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TOTAL, PLATE    47438.36   10.576   501689.6   9431708.   31414.   18.822   892880.9   19735224.   170241.

ABS/SAFEHULL/BSEMCALC V7.00 (2001 Rules)  
SECTION MODULUS CALCULATIONS FOR HULL GIRDER  
SHIP : ACP-Max bulk carrier

[ B ] STIFFENERS - NET, W/O SMALL OPENING ON STIFFENER

ID	MSID	XLB	OPNG	A	YY	A*YY	A*YY^2	XI0	XX	A*XX	A*XX^2	YI0
			cm	cm2	m	cm2-m	cm2-m2	m	cm2-m	cm2-m2	cm2-m2	
KEEL PLATE												
KPL- 101	4	T400x100x30x15	0.0	112.50	0.23	26.4	6.	2.	0.80	90.	72.	0.
KPL- 102	4	T400x100x30x15	0.0	112.50	0.23	26.4	6.	2.	1.65	186.	306.	0.
BOTTOM												
BTM- 101	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	3.35	369.	1234.	0.
BTM- 102	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	4.20	462.	1940.	0.
BTM- 103	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	5.05	556.	2805.	0.
BTM- 104	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	5.90	649.	3829.	0.
BTM- 205	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	7.60	836.	6354.	0.
BTM- 206	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	8.45	930.	7854.	0.
BTM- 207	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	9.30	1023.	9514.	0.
BTM- 208	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	10.15	1117.	11332.	0.
BTM- 309	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	11.85	1304.	15446.	0.
BTM- 310	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	12.70	1397.	17742.	0.
BTM- 311	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	13.55	1491.	20196.	0.
BTM- 312	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	14.40	1584.	22810.	0.
BTM- 313	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	15.25	1678.	25582.	0.
BTM- 414	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	16.95	1865.	31603.	0.
BTM- 415	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	17.80	1958.	34852.	0.
BTM- 416	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	18.65	2052.	38260.	0.
BTM- 417	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	19.50	2145.	41828.	0.
BTM- 418	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	20.35	2239.	45553.	0.
BTM- 519	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	22.05	2426.	53482.	0.
BTM- 520	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	22.90	2519.	57685.	0.
BTM- 521	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	23.75	2613.	62047.	0.
BTM- 522	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	24.60	2706.	66568.	0.
BTM- 523	4	T400x100x30x15	0.0	110.00	0.23	25.8	6.	2.	25.45	2800.	71247.	0.
SIDE												
SHL- 101	16	L300x90x10/15	0.0	35.20	2.50	88.0	220.	0.	28.00	986.	27606.	0.
SHL- 202	16	L300x90x10/15	0.0	35.20	3.34	117.6	393.	0.	28.00	986.	27606.	0.
SHL- 203	16	L300x90x10/15	0.0	35.20	4.19	147.5	618.	0.	28.00	986.	27606.	0.
SHL- 204	16	L300x90x10/15	0.0	35.20	5.04	177.4	894.	0.	28.00	986.	27606.	0.
SHL- 205	16	L300x90x10/15	0.0	35.20	5.89	207.3	1221.	0.	28.00	986.	27606.	0.
SHL- 206	16	L300x90x10/15	0.0	35.20	6.74	237.2	1599.	0.	28.00	986.	27606.	0.
SHL- 207	16	L300x90x10/15	0.0	35.20	7.59	267.2	2028.	0.	28.00	986.	27606.	0.
SHL- 208	16	L300x90x10/15	0.0	35.20	8.44	297.1	2507.	0.	28.00	986.	27606.	0.
SHL- 409	5	L400x100x13/18	0.0	61.00	16.48	1005.0	16557.	0.	27.95	1705.	47642.	1.
SHL- 410	5	L400x100x13/18	0.0	61.00	17.33	1056.8	18309.	0.	27.95	1705.	47642.	1.
SHL- 411	5	L400x100x13/18	0.0	61.00	18.17	1108.7	20150.	0.	27.95	1705.	47642.	1.
SHL- 412	1	L350x100x12/17	0.0	51.00	19.02	970.3	18459.	0.	27.97	1427.	39906.	1.
SHL- 413	1	L350x100x12/17	0.0	51.00	19.88	1013.6	20146.	0.	27.97	1427.	39906.	1.
SHEER STRAKE												
SHS- 101	12	FB350x25	0.0	80.50	20.73	1668.4	34577.	0.	28.03	2256.	63225.	1.
SHS- 102	12	FB350x25	0.0	80.50	21.58	1736.8	37471.	0.	28.03	2256.	63225.	1.
SHS- 103	12	FB350x25	0.0	80.50	22.42	1805.2	40482.	0.	28.03	2256.	63225.	1.
UPPER DECK												
DEC- 101	17	FB 500x55	0.0	265.00	22.79	6040.0	137666.	6.	27.34	7245.	198061.	0.
DEC- 102	17	FB 500x55	0.0	265.00	22.83	6051.2	138176.	6.	26.49	7020.	185952.	0.
DEC- 103	17	FB 500x55	0.0	265.00	22.88	6062.3	138687.	6.	25.64	6795.	174224.	0.
DEC- 104	17	FB 500x55	0.0	265.00	22.92	6073.5	139198.	6.	24.79	6570.	162878.	0.
DEC- 105	17	FB 500x55	0.0	265.00	22.96	6084.7	139710.	6.	23.94	6345.	151914.	0.
DEC- 106	17	FB 500x55	0.0	265.00	23.00	6095.8	140224.	6.	23.09	6120.	141332.	0.
DEC- 107	17	FB 500x55	0.0	265.00	23.05	6107.0	140738.	6.	22.24	5895.	131132.	0.
DEC- 108	17	FB 500x55	0.0	265.00	23.09	6118.2	141253.	6.	21.40	5670.	121314.	0.
DEC- 109	17	FB 500x55	0.0	265.00	23.13	6129.4	141770.	6.	20.55	5445.	111878.	0.

DEC- 113	17	FB 500x55	0.0	265.00	23.30	6174.0	143844.	6.	17.15	4545.	77953.	0.
DEC- 114	17	FB 500x55	0.0	265.00	23.34	6185.2	144365.	6.	16.30	4320.	70427.	0.
DEC- 115	17	FB 500x55	0.0	265.00	23.38	6196.4	144887.	6.	15.45	4095.	63283.	0.

INNER BOTTOM

INB- 101	4	T400x100x30x15	0.0	112.50	2.77	311.1	860.	2.	0.80	90.	72.	0.
INB- 102	4	T400x100x30x15	0.0	112.50	2.77	311.1	860.	2.	1.65	186.	306.	0.
INB- 203	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	3.35	369.	1234.	0.
INB- 204	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	4.20	462.	1940.	0.
INB- 205	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	5.05	556.	2805.	0.
INB- 206	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	5.90	649.	3829.	0.
INB- 307	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	7.60	836.	6354.	0.
INB- 308	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	8.45	930.	7854.	0.
INB- 309	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	9.30	1023.	9514.	0.
INB- 310	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	10.15	1117.	11332.	0.
INB- 411	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	11.85	1304.	15446.	0.
INB- 412	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	12.70	1397.	17742.	0.
INB- 413	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	13.55	1491.	20196.	0.
INB- 414	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	14.40	1584.	22810.	0.
INB- 415	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	15.25	1678.	25582.	0.
INB- 516	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	16.95	1865.	31603.	0.
INB- 517	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	17.80	1958.	34852.	0.
INB- 518	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	18.65	2052.	38260.	0.
INB- 519	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	19.50	2145.	41828.	0.
INB- 520	4	T400x100x30x15	0.0	110.00	2.77	304.2	841.	2.	20.35	2239.	45553.	0.

LOWER WING TANK SLOPING P

LWT- 101	2	L300x90x11/16	0.0	41.55	3.49	144.9	506.	0.	21.92	911.	19969.	0.
LWT- 102	2	L300x90x11/16	0.0	41.55	4.11	170.8	702.	0.	22.50	935.	21039.	0.
LWT- 103	2	L300x90x11/16	0.0	41.55	4.73	196.6	930.	0.	23.08	959.	22138.	0.
LWT- 104	2	L300x90x11/16	0.0	41.55	5.35	222.4	1190.	0.	23.66	983.	23264.	0.
LWT- 105	2	L300x90x11/16	0.0	41.55	5.97	248.2	1483.	0.	24.24	1007.	24418.	0.
LWT- 106	2	L300x90x11/16	0.0	41.55	6.60	274.0	1807.	0.	24.82	1031.	25601.	0.
LWT- 107	2	L300x90x11/16	0.0	41.55	7.22	299.9	2164.	0.	25.40	1055.	26811.	0.
LWT- 208	2	L300x90x11/16	0.0	41.55	7.84	325.7	2553.	0.	25.98	1080.	28050.	0.
LWT- 209	2	L300x90x11/16	0.0	41.55	8.46	351.5	2974.	0.	26.56	1104.	29316.	0.
LWT- 210	2	L300x90x11/16	0.0	41.55	9.08	377.3	3427.	0.	27.14	1128.	30610.	0.

UPPER WING TANK SLOPING P

UWT- 101	14	FB400x40	0.0	154.00	15.90	2449.0	38946.	2.	27.02	4161.	112403.	1.
UWT- 102	14	FB400x40	0.0	154.00	16.32	2513.7	41031.	2.	26.28	4047.	106338.	1.
UWT- 103	8	FB400x30	0.0	114.00	16.74	1908.7	31957.	1.	25.54	2911.	74353.	0.
UWT- 104	8	FB400x30	0.0	114.00	17.16	1956.6	33580.	1.	24.80	2827.	70112.	0.
UWT- 105	8	FB400x30	0.0	114.00	17.58	2004.4	35244.	1.	24.06	2743.	65996.	0.
UWT- 206	8	FB400x30	0.0	114.00	18.00	2052.4	36949.	1.	23.32	2658.	61991.	0.
UWT- 207	8	FB400x30	0.0	114.00	18.42	2100.1	38689.	1.	22.58	2574.	58122.	0.
UWT- 208	8	FB400x30	0.0	114.00	18.84	2147.9	40469.	1.	21.84	2490.	54377.	0.
UWT- 209	8	FB400x30	0.0	114.00	19.26	2195.7	42290.	1.	21.10	2405.	50757.	0.
UWT- 210	13	FB350x30	0.0	99.75	19.66	1960.9	38546.	1.	20.35	2030.	41304.	0.
UWT- 211	13	FB350x30	0.0	99.75	20.08	2002.7	40207.	1.	19.61	1956.	38356.	0.
UWT- 212	13	FB350x30	0.0	99.75	20.50	2044.5	41903.	1.	18.87	1882.	35518.	0.
UWT- 313	13	FB350x30	0.0	99.75	20.91	2085.9	43620.	1.	18.14	1809.	32813.	0.
UWT- 314	13	FB350x30	0.0	99.75	21.33	2127.8	45387.	1.	17.40	1735.	30192.	0.
UWT- 315	13	FB350x30	0.0	98.00	21.75	2131.5	46361.	1.	16.66	1633.	27195.	0.
UWT- 316	13	FB350x30	0.0	98.00	22.17	2172.6	48166.	1.	15.92	1560.	24834.	0.
UWT- 317	13	FB350x30	0.0	98.00	22.59	2213.7	50005.	1.	15.18	1488.	22581.	0.

WT BOTTOM GIRDER

BGR- 101	9	FB320x25	0.0	73.60	0.75	55.2	41.	0.	2.66	196.	521.	1.
BGR- 102	9	FB320x25	0.0	73.60	1.50	110.4	166.	0.	2.66	196.	521.	1.
BGR- 103	9	FB320x25	0.0	73.60	2.25	165.6	373.	0.	2.66	196.	521.	1.

NON-TIGHT BHD

NBG- 101	15	FB100x10	0.0	8.00	0.75	6.0	5.	0.	6.70	54.	359.	0.
NBG- 102	15	FB100x10	0.0	8.00	1.50	12.0	18.	0.	6.70	54.	359.	0.
NBG- 103	15	FB100x10	0.0	8.00	2.25	18.0	41.	0.	6.70	54.	359.	0.

NON-TIGHT BHD

NBG- 204	15	FB100x10	0.0	8.00	0.75	6.0	5.	0.	10.95	88.	959.	0.
NBG- 205	15	FB100x10	0.0	8.00	1.50	12.0	18.	0.	10.95	88.	959.	0.

NBG- 307	15	FB100x10	0.0	8.00	0.75	6.0	5.	0.	16.05	128.	2061.	0.
NBG- 308	15	FB100x10	0.0	8.00	1.50	12.0	18.	0.	16.05	128.	2061.	0.
NBG- 309	15	FB100x10	0.0	8.00	2.25	18.0	41.	0.	16.05	128.	2061.	0.

NON-TIGHT BHD

NBG- 410	15	FB100x10	0.0	8.00	0.75	6.0	5.	0.	21.15	169.	3579.	0.
NBG- 411	15	FB100x10	0.0	8.00	1.50	12.0	18.	0.	21.15	169.	3579.	0.
NBG- 412	15	FB100x10	0.0	8.00	2.25	18.0	41.	0.	21.15	169.	3579.	0.

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TOTAL, STIFFENER			12374.15	12.09	149575.1	3063502.	187.	17.91	221590.	4676593.	21.	
TOTAL PLATE & STIFFENER			59812.50	10.89	651264.7	12495210.	31601.	18.63	1114471.	24411816.	170263.	

ABS/SAFEHULL/BSEMCALC V7.00 (2001 Rules)

SECTION MODULUS CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max bulk carrier

SUMMARY OF HULL GIRDER PROPERTIES — NET, W/O SMALL OPENING ON STIFFENER

DEPTH, MOLDED = 23.000 m  
BEAM, MOLDED = 56.400 m  
SECTIONAL AREA = 119625.000 cm<sup>2</sup>

NEUTRAL AXIS ABOVE BASELINE = 10.888 m  
FIRST MOMENT ABOVE NEUTRAL AXIS, X-X = 1302529. cm<sup>2</sup>-m  
MOMENT OF INERTIA ABOUT NEUTRAL AXIS, X-X = 10871112. cm<sup>2</sup>-m<sup>2</sup>  
SECTION MODULUS AT DECK = 897581. cm<sup>2</sup>-m  
SECTION MODULUS AT BOTTOM = 998409. cm<sup>2</sup>-m

MOMENT OF INERTIA ABOUT CL = 49164156. cm<sup>2</sup>-m<sup>2</sup>  
SECTION MODULUS AT SIDE SHELL = 1743410. cm<sup>2</sup>-m



ABS/SAFEHULL/BSEMCALC V7.00 (2001 Rules)

SECTION MODULUS CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max bulk carrier

SUMMARY OF FIRST MOMENT ABOUT NEUTRAL AXIS FOR SECTION AT EACH LOWER SEAM ON SIDE SHELL OR ON LONGITUDINAL BHD  
 NEUTRAL AXIS OF HULL GIRDER = 10.888 (m) ABOVE BASELINE

NOSEAM	PLTNO	SECTIONS	Yc		AREA		VCG		MOMENT0		Y-NA	MOMENT
			abv BL	abv BL	abt BL	off NA	abt NA	abt NA				
			(m)	(cm2)	(m)	(cm2-m)	(m)	(m)	(cm2-m)	(cm2-m)		
1	11	SIDE	2.500	32094.88	0.366	11742.	10.523	337721.				
2	12	SIDE	3.000	51931.89	1.350	70092.	9.539	495365.				
3	13	SIDE	10.500	63275.80	2.306	145908.	8.583	543067.				
4	14	SIDE	15.000	65840.80	2.713	178612.	8.176	538292.				
5	15	SHEER STRAKE	20.500	90808.72	6.981	633951.	3.907	354814.				
6	23	LOWER WING TANK SLOPING P	3.000	51931.89	1.350	70092.	9.539	495365.				
7	24	LOWER WING TANK SLOPING P	7.350	58677.25	1.791	105087.	9.098	533817.				
8	25	UPPER WING TANK SLOPING P	15.000	65840.80	2.713	178612.	8.176	538292.				
9	26	UPPER WING TANK SLOPING P	17.410	74940.95	4.360	326726.	6.529	489264.				
10	27	UPPER WING TANK SLOPING P	20.340	85778.57	6.194	531344.	4.694	402650.				
11	28	UPPER WING TANK SLOPING P	23.000	95968.59	7.834	751843.	3.054	293105.				
12		LOCATION AT NEUTRAL AXIS, 10.888	63497.21	2.335	148276.	8.553	543110.					

ABS/SAFEHULL/BSEMCALC V7.00 (2001 Rules)  
SECTION MODULUS CALCULATIONS FOR HULL GIRDER  
SHIP : ACP-Max bulk carrier

## [ A ] PLATING --- AS BUILT

ID	B	TP	A	YY	A*YY	A*YY^2	XI0	XX	A*XX	A*XX^2	YI0
	m	cm	cm2	m	cm2-m	cm2-m2	cm2-m2	m	cm-m	cm2-m2	cm2-m2
KEEL PLATE											
KPL-01	2.500	3.500	875.00	-0.018	-15.3	0.	0.	1.250	1093.8	1367.	456.
BOTTOM											
BTM-01	4.250	3.500	1487.50	-0.018	-26.0	0.	0.	4.625	6879.7	31819.	2239.
BTM-02	4.250	3.500	1487.50	-0.018	-26.0	0.	0.	8.875	13201.6	117164.	2239.
BTM-03	5.100	3.500	1785.00	-0.018	-31.2	1.	0.	13.550	24186.8	327731.	3869.
BTM-04	5.100	3.500	1785.00	-0.018	-31.2	1.	0.	18.650	33290.3	620863.	3869.
BTM-05	4.500	3.500	1575.00	-0.018	-27.6	0.	0.	23.450	36933.8	866097.	2658.
BILGE											
BLG-01	0.979	3.500	342.52	0.078	26.7	2.	1.	26.183	8968.3	234820.	26.
BLG-02	0.973	3.500	340.72	0.445	151.8	68.	8.	27.075	9225.0	249765.	19.
BLG-03	0.973	3.500	340.72	1.125	383.4	431.	19.	27.755	9456.7	262466.	8.
BLG-04	0.979	3.500	342.52	2.017	690.7	1393.	26.	28.122	9632.3	270882.	1.
SIDE											
SHL-01	0.500	3.000	150.00	2.750	412.5	1134.	3.	28.215	4232.3	119413.	0.
SHL-02	7.500	3.000	2250.00	6.750	15187.5	102516.	10547.	28.215	63483.8	1791194.	0.
SHL-03	4.500	3.000	1350.00	12.750	17212.5	219459.	2278.	28.215	38090.3	1074716.	0.
SHL-04	5.500	5.000	2750.00	17.750	48812.5	866422.	6932.	28.225	77618.8	2190789.	1.
SHEER STRAKE											
SHS-01	2.500	5.500	1375.00	21.750	29906.3	650461.	716.	28.228	38812.8	1095589.	0.
UPPER DECK											
DEC-01	14.117	5.500	7764.55	23.377	181515.5	4243374.	319.	21.151	164230.9	3473707.	128639.
PLATING WITHIN LINE OF OP											
INNER BOTTOM											
INB-01	2.500	3.500	875.00	3.017	2640.3	7967.	0.	1.250	1093.8	1367.	456.
INB-02	4.250	3.500	1487.50	3.017	4488.5	13544.	0.	4.625	6879.7	31819.	2239.
INB-03	4.250	3.500	1487.50	3.017	4488.5	13544.	0.	8.875	13201.6	117164.	2239.
INB-04	5.100	3.500	1785.00	3.017	5386.2	16253.	0.	13.550	24186.8	327731.	3869.
INB-05	5.100	3.500	1785.00	3.017	5386.2	16253.	0.	18.650	33290.3	620863.	3869.
LOWER WING TANK SLOPING P											
LWT-01	5.950	3.000	1785.09	5.185	9256.1	47995.	2815.	23.219	41448.1	962384.	2452.
LWT-02	4.309	3.000	1292.65	8.935	11550.2	103203.	1069.	26.719	34538.4	922833.	931.
UPPER WING TANK SLOPING P											
UWT-01	4.877	5.500	2682.38	16.181	43403.9	702322.	1299.	26.066	69920.1	1822566.	4019.
UWT-02	5.943	5.500	3268.40	18.851	61612.8	1161467.	2339.	21.361	69817.7	1491406.	7280.
UWT-03	5.392	5.500	2965.50	21.646	64191.4	1389493.	1749.	16.431	48727.4	800661.	5436.
UWT-04	0.700	5.500	385.00	23.350	9898.8	209911.	16.	14.073	5417.9	76244.	0.
WT BOTTOM GIRDER											
BGR-01	3.000	2.500	750.00	1.500	1125.0	1688.	563.	2.487	1865.6	4641.	0.
NON-TIGHT BHD											
NBG-01	3.000	2.500	750.00	1.500	1125.0	1688.	563.	6.762	5071.9	34299.	0.
NON-TIGHT BHD											
NBG-02	3.000	2.500	750.00	1.500	1125.0	1688.	563.	11.012	8259.4	90956.	0.
NON-TIGHT BHD											
NBG-03	3.000	2.500	750.00	1.500	1125.0	1688.	563.	16.113	12084.4	194710.	0.

NON-TIGHT BHD  
NBG-05 3.000 0.000 0.00 1.500 0.0 0. 0. 0.000 0.0 0. 0.

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TOTAL, PLATE	49550.06	10.518	521160.9	9775656.	32950.	18.790	931048.9	20565500.	176814.
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ABS/SAFEHULL/BSEMCALC V7.00 (2001 Rules)  
SECTION MODULUS CALCULATIONS FOR HULL GIRDER  
SHIP : ACP-Max bulk carrier

[ B ] STIFFENERS - AS BUILT, W/O SMALL OPENING ON STIFFENER

ID	MSID	XLB	OPNG	A	YY	A*YY	A*YY^2	XI0	XX	A*XX	A*XX^2	YI0
			cm	cm2	m	cm2-m	cm2-m2	m	cm2-m	cm2-m2	cm2-m2	cm2-m2
KEEL PLATE												
KPL- 101	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	0.80	96.	77.	0.	
KPL- 102	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	1.65	198.	327.	0.	
BOTTOM												
BTM- 101	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	3.35	402.	1347.	0.	
BTM- 102	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	4.20	504.	2117.	0.	
BTM- 103	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	5.05	606.	3060.	0.	
BTM- 104	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	5.90	708.	4177.	0.	
BTM- 205	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	7.60	912.	6931.	0.	
BTM- 206	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	8.45	1014.	8568.	0.	
BTM- 207	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	9.30	1116.	10379.	0.	
BTM- 208	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	10.15	1218.	12363.	0.	
BTM- 309	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	11.85	1422.	16851.	0.	
BTM- 310	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	12.70	1524.	19355.	0.	
BTM- 311	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	13.55	1626.	22032.	0.	
BTM- 312	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	14.40	1728.	24883.	0.	
BTM- 313	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	15.25	1830.	27908.	0.	
BTM- 414	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	16.95	2034.	34476.	0.	
BTM- 415	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	17.80	2136.	38021.	0.	
BTM- 416	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	18.65	2238.	41739.	0.	
BTM- 417	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	19.50	2340.	45630.	0.	
BTM- 418	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	20.35	2442.	49695.	0.	
BTM- 519	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	22.05	2646.	58344.	0.	
BTM- 520	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	22.90	2748.	62929.	0.	
BTM- 521	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	23.75	2850.	67688.	0.	
BTM- 522	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	24.60	2952.	72619.	0.	
BTM- 523	4	T400x100x30x15	0.0	120.00	0.23	28.2	7. 2.	25.45	3054.	77724.	0.	
SIDE												
SHL- 101	16	L300x90x10/15	0.0	42.00	2.50	105.0	263.	0.	28.01	1176.	32950.	0.
SHL- 202	16	L300x90x10/15	0.0	42.00	3.34	140.3	469.	0.	28.01	1176.	32950.	0.
SHL- 203	16	L300x90x10/15	0.0	42.00	4.19	176.0	737.	0.	28.01	1176.	32950.	0.
SHL- 204	16	L300x90x10/15	0.0	42.00	5.04	211.7	1067.	0.	28.01	1176.	32950.	0.
SHL- 205	16	L300x90x10/15	0.0	42.00	5.89	247.4	1457.	0.	28.01	1176.	32950.	0.
SHL- 206	16	L300x90x10/15	0.0	42.00	6.74	283.1	1908.	0.	28.01	1176.	32950.	0.
SHL- 207	16	L300x90x10/15	0.0	42.00	7.59	318.8	2420.	0.	28.01	1176.	32950.	0.
SHL- 208	16	L300x90x10/15	0.0	42.00	8.44	354.5	2992.	0.	28.01	1176.	32950.	0.
SHL- 409	5	L400x100x13/18	0.0	70.00	16.48	1153.3	19000.	0.	27.95	1957.	54688.	1.
SHL- 410	5	L400x100x13/18	0.0	70.00	17.33	1212.8	21011.	0.	27.95	1957.	54688.	1.
SHL- 411	5	L400x100x13/18	0.0	70.00	18.17	1272.3	23123.	0.	27.95	1957.	54688.	1.
SHL- 412	1	L350x100x12/17	0.0	59.00	19.02	1122.5	21355.	0.	27.98	1651.	46180.	1.
SHL- 413	1	L350x100x12/17	0.0	59.00	19.88	1172.6	23306.	0.	27.98	1651.	46180.	1.
SHEER STRAKE												
SHS- 101	12	FB350x25	0.0	87.50	20.73	1813.4	37583.	0.	28.03	2452.	68723.	1.
SHS- 102	12	FB350x25	0.0	87.50	21.58	1887.8	40730.	0.	28.03	2452.	68723.	1.
SHS- 103	12	FB350x25	0.0	87.50	22.42	1962.2	44002.	0.	28.03	2452.	68723.	1.
UPPER DECK												
DEC- 101	17	FB 500x55	0.0	275.00	22.79	6267.9	142861.	6.	27.34	7518.	205535.	0.
DEC- 102	17	FB 500x55	0.0	275.00	22.83	6279.5	143390.	6.	26.49	7285.	192969.	0.
DEC- 103	17	FB 500x55	0.0	275.00	22.88	6291.1	143920.	6.	25.64	7051.	180798.	0.
DEC- 104	17	FB 500x55	0.0	275.00	22.92	6302.7	144451.	6.	24.79	6818.	169024.	0.
DEC- 105	17	FB 500x55	0.0	275.00	22.96	6314.3	144983.	6.	23.94	6584.	157646.	0.
DEC- 106	17	FB 500x55	0.0	275.00	23.00	6325.9	145515.	6.	23.09	6351.	146665.	0.
DEC- 107	17	FB 500x55	0.0	275.00	23.05	6337.5	146049.	6.	22.24	6117.	136080.	0.
DEC- 108	17	FB 500x55	0.0	275.00	23.09	6349.1	146584.	6.	21.40	5884.	125892.	0.
DEC- 109	17	FB 500x55	0.0	275.00	23.13	6360.6	147119.	6.	20.55	5650.	116099.	0.

DEC- 113	17	FB 500x55	0.0	275.00	23.30	6407.0	149272.	6.	17.15	4717.	80895.	0.
DEC- 114	17	FB 500x55	0.0	275.00	23.34	6418.6	149812.	6.	16.30	4483.	73085.	0.
DEC- 115	17	FB 500x55	0.0	275.00	23.38	6430.2	150354.	6.	15.45	4250.	65671.	0.

INNER BOTTOM

INB- 101	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	0.80	96.	77.	0.
INB- 102	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	1.65	198.	327.	0.
INB- 203	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	3.35	402.	1347.	0.
INB- 204	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	4.20	504.	2117.	0.
INB- 205	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	5.05	606.	3060.	0.
INB- 206	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	5.90	708.	4177.	0.
INB- 307	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	7.60	912.	6931.	0.
INB- 308	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	8.45	1014.	8568.	0.
INB- 309	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	9.30	1116.	10379.	0.
INB- 310	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	10.15	1218.	12363.	0.
INB- 411	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	11.85	1422.	16851.	0.
INB- 412	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	12.70	1524.	19355.	0.
INB- 413	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	13.55	1626.	22032.	0.
INB- 414	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	14.40	1728.	24883.	0.
INB- 415	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	15.25	1830.	27908.	0.
INB- 516	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	16.95	2034.	34476.	0.
INB- 517	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	17.80	2136.	38021.	0.
INB- 518	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	18.65	2238.	41739.	0.
INB- 519	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	19.50	2340.	45630.	0.
INB- 520	4	T400x100x30x15	0.0	120.00	2.77	331.8	917.	2.	20.35	2442.	49695.	0.

LOWER WING TANK SLOPING P

LWT- 101	2	L300x90x11/16	0.0	47.40	3.49	165.4	577.	0.	21.92	1039.	22777.	0.
LWT- 102	2	L300x90x11/16	0.0	47.40	4.11	194.9	801.	0.	22.50	1067.	23999.	0.
LWT- 103	2	L300x90x11/16	0.0	47.40	4.73	224.3	1062.	0.	23.08	1094.	25252.	0.
LWT- 104	2	L300x90x11/16	0.0	47.40	5.35	253.8	1359.	0.	23.66	1122.	26537.	0.
LWT- 105	2	L300x90x11/16	0.0	47.40	5.98	283.2	1692.	0.	24.24	1149.	27854.	0.
LWT- 106	2	L300x90x11/16	0.0	47.40	6.60	312.7	2063.	0.	24.82	1177.	29202.	0.
LWT- 107	2	L300x90x11/16	0.0	47.40	7.22	342.1	2470.	0.	25.40	1204.	30583.	0.
LWT- 208	2	L300x90x11/16	0.0	47.40	7.84	371.6	2913.	0.	25.98	1232.	31996.	0.
LWT- 209	2	L300x90x11/16	0.0	47.40	8.46	401.1	3393.	0.	26.56	1259.	33440.	0.
LWT- 210	2	L300x90x11/16	0.0	47.40	9.08	430.5	3910.	0.	27.14	1286.	34917.	0.

UPPER WING TANK SLOPING P

UWT- 101	14	FB400x40	0.0	160.00	15.90	2544.4	40464.	2.	27.02	4323.	116783.	1.
UWT- 102	14	FB400x40	0.0	160.00	16.32	2611.6	42629.	2.	26.28	4204.	110481.	1.
UWT- 103	8	FB400x30	0.0	120.00	16.74	2009.1	33639.	1.	25.54	3065.	78266.	0.
UWT- 104	8	FB400x30	0.0	120.00	17.16	2059.5	35348.	1.	24.80	2976.	73802.	0.
UWT- 105	8	FB400x30	0.0	120.00	17.58	2109.9	37099.	1.	24.06	2887.	69470.	0.
UWT- 206	8	FB400x30	0.0	120.00	18.00	2160.4	38893.	1.	23.32	2798.	65254.	0.
UWT- 207	8	FB400x30	0.0	120.00	18.42	2210.7	40725.	1.	22.58	2710.	61181.	0.
UWT- 208	8	FB400x30	0.0	120.00	18.84	2261.0	42599.	1.	21.84	2621.	57239.	0.
UWT- 209	8	FB400x30	0.0	120.00	19.26	2311.2	44516.	1.	21.10	2532.	53428.	0.
UWT- 210	13	FB350x30	0.0	105.00	19.66	2064.1	40575.	1.	20.35	2137.	43478.	0.
UWT- 211	13	FB350x30	0.0	105.00	20.08	2108.1	42323.	1.	19.61	2059.	40375.	0.
UWT- 212	13	FB350x30	0.0	105.00	20.50	2152.1	44109.	1.	18.87	1981.	37387.	0.
UWT- 313	13	FB350x30	0.0	105.00	20.91	2195.7	45916.	1.	18.14	1904.	34540.	0.
UWT- 314	13	FB350x30	0.0	105.00	21.33	2239.7	47776.	1.	17.40	1827.	31781.	0.
UWT- 315	13	FB350x30	0.0	105.00	21.75	2283.8	49673.	1.	16.66	1749.	29137.	0.
UWT- 316	13	FB350x30	0.0	105.00	22.17	2327.8	51606.	1.	15.92	1671.	26608.	0.
UWT- 317	13	FB350x30	0.0	105.00	22.59	2371.8	53577.	1.	15.18	1594.	24194.	0.

WT BOTTOM GIRDER

BGR- 101	9	FB320x25	0.0	80.00	0.75	60.0	45.	0.	2.66	213.	566.	1.
BGR- 102	9	FB320x25	0.0	80.00	1.50	120.0	180.	0.	2.66	213.	566.	1.
BGR- 103	9	FB320x25	0.0	80.00	2.25	180.0	405.	0.	2.66	213.	566.	1.

NON-TIGHT BHD

NBG- 101	15	FB100x10	0.0	10.00	0.75	7.5	6.	0.	6.70	67.	449.	0.
NBG- 102	15	FB100x10	0.0	10.00	1.50	15.0	23.	0.	6.70	67.	449.	0.
NBG- 103	15	FB100x10	0.0	10.00	2.25	22.5	51.	0.	6.70	67.	449.	0.

NON-TIGHT BHD

NBG- 204	15	FB100x10	0.0	10.00	0.75	7.5	6.	0.	10.95	110.	1199.	0.
NBG- 205	15	FB100x10	0.0	10.00	1.50	15.0	23.	0.	10.95	110.	1199.	0.

NBG- 307	15	FB100x10	0.0	10.00	0.75	7.5	6.	0.	16.05	161.	2576.	0.
NBG- 308	15	FB100x10	0.0	10.00	1.50	15.0	23.	0.	16.05	161.	2576.	0.
NBG- 309	15	FB100x10	0.0	10.00	2.25	22.5	51.	0.	16.05	161.	2576.	0.

NON-TIGHT BHD

NBG- 410	15	FB100x10	0.0	10.00	0.75	7.5	6.	0.	21.15	212.	4473.	0.
NBG- 411	15	FB100x10	0.0	10.00	1.50	15.0	23.	0.	21.15	212.	4473.	0.
NBG- 412	15	FB100x10	0.0	10.00	2.25	22.5	51.	0.	21.15	212.	4473.	0.

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TOTAL, STIFFENER			13285.50	11.86	157550.8	3211479.	200.	17.88	237585.	5016981.	24.	
TOTAL PLATE & STIFFENER			62835.56	10.80	678711.8	12987135.	33150.	18.60	1168634.	25582480.	176838.	

ABS/SAFEHULL/BSEMCALC V7.00 (2001 Rules)  
SECTION MODULUS CALCULATIONS FOR HULL GIRDER  
SHIP : ACP-Max bulk carrier

SUMMARY OF HULL GIRDER PROPERTIES — AS BUILT, W/O SMALL OPENING ON STIFFENER

DEPTH, MOLDED	=	23.000 m
BEAM, MOLDED	=	56.400 m
SECTIONAL AREA	=	125671.125 cm <sup>2</sup>
NEUTRAL AXIS ABOVE BASELINE	=	10.801 m
FIRST MOMENT ABOVE NEUTRAL AXIS, X-X	=	1357424. cm <sup>2</sup> -m
MOMENT OF INERTIA ABOUT NEUTRAL AXIS, X-X	=	11378502. cm <sup>2</sup> -m <sup>2</sup>
SECTION MODULUS AT DECK	=	932771. cm <sup>2</sup> -m
SECTION MODULUS AT BOTTOM	=	1053429. cm <sup>2</sup> -m
MOMENT OF INERTIA ABOUT CL	=	51518636. cm <sup>2</sup> -m <sup>2</sup>
SECTION MODULUS AT SIDE SHELL	=	1826902. cm <sup>2</sup> -m

ABS/SAFEHULL\_WEIGHT V7.00 (2001 Rules)

SECTION WEIGHT CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max bulk carrier

FILE : ACP-B2.OWD

## Gross Summary

ACP-Max bulk carrier Scantling group 1 ( x = 170.000 m from AP )

(Scantling group length = 352.000 m)

## Gross plates Group 1

ID	Breadth m	Thickness cm	Area cm2	Weight tonnes	Center of mass Y(m)	Z(m)
KPL-01	2.500	3.500	875.000	241.780	-0.018	1.250
BTM-01	4.250	3.500	1487.500	411.026	-0.018	4.625
BTM-02	4.250	3.500	1487.500	411.026	-0.018	8.875
BTM-03	5.100	3.500	1785.000	493.231	-0.018	13.550
BTM-04	5.100	3.500	1785.000	493.231	-0.018	18.650
BTM-05	4.500	3.500	1575.000	435.204	-0.018	23.450
BLG-01	0.979	3.500	342.517	94.644	0.078	26.183
BLG-02	0.973	3.500	340.724	94.149	0.445	27.075
BLG-03	0.973	3.500	340.725	94.149	1.125	27.755
BLG-04	0.979	3.500	342.518	94.644	2.017	28.122
SHL-01	0.500	3.000	150.000	41.448	2.750	28.215
SHL-02	7.500	3.000	2250.000	621.720	6.750	28.215
SHL-03	4.500	3.000	1350.000	373.032	12.750	28.215
SHL-04	5.500	5.000	2750.000	759.880	17.750	28.225
SHS-01	2.500	5.500	1375.000	379.940	21.750	28.228
DEC-01	14.117	5.500	7764.551	2145.501	23.377	21.151
PLO-01	14.100	0.000	0.000	0.000	23.700	7.050
INB-01	2.500	3.500	875.000	241.780	3.017	1.250
INB-02	4.250	3.500	1487.500	411.026	3.017	4.625
INB-03	4.250	3.500	1487.500	411.026	3.017	8.875
INB-04	5.100	3.500	1785.000	493.231	3.017	13.550
INB-05	5.100	3.500	1785.000	493.231	3.017	18.650
LWT-01	5.950	3.000	1785.091	493.256	5.185	23.219
LWT-02	4.309	3.000	1292.652	357.186	8.935	26.719
UWT-01	4.877	5.500	2682.383	741.196	16.181	26.066
UWT-02	5.943	5.500	3268.397	903.123	18.851	21.361
UWT-03	5.392	5.500	2965.500	819.427	21.646	16.431
UWT-04	0.700	5.500	385.000	106.383	23.350	14.073
BGR-01	3.000	2.500	750.000	207.240	1.500	2.487
NBG-01	3.000	2.500	750.000	207.240	1.500	6.762
NBG-02	3.000	2.500	750.000	207.240	1.500	11.012
NBG-03	3.000	2.500	750.000	207.240	1.500	16.113
NBG-04	3.000	2.500	750.000	207.240	1.500	21.213
NBG-05	3.000	0.000	0.000	0.000	1.500	0.000
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Gross Plate Total			49550.059	13691.673	10.518	18.790

## Gross Stiffeners Group 1

ID	ID Stiffener # Description	Area cm2	Weight tonnes	Center of mass Y(m)	Z(m)
KPL- 101	4 T400x100x30x15		120.000	33.158	0.235 0.800
KPL- 102	4 T400x100x30x15		120.000	33.158	0.235 1.650
BTM- 101	4 T400x100x30x15		120.000	33.158	0.235 3.350
BTM- 102	4 T400x100x30x15		120.000	33.158	0.235 4.200
BTM- 103	4 T400x100x30x15		120.000	33.158	0.235 5.050
BTM- 104	4 T400x100x30x15		120.000	33.158	0.235 5.900
BTM- 205	4 T400x100x30x15		120.000	33.158	0.235 7.600
BTM- 206	4 T400x100x30x15		120.000	33.158	0.235 8.450
BTM- 207	4 T400x100x30x15		120.000	33.158	0.235 9.300



ABS/SAFEHULL\_WEIGHT V7.00 (2001 Rules)

SECTION WEIGHT CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max bulk carrier

FILE : ACP-B2.OWD

## Gross Summary

ACP-Max bulk carrier Scantling group 1 ( x = 170.000 m from AP )

(Scantling group length = 352.000 m)

## Gross Stiffeners Group 1

ID	ID #	Stiffener Description	Area cm2	Weight tonnes	Center of mass		
					Y(m)	Z(m)	
BTM- 208	4	T400x100x30x15	120.000	120.000	33.158	0.235	10.150
BTM- 309	4	T400x100x30x15	120.000	120.000	33.158	0.235	11.850
BTM- 310	4	T400x100x30x15	120.000	120.000	33.158	0.235	12.700
BTM- 311	4	T400x100x30x15	120.000	120.000	33.158	0.235	13.550
BTM- 312	4	T400x100x30x15	120.000	120.000	33.158	0.235	14.400
BTM- 313	4	T400x100x30x15	120.000	120.000	33.158	0.235	15.250
BTM- 414	4	T400x100x30x15	120.000	120.000	33.158	0.235	16.950
BTM- 415	4	T400x100x30x15	120.000	120.000	33.158	0.235	17.800
BTM- 416	4	T400x100x30x15	120.000	120.000	33.158	0.235	18.650
BTM- 417	4	T400x100x30x15	120.000	120.000	33.158	0.235	19.500
BTM- 418	4	T400x100x30x15	120.000	120.000	33.158	0.235	20.350
BTM- 519	4	T400x100x30x15	120.000	120.000	33.158	0.235	22.050
BTM- 520	4	T400x100x30x15	120.000	120.000	33.158	0.235	22.900
BTM- 521	4	T400x100x30x15	120.000	120.000	33.158	0.235	23.750
BTM- 522	4	T400x100x30x15	120.000	120.000	33.158	0.235	24.600
BTM- 523	4	T400x100x30x15	120.000	120.000	33.158	0.235	25.450
SHL- 101	16	L300x90x10/15	42.000	42.000	11.605	2.500	28.009
SHL- 202	16	L300x90x10/15	42.000	42.000	11.605	3.340	28.009
SHL- 203	16	L300x90x10/15	42.000	42.000	11.605	4.190	28.009
SHL- 204	16	L300x90x10/15	42.000	42.000	11.605	5.040	28.009
SHL- 205	16	L300x90x10/15	42.000	42.000	11.605	5.890	28.009
SHL- 206	16	L300x90x10/15	42.000	42.000	11.605	6.740	28.009
SHL- 207	16	L300x90x10/15	42.000	42.000	11.605	7.590	28.009
SHL- 208	16	L300x90x10/15	42.000	42.000	11.605	8.440	28.009
SHL- 409	5	L400x100x13/18	70.000	70.000	19.342	16.475	27.951
SHL- 410	5	L400x100x13/18	70.000	70.000	19.342	17.325	27.951
SHL- 411	5	L400x100x13/18	70.000	70.000	19.342	18.175	27.951
SHL- 412	1	L350x100x12/17	59.000	59.000	16.303	19.025	27.977
SHL- 413	1	L350x100x12/17	59.000	59.000	16.303	19.875	27.977
SHS- 101	12	FB350x25	87.500	87.500	24.178	20.725	28.025
SHS- 102	12	FB350x25	87.500	87.500	24.178	21.575	28.025
SHS- 103	12	FB350x25	87.500	87.500	24.178	22.425	28.025
DEC- 101	17	FB 500x55	275.000	275.000	75.988	22.792	27.339
DEC- 102	17	FB 500x55	275.000	275.000	75.988	22.835	26.490
DEC- 103	17	FB 500x55	275.000	275.000	75.988	22.877	25.641
DEC- 104	17	FB 500x55	275.000	275.000	75.988	22.919	24.792
DEC- 105	17	FB 500x55	275.000	275.000	75.988	22.961	23.943
DEC- 106	17	FB 500x55	275.000	275.000	75.988	23.003	23.094
DEC- 107	17	FB 500x55	275.000	275.000	75.988	23.045	22.245
DEC- 108	17	FB 500x55	275.000	275.000	75.988	23.087	21.396
DEC- 109	17	FB 500x55	275.000	275.000	75.988	23.130	20.547
DEC- 110	17	FB 500x55	275.000	275.000	75.988	23.172	19.698
DEC- 111	17	FB 500x55	275.000	275.000	75.988	23.214	18.849
DEC- 112	17	FB 500x55	275.000	275.000	75.988	23.256	18.000
DEC- 113	17	FB 500x55	275.000	275.000	75.988	23.298	17.151
DEC- 114	17	FB 500x55	275.000	275.000	75.988	23.340	16.302
DEC- 115	17	FB 500x55	275.000	275.000	75.988	23.383	15.453
INB- 101	4	T400x100x30x15	120.000	120.000	33.158	2.765	0.800
INB- 102	4	T400x100x30x15	120.000	120.000	33.158	2.765	1.650
INB- 203	4	T400x100x30x15	120.000	120.000	33.158	2.765	3.350
INB- 204	4	T400x100x30x15	120.000	120.000	33.158	2.765	4.200
INB- 205	4	T400x100x30x15	120.000	120.000	33.158	2.765	5.050
INB- 206	4	T400x100x30x15	120.000	120.000	33.158	2.765	5.900

ABS/SAFEHULL\_WEIGHT V7.00 (2001 Rules)

SECTION WEIGHT CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max bulk carrier

FILE : ACP-B2.OWD

## Gross Summary

ACP-Max bulk carrier Scantling group 1 ( x = 170.000 m from AP )

(Scantling group length = 352.000 m)

## Gross Stiffeners Group 1

ID	ID Stiffener #	Description	Area cm2	Weight tonnes	Center of mass Y(m) Z(m)	
INB- 307	4	T400x100x30x15	120.000	33.158	2.765	7.600
INB- 308	4	T400x100x30x15	120.000	33.158	2.765	8.450
INB- 309	4	T400x100x30x15	120.000	33.158	2.765	9.300
INB- 310	4	T400x100x30x15	120.000	33.158	2.765	10.150
INB- 411	4	T400x100x30x15	120.000	33.158	2.765	11.850
INB- 412	4	T400x100x30x15	120.000	33.158	2.765	12.700
INB- 413	4	T400x100x30x15	120.000	33.158	2.765	13.550
INB- 414	4	T400x100x30x15	120.000	33.158	2.765	14.400
INB- 415	4	T400x100x30x15	120.000	33.158	2.765	15.250
INB- 516	4	T400x100x30x15	120.000	33.158	2.765	16.950
INB- 517	4	T400x100x30x15	120.000	33.158	2.765	17.800
INB- 518	4	T400x100x30x15	120.000	33.158	2.765	18.650
INB- 519	4	T400x100x30x15	120.000	33.158	2.765	19.500
INB- 520	4	T400x100x30x15	120.000	33.158	2.765	20.350
LWT- 101	2	L300x90x11/16	47.400	13.098	3.490	21.921
LWT- 102	2	L300x90x11/16	47.400	13.098	4.111	22.501
LWT- 103	2	L300x90x11/16	47.400	13.098	4.732	23.081
LWT- 104	2	L300x90x11/16	47.400	13.098	5.354	23.661
LWT- 105	2	L300x90x11/16	47.400	13.098	5.975	24.241
LWT- 106	2	L300x90x11/16	47.400	13.098	6.597	24.821
LWT- 107	2	L300x90x11/16	47.400	13.098	7.218	25.401
LWT- 208	2	L300x90x11/16	47.400	13.098	7.840	25.981
LWT- 209	2	L300x90x11/16	47.400	13.098	8.461	26.561
LWT- 210	2	L300x90x11/16	47.400	13.098	9.082	27.141
UWT- 101	14	FB400x40	160.000	44.211	15.903	27.017
UWT- 102	14	FB400x40	160.000	44.211	16.323	26.278
UWT- 103	8	FB400x30	120.000	33.158	16.743	25.539
UWT- 104	8	FB400x30	120.000	33.158	17.163	24.800
UWT- 105	8	FB400x30	120.000	33.158	17.583	24.061
UWT- 206	8	FB400x30	120.000	33.158	18.003	23.319
UWT- 207	8	FB400x30	120.000	33.158	18.422	22.580
UWT- 208	8	FB400x30	120.000	33.158	18.841	21.840
UWT- 209	8	FB400x30	120.000	33.158	19.260	21.101
UWT- 210	13	FB350x30	105.000	29.014	19.658	20.349
UWT- 211	13	FB350x30	105.000	29.014	20.077	19.609
UWT- 212	13	FB350x30	105.000	29.014	20.496	18.870
UWT- 313	13	FB350x30	105.000	29.014	20.912	18.137
UWT- 314	13	FB350x30	105.000	29.014	21.331	17.398
UWT- 315	13	FB350x30	105.000	29.014	21.750	16.658
UWT- 316	13	FB350x30	105.000	29.014	22.170	15.919
UWT- 317	13	FB350x30	105.000	29.014	22.589	15.180
BGR- 101	9	FB320x25	80.000	22.106	0.750	2.660
BGR- 102	9	FB320x25	80.000	22.106	1.500	2.660
BGR- 103	9	FB320x25	80.000	22.106	2.250	2.660
NBG- 101	15	FB100x10	10.000	2.763	0.750	6.700
NBG- 102	15	FB100x10	10.000	2.763	1.500	6.700
NBG- 103	15	FB100x10	10.000	2.763	2.250	6.700
NBG- 204	15	FB100x10	10.000	2.763	0.750	10.950
NBG- 205	15	FB100x10	10.000	2.763	1.500	10.950
NBG- 206	15	FB100x10	10.000	2.763	2.250	10.950
NBG- 307	15	FB100x10	10.000	2.763	0.750	16.050
NBG- 308	15	FB100x10	10.000	2.763	1.500	16.050
NBG- 309	15	FB100x10	10.000	2.763	2.250	16.050

ABS/SAFEHULL/\_WEIGHT V7.00 (2001 Rules)

SECTION WEIGHT CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max bulk carrier

FILE : ACP-B2.OWD

Gross Summary

ACP-Max bulk carrier Scantling group 1 ( x = 170.000 m from AP )  
 (Scantling group length = 352.000 m)

Gross Stiffeners Group 1

ID	ID Stiffener #	Description	Area cm2	Weight tonnes	Center of mass Y(m) Z(m)	
NBG- 410	15	FB100x10	10.000	2.763	0.750	21.150
NBG- 411	15	FB100x10	10.000	2.763	1.500	21.150
NBG- 412	15	FB100x10	10.000	2.763	2.250	21.150
Gross Stiffeners Total			13285.504	3671.053	11.859	17.883
Gross Total			62835.563	17362.727	10.801	18.598

ABS/SAFEHULL\_WEIGHT V7.00 (2001 Rules)

SECTION WEIGHT CALCULATIONS FOR HULL GIRDER

SHIP : ACP-Max bulk carrier

FILE : ACP-B2.OWD

Gross Summary

ACP-Max bulk carrier Scantling group 1 ( x = 170.000 m from AP )  
(Scantling group length = 352.000 m)

DEPTH, MOLDED = 23.000 m  
BEAM, MOLDED = 56.400 m  
SECTIONAL AREA = 125671.086 cm<sup>2</sup>  
STEEL DENSITY = 7.850 tonnes/m<sup>3</sup>  
NEUTRAL AXIS ABOVE BASELINE = 10.801 m

WEIGHT OF PLATES (HALF SHIP) = 13691.673 tonnes  
WEIGHT OF STIFFENERS (HALF SHIP) = 3671.053 tonnes  
TOTAL WEIGHT OF SCANTLINGS (FULL SHIP) = 34725.445 tonnes

**Appendix E: Trim and Stability  
calculations including longitudinal  
strength for Tanker**

Hydrostatic Data Sea Water  
ACP-Max Tanker

Shiplength= Lbp 352.000 Metres  
 Moulded Beam 56.388 Metres  
 Mean Shell thickness 0.0000 Metres  
 Top of Keel 0.000 Metres  
 Underside of Keel 0.000 Metres  
 CP and CM referred to Section 17  
 Vertical Centre of Gravity 0.000 Metres  
 Specific Gravity of Water 1.0250

Longitudinal Datum Midships  
 Vertical Datum Base Line

Trim 0.000 Metres

Draught To USK Metres	Moulded Draught Metres	Moulded Displacement Tonnes	Full Displacement Tonnes	LCB Metres	LCF Metres	Moulded VCB Metres	Immersion Tonnes/Cm	WSA Metre^2
0.000	0.000							
0.250	0.250	3295.70	3295.70	18.316	18.093	0.126	135.131	13205.0
0.500	0.500	6735.09	6735.09	18.146	17.345	0.259	141.883	13897.0
0.750	0.750	10309.72	10309.72	17.865	16.875	0.388	146.012	14344.9
1.000	1.000	14016.10	14016.10	17.529	16.911	0.513	147.793	14575.1
1.250	1.250	17751.97	17751.97	17.382	16.870	0.640	149.919	14848.4
1.500	1.500	21526.13	21526.13	17.283	16.712	0.769	151.746	15100.9
1.750	1.750	25336.31	25336.31	17.176	16.443	0.899	153.494	15355.0
2.000	2.000	29182.17	29182.17	17.068	16.216	1.029	155.049	15599.5
2.250	2.250	33063.81	33063.81	16.961	16.017	1.159	156.401	15832.9
2.500	2.500	36981.22	36981.22	16.855	15.845	1.288	157.548	16055.1
2.750	2.750	40934.41	40934.41	16.750	15.699	1.417	158.492	16266.5
3.000	3.000	44923.42	44923.42	16.645	15.578	1.544	159.232	16466.7
3.250	3.250	48917.57	48917.57	16.551	15.427	1.673	159.983	16668.5
3.500	3.500	52926.63	52926.63	16.460	15.281	1.802	160.690	16868.4
3.750	3.750	56950.60	56950.60	16.372	15.139	1.931	161.353	17066.7
4.000	4.000	60989.48	60989.48	16.286	15.002	2.060	161.971	17263.1
4.250	4.250	65043.26	65043.26	16.203	14.868	2.189	162.545	17457.8
4.500	4.500	69111.96	69111.96	16.120	14.739	2.318	163.075	17650.7
4.750	4.750	73195.56	73195.56	16.040	14.613	2.447	163.561	17841.9
5.000	5.000	77294.06	77294.06	15.960	14.491	2.575	164.003	18031.3
5.250	5.250	81400.50	81400.50	15.885	14.377	2.703	164.437	18222.1
5.500	5.500	85516.88	85516.88	15.810	14.254	2.832	164.861	18412.5
5.750	5.750	89643.22	89643.22	15.735	14.121	2.961	165.275	18602.2
6.000	6.000	93779.52	93779.52	15.659	13.980	3.089	165.678	18791.5
6.250	6.250	97925.77	97925.77	15.584	13.829	3.218	166.072	18980.2
6.500	6.500	102082.0	102082.0	15.509	13.669	3.347	166.454	19168.4
6.750	6.750	106248.1	106248.1	15.433	13.501	3.475	166.827	19356.1
7.000	7.000	110424.3	110424.3	15.358	13.323	3.603	167.189	19543.2
7.250	7.250	114608.4	114608.4	15.282	13.122	3.732	167.559	19729.9
7.500	7.500	118802.0	118802.0	15.203	12.906	3.860	167.932	19917.0
7.750	7.750	123005.1	123005.1	15.119	12.674	3.989	168.306	20104.5
8.000	8.000	127217.5	127217.5	15.033	12.429	4.118	168.682	20292.4
8.250	8.250	131439.4	131439.4	14.944	12.168	4.247	169.061	20480.7
8.500	8.500	135670.8	135670.8	14.852	11.893	4.376	169.441	20669.4
8.750	8.750	139911.5	139911.5	14.759	11.603	4.504	169.823	20858.6
9.000	9.000	144161.7	144161.7	14.663	11.299	4.633	170.207	21048.2
9.250	9.250	148421.1	148421.1	14.563	10.976	4.762	170.593	21238.8
9.500	9.500	152690.7	152690.7	14.459	10.639	4.891	170.985	21430.4
9.750	9.750	156970.6	156970.6	14.349	10.286	5.020	171.385	21622.8
10.000	10.000	161260.7	161260.7	14.235	9.919	5.149	171.792	21816.2

Draught To USK Metres	Moulded Draught Metres	Moulded Displacement Tonnes	Full Displacement Tonnes	LCB Metres	LCF Metres	Moulded VCB Metres	Immersion Tonnes/Cm	WSA Metre^2
10.250	10.250	165561.1	165561.1	14.117	9.537	5.279	172.205	22010.4
10.500	10.500	169871.8	169871.8	13.995	9.141	5.408	172.626	22205.6
10.750	10.750	174192.7	174192.7	13.870	8.730	5.537	173.054	22401.6
11.000	11.000	178523.8	178523.8	13.741	8.305	5.667	173.489	22598.5
11.250	11.250	182865.0	182865.0	13.610	7.877	5.796	173.937	22795.7
11.500	11.500	187219.0	187219.0	13.471	7.420	5.926	174.402	22995.9
11.750	11.750	191585.7	191585.7	13.327	6.935	6.056	174.883	23199.3
12.000	12.000	195965.1	195965.1	13.177	6.421	6.186	175.380	23405.7
12.250	12.250	200357.2	200357.2	13.021	5.881	6.316	175.894	23615.2
12.500	12.500	204762.1	204762.1	12.861	5.313	6.447	176.425	23827.8
12.750	12.750	209179.3	209179.3	12.696	4.724	6.577	176.977	24043.1
13.000	13.000	213609.5	213609.5	12.525	4.039	6.708	177.629	24268.5
13.250	13.250	218060.6	218060.6	12.341	3.361	6.839	178.213	24494.2
13.500	13.500	222523.6	222523.6	12.154	2.721	6.970	178.790	24717.3
13.750	13.750	226999.0	226999.0	11.964	2.122	7.101	179.355	24937.6
14.000	14.000	231488.3	231488.3	11.770	1.518	7.232	179.952	25159.6
14.250	14.250	235992.6	235992.6	11.571	0.998	7.364	180.533	25375.3
14.500	14.500	240512.2	240512.2	11.369	0.530	7.496	181.097	25587.3
14.750	14.750	245047.4	245047.4	11.163	0.114	7.628	181.622	25794.7
15.000	15.000	249597.0	249597.0	10.954	-0.243	7.760	182.084	25996.5
15.250	15.250	254156.1	254156.1	10.748	-0.555	7.892	182.518	26196.1
15.500	15.500	258724.2	258724.2	10.546	-0.835	8.024	182.937	26394.7
15.750	15.750	263301.5	263301.5	10.347	-1.083	8.156	183.340	26592.1
16.000	16.000	267887.8	267887.8	10.153	-1.299	8.288	183.728	26788.4
16.250	16.250	272483.1	272483.1	9.961	-1.484	8.421	184.101	26983.6
16.500	16.500	277087.6	277087.6	9.773	-1.638	8.553	184.458	27177.7
16.750	16.750	281701.1	281701.1	9.588	-1.762	8.685	184.800	27370.7
17.000	17.000	286323.7	286323.7	9.406	-1.854	8.817	185.126	27562.6
17.250	17.250	290955.4	290955.4	9.227	-1.916	8.950	185.437	27753.3
17.500	17.500	295596.1	295596.1	9.050	-1.948	9.082	185.733	27943.0
17.750	17.750	300245.9	300245.9	8.876	-1.950	9.214	186.013	28131.5
18.000	18.000	304904.8	304904.8	8.705	-1.922	9.346	186.278	28318.9
18.250	18.250	309569.1	309569.1	8.543	-1.878	9.478	186.564	28508.7
18.500	18.500	314238.9	314238.9	8.388	-1.827	9.610	186.841	28698.2
18.750	18.750	318914.2	318914.2	8.238	-1.771	9.742	187.110	28887.5
19.000	19.000	323595.1	323595.1	8.094	-1.709	9.875	187.371	29076.6
19.250	19.250	328281.6	328281.6	7.955	-1.641	10.007	187.623	29265.4
19.500	19.500	332973.7	332973.7	7.821	-1.566	10.139	187.867	29454.1
19.750	19.750	337671.3	337671.3	7.691	-1.486	10.271	188.102	29642.5
20.000	20.000	342374.5	342374.5	7.567	-1.400	10.403	188.329	29830.8
20.250	20.250	347083.3	347083.3	7.447	-1.308	10.535	188.547	30018.8
20.500	20.500	351797.6	351797.6	7.331	-1.209	10.667	188.757	30206.6
20.750	20.750	356517.4	356517.4	7.219	-1.105	10.799	188.959	30394.2
21.000	21.000	361242.9	361242.9	7.111	-0.995	10.931	189.152	30581.6
21.250	21.250	365973.9	365973.9	7.007	-0.879	11.062	189.336	30768.8
21.500	21.500	370710.5	370710.5	6.907	-0.757	11.194	189.512	30955.7
21.750	21.750	375452.6	375452.6	6.810	-0.629	11.326	189.680	31142.5
22.000	22.000	380200.3	380200.3	6.717	-0.495	11.457	189.840	31329.0

Draught To USK Metres	Moulded KMT Metres	GMT Metres	Moulded KML Metres	MCT Tonnes Metres/Cm	CB	CP	CM	CW
0.000								
0.250	826.351	826.351	22747.132	2129.763	0.648	0.700	0.926	0.664
0.500	448.698	448.698	12211.998	2336.615	0.662	0.708	0.936	0.697
0.750	311.655	311.655	8423.959	2467.291	0.676	0.715	0.945	0.718
1.000	233.918	233.918	6376.996	2539.222	0.689	0.722	0.955	0.726
1.250	189.771	189.771	5192.773	2618.806	0.698	0.726	0.961	0.737
1.500	160.346	160.346	4392.614	2686.249	0.705	0.731	0.965	0.746
1.750	139.211	139.211	3832.089	2758.267	0.712	0.734	0.969	0.754
2.000	123.182	123.182	3406.597	2824.202	0.717	0.738	0.972	0.762
2.250	110.516	110.516	3069.471	2883.193	0.722	0.741	0.975	0.769
2.500	100.183	100.183	2793.875	2935.253	0.727	0.744	0.977	0.774
2.750	91.532	91.532	2562.970	2980.502	0.732	0.747	0.979	0.779
3.000	84.135	84.135	2365.432	3018.843	0.736	0.750	0.981	0.783
3.250	78.003	78.003	2199.660	3056.876	0.740	0.753	0.983	0.786
3.500	72.771	72.771	2056.984	3092.876	0.743	0.755	0.984	0.790
3.750	68.253	68.253	1932.638	3126.844	0.746	0.758	0.985	0.793
4.000	64.310	64.310	1823.087	3158.782	0.749	0.760	0.986	0.796
4.250	60.836	60.836	1725.651	3188.692	0.752	0.762	0.987	0.799
4.500	57.752	57.752	1638.261	3216.574	0.755	0.764	0.988	0.802
4.750	54.992	54.992	1559.296	3242.430	0.757	0.766	0.988	0.804
5.000	52.506	52.506	1487.467	3266.261	0.760	0.768	0.989	0.806
5.250	50.288	50.288	1422.291	3289.069	0.762	0.770	0.989	0.808
5.500	48.287	48.287	1363.093	3311.575	0.764	0.772	0.990	0.810
5.750	46.473	46.473	1309.066	3333.774	0.766	0.774	0.990	0.812
6.000	44.823	44.823	1259.544	3355.665	0.768	0.775	0.991	0.814
6.250	43.316	43.316	1213.970	3377.242	0.770	0.777	0.991	0.816
6.500	41.934	41.934	1171.874	3398.501	0.772	0.779	0.991	0.818
6.750	40.664	40.664	1132.860	3419.440	0.774	0.780	0.992	0.820
7.000	39.494	39.494	1096.587	3440.052	0.775	0.782	0.992	0.822
7.250	38.418	38.418	1063.108	3461.397	0.777	0.783	0.992	0.824
7.500	37.425	37.425	1031.981	3482.997	0.779	0.784	0.993	0.825
7.750	36.508	36.508	1002.970	3504.842	0.780	0.786	0.993	0.827
8.000	35.659	35.659	975.869	3526.923	0.782	0.787	0.993	0.829
8.250	34.872	34.872	950.497	3549.228	0.783	0.788	0.993	0.831
8.500	34.141	34.141	926.695	3571.746	0.785	0.790	0.993	0.833
8.750	33.462	33.462	904.323	3594.466	0.786	0.791	0.994	0.835
9.000	32.829	32.829	883.255	3617.374	0.787	0.792	0.994	0.837
9.250	32.240	32.240	863.370	3640.406	0.789	0.793	0.994	0.839
9.500	31.689	31.689	844.715	3664.208	0.790	0.795	0.994	0.840
9.750	31.174	31.174	827.190	3688.766	0.791	0.796	0.994	0.842
10.000	30.691	30.691	810.706	3714.064	0.793	0.797	0.994	0.844
10.250	30.239	30.239	795.180	3740.084	0.794	0.798	0.995	0.846
10.500	29.815	29.815	780.540	3766.809	0.795	0.799	0.995	0.849
10.750	29.417	29.417	766.718	3794.221	0.796	0.801	0.995	0.851
11.000	29.044	29.044	753.653	3822.303	0.798	0.802	0.995	0.853
11.250	28.691	28.691	741.429	3851.747	0.799	0.803	0.995	0.855
11.500	28.360	28.360	730.021	3882.778	0.800	0.804	0.995	0.857
11.750	28.048	28.048	719.368	3915.358	0.801	0.805	0.995	0.860
12.000	27.755	27.755	709.414	3949.443	0.803	0.806	0.995	0.862
12.250	27.479	27.479	700.108	3984.989	0.804	0.808	0.995	0.865
12.500	27.220	27.220	691.400	4021.949	0.805	0.809	0.996	0.867
12.750	26.977	26.977	683.324	4060.716	0.806	0.810	0.996	0.870
13.000	26.751	26.751	676.953	4108.055	0.808	0.811	0.996	0.873
13.250	26.533	26.533	670.133	4151.412	0.809	0.812	0.996	0.876
13.500	26.327	26.327	663.483	4194.336	0.810	0.814	0.996	0.879
13.750	26.133	26.133	656.951	4236.569	0.811	0.815	0.996	0.882
14.000	25.950	25.950	651.172	4282.351	0.813	0.816	0.996	0.885
14.250	25.776	25.776	645.400	4326.978	0.814	0.817	0.996	0.887



Draught To USK Metres	Moulded KMT Metres	GMT Metres	Moulded KML Metres	MCT Tonnes Metres/Cm	CB	CP	CM	CW
14.500	25.611	25.611	639.665	4370.659	0.815	0.818	0.996	0.890
14.750	25.454	25.454	633.686	4411.455	0.817	0.820	0.996	0.893
15.000	25.304	25.304	627.172	4447.164	0.818	0.821	0.996	0.895
15.250	25.162	25.162	620.563	4480.676	0.819	0.822	0.996	0.897
15.500	25.029	25.029	614.018	4513.106	0.820	0.823	0.996	0.899
15.750	24.904	24.904	607.538	4544.481	0.822	0.825	0.996	0.901
16.000	24.785	24.785	601.124	4574.826	0.823	0.826	0.997	0.903
16.250	24.674	24.674	594.776	4604.160	0.824	0.827	0.997	0.905
16.500	24.568	24.568	588.493	4632.502	0.825	0.828	0.997	0.907
16.750	24.469	24.469	582.274	4659.867	0.827	0.829	0.997	0.908
17.000	24.375	24.375	576.119	4686.267	0.828	0.831	0.997	0.910
17.250	24.286	24.286	570.026	4711.710	0.829	0.832	0.997	0.911
17.500	24.202	24.202	563.994	4736.202	0.830	0.833	0.997	0.913
17.750	24.122	24.122	558.020	4759.747	0.831	0.834	0.997	0.914
18.000	24.047	24.047	552.102	4782.345	0.833	0.835	0.997	0.916
18.250	23.978	23.978	546.580	4806.942	0.834	0.836	0.997	0.917
18.500	23.914	23.914	541.150	4830.975	0.835	0.837	0.997	0.918
18.750	23.855	23.855	535.807	4854.442	0.836	0.839	0.997	0.920
19.000	23.801	23.801	530.547	4877.341	0.837	0.840	0.997	0.921
19.250	23.752	23.752	525.367	4899.673	0.838	0.841	0.997	0.922
19.500	23.707	23.707	520.265	4921.435	0.839	0.842	0.997	0.923
19.750	23.666	23.666	515.236	4942.625	0.840	0.843	0.997	0.925
20.000	23.629	23.629	510.278	4963.243	0.841	0.844	0.997	0.926
20.250	23.596	23.596	505.388	4983.287	0.842	0.845	0.997	0.927
20.500	23.567	23.567	500.563	5002.754	0.844	0.846	0.997	0.928
20.750	23.541	23.541	495.801	5021.643	0.845	0.847	0.997	0.929
21.000	23.519	23.519	491.100	5039.953	0.846	0.848	0.997	0.930
21.250	23.500	23.500	486.456	5057.679	0.847	0.849	0.997	0.931
21.500	23.484	23.484	481.869	5074.822	0.848	0.850	0.997	0.932
21.750	23.471	23.471	477.334	5091.377	0.848	0.851	0.997	0.932
22.000	23.461	23.461	472.852	5107.343	0.849	0.852	0.997	0.933

Hydrostatic Data Tropical Fresh Water  
ACP-Max Tanker

Shiplength= Lbp 352.000 Metres  
 Moulded Beam 56.388 Metres  
 Mean Shell thickness 0.0000 Metres  
 Top of Keel 0.000 Metres  
 Underside of Keel 0.000 Metres  
 CP and CM referred to Section 17  
 Vertical Centre of Gravity 0.000 Metres  
 Specific Gravity of Water 0.9954

Longitudinal Datum Midships  
 Vertical Datum Base Line

Trim 0.000 Metres

Draught To USK Metres	Moulded Draught Metres	Moulded Displacement Tonnes	Full Displacement Tonnes	LCB Metres	LCF Metres	Moulded VCB Metres	Immersion Tonnes/Cm	WSA Metre <sup>2</sup>
0.000	0.000							
0.250	0.250	3200.52	3200.52	18.316	18.093	0.126	131.229	13205.0
0.500	0.500	6540.59	6540.59	18.146	17.345	0.259	137.786	13897.0
0.750	0.750	10011.99	10011.99	17.865	16.875	0.388	141.795	14344.9
1.000	1.000	13611.34	13611.34	17.529	16.911	0.513	143.525	14575.1
1.250	1.250	17239.33	17239.33	17.382	16.870	0.640	145.590	14848.4
1.500	1.500	20904.50	20904.50	17.283	16.712	0.769	147.364	15100.9
1.750	1.750	24604.65	24604.65	17.176	16.443	0.899	149.061	15355.0
2.000	2.000	28339.45	28339.45	17.068	16.216	1.029	150.572	15599.5
2.250	2.250	32108.99	32108.99	16.961	16.017	1.159	151.884	15832.9
2.500	2.500	35913.27	35913.27	16.855	15.845	1.288	152.998	16055.1
2.750	2.750	39752.31	39752.31	16.750	15.699	1.417	153.915	16266.5
3.000	3.000	43626.12	43626.12	16.645	15.578	1.544	154.634	16466.7
3.250	3.250	47504.93	47504.93	16.551	15.427	1.673	155.363	16668.5
3.500	3.500	51398.22	51398.22	16.460	15.281	1.802	156.050	16868.4
3.750	3.750	55305.98	55305.98	16.372	15.139	1.931	156.693	17066.7
4.000	4.000	59228.22	59228.22	16.286	15.002	2.060	157.294	17263.1
4.250	4.250	63164.94	63164.94	16.203	14.868	2.189	157.851	17457.8
4.500	4.500	67116.14	67116.14	16.120	14.739	2.318	158.366	17650.7
4.750	4.750	71081.81	71081.81	16.040	14.613	2.447	158.838	17841.9
5.000	5.000	75061.96	75061.96	15.960	14.491	2.575	159.267	18031.3
5.250	5.250	79049.81	79049.81	15.885	14.377	2.703	159.689	18222.1
5.500	5.500	83047.32	83047.32	15.810	14.254	2.832	160.101	18412.5
5.750	5.750	87054.50	87054.50	15.735	14.121	2.961	160.502	18602.2
6.000	6.000	91071.35	91071.35	15.659	13.980	3.089	160.894	18791.5
6.250	6.250	95097.86	95097.86	15.584	13.829	3.218	161.276	18980.2
6.500	6.500	99134.05	99134.05	15.509	13.669	3.347	161.647	19168.4
6.750	6.750	103179.9	103179.9	15.433	13.501	3.475	162.009	19356.1
7.000	7.000	107235.4	107235.4	15.358	13.323	3.603	162.361	19543.2
7.250	7.250	111298.8	111298.8	15.282	13.122	3.732	162.720	19729.9
7.500	7.500	115371.3	115371.3	15.203	12.906	3.860	163.082	19917.0
7.750	7.750	119452.9	119452.9	15.119	12.674	3.989	163.446	20104.5
8.000	8.000	123543.7	123543.7	15.033	12.429	4.118	163.811	20292.4
8.250	8.250	127643.7	127643.7	14.944	12.168	4.247	164.178	20480.7
8.500	8.500	131752.9	131752.9	14.852	11.893	4.376	164.548	20669.4
8.750	8.750	135871.2	135871.2	14.759	11.603	4.504	164.919	20858.6
9.000	9.000	139998.6	139998.6	14.663	11.299	4.633	165.292	21048.2
9.250	9.250	144135.0	144135.0	14.563	10.976	4.762	165.666	21238.8
9.500	9.500	148281.3	148281.3	14.459	10.639	4.891	166.047	21430.4
9.750	9.750	152437.6	152437.6	14.349	10.286	5.020	166.436	21622.8
10.000	10.000	156603.8	156603.8	14.235	9.919	5.149	166.831	21816.2

Draught To USK Metres	Moulded Draught Metres	Moulded Displacement Tonnes	Full Displacement Tonnes	LCB Metres	LCF Metres	Moulded VCB Metres	Immersion Tonnes/Cm	WSA Metre <sup>2</sup>
10.250	10.250	160780.0	160780.0	14.117	9.537	5.279	167.232	22010.4
10.500	10.500	164966.2	164966.2	13.995	9.141	5.408	167.641	22205.6
10.750	10.750	169162.3	169162.3	13.870	8.730	5.537	168.056	22401.6
11.000	11.000	173368.4	173368.4	13.741	8.305	5.667	168.479	22598.5
11.250	11.250	177584.2	177584.2	13.610	7.877	5.796	168.914	22795.7
11.500	11.500	181812.5	181812.5	13.471	7.420	5.926	169.365	22995.9
11.750	11.750	186053.0	186053.0	13.327	6.935	6.056	169.833	23199.3
12.000	12.000	190306.0	190306.0	13.177	6.421	6.186	170.316	23405.7
12.250	12.250	194571.3	194571.3	13.021	5.881	6.316	170.815	23615.2
12.500	12.500	198849.0	198849.0	12.861	5.313	6.447	171.330	23827.8
12.750	12.750	203138.6	203138.6	12.696	4.724	6.577	171.866	24043.1
13.000	13.000	207440.9	207440.9	12.525	4.039	6.708	172.500	24268.5
13.250	13.250	211763.5	211763.5	12.341	3.361	6.839	173.067	24494.2
13.500	13.500	216097.6	216097.6	12.154	2.721	6.970	173.627	24717.3
13.750	13.750	220443.7	220443.7	11.964	2.122	7.101	174.175	24937.6
14.000	14.000	224803.4	224803.4	11.770	1.518	7.232	174.756	25159.6
14.250	14.250	229177.6	229177.6	11.571	0.998	7.364	175.320	25375.3
14.500	14.500	233566.6	233566.6	11.369	0.530	7.496	175.868	25587.3
14.750	14.750	237970.9	237970.9	11.163	0.114	7.628	176.377	25794.7
15.000	15.000	242389.1	242389.1	10.954	-0.243	7.760	176.825	25996.5
15.250	15.250	246816.5	246816.5	10.748	-0.555	7.892	177.247	26196.1
15.500	15.500	251252.8	251252.8	10.546	-0.835	8.024	177.654	26394.7
15.750	15.750	255697.8	255697.8	10.347	-1.083	8.156	178.046	26592.1
16.000	16.000	260151.7	260151.7	10.153	-1.299	8.288	178.423	26788.4
16.250	16.250	264614.4	264614.4	9.961	-1.484	8.421	178.784	26983.6
16.500	16.500	269085.8	269085.8	9.773	-1.638	8.553	179.131	27177.7
16.750	16.750	273566.1	273566.1	9.588	-1.762	8.685	179.463	27370.7
17.000	17.000	278055.2	278055.2	9.406	-1.854	8.817	179.780	27562.6
17.250	17.250	282553.2	282553.2	9.227	-1.916	8.950	180.082	27753.3
17.500	17.500	287059.9	287059.9	9.050	-1.948	9.082	180.369	27943.0
17.750	17.750	291575.4	291575.4	8.876	-1.950	9.214	180.642	28131.5
18.000	18.000	296099.8	296099.8	8.705	-1.922	9.346	180.899	28318.9
18.250	18.250	300629.3	300629.3	8.543	-1.878	9.478	181.176	28508.7
18.500	18.500	305164.2	305164.2	8.388	-1.827	9.610	181.446	28698.2
18.750	18.750	309704.6	309704.6	8.238	-1.771	9.742	181.707	28887.5
19.000	19.000	314250.3	314250.3	8.094	-1.709	9.875	181.960	29076.6
19.250	19.250	318801.5	318801.5	7.955	-1.641	10.007	182.205	29265.4
19.500	19.500	323358.1	323358.1	7.821	-1.566	10.139	182.441	29454.1
19.750	19.750	327920.0	327920.0	7.691	-1.486	10.271	182.670	29642.5
20.000	20.000	332487.4	332487.4	7.567	-1.400	10.403	182.890	29830.8
20.250	20.250	337060.2	337060.2	7.447	-1.308	10.535	183.102	30018.8
20.500	20.500	341638.3	341638.3	7.331	-1.209	10.667	183.306	30206.6
20.750	20.750	346221.9	346221.9	7.219	-1.105	10.799	183.502	30394.2
21.000	21.000	350810.9	350810.9	7.111	-0.995	10.931	183.689	30581.6
21.250	21.250	355405.3	355405.3	7.007	-0.879	11.062	183.869	30768.8
21.500	21.500	360005.1	360005.1	6.907	-0.757	11.194	184.040	30955.7
21.750	21.750	364610.3	364610.3	6.810	-0.629	11.326	184.203	31142.5
22.000	22.000	369220.9	369220.9	6.717	-0.495	11.457	184.357	31329.0

Draught To USK Metres	Moulded KMT Metres	GMT Metres	Moulded KML Metres	MCT Tonnes Metres/Cm	CB	CP	CM	CW
0.000								
0.250	826.351	826.351	22747.132	2068.259	0.648	0.700	0.926	0.664
0.500	448.698	448.698	12211.998	2269.138	0.662	0.708	0.936	0.697
0.750	311.655	311.655	8423.959	2396.040	0.676	0.715	0.945	0.718
1.000	233.918	233.918	6376.996	2465.894	0.689	0.722	0.955	0.726
1.250	189.771	189.771	5192.773	2543.180	0.698	0.726	0.961	0.737
1.500	160.346	160.346	4392.614	2608.675	0.705	0.731	0.965	0.746
1.750	139.211	139.211	3832.089	2678.613	0.712	0.734	0.969	0.754
2.000	123.182	123.182	3406.597	2742.645	0.717	0.738	0.972	0.762
2.250	110.516	110.516	3069.471	2799.932	0.722	0.741	0.975	0.769
2.500	100.183	100.183	2793.875	2850.488	0.727	0.744	0.977	0.774
2.750	91.532	91.532	2562.970	2894.431	0.732	0.747	0.979	0.779
3.000	84.135	84.135	2365.432	2931.665	0.736	0.750	0.981	0.783
3.250	78.003	78.003	2199.660	2968.599	0.740	0.753	0.983	0.786
3.500	72.771	72.771	2056.984	3003.560	0.743	0.755	0.984	0.790
3.750	68.253	68.253	1932.638	3036.547	0.746	0.758	0.985	0.793
4.000	64.310	64.310	1823.087	3067.563	0.749	0.760	0.986	0.796
4.250	60.836	60.836	1725.651	3096.609	0.752	0.762	0.987	0.799
4.500	57.752	57.752	1638.261	3123.686	0.755	0.764	0.988	0.802
4.750	54.992	54.992	1559.296	3148.795	0.757	0.766	0.988	0.804
5.000	52.506	52.506	1487.467	3171.938	0.760	0.768	0.989	0.806
5.250	50.288	50.288	1422.291	3194.087	0.762	0.770	0.989	0.808
5.500	48.287	48.287	1363.093	3215.943	0.764	0.772	0.990	0.810
5.750	46.473	46.473	1309.066	3237.501	0.766	0.774	0.990	0.812
6.000	44.823	44.823	1259.544	3258.760	0.768	0.775	0.991	0.814
6.250	43.316	43.316	1213.970	3279.714	0.770	0.777	0.991	0.816
6.500	41.934	41.934	1171.874	3300.359	0.772	0.779	0.991	0.818
6.750	40.664	40.664	1132.860	3320.693	0.774	0.780	0.992	0.820
7.000	39.494	39.494	1096.587	3340.710	0.775	0.782	0.992	0.822
7.250	38.418	38.418	1063.108	3361.438	0.777	0.783	0.992	0.824
7.500	37.425	37.425	1031.981	3382.414	0.779	0.784	0.993	0.825
7.750	36.508	36.508	1002.970	3403.629	0.780	0.786	0.993	0.827
8.000	35.659	35.659	975.869	3425.072	0.782	0.787	0.993	0.829
8.250	34.872	34.872	950.497	3446.733	0.783	0.788	0.993	0.831
8.500	34.141	34.141	926.695	3468.601	0.785	0.790	0.993	0.833
8.750	33.462	33.462	904.323	3490.665	0.786	0.791	0.994	0.835
9.000	32.829	32.829	883.255	3512.911	0.787	0.792	0.994	0.837
9.250	32.240	32.240	863.370	3535.278	0.789	0.793	0.994	0.839
9.500	31.689	31.689	844.715	3558.393	0.790	0.795	0.994	0.840
9.750	31.174	31.174	827.190	3582.242	0.791	0.796	0.994	0.842
10.000	30.691	30.691	810.706	3606.809	0.793	0.797	0.994	0.844
10.250	30.239	30.239	795.180	3632.077	0.794	0.798	0.995	0.846
10.500	29.815	29.815	780.540	3658.031	0.795	0.799	0.995	0.849
10.750	29.417	29.417	766.718	3684.652	0.796	0.801	0.995	0.851
11.000	29.044	29.044	753.653	3711.922	0.798	0.802	0.995	0.853
11.250	28.691	28.691	741.429	3740.516	0.799	0.803	0.995	0.855
11.500	28.360	28.360	730.021	3770.651	0.800	0.804	0.995	0.857
11.750	28.048	28.048	719.368	3802.290	0.801	0.805	0.995	0.860
12.000	27.755	27.755	709.414	3835.391	0.803	0.806	0.995	0.862
12.250	27.479	27.479	700.108	3869.910	0.804	0.808	0.995	0.865
12.500	27.220	27.220	691.400	3905.803	0.805	0.809	0.996	0.867
12.750	26.977	26.977	683.324	3943.450	0.806	0.810	0.996	0.870
13.000	26.751	26.751	676.953	3989.422	0.808	0.811	0.996	0.873
13.250	26.533	26.533	670.133	4031.527	0.809	0.812	0.996	0.876
13.500	26.327	26.327	663.483	4073.211	0.810	0.814	0.996	0.879
13.750	26.133	26.133	656.951	4114.225	0.811	0.815	0.996	0.882
14.000	25.950	25.950	651.172	4158.685	0.813	0.816	0.996	0.885
14.250	25.776	25.776	645.400	4202.024	0.814	0.817	0.996	0.887

Draught To USK Metres	Moulded KMT Metres	GMT Metres	Moulded KML Metres	MCT Tonnes Metres/Cm	CB	CP	CM	CW
14.500	25.611	25.611	639.665	4244.442	0.815	0.818	0.996	0.890
14.750	25.454	25.454	633.686	4284.060	0.817	0.820	0.996	0.893
15.000	25.304	25.304	627.172	4318.738	0.818	0.821	0.996	0.895
15.250	25.162	25.162	620.563	4351.283	0.819	0.822	0.996	0.897
15.500	25.029	25.029	614.018	4382.777	0.820	0.823	0.996	0.899
15.750	24.904	24.904	607.538	4413.246	0.822	0.825	0.996	0.901
16.000	24.785	24.785	601.124	4442.714	0.823	0.826	0.997	0.903
16.250	24.674	24.674	594.776	4471.201	0.824	0.827	0.997	0.905
16.500	24.568	24.568	588.493	4498.724	0.825	0.828	0.997	0.907
16.750	24.469	24.469	582.274	4525.299	0.827	0.829	0.997	0.908
17.000	24.375	24.375	576.119	4550.936	0.828	0.831	0.997	0.910
17.250	24.286	24.286	570.026	4575.645	0.829	0.832	0.997	0.911
17.500	24.202	24.202	563.994	4599.430	0.830	0.833	0.997	0.913
17.750	24.122	24.122	558.020	4622.295	0.831	0.834	0.997	0.914
18.000	24.047	24.047	552.102	4644.240	0.833	0.835	0.997	0.916
18.250	23.978	23.978	546.580	4668.127	0.834	0.836	0.997	0.917
18.500	23.914	23.914	541.150	4691.466	0.835	0.837	0.997	0.918
18.750	23.855	23.855	535.807	4714.255	0.836	0.839	0.997	0.920
19.000	23.801	23.801	530.547	4736.493	0.837	0.840	0.997	0.921
19.250	23.752	23.752	525.367	4758.180	0.838	0.841	0.997	0.922
19.500	23.707	23.707	520.265	4779.313	0.839	0.842	0.997	0.923
19.750	23.666	23.666	515.236	4799.892	0.840	0.843	0.997	0.925
20.000	23.629	23.629	510.278	4819.914	0.841	0.844	0.997	0.926
20.250	23.596	23.596	505.388	4839.379	0.842	0.845	0.997	0.927
20.500	23.567	23.567	500.563	4858.284	0.844	0.846	0.997	0.928
20.750	23.541	23.541	495.801	4876.628	0.845	0.847	0.997	0.929
21.000	23.519	23.519	491.100	4894.409	0.846	0.848	0.997	0.930
21.250	23.500	23.500	486.456	4911.623	0.847	0.849	0.997	0.931
21.500	23.484	23.484	481.869	4928.271	0.848	0.850	0.997	0.932
21.750	23.471	23.471	477.334	4944.348	0.848	0.851	0.997	0.932
22.000	23.461	23.461	472.852	4959.853	0.849	0.852	0.997	0.933

## Summary of intact stability and strength calculations for ACP-Max Tanker

Description	Unit	Condition 1	Condition 2	Condition 3
		Lightship cond.	Homo. design load dep. cond	Normal ballast dep. cond.
Lightship weight	[T]	43630,2	43630,2	43630,2
Bunkering	[T]	0,0	6800,0	6800,0
Water ballast	[T]	0,0	0,0	98982,0
Cargo	[T]	0,0	196124,0	0,0
Deadweight	[T]	0,0	202924,0	105782,0
Displacement	[T]	43630,2	246554,2	149412,2
Draught equiv.	[M]	3,045	14,833	9,399
Draught at F.P.	[M]	1,423	14,835	7,752
Draught at A.P.	[M]	4,699	14,831	11,078
Trim*	[M]	3,276	-0,003	3,327
KG	[M]	12,500	13,392	8,315
GMO	[M]	74,578	12,011	24,268
Max B. Moment	[T-M]	458150	85925	815275
Max S. Force	[T]	5156	3012	8795

### IMO Intact Stability Criteria

Area30	[Mrad]	5,399	1,531	3,270
Area40	[Mrad]	7,565	2,378	5,303
Area30-40	[Mrad]	2,166	0,847	2,033
Max GZ 30	[°]	25**	35	40
GZ 0.2	[M]	13,045**	4,892	11,765
GM 0.15	[M]	74,578	12,011	24,268

### Criteria

Area30:	The area under the GZ-curve to 30° not to be less than 0,055 mrad
Area40:	The area under the GZ-curve to 40° not to be less than 0,090 mrad
Area30-40:	The area under the GZ-curve from 30°-40° not to be less than 0,030 mrad
Max GZ 30:	The max value of GZ to occur at an angle equal or greater than 30°
GZ 0,2:	The value of GZ at an angle equal or greater to 30° not to be less than 0,20 m
GM 0,15:	The value of upright GM not to be less than 0,15 m

\* Positive trim bow up, negative trim bow down

\*\* For lightship conditions this is normally the case, however accepted due to ballast capacities

Loading Conditions Data  
 ACP-Max tanker  
Condition 1: Lightship cond.

Item	Weight	LCG	LMom	VCG	VMom	FSM
No1Hold	0.000	0.000	0.00	0.000	0.00	0.000
No2Hold	0.000	0.000	0.00	0.000	0.00	0.000
No3Hold	0.000	0.000	0.00	0.000	0.00	0.000
No4Hold	0.000	0.000	0.00	0.000	0.00	0.000
No5Hold	0.000	0.000	0.00	0.000	0.00	0.000
APtk	0.000	0.000	0.00	0.000	0.00	0.000
LFPtk	0.000	0.000	0.00	0.000	0.00	0.000
UFPtk	0.000	0.000	0.00	0.000	0.00	0.000
HFOtk & Supplies	0.000	0.000	0.00	0.000	0.00	0.000
NO1BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No2BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No3BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No4BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No5BWtk	0.000	0.000	0.00	0.000	0.00	0.000
Deadweight	0.000	0.000	0.00	0.000	0.00	0.000
Lightship	43630.20	-5.115	-223168	12.500	545377	0.000
Displacement	43630.20	-5.115	-223168	12.500	545377	0.000

Draught   Aft   4.699 Metres  
               Mid   3.045 Metres  
               Fwd   1.423 Metres  
 Trim               3.276 Metres by the stern

GM       Solid 74.578 Metres  
           Fluid 74.578 Metres  
 Effective VCG 12.500 Metres

Draught   LCF   2.935 Metres  
 Moulded Disp. 43630.200 Tonnes

Free Trimming Stability Data  
 ACP-Max Tanker  
 Lightship cond.

Displacement 43630.00 Tonnes  
 Longitudinal Centre of Gravity -5.115 Metres  
 Vertical Centre of Gravity 12.500 Metres  
 Transverse Centre of Gravity 0.000 Metres  
 GM 74.592 Metres

Shiplength 366.000  
 Rollcentre 11.500  
 Specific Gravity of Water 1.0250

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	GZ Curve Area M.Rad
0.0	0.000	0.000	3.045	3.306	1.601
5.0	6.338	7.428	3.037	3.309	1.916
10.0	10.442	12.612	2.803	3.849	2.559
15.0	12.186	15.421	2.232	4.619	3.161
20.0	12.884	17.159	1.453	5.480	3.720
25.0	13.045	18.328	0.558	6.315	4.267
30.0	12.864	19.114	-0.403	7.029	4.812
35.0	12.445	19.615	-1.404	7.562	5.386
40.0	11.817	19.852	-2.428	7.861	5.954
45.0	11.038	19.876	-3.457	7.970	6.539
50.0	10.172	19.747	-4.472	7.942	7.192
55.0	9.163	19.403	-5.441	7.915	7.829
60.0	8.043	18.868	-6.337	7.948	8.476
65.0	6.811	18.140	-7.134	8.045	9.111
70.0	5.471	17.217	-7.809	8.108	9.720
75.0	4.032	16.107	-8.343	8.082	10.293
80.0	2.526	14.836	-8.732	7.976	10.844
85.0	0.978	13.430	-8.973	7.785	11.381
90.0	-0.591	11.909	-9.063	7.518	11.909

Criteria	Result
The area under the GZ-curve to 30° not to be less than 0.055 mrad	5.399 mrad
The area under the GZ-curve to 40° not to be less than 0.090 mrad	7.565 mrad
The area under the GZ-curve from 30°-40° not to be less than 0.030 mrad	2.166 mrad
The max value of GZ to occur at an angle equal or greater than 30°	25° *
The value of GZ at an angle equal or greater to 30° not to be less than 0.20 m	13.045 m at 25° *
The value of upright GM not to be less than 0.15 m	74.578 m

\* For lightship conditions this is normally the case, however accepted due to ballast capacities



Longitudinal Strength Data  
 ACP-Max tanker  
 Condition 1: Lightship cond.

Item	Weight	LCG	LMom	VCG	Vmom	FSM
No1Hold	0.000	0.000	0.00	0.000	0.00	0.000
No2Hold	0.000	0.000	0.00	0.000	0.00	0.000
No3Hold	0.000	0.000	0.00	0.000	0.00	0.000
No4Hold	0.000	0.000	0.00	0.000	0.00	0.000
No5Hold	0.000	0.000	0.00	0.000	0.00	0.000
APtk	0.000	0.000	0.00	0.000	0.00	0.000
LFPtk	0.000	0.000	0.00	0.000	0.00	0.000
UFPTk	0.000	0.000	0.00	0.000	0.00	0.000
HFOTks & Supplies	0.000	0.000	0.00	0.000	0.00	0.000
NO1BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No2BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No3BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No4BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No5BWtk	0.000	0.000	0.00	0.000	0.00	0.000
Deadweight	0.000	0.000	0.00	0.000	0.00	0.000
Lightship	43630	-5.115	-223168	12.500	545377	0.000
Displacement	43630	-5.115	-223168	12.500	545377	0.000

Draught 3.045 Metres

Trim 3.308 Metres by the stern

S.G. of Water 1.0250  
 Shell Thick. 0.0000 Metres

GM Solid 74.579 Metres  
 Fluid 74.579 Metres  
 Effective VCG 12.500 Metres

Draught LCF 2.935 Metres  
 Moulded Disp. 43636.295 Tonnes

Long. Position Metres	Shear Force Tonnes	Bending Moment Tonne.M
-183.000	0.000	0.000
-176.550	0.107	2298.394
-176.500	1.667	2316.253
-173.000	248.813	4001.596
-171.500	354.733	4988.685
-168.050	632.716	7921.222
-168.000	635.098	7970.732
-167.400	669.295	8575.822
-163.000	1051.165	13928.495
-160.700	1240.512	17383.384
-155.500	1719.699	26932.624
-153.000	2152.899	32664.088
-144.500	3536.134	59870.919
-143.000	3832.710	65931.981
-141.500	4123.324	72433.437
-135.400	4764.174	101713.655
-134.800	4801.636	104797.170
-134.765	4803.786	104977.735

-133.000	4933.718	114199.928
-130.500	5100.959	127633.992
-125.500	5141.979	155022.770
-125.435	5143.589	155380.209
-123.000	5157.759	168789.658
-113.000	4981.831	223050.478
-103.000	4595.197	274498.485
-93.000	4063.164	321353.153
-83.000	3385.731	362160.492
-73.000	2562.900	395466.515
-68.500	2145.190	407663.007
-63.000	1769.043	420386.724
-53.000	1148.442	438537.016
-43.000	562.101	450652.599
-33.000	10.020	457076.074
-23.000	-507.800	458150.041
-13.000	-991.361	454217.101
-10.500	-1106.898	452484.993
-3.000	-1329.468	446020.770
-0.500	-1396.754	443503.708
-0.005	-1416.617	442983.760
0.005	-1417.017	442973.155
7.000	-1683.948	434619.756
17.000	-2021.061	419657.581
27.000	-2305.818	401586.051
37.000	-2538.221	380928.721
47.000	-2718.268	358209.144
57.000	-2996.126	333200.038
67.000	-3212.080	305721.874
68.400	-3233.230	301708.959
77.000	-3534.389	275672.265
87.000	-3778.712	242669.627
97.000	-3909.206	207792.905
107.000	-3925.869	172180.395
117.000	-3828.704	136970.395
127.000	-3617.708	103301.201
137.000	-3292.883	72311.112
147.000	-2854.228	45138.423
157.000	-2301.743	22921.431
167.000	-1575.264	7099.259
167.300	-1546.181	6737.929
173.200	-1140.459	914.433
173.500	-1096.914	685.713
176.500	-694.397	-932.394
177.000	-618.295	-1082.424
178.200	-435.576	-1287.203
178.500	-411.481	-1307.375
179.500	-122.708	-1218.183
179.700	-64.966	-1165.693
183.300	0.000	-0.000

Loading Conditions Data continued

ACP-Max tanker

Condition 2: Homo. design load dep. cond.

Item	Weight	LCG	LMom	VCG	VMom	FSM
No1Hold	34799.00	132.80	4621307	13.500	469787	0.000
No2Hold	41844.00	78.100	3268016	13.500	564894	0.000
No3Hold	41844.00	20.500	857802	13.500	564894	0.000
No4Hold	41844.00	-37.100	-1552412	13.500	564894	0.000
No5Hold	35793.00	-92.300	-3303694	13.500	483205	0.000
APtk	0.000	-171.00	0.00	13.000	0.00	0.000
LFPtk	0.000	0.000	0.00	0.000	0.00	0.000
UFPtk	0.000	0.000	0.00	0.000	0.00	0.000
HFOtks & Supplies	6800.000	-137.00	-931600	16.000	108800	0.000
NO1BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No2BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No3BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No4BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No5BWtk	0.000	0.000	0.00	0.000	0.00	0.000
Deadweight	202924.0	14.584	2959419	13.584	2756474	0.000
Lightship	43630.20	-5.115	-223168	12.500	545377	0.000
Displacement	246554.2	11.098	2736251	13.392	3301852	0.000

Draught   Aft   14.831 Metres  
           Mid   14.833 Metres  
           Fwd   14.835 Metres  
 Trim           0.003 Metres by the bow

GM       Solid   12.011 Metres  
           Fluid   12.011 Metres  
 Effective VCG   13.392 Metres

Draught   LCF   14.833 Metres  
 Moulded Disp.246554.200 Tonnes

Free Trimming Stability Data continued  
 ACP-Max Tanker  
 Homo. Design load dep. cond.

Displacement	246554.00	Tonnes
Longitudinal Centre of Gravity	11.098	Metres
Vertical Centre of Gravity	13.392	Metres
Transverse Centre of Gravity	0.000	Metres
GM	12.011	Metres
Shiplength	366.000	
Rollcentre	11.500	
Specific Gravity of Water	1.0250	

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	GZ Curve Area M.Rad
0.0	0.000	0.000	14.833	-0.002	7.671	0.000
5.0	1.052	2.219	14.811	-0.053	7.748	0.046
10.0	2.120	4.446	14.744	-0.202	7.946	0.184
15.0	3.223	6.689	14.636	-0.446	8.298	0.418
20.0	4.064	8.644	14.649	-0.844	8.713	0.738
25.0	4.586	10.246	14.847	-1.316	9.132	1.117
30.0	4.861	11.557	15.174	-1.871	9.541	1.531
35.0	4.892	12.573	15.545	-2.461	9.908	1.959
40.0	4.700	13.309	15.904	-3.028	10.209	2.378
45.0	4.344	13.813	16.238	-3.547	10.457	2.774
50.0	3.872	14.131	16.543	-4.022	10.667	3.133
55.0	3.316	14.286	16.814	-4.457	10.850	3.447
60.0	2.697	14.295	17.049	-4.852	11.012	3.710
65.0	2.032	14.169	17.246	-5.205	11.161	3.917
70.0	1.333	13.917	17.403	-5.513	11.298	4.064
75.0	0.611	13.547	17.518	-5.776	11.428	4.149
80.0	-0.123	13.065	17.592	-5.993	11.553	4.170
85.0	-0.862	12.479	17.623	-6.161	11.675	4.127
90.0	-1.595	11.797	17.611	-6.277	11.797	4.020

Criteria	Result
The area under the GZ-curve to 30° not to be less than 0.055 mrad	1.531 mrad
The area under the GZ-curve to 40° not to be less than 0.090 mrad	2.378 mrad
The area under the GZ-curve from 30°-40° not to be less than 0.030 mrad	0.847 mrad
The max value of GZ to occur at an angle equal or greater than 30°	35°
The value of GZ at an angle equal or greater than 30° not to be less than 0.20 m	4.892 m at 35°
The value of upright GM not to be less than 0.15 m	12.011 m

Longitudinal Strength Data continued  
Condition 2: Homo. design load dep. cond.

Item	Weight	LCG	LMom	VCG	Vmom	FSM
No1Hold	34799	132.80	4621307	13.500	469787	0.000
No2Hold	41844	78.100	3268016	13.500	564894	0.000
No3Hold	41844	20.500	857802	13.500	564894	0.000
No4Hold	41844	-37.100	-1552412	13.500	564894	0.000
No5Hold	35793	-92.300	-3303694	13.500	483205	0.000
APtk	0.000	-171.00	0.00	13.000	0.00	0.000
LFPtk	0.000	0.000	0.00	0.000	0.00	0.000
UFPtk	0.000	0.000	0.00	0.000	0.00	0.000
HFOtks & Supplies	6800.0	-137.00	-931600	16.000	108800	0.000
NO1BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No2BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No3BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No4BWtk	0.000	0.000	0.00	0.000	0.00	0.000
No5BWtk	0.000	0.000	0.00	0.000	0.00	0.000
Deadweight	202924	14.584	2959419	13.584	2756474	0.000
Lightship	43630	-5.115	-223168	12.500	545377	0.000
Displacement	246554	11.098	2736251	13.392	3301852	0.000

Draught 14.833 Metres  
Trim 0.003 Metres by the bow

S.G. of Water 1.0250  
Shell Thick. 0.0000 Metres

GM Solid 12.011 Metres  
Fluid 12.011 Metres  
Effective VCG 13.392 Metres

Draught LCF 14.833 Metres  
Moulded Disp. 246554.055 Tonnes

Long. Position Metres	Shear Force Tonnes	Bending Moment Tonne.M
-183.000	0.000	0.000
-180.750	-3.967	761.796
-176.550	-29.523	2121.817
-176.500	-28.410	2137.397
-173.000	171.856	3580.384
-171.500	249.336	4407.117
-168.050	457.510	6801.356
-168.000	458.388	6841.282
-167.400	472.914	7325.008
-163.000	618.581	11224.759
-161.250	624.365	12908.316
-160.700	620.053	13437.838
-155.500	497.202	18113.609
-153.000	518.325	20234.416
-145.500	80.725	25035.045
-144.500	363.169	25597.551
-143.000	830.650	27003.755
-141.500	1267.135	29087.933
-135.400	2240.905	41864.867
-134.800	2289.073	43428.196

-134.765	2291.755	43520.280
-133.000	2435.112	48292.828
-130.500	2576.535	55408.785
-128.500	2543.899	61210.337
-125.500	1208.241	67860.226
-125.435	1179.746	67959.972
-123.000	40.526	70274.914
-118.700	-2138.639	67228.377
-113.000	-1457.783	58919.763
-103.000	-574.005	52166.412
-93.000	-86.030	52271.831
-83.000	6.144	55277.996
-73.000	-297.485	57226.884
-68.500	-563.248	56822.751
-65.900	-688.333	56081.150
-63.000	-644.045	55136.824
-53.000	-503.746	52803.462
-43.000	-382.702	51776.817
-33.000	-280.911	51864.346
-23.000	-198.375	52873.507
-13.000	-135.093	54611.758
-10.500	-122.281	55141.438
-8.300	-81.202	55666.837
-3.000	20.146	57310.003
-0.500	67.948	58271.519
-0.005	70.485	58474.358
0.005	70.536	58478.469
7.000	106.370	61479.411
17.000	157.563	66204.670
27.000	208.713	71441.641
37.000	259.820	77189.900
47.000	310.886	83449.023
49.300	322.625	84960.846
57.000	-753.306	85925.027
67.000	-1773.691	76695.633
68.400	-1882.557	74613.042
77.000	-2588.353	58316.936
87.000	-3012.952	33716.002
97.000	-3011.643	6998.620
104.000	-2757.312	-10808.807
106.900	-838.774	-15035.510
107.000	-844.624	-15085.624
117.000	-1214.590	-21976.105
127.000	-1158.649	-30436.708
137.000	-676.799	-36208.356
147.000	230.958	-35031.972
157.000	1564.622	-22648.480
161.600	2321.128	-12144.683
167.000	511.260	-2658.215
167.300	451.125	-2411.689
173.200	-505.832	-563.775
173.500	-511.646	-614.229
176.500	-490.942	-1096.434
177.000	-459.440	-1163.750
178.200	-366.297	-1250.521
178.500	-360.742	-1257.409
179.500	-122.644	-1158.543
179.700	-64.904	-1109.186
183.300	0.000	0.000

Loading Conditions Data continued  
 ACP-Max tanker  
Condition 3: Normal ballast dep. cond.

Item	Weight	LCG	LMom	VCG	VMom	FSM
No1Hold	0.000	0.000	0.00	0.000	0.00	0.000
No2Hold	0.000	0.000	0.00	0.000	0.00	0.000
No3Hold	0.000	0.000	0.00	0.000	0.00	0.000
No4Hold	0.000	0.000	0.00	0.000	0.00	0.000
No5Hold	0.000	0.000	0.00	0.000	0.00	0.000
APtk	0.000	-171.08	0.00	15.930	0.00	0.000
LFPtk	835.000	169.60	141616	3.830	3198.0	0.000
UFPtk	2811.000	170.00	477870	11.700	32889	0.000
HFOtk & Supplies	6800.000	-137.00	-931600	16.000	108800	0.000
NO1BWtk	17467.00	134.10	2342325	6.500	113536	0.000
No2BWtk	19155.00	78.100	1496005	5.000	95775	0.000
No3BWtk	19171.00	20.500	393006	5.000	95855	0.000
No4BWtk	19036.00	-37.000	-704332	5.000	95180	0.000
No5BWtk	20507.00	-97.900	-2007635	7.400	151752	0.000
Deadweight	105782.0	11.413	1207254	6.589	696984	0.000
Lightship	43630.20	-5.115	-223168	12.500	545377	0.000
Displacement	149412.2	6.586	984086	8.315	1242362	0.000

Draught   Aft   11.078 Metres  
           Mid    9.399 Metres  
           Fwd    7.752 Metres  
 Trim           3.327 Metres by the stern

GM       Solid  24.268 Metres  
           Fluid  24.268 Metres  
 Effective VCG   8.315 Metres

Draught   LCF    9.318 Metres  
 Moulded Disp. 149412.200 Tonnes

Free Trimming Stability Data continued  
 ACP-Max Tanker  
 Normal ballast dep. cond.

Displacement	149412.00	Tonnes
Longitudinal Centre of Gravity	6.586	Metres
Vertical Centre of Gravity	8.315	Metres
Transverse Centre of Gravity	0.000	Metres
GM	24.268	Metres

Shiplength	366.000
Rollcentre	11.500
Specific Gravity of Water	1.0250

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	GZ Curve Area M.Rad
0.0	0.000	0.000	9.399	3.359	4.829	0.000
5.0	2.123	2.847	9.392	3.270	4.935	0.093
10.0	4.276	5.720	9.374	3.014	5.257	0.371
15.0	6.480	8.632	9.340	2.620	5.822	0.841
20.0	8.594	11.438	9.248	2.194	6.569	1.500
25.0	10.247	13.761	8.971	1.888	7.379	2.326
30.0	11.277	15.434	8.579	1.707	8.104	3.270
35.0	11.714	16.484	8.193	1.533	8.676	4.277
40.0	11.765	17.110	7.823	1.378	9.143	5.303
45.0	11.553	17.433	7.466	1.293	9.546	6.322
50.0	11.132	17.501	7.137	1.220	9.897	7.313
55.0	10.544	17.355	6.836	1.160	10.211	8.260
60.0	9.818	17.019	6.566	1.113	10.498	9.150
65.0	8.974	16.510	6.325	1.049	10.761	9.970
70.0	8.030	15.843	6.115	0.965	11.004	10.713
75.0	6.999	15.031	5.941	0.864	11.230	11.369
80.0	5.897	14.085	5.805	0.748	11.445	11.932
85.0	4.738	13.021	5.708	0.613	11.650	12.397
90.0	3.536	11.851	5.651	0.473	11.851	12.758

Criteria	Result
The area under the GZ-curve to 30° not to be less than 0.055 mrad	3.270 mrad
The area under the GZ-curve to 40° not to be less than 0.090 mrad	5.303 mrad
The area under the GZ-curve from 30°-40° not to be less than 0.030 mrad	2.033 mrad
The max value of GZ to occur at an angle equal or greater than 30°	40°
The value of GZ at an angle equal or greater than 30° not to be less than 0.20 m	11.765 m at 40°
The value of upright GM not to be less than 0.15 m	24.268 m



Longitudinal Strength Data continued  
 Condition 3: Normal ballast dep. cond.

Item	Weight	LCG	LMom	VCG	Vmom	FSM
No1Hold	0.000	0.000	0.00	0.000	0.00	0.000
No2Hold	0.000	0.000	0.00	0.000	0.00	0.000
No3Hold	0.000	0.000	0.00	0.000	0.00	0.000
No4Hold	0.000	0.000	0.00	0.000	0.00	0.000
No5Hold	0.000	0.000	0.00	0.000	0.00	0.000
APtk	0.000	-171.08	0.00	15.930	0.00	0.000
LFPtk	835.0	169.60	141616	3.830	3198.0	0.000
UFPtk	2811.0	170.00	477870	11.700	32889	0.000
HF0tk & Supplies	6800.0	-137.00	-931600	16.000	108800	0.000
NO1BWtk	17467	134.10	2342325	6.500	113536	0.000
No2BWtk	19155	78.100	1496005	5.000	95775	0.000
No3BWtk	19171	20.500	393006	5.000	95855	0.000
No4BWtk	19036	-37.000	-704332	5.000	95180	0.000
No5BWtk	20507	-97.900	-2007635	7.400	151752	0.000
Deadweight	105782	11.413	1207254	6.589	696984	0.000
Lightship	43630	-5.115	-223168	12.500	545377	0.000
Displacement	149412	6.586	984086	8.315	1242362	0.000

Draught 9.399 Metres  
 Trim 3.359 Metres by the stern

S.G. of Water 1.0250  
 Shell Thick. 0.0000 Metres

GM Solid 24.268 Metres  
 Fluid 24.268 Metres  
 Effective VCG 8.315 Metres

Draught LCF 9.318 Metres  
 Moulded Disp. 149412.477 Tonnes

Long. Position Metres	Shear Force Tonnes	Bending Moment Tonne.M
-183.000	0.000	0.000
-178.980	0.003	1433.944
-176.550	0.005	2300.737
-176.500	1.564	2318.611
-173.000	248.654	4004.946
-171.500	354.550	4992.400
-168.050	648.997	7954.137
-168.000	651.519	8004.485
-167.400	686.782	8619.996
-163.180	1029.077	13745.738
-163.000	1041.906	13996.332
-160.700	1193.059	17386.954
-155.500	1513.392	26278.573
-153.000	1801.911	31314.455
-145.500	2344.398	49538.372
-144.500	2776.684	52455.614
-143.000	3476.321	57680.419
-141.500	4153.837	63938.089
-135.400	6199.996	97693.154
-134.800	6361.325	101675.571

-134.765	6370.639	101910.865
-133.000	6852.838	114210.160
-130.500	7488.995	133029.204
-129.100	7755.629	144199.823
-128.500	8061.812	149159.076
-125.500	8345.275	174839.809
-125.435	8352.137	175405.660
-123.000	8545.897	196847.583
-113.000	8795.860	287123.374
-103.000	8617.044	377754.903
-93.000	8132.141	465067.841
-83.000	7341.150	546001.306
-73.000	6244.071	617494.420
-68.500	5650.524	645862.412
-66.700	5440.750	656486.621
-65.800	5038.242	661523.198
-63.000	4755.899	676233.758
-53.000	3769.180	722426.161
-43.000	2816.287	758920.501
-33.000	1897.220	786055.045
-23.000	1011.980	804168.057
-13.000	160.567	813597.803
-10.500	-47.001	814631.512
-8.300	-197.112	815147.730
-8.200	-170.546	815165.018
-3.000	-500.336	815275.570
-0.500	-653.784	814724.672
-0.005	-690.701	814568.479
0.005	-691.446	814565.135
7.000	-1199.206	810447.705
17.000	-1880.026	798618.556
27.000	-2507.808	780246.395
37.000	-3082.552	755861.605
47.000	-3604.257	725994.571
49.300	-3716.747	718395.828
57.000	-4712.398	688690.219
67.000	-5740.528	639992.601
68.400	-5860.578	632371.208
77.000	-6689.496	581473.517
87.000	-7374.961	514718.245
97.000	-7761.078	442605.062
105.300	-7854.216	380762.212
106.900	-7363.267	369158.947
107.000	-7365.584	368458.175
117.000	-7446.062	297966.959
127.000	-7227.192	228167.702
137.000	-6708.975	162053.879
147.000	-5891.410	102618.964
157.000	-4774.498	52856.432
160.720	-4282.616	37337.128
161.120	-4208.452	35781.595
162.900	-3590.884	29475.114
167.000	-3116.260	17187.943
167.300	-3064.035	16367.909
173.200	-2027.308	3452.983
173.500	-1942.735	2964.487
176.500	-1081.973	-502.471
177.000	-921.698	-825.038
178.200	-529.163	-1267.514
178.480	-456.131	-1305.578
178.500	-451.831	-1307.524

178.880	-290.361	-1312.994
179.500	-122.648	-1219.873
179.700	-64.909	-1167.288
183.300	0.000	0.000

## Summary of damage stability calculations for ACP-Max Tanker

All damage stability conditions calculated for Homo. des. load dep.  
Compartment division in damage stability calculations was not modelled exactly.

Intact ship data		Homo. design load dep. cond
Displacement	[T]	246554,0
Draught equiv.	[M]	14,833
KG	[M]	13,392
GM0	[M]	12,011

### Survival requirements as per MARPOL 73/78, Annex 1, Regulation 25

Water line:	The final water line shall be below margin points allowing progressive flooding
Heel 25:	The angle of heel due to unsymmetrical flooding shall not exceed 25°
Min GZ 20 *:	The GZ curve shall after flooding have a range of 20° beyond equilibrium heel angle
Min GZ 0.1:	The min GZ within the 20° range mentioned above shall be at least 0.10 m
Min 0.0175:	The min area within the 20° range mentioned above shall be at least 0.0175 mrad

\* Result presented as estimated stability width

Damages	Damage 1	Damage 2	Damage 3	Damage 4	Damage 5
Flooded comp.	No.1 W.B.TK (S)	No.2 W.B.TK (S)	No.3 W.B.TK (S)	No.4 W.B.TK (S)	No.5 W.B.TK (S)
Flooded comp.	No.1 S.C.O TK. (S)	No.2 S.C.O TK. (S)	No.3 S.C.O TK. (S)	No.4 S.C.O TK. (S)	No.5 S.C.O TK. (S)

### Survival requirements

Criteria	Damage 1	Damage 2	Damage 3	Damage 4	Damage 5
Water line:	Ok	Ok	Ok	Ok	Ok
Heel 25 [°]:	5,55	6,65	6,30	6,21	4,64
Min GZ 20 [°]:	70	70	70	70	70
Min GZ 0.1 [M]:	2,40	2,16	2,28	2,35	2,72
Min 0.0175:	Ok	Ok	Ok	Ok	Ok

Continuation:

Damages	Damage 6	Damage 7	Damage 8	Damage 9	Damage 10
Flooded comp.	No.1 H.F.O. TK (S)	No.1 W.B.TK (S)	No.2 W.B.TK (S)	No.3 W.B.TK (S)	No.4 W.B.TK (S)
Flooded comp.	No.1 H.F.O. TK (S)	No.1 S.C.O TK. (S)	No.2 S.C.O TK. (S)	No.3 S.C.O TK. (S)	No.4 S.C.O TK. (S)
Flooded comp.	No.2 H.F.O. TK (P)	No.2 W.B.TK (S)	No.3 W.B.TK (S)	No.4 W.B.TK (S)	No.5 W.B.TK (S)
Flooded comp.	No.2 H.F.O. TK (P)	No.2 S.C.O TK. (S)	No.3 S.C.O TK. (S)	No.4 S.C.O TK. (S)	No.5 S.C.O TK. (S)
Flooded comp.	Engine Room				
Flooded comp.	Slop TK. (S)				
Flooded comp.	Slop TK. (P)				

### Survival requirements

Criteria	Damage 6	Damage 7	Damage 8	Damage 9	Damage 10
Water line:	Ok	Ok	Ok	Ok	Ok
Heel 25 [°]:	0,00	17,85	17,83	15,59	13,15
Min GZ 20 [°]:	75	40	40	50	55
Min GZ 0.1 [M]:	3,60	0,65	0,72	0,90	1,35
Min 0.0175 [Mrad]:	Ok	Ok	Ok	Ok	Ok

Continuation:

**Damages**

Flooded comp.

**Damage 11**

No.5 W.B.TK (S)  
No.5 S.C.O TK. (S)  
No.1 H.F.O. TK (S)  
No.1 H.F.O. TK (S)  
No.2 H.F.O. TK (P)  
No.2 H.F.O. TK (P)  
Engine Room  
Slop TK. (S)  
Slop TK. (P)

**Survival requirements**

**Criteria**

**Damage 11**

Water line:	Ok
Heel 25 [°]:	6,28
Min GZ 20 [°]:	65
Min GZ 0.1 [M]:	1,867
Min 0.0175 [Mrad]:	Ok

Damage Stability Data  
ACP-Max tanker

Damage 1: Hold 1 Starboard S.C.O. Tk. flooded

Homo. des. load dep.

Displacement	246554.00	Tonnes
Longitudinal Centre of Gravity	11.098	Metres
Vertical Centre of Gravity	13.392	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	5.55	Degrees
Equilibrium GM	11.022	Metres
Longitudinal KM	550.299	Metres
Equilibrium Draught	15.689	Metres
Equilibrium Trim	-5.175	Metres
Shiplength	366.000	Metres
Rollcentre	14.850	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	-1.057	-1.057	15.610	-4.545	8.092 14039.854
10.00	0.869	3.195	15.721	-5.692	8.340 17263.893
20.00	2.395	6.975	16.025	-7.538	8.963 18650.703
30.00	2.987	9.683	16.992	-9.722	9.634 18687.682
40.00	2.929	11.537	18.355	-12.321	10.228 18687.682
50.00	2.378	12.637	19.741	-14.961	10.678 18687.682
60.00	1.538	13.136	21.011	-17.190	11.024 18687.682
70.00	0.541	13.125	22.118	-18.886	11.306 18687.682
80.00	-0.526	12.663	23.029	-19.993	11.556 18687.682
90.00	-1.599	11.793	23.718	-20.463	11.793 18687.682

Criteria	Result
The final water line shall be below margin points allowing progressive flooding	Ok
The angle of heel due to unsymmetrical flooding shall not exceed 25°	5,55°
The GZ curve shall after flooding have a range of 20° beyond equilibrium heel angle	70°
The min GZ within the 20° range mentioned above shall be at least 0.10 m	2,40 m
The min area within the 20° range mentioned above shall be at least 0.0175 mrad	Ok

Damage Stability Data continued  
ACP-Max tanker

Damage 2: Hold 2 Starboard S.C.O. Tk. flooded

Homo. des. load dep.

Displacement	246554.00	Tonnes
Longitudinal Centre of Gravity	11.098	Metres
Vertical Centre of Gravity	13.392	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	6.65	Degrees
Equilibrium GM	11.050	Metres
Longitudinal KM	603.731	Metres
Equilibrium Draught	15.823	Metres
Equilibrium Trim	-3.533	Metres
Shiplength	366.000	Metres
Rollcentre	14.850	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	-1.260	-1.260	15.712	-2.997	8.153 15678.633
10.00	0.654	2.980	15.854	-3.808	8.398 19305.864
20.00	2.160	6.740	16.198	-5.311	9.009 21426.331
30.00	2.756	9.452	17.195	-7.119	9.672 21611.183
40.00	2.744	11.353	18.593	-9.309	10.273 21611.183
50.00	2.235	12.494	20.007	-11.480	10.724 21611.183
60.00	1.436	13.033	21.293	-13.284	11.066 21611.183
70.00	0.485	13.069	22.399	-14.648	11.349 21611.183
80.00	-0.535	12.654	23.296	-15.573	11.597 21611.183
90.00	-1.561	11.831	23.960	-16.025	11.831 21611.183

Criteria	Result
The final water line shall be below margin points allowing progressive flooding	Ok
The angle of heel due to unsymmetrical flooding shall not exceed 25°	6,65°
The GZ curve shall after flooding have a range of 20° beyond equilibrium heel angle	70°
The min GZ within the 20° range metioned above shall be at least 0.10 m	2,16 m
The min area within the 20° range metioned above shall be at least 0.0175 mrad	Ok

Damage Stability Data continued  
ACP-Max tanker

Damage 3: Hold 3 Starboard S.C.O. Tk. flooded

Homo. des. load dep.

Displacement	246554.00	Tonnes
Longitudinal Centre of Gravity	11.098	Metres
Vertical Centre of Gravity	13.392	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	6.30	Degrees
Equilibrium GM	11.192	Metres
Longitudinal KM	641.160	Metres
Equilibrium Draught	15.787	Metres
Equilibrium Trim	-0.946	Metres
Shiplength	366.000	Metres
Rollcentre	14.850	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre^3
0.00	-1.213	-1.213	15.683	-0.761	8.128 15088.525
10.00	0.732	3.058	15.825	-1.086	8.384 18555.445
20.00	2.283	6.864	16.174	-1.877	9.006 21119.725
30.00	2.892	9.588	17.191	-3.038	9.679 21625.057
40.00	2.894	11.502	18.588	-4.482	10.295 21625.057
50.00	2.364	12.623	19.983	-5.807	10.745 21625.057
60.00	1.539	13.137	21.243	-6.887	11.085 21625.057
70.00	0.559	13.144	22.322	-7.723	11.365 21625.057
80.00	-0.489	12.699	23.185	-8.302	11.613 21625.057
90.00	-1.544	11.848	23.811	-8.624	11.848 21625.057

Criteria	Result
The final water line shall be below margin points allowing progressive flooding	Ok
The angle of heel due to unsymmetrical flooding shall not exceed 25°	6,30°
The GZ curve shall after flooding have a range of 20° beyond equilibrium heel angle	70°
The min GZ within the 20° range metioned above shall be at least 0.10 m	2,28 m
The min area within the 20° range metioned above shall be at least 0.0175 mrad	Ok



Damage Stability Data continued  
ACP-Max tanker

Damage 4: Hold 4 Starboard S.C.O. Tk. flooded

Homo. des. load dep.

Displacement	246554.00	Tonnes
Longitudinal Centre of Gravity	11.098	Metres
Vertical Centre of Gravity	13.392	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	6.21	Degrees
Equilibrium GM	11.307	Metres
Longitudinal KM	645.876	Metres
Equilibrium Draught	15.778	Metres
Equilibrium Trim	1.431	Metres
Shiplength	366.000	Metres
Rollcentre	14.850	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	-1.205	-1.205	15.673	1.304	8.124 15041.434
10.00	0.758	3.084	15.822	1.445	8.381 18513.268
20.00	2.346	6.926	16.186	1.367	9.013 21014.282
30.00	2.985	9.681	17.221	0.887	9.701 21501.985
40.00	2.986	11.594	18.623	0.241	10.319 21501.985
50.00	2.440	12.699	20.008	-0.285	10.764 21501.985
60.00	1.599	13.197	21.262	-0.738	11.101 21501.985
70.00	0.605	13.190	22.335	-1.151	11.380 21501.985
80.00	-0.459	12.730	23.195	-1.521	11.628 21501.985
90.00	-1.529	11.863	23.815	-1.846	11.863 21501.985

Criteria	Result
The final water line shall be below margin points allowing progressive flooding	Ok
The angle of heel due to unsymmetrical flooding shall not exceed 25°	6,21°
The GZ curve shall after flooding have a range of 20° beyond equilibrium heel angle	70°
The min GZ within the 20° range metioned above shall be at least 0.10 m	2,35 m
The min area within the 20° range metioned above shall be at least 0.0175 mrad	Ok

Damage Stability Data continued  
ACP-Max tanker

Damage 5: Hold 5 Starboard S.C.O. Tk. flooded

Homo. des. load dep.

Displacement	246554.00	Tonnes
Longitudinal Centre of Gravity	11.098	Metres
Vertical Centre of Gravity	13.392	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	4.64	Degrees
Equilibrium GM	11.222	Metres
Longitudinal KM	623.692	Metres
Equilibrium Draught	15.564	Metres
Equilibrium Trim	2.834	Metres
Shiplength	366.000	Metres
Rollcentre	14.850	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	-0.901	-0.901	15.488	2.543	7.999 11853.343
10.00	1.069	3.394	15.627	3.055	8.255 15054.086
20.00	2.724	7.304	15.958	3.378	8.915 17100.717
30.00	3.403	10.099	16.962	3.251	9.639 17395.333
40.00	3.355	11.963	18.307	3.098	10.264 17395.333
50.00	2.735	12.994	19.630	3.045	10.708 17395.333
60.00	1.815	13.412	20.835	2.951	11.045 17395.333
70.00	0.734	13.318	21.876	2.781	11.325 17395.333
80.00	-0.420	12.769	22.717	2.532	11.574 17395.333
90.00	-1.582	11.810	23.332	2.210	11.810 17395.333

Criteria	Result
The final water line shall be below margin points allowing progressive flooding	Ok
The angle of heel due to unsymmetrical flooding shall not exceed 25°	4,64°
The GZ curve shall after flooding have a range of 20° beyond equilibrium heel angle	70°
The min GZ within the 20° range metioned above shall be at least 0.10 m	2,72 m
The min area within the 20° range metioned above shall be at least 0.0175 mrad	Ok

Damage Stability Data continued  
ACP-Max tanker

Damage 6: E/R and S/Tks flooded

Homo. des. load dep.

Displacement	246554.00	Tonnes
Longitudinal Centre of Gravity	11.098	Metres
Vertical Centre of Gravity	13.392	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.478	Metres
Longitudinal KM	522.384	Metres
Equilibrium Draught	15.861	Metres
Equilibrium Trim	6.063	Metres
Shiplength	366.000	Metres
Rollcentre	14.850	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	15.861	6.063	8.082 19033.631
10.00	2.031	4.357	15.837	5.917	8.340 19107.724
20.00	3.601	8.182	16.161	6.360	8.988 19492.659
30.00	4.135	10.831	17.276	7.094	9.672 20222.163
40.00	3.927	12.535	18.757	8.158	10.250 20988.705
50.00	3.170	13.429	20.223	9.288	10.664 21597.847
60.00	2.116	13.714	21.564	10.241	10.981 22074.139
70.00	0.899	13.483	22.724	10.924	11.244 22467.566
80.00	-0.395	12.794	23.666	11.323	11.476 22814.376
90.00	-1.699	11.693	24.357	11.405	11.694 23127.681

Criteria	Result
The final water line shall be below margin points allowing progressive flooding	Ok
The angle of heel due to unsymmetrical flooding shall not exceed 25°	0,00°
The GZ curve shall after flooding have a range of 20° beyond equilibrium heel angle	75°
The min GZ within the 20° range metioned above shall be at least 0.10 m	3,60 m
The min area within the 20° range metioned above shall be at least 0.0175 mrad	Ok

-163.000	507.846	5672.003
-155.500	119.776	8293.141
-155.300	131.562	8325.410
-153.000	36.918	8601.211
-149.800	-215.505	8429.629
-149.500	-232.442	8373.139
-145.200	-615.743	6702.940
-144.000	-429.605	6118.540
-143.500	-397.216	5929.672
-143.000	-368.381	5756.109
-141.500	-303.189	5305.943
-137.900	-313.540	4324.258
-136.000	1629.930	5642.608
-135.500	2113.454	6596.292
-135.050	2508.327	7652.246
-133.000	4229.582	14631.734
-128.300	8060.495	43681.084
-123.000	12768.326	99066.532
-121.200	14320.733	123510.898
-113.000	18771.251	259480.559
-110.300	20129.633	312093.073
-103.000	15458.136	442248.849
-93.000	8429.647	562044.502
-83.000	690.290	608000.929
-82.900	614.704	608069.746
-73.000	4865.648	635550.663
-68.500	6794.812	661947.230
-63.000	9881.562	708003.464
-61.300	10835.066	725673.243
-55.300	13540.871	799015.097
-53.000	11850.022	828296.674
-43.000	4492.650	910366.771
-33.000	-2874.238	918815.568
-27.700	-6779.042	893423.448
-23.000	-4625.709	866789.952
-13.000	-6.174	843987.278
-10.500	1156.783	845514.725
-3.000	4665.030	867614.082
-0.500	5840.905	880835.686
-0.450	5857.805	881129.937
-0.100	6022.694	883221.511
-0.005	5954.817	883793.832
0.005	5947.672	883853.701
7.000	962.608	908271.947
17.000	-6120.096	882841.249
27.000	-13151.132	786841.848
27.500	-13501.168	780196.610
37.000	-7987.082	678466.324
47.000	-2134.304	628216.134
55.100	2642.896	630564.892
56.600	1614.240	633811.255
57.000	1383.121	634424.997
67.000	-4369.005	619852.314
68.450	-5198.936	612967.284
77.000	-11210.429	543122.261
81.800	-14565.082	481432.270
87.000	-11140.254	414783.903
97.000	-4506.029	336909.232
107.000	2191.376	325692.709
109.400	3808.154	332977.764
117.000	-1726.598	341158.799

127.000	-8302.729	291368.902
136.900	-13959.872	181522.197
137.000	-13913.612	180132.090
147.000	-8850.144	66670.051
155.800	-3677.792	11861.066
157.000	-3049.500	7867.499
164.500	1159.911	1049.095
167.000	372.805	3054.175
167.650	200.293	3263.620
173.200	-489.405	2659.325
173.500	-488.348	2523.364
173.550	-484.405	2500.829
177.000	-381.292	1130.577
177.900	-320.002	847.102
178.200	-280.961	767.660
178.500	-262.014	696.916
179.500	-259.984	471.590
184.500	0.000	0.000

Loading Conditions Data continued  
 ACP-Max Bulk Carrier  
Condition 4: Normal ballast dep. cond.

Item	Weight	LCG	LMom	VCG	VMom	FSM
Hold1	0.000	0.000	0.00	0.000	0.00	0.000
Hold2	0.000	0.000	0.00	0.000	0.00	0.000
Hold3	0.000	0.000	0.00	0.000	0.00	0.000
Hold4	0.000	0.000	0.00	0.000	0.00	0.000
Hold5	0.000	0.000	0.00	0.000	0.00	0.000
Hold6	0.000	0.000	0.00	0.000	0.00	0.000
Hold7	0.000	0.000	0.00	0.000	0.00	0.000
Hold8	0.000	0.000	0.00	0.000	0.00	0.000
Hold9	0.000	0.000	0.00	0.000	0.00	0.000
Hold10	0.000	0.000	0.00	0.000	0.00	0.000
Hold11	0.000	0.000	0.00	0.000	0.00	0.000
HFOTks & Supplies	0.000	0.000	0.00	0.000	0.00	0.000
FPtk	3461.000	170.30	589408	9.900	34264	0.000
APtk	1176.000	-173.50	-204036	16.100	18934	0.000
BWTK1	8380.000	149.50	1252810	7.500	62850	0.000
BWTK2	17401.00	109.50	1905409	9.100	158349	0.000
BWTK3	17866.00	54.700	977270	9.000	160794	0.000
BWTK4	17866.00	-0.500	-8933.00	9.000	160794	0.000
BWTK5	17620.00	-55.500	-977910	9.000	158580	0.000
BWTK6	13772.00	-108.50	-1494262	11.100	152869	0.000
Deadweight	97542.00	20.912	2039757	9.303	907434	0.000
Lightship	43966.00	-5.678	-249639	12.500	549575	0.000
Displacement	141508.0	12.650	1790118	10.296	1457009	0.000

Draught   Aft    9.317 Metres  
               Mid    8.800 Metres  
               Fwd    8.284 Metres  
 Trim                    1.033 Metres by the stern

GM       Solid  23.413 Metres  
           Fluid  23.413 Metres  
 Effective VCG  10.296 Metres

Draught   LCF    8.768 Metres  
 Moulded Disp. 141508.000 Tonnes

Free Trimming Stability Data continued  
 ACP-Max BULK Carrier  
 Normal ballast dep. cond.

	Displacement	141508.00	Tonnes
Longitudinal Centre of Gravity		12.650	Metres
Vertical Centre of Gravity		10.296	Metres
Transverse Centre of Gravity		0.000	Metres
GM		23.413	Metres

Shiplength	366.000
Rollcentre	11.800
Specific Gravity of Water	1.0250

Heel Angle Degrees	Righting Lever GZ Metres	Waterline Metres	Trim Metres	VCB Metres	GZ Curve M.Rad
0.0	0.000	8.800	1.033	4.523	0.000
5.0	2.047	8.799	0.968	4.634	0.089
10.0	4.121	8.792	0.776	4.973	0.358
15.0	6.230	8.771	0.471	5.552	0.810
20.0	8.198	8.676	0.116	6.320	1.442
25.0	9.648	8.379	-0.199	7.139	2.224
30.0	10.648	7.896	-0.449	7.926	3.113
35.0	11.117	7.370	-0.684	8.615	4.066
40.0	11.143	6.867	-0.925	9.176	5.040
45.0	10.864	6.392	-1.131	9.651	6.002
50.0	10.357	5.949	-1.323	10.064	6.929
55.0	9.673	5.541	-1.496	10.431	7.805
60.0	8.841	5.168	-1.689	10.759	8.613
65.0	7.888	4.834	-1.892	11.056	9.344
70.0	6.834	4.547	-2.111	11.328	9.987
75.0	5.700	4.308	-2.337	11.581	10.534
80.0	4.502	4.121	-2.553	11.821	10.980
85.0	3.260	3.988	-2.767	12.054	11.319
90.0	1.986	3.910	-2.963	12.282	11.548

Criteria	Result
The area under the GZ-curve to 30° not to be less than 0.055 mrad	3.113 mrad
The area under the GZ-curve to 40° not to be less than 0.090 mrad	5.040 mrad
The area under the GZ-curve from 30°-40° not to be less than 0.030 mrad	1.927 mrad
The max value of GZ to occur at an angle equal or greater than 30°	40°
The value of GZ at an angle equal or greater to 30° not to be less than 0,20 m	11.143 m at 40°
The value of upright GM not to be less than 0.15 m	23.413

Longitudinal Strength Data continued  
 Condition 4: Normal ballast dep. cond.

Item	Weight	LCG	LMom	VCG	Vmom	FSM
Hold1	0.000	0.000	0.00	0.000	0.00	0.000
Hold2	0.000	0.000	0.00	0.000	0.00	0.000
Hold3	0.000	0.000	0.00	0.000	0.00	0.000
Hold4	0.000	0.000	0.00	0.000	0.00	0.000
Hold5	0.000	0.000	0.00	0.000	0.00	0.000
Hold6	0.000	0.000	0.00	0.000	0.00	0.000
Hold7	0.000	0.000	0.00	0.000	0.00	0.000
Hold8	0.000	0.000	0.00	0.000	0.00	0.000
Hold9	0.000	0.000	0.00	0.000	0.00	0.000
Hold10	0.000	0.000	0.00	0.000	0.00	0.000
Hold11	0.000	0.000	0.00	0.000	0.00	0.000
HFotks & Supplies	0.000	0.000	0.00	0.000	0.00	0.000
FPtk	3461.0	170.30	589408	9.900	34264	0.000
APtk	1176.0	-173.50	-204036	16.100	18934	0.000
BWTK1	8380.0	149.50	1252810	7.500	62850	0.000
BWTK2	17401	109.50	1905409	9.100	158349	0.000
BWTK3	17866	54.700	977270	9.000	160794	0.000
BWTK4	17866	-0.500	-8933.00	9.000	160794	0.000
BWTK5	17620	-55.500	-977910	9.000	158580	0.000
BWTK6	13772	-108.50	-1494262	11.100	152869	0.000
Deadweight	97542	20.912	2039757	9.303	907434	0.000
Lightship	43966	-5.678	-249639	12.500	549575	0.000
Displacement	141508	12.650	1790118	10.296	1457009	0.000

Draught 8.800 Metres  
 Trim 1.033 Metres by the stern

S.G. of Water 1.0250  
 Shell Thick. 0.0000 Metres

GM Solid 23.413 Metres  
 Fluid 23.413 Metres  
 Effective VCG 10.296 Metres

Draught LCF 8.768 Metres  
 Moulded Disp. 141506.977 Tonnes

Long. Position Metres	Shear Force Tonnes	Bending Moment Tonne.M
-183.000	0.000	0.000
-181.750	-0.004	17.302
-181.500	17.814	22.989
-176.500	563.894	1546.475
-176.200	612.559	1727.096
-175.900	677.130	1924.703
-173.000	1191.270	4674.028
-171.500	1457.204	6681.149
-171.350	1475.848	6903.204
-171.200	1504.254	7128.788
-168.250	1911.523	12207.898
-167.850	1977.335	12991.207
-165.250	2422.653	18747.184
-164.350	2509.301	20979.023



-164.300	2510.313	21105.205
-163.000	2642.721	24472.674
-155.500	3241.432	46642.076
-155.300	3285.913	47297.580
-153.000	3590.630	55237.444
-149.800	3963.615	67368.537
-149.500	4008.979	68568.578
-144.000	4719.409	92647.782
-143.500	4733.462	95017.921
-143.000	4745.614	97394.612
-141.500	4770.672	104552.592
-136.100	4632.061	130014.726
-136.000	4650.586	130480.241
-135.500	4718.820	132829.516
-135.050	4740.291	134964.046
-133.000	4764.808	144735.151
-128.300	4732.342	167118.518
-123.000	5128.206	193322.339
-113.000	5447.457	246339.087
-103.000	5207.674	299753.178
-93.000	4408.857	347974.267
-83.100	3072.906	385146.042
-83.000	3091.335	385455.639
-80.900	3477.314	392381.791
-73.000	2940.614	417841.970
-68.500	2622.381	430421.003
-63.000	2952.591	445828.314
-61.300	3051.910	450955.673
-53.000	2608.929	474563.055
-43.000	2034.164	497916.952
-33.000	1414.531	515298.858
-28.100	1094.532	521513.895
-27.900	1147.714	521740.889
-23.000	888.628	526797.760
-13.000	372.037	533239.518
-10.500	245.439	534045.971
-3.000	-128.236	534589.306
-0.500	-250.755	534150.176
-0.450	-259.845	534138.104
-0.005	-281.542	534023.805
0.005	-282.030	534021.126
7.000	-618.841	530967.166
17.000	-1086.478	522579.009
27.000	-1537.796	509596.076
27.100	-1542.227	509443.459
37.000	-1969.810	492195.925
47.000	-2387.382	470548.398
56.600	-2774.700	445903.302
57.000	-2747.550	444804.389
67.000	-2061.315	420898.496
68.450	-1960.615	418002.669
77.000	-2499.661	399053.348
81.900	-2799.507	386138.219
82.300	-2697.597	385044.336
87.000	-3018.044	371677.643
97.000	-3679.542	338328.146
107.000	-4313.413	298501.804
117.000	-5155.412	251296.114
127.000	-5612.224	197596.370
135.700	-5555.380	149137.727
137.000	-5115.877	142219.406

137.100	-5081.678	141710.913
147.000	-4540.391	94218.719
155.800	-3599.755	58523.899
157.000	-3566.979	54240.470
161.800	-3355.461	37693.063
163.300	-2957.592	32979.039
167.000	-2932.796	22133.042
167.650	-2896.745	20247.439
173.200	-1934.312	6918.088
173.500	-1850.513	6354.517
173.550	-1832.845	6263.126
177.000	-829.845	1717.745
177.900	-549.878	1109.329
178.200	-439.418	965.088
178.500	-349.789	850.860
178.800	-280.991	760.396
179.500	-259.985	580.745
184.500	0.000	0.000

## Summary of damage stability calculations for ACP-Max Bulk Carrier

All damage stability conditions calculated for Homo. des. load dep.  
 Compartment division in damage stability calculations was not modelled exactly.

Intact ship data		Homo. design load dep. cond
Displacement	[T]	250148,0
Draught equiv.	[M]	14,903
KG	[M]	13,074
GM0	[M]	12,387

### Subdivision and damage stability according to SOLAS B-1, regulations 25-1 - 25-6.

Damage stability of the bulk carrier is calculated according to SOLAS index rule. The complete calculation is presented in attached separate document. Stability criteria comprise:

1. Final equilibrium angle of heel
2. GZ max
3. Stability width

All damaged cases presented fulfill the SOLAS requirements.

<b>Damages</b>	<b>Damage 1</b>	<b>Damage 2</b>	<b>Damage 3</b>	<b>Damage 4</b>	<b>Damage 5</b>
Flooded comp.	NO.1 HOLD	NO.2 HOLD	NO.3 HOLD	NO.4 HOLD	NO.5 HOLD
Flooded comp.	No.1 W.B.TK (S)	No.2 W.B.TK (S)	No.3 W.B.TK (S)	No.4 W.B.TK (S)	No.5 W.B.TK (S)
Flooded comp.		No.2 W.B.TK (P)	No.3 W.B.TK (P)	No.4 W.B.TK (P)	No.5 W.B.TK (P)
<i>Continuation:</i>					
<b>Damages</b>	<b>Damage 6</b>	<b>Damage 7</b>	<b>Damage 8</b>	<b>Damage 9</b>	<b>Damage 10</b>
Flooded comp.	NO.6 HOLD	NO.7 HOLD	NO.8 HOLD	NO.9 HOLD	NO.10 HOLD
Flooded comp.	No.6 W.B.TK (S)	No.7 W.B.TK (S)	No.8 W.B.TK (S)	No.9 W.B.TK (S)	No.10 W.B.TK (S)
Flooded comp.	No.6 W.B.TK (P)	No.7 W.B.TK (P)	No.8 W.B.TK (P)	No.9 W.B.TK (P)	No.10 W.B.TK (P)
<i>Continuation:</i>					
<b>Damages</b>	<b>Damage 11</b>	<b>Damage 12</b>	<b>Damage 13</b>	<b>Damage 14</b>	<b>Damage 15</b>
Flooded comp.	NO.11 HOLD	H.F.O. TK (S)	NO.1 HOLD	NO.2 HOLD	NO.3 HOLD
Flooded comp.	No.11 W.B.TK (S)	H.F.O. TK (S)	No.1 W.B.TK	No.2 W.B.TK (S)	No.3 W.B.TK (S)
Flooded comp.	No.11 W.B.TK (P)	Engine Room	NO.2 HOLD	No.2 W.B.TK (P)	No.3 W.B.TK (P)
Flooded comp.			No.2 W.B.TK (S)	NO.3 HOLD	NO.4 HOLD
Flooded comp.			No.2 W.B.TK (P)	No.3 W.B.TK (S)	No.4 W.B.TK (S)
Flooded comp.				No.3 W.B.TK (P)	No.4 W.B.TK (P)
<i>Continuation:</i>					
<b>Damages</b>	<b>Damage 16</b>	<b>Damage 17</b>	<b>Damage 18</b>	<b>Damage 19</b>	<b>Damage 20</b>
Flooded comp.	NO.4 HOLD	NO.5 HOLD	NO.6 HOLD	NO.7 HOLD	NO.8 HOLD
Flooded comp.	No.4 W.B.TK (S)	No.5 W.B.TK (S)	No.6 W.B.TK (S)	No.7 W.B.TK (S)	No.8 W.B.TK (S)
Flooded comp.	No.4 W.B.TK (P)	No.5 W.B.TK (P)	No.6 W.B.TK (P)	No.7 W.B.TK (P)	No.8 W.B.TK (P)
Flooded comp.	NO.5 HOLD	NO.6 HOLD	NO.7 HOLD	NO.8 HOLD	NO.9 HOLD
Flooded comp.	No.5 W.B.TK (S)	No.6 W.B.TK (S)	No.7 W.B.TK (S)	No.8 W.B.TK (S)	No.9 W.B.TK (S)
Flooded comp.	No.5 W.B.TK (P)	No.6 W.B.TK (P)	No.7 W.B.TK (P)	No.8 W.B.TK (P)	No.9 W.B.TK (P)
<i>Continuation:</i>					
<b>Damages</b>	<b>Damage 21</b>	<b>Damage 22</b>	<b>Damage 23</b>		
Flooded comp.	NO.9 HOLD	NO.10 HOLD	NO.11 HOLD		
Flooded comp.	No.9 W.B.TK (S)	No.10 W.B.TK (S)	No.11 W.B.TK (S)		
Flooded comp.	No.9 W.B.TK (P)	No.10 W.B.TK (P)	No.11 W.B.TK (P)		
Flooded comp.	NO.10 HOLD	NO.11 HOLD	H.F.O. TK (S)		
Flooded comp.	No.10 W.B.TK (S)	No.11 W.B.TK (S)	H.F.O. TK (S)		
Flooded comp.	No.10 W.B.TK (P)	No.11 W.B.TK (P)	Engine Room		

**Subdivision and damage stability of cargo ships according to SOLAS B-1, regulations 25-1 - 25-6.**

**Index rule**

**Reg 25-3**

Ls= 365,80  
 $R=(0,002+0,0009Ls)^{1/3}$  0,6919

	DAMAGE 1	DAMAGE 2	DAMAGE 3	DAMAGE 4
<b>Reg 25-4</b>	<b>Hold 1 flooded</b>	<b>Hold 2 flooded</b>	<b>Hold 3 flooded</b>	<b>Hold 4 flooded</b>
pi*si	0,0421	0,0421	0,0421	0,0421
A=Sum(pi*si) one comp	0,4300			
A=Sum(pi*si) two comp	0,4243			
<b>Atot=</b>	<b>0,8542</b>			

**Reg 25-5**

	Hold 1 flooded	Hold 2 flooded	Hold 3 flooded	Hold 4 flooded
x1=	321,04	293,44	265,84	238,24
x2=	348,64	321,04	293,44	265,84
E1=x1/Ls	0,878	0,802	0,727	0,651
E2=x2/Ls	0,953	0,878	0,802	0,727
E=E1+E2-1	0,831	0,680	0,529	0,378
J=E2-E1	0,075	0,075	0,075	0,075
J'=J-E if E>=0	-0,755	-0,604	-0,453	-0,303
J'=J+E if E<0				
Jmax=48/Ls, max 0,24	0,131	0,131	0,131	0,131
a=1,2+0,8*E, max 1,2	1,200	1,200	1,200	1,200
F=0,4+0,25*E*(1,2+a)	0,898	0,808	0,717	0,627
g=J/Jmax	0,575	0,575	0,575	0,575
F1=g^2-g^3/3 if g<1	0,267	0,267	0,267	0,267
F1=g-1/3 otherwise				
F2=g^3/3-g^4/12 if g<1	0,054	0,054	0,054	0,054
F2=g^2/2-g^3+1/12 otherwise				
p=F1*Jmax	0,035	0,035	0,035	0,035
q=0,4*F2*Jmax^2	0,000	0,000	0,000	0,000
<b>pi=a*p</b>	<b>0,042</b>	<b>0,042</b>	<b>0,042</b>	<b>0,042</b>
<b>pi group=pi(i,i+1)-pi-pi+1</b>				

**Reg 25-6**

	Hold 1 flooded	Hold 2 flooded	Hold 3 flooded	Hold 4 flooded
De=equilibrium angle of heel	0	0	0	0
C=1 if De <= 25°	1	1	1	1
C=0 if De > 30°				
C=sqrt((30-De)/5) otherwise				
range=	20	20	20	20
Gzmax=	0,1	0,1	0,1	0,1
<b>si=C*sqrt(0,5*Gzmax*range)</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

DAMAGE 5	DAMAGE 6	DAMAGE 7	DAMAGE 8	DAMAGE 9	DAMAGE 10	DAMAGE 11
<b>Hold 5 flooded</b>	<b>Hold 6 flooded</b>	<b>Hold 7 flooded</b>	<b>Hold 8 flooded</b>	<b>Hold 9 flooded</b>	<b>Hold 10 flooded</b>	<b>Hold 11 flooded</b>
0,0421	0,0421	0,0400	0,0358	0,0315	0,0273	0,0231

Hold 5 flooded	Hold 6 flooded	Hold 7 flooded	Hold 8 flooded	Hold 9 flooded	Hold 10 flooded	Hold 11 flooded
210,64	183,04	155,44	127,84	100,24	72,64	45,04
238,24	210,64	183,04	155,44	127,84	100,24	72,64
0,576	0,500	0,425	0,349	0,274	0,199	0,123
0,651	0,576	0,500	0,425	0,349	0,274	0,199
0,227	0,076	-0,075	-0,226	-0,376	-0,527	-0,678
0,075	0,075	0,075	0,075	0,075	0,075	0,075
-0,152	-0,001					
		0,001	-0,150	-0,301	-0,452	-0,603
0,131	0,131	0,131	0,131	0,131	0,131	0,131
1,200	1,200	1,140	1,020	0,899	0,778	0,657
0,536	0,446	0,356	0,275	0,202	0,139	0,085
0,575	0,575	0,575	0,575	0,575	0,575	0,575
0,267	0,267	0,267	0,267	0,267	0,267	0,267
0,054	0,054	0,054	0,054	0,054	0,054	0,054
0,035	0,035	0,035	0,035	0,035	0,035	0,035
0,000	0,000	0,000	0,000	0,000	0,000	0,000
<b>0,042</b>	<b>0,042</b>	<b>0,040</b>	<b>0,036</b>	<b>0,032</b>	<b>0,027</b>	<b>0,023</b>

Hold 5 flooded	Hold 6 flooded	Hold 7 flooded	Hold 8 flooded	Hold 9 flooded	Hold 10 flooded	Hold 11 flooded
0	0	0	0	0	0	0
1	1	1	1	1	1	1
20	20	20	20	20	20	20
0,1	0,1	0,1	0,1	0,1	0,1	0,1
1	1	1	1	1	1	1

DAMAGE 12	DAMAGE 13	DAMAGE 14	DAMAGE 15	DAMAGE 16	DAMAGE 17	DAMAGE 18
Eng. room flooded	Hold 1 & 2 flooded	Hold 2 & 3 flooded	Hold 3 & 4 flooded	Hold 4 & 5 flooded	Hold 5 & 6 flooded	Hold 6 & 7 flooded
0,0199	0,0444	0,0444	0,0444	0,0444	0,0445	0,0465

Eng. room flooded	Hold 1 & 2 flooded	Hold 2 & 3 flooded	Hold 3 & 4 flooded	Hold 4 & 5 flooded	Hold 5 & 6 flooded	Hold 6 & 7 flooded
16,52	293,44	265,84	238,24	210,64	183,04	155,44
45,04	348,64	321,04	293,44	265,84	238,27	210,64
0,045	0,802	0,727	0,651	0,576	0,500	0,425
0,123	0,953	0,878	0,802	0,727	0,651	0,576
-0,832	0,755	0,604	0,453	0,303	0,152	0,001
0,078	0,151	0,151	0,151	0,151	0,151	0,151
	-0,604	-0,453	-0,303	-0,152	-0,001	0,150
-0,754						
0,131	0,131	0,131	0,131	0,131	0,131	0,131
0,535	1,200	1,200	1,200	1,200	1,200	1,200
0,039	0,853	0,763	0,672	0,582	0,491	0,400
0,594	1,150	1,150	1,150	1,150	1,151	1,150
0,283						
	0,817	0,817	0,817	0,817	0,817	0,817
0,060						
	0,361	0,361	0,361	0,361	0,362	0,361
0,037	0,107	0,107	0,107	0,107	0,107	0,107
0,000	0,000	0,000	0,000	0,000	0,000	0,000
0,020	0,129	0,129	0,129	0,129	0,129	0,129
	0,044	0,044	0,044	0,044	0,045	0,047

Eng. room flooded	Hold 1 & 2 flooded	Hold 2 & 3 flooded	Hold 3 & 4 flooded	Hold 4 & 5 flooded	Hold 5 & 6 flooded	Hold 6 & 7 flooded
0	0	0	0	0	0	0
1	1	1	1	1	1	1
20	20	20	20	20	20	20
0,1	0,1	0,1	0,1	0,1	0,1	0,1
1	1	1	1	1	1	1

**DAMAGE 19    DAMAGE 20    DAMAGE 21    DAMAGE 22    DAMAGE 23**

<b>Hold 7 &amp; 8 flooded</b>	<b>Hold 8 &amp; 9 flooded</b>	<b>Hold 9 &amp; 10 flooded</b>	<b>Hold 10 &amp; 11 flooded</b>	<b>Hold 11 &amp; E/R flooded</b>
0,0400	0,0355	0,0310	0,0266	0,0223

<b>Hold 7 &amp; 8 flooded</b>	<b>Hold 8 &amp; 9 flooded</b>	<b>Hold 9 &amp; 10 flooded</b>	<b>Hold 10 &amp; 11 flooded</b>	<b>Hold 11 &amp; E/R flooded</b>
127,84	100,24	72,64	45,04	16,52
183,04	155,44	127,84	100,27	72,64
0,349	0,274	0,199	0,123	0,045
0,500	0,425	0,349	0,274	0,199
-0,150	-0,301	-0,452	-0,603	-0,756
0,151	0,151	0,151	0,151	0,153
0,001	-0,150	-0,301	-0,452	-0,603
0,131	0,131	0,131	0,131	0,131
1,080	0,959	0,838	0,718	0,595
0,314	0,238	0,170	0,111	0,061
1,150	1,150	1,150	1,151	1,169
0,817	0,817	0,817	0,817	0,836
0,361	0,361	0,361	0,362	0,377
0,107	0,107	0,107	0,107	0,110
0,000	0,000	0,000	0,000	0,000
<b>0,116</b>	<b>0,103</b>	<b>0,090</b>	<b>0,077</b>	<b>0,065</b>
<b>0,040</b>	<b>0,036</b>	<b>0,031</b>	<b>0,027</b>	<b>0,022</b>

<b>Hold 7 &amp; 8 flooded</b>	<b>Hold 8 &amp; 9 flooded</b>	<b>Hold 9 &amp; 10 flooded</b>	<b>Hold 10 &amp; 11 flooded</b>	<b>Hold 11 &amp; E/R flooded</b>
0	0	0	0	0
1	1	1	1	1
20	20	20	20	20
0,1	0,1	0,1	0,1	0,1
1	1	1	1	1

Damage Stability Data  
ACP-Max Bulk Carrier

Damage 1: Hold 1 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.981	Metres
Longitudinal KM	536.767	Metres
Equilibrium Draught	15.851	Metres
Equilibrium Trim	-3.540	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre^3
0.00	0.000	0.000	15.851	-3.540	8.187	17242.482
10.00	2.116	4.386	15.753	-3.670	8.452	17398.699
20.00	4.001	8.472	15.683	-4.592	9.161	17938.660
30.00	4.769	11.306	16.273	-6.499	9.918	18724.147
40.00	4.714	13.118	17.196	-8.901	10.561	19434.954
50.00	4.042	14.058	18.053	-11.209	11.024	19903.195
60.00	3.021	14.343	18.751	-13.173	11.376	20198.438
70.00	1.798	14.083	19.257	-14.712	11.668	20411.970
80.00	0.468	13.343	19.553	-15.751	11.929	20574.710
90.00	-0.897	12.177	19.630	-16.237	12.177	20702.874



Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 2: Hold 2 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.571	Metres
Longitudinal KM	543.875	Metres
Equilibrium Draught	16.306	Metres
Equilibrium Trim	-5.006	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre^3
0.00	0.000	0.000	16.306	-5.006	8.450	25602.505
10.00	2.046	4.316	16.194	-5.066	8.702	25668.003
20.00	3.761	8.232	16.159	-5.990	9.357	25573.864
30.00	4.429	10.966	16.783	-7.828	10.048	25683.745
40.00	4.378	12.781	17.755	-10.146	10.657	25885.065
50.00	3.762	13.777	18.669	-12.400	11.106	25965.333
60.00	2.812	14.135	19.410	-14.304	11.448	25977.808
70.00	1.671	13.957	19.943	-15.778	11.732	25968.080
80.00	0.428	13.304	20.248	-16.746	11.985	25949.751
90.00	-0.848	12.226	20.319	-17.176	12.226	25940.638

Damage Stability Data continued  
ACP-Max Bulk Carrier

Damage 3: Hold 3 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.539	Metres
Longitudinal KM	594.136	Metres
Equilibrium Draught	16.297	Metres
Equilibrium Trim	-3.185	Metres

Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre^3
0.00	0.000	0.000	16.297	-3.184	8.459 25194.544
10.00	2.040	4.310	16.185	-3.237	8.713 25171.016
20.00	3.787	8.259	16.121	-3.917	9.372 25010.318
30.00	4.465	11.002	16.716	-5.306	10.068 24869.048
40.00	4.417	12.820	17.651	-7.064	10.678 24731.884
50.00	3.793	13.809	18.524	-8.751	11.122 24615.730
60.00	2.840	14.163	19.232	-10.214	11.464 24562.831
70.00	1.696	13.982	19.737	-11.372	11.748 24535.617
80.00	0.449	13.324	20.016	-12.162	12.001 24517.604
90.00	-0.833	12.241	20.059	-12.545	12.241 24502.351

Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 4: Hold 4 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.566	Metres
Longitudinal KM	630.519	Metres
Equilibrium Draught	16.256	Metres
Equilibrium Trim	-1.436	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre^3
0.00	0.000	0.000	16.256	-1.436	8.445	24354.685
10.00	2.047	4.317	16.150	-1.505	8.703	24324.159
20.00	3.829	8.301	16.073	-2.000	9.369	24173.383
30.00	4.525	11.062	16.655	-3.049	10.074	23932.534
40.00	4.479	12.883	17.574	-4.384	10.688	23691.734
50.00	3.850	13.865	18.429	-5.663	11.134	23564.779
60.00	2.888	14.210	19.118	-6.766	11.476	23495.383
70.00	1.733	14.018	19.605	-7.658	11.760	23451.073
80.00	0.472	13.347	19.867	-8.306	12.012	23418.325
90.00	-0.823	12.251	19.898	-8.679	12.251	23394.853

Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 5: Hold 5 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.616	Metres
Longitudinal KM	654.333	Metres
Equilibrium Draught	16.229	Metres
Equilibrium Trim	0.157	Metres

Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre^3
0.00	0.000	0.000	16.229	0.157	8.439	23880.545
10.00	2.054	4.324	16.129	0.075	8.700	23845.374
20.00	3.858	8.330	16.052	-0.272	9.370	23681.552
30.00	4.570	11.107	16.632	-1.034	10.083	23369.756
40.00	4.526	12.930	17.546	-1.991	10.700	23079.860
50.00	3.892	13.907	18.389	-2.906	11.146	22929.979
60.00	2.924	14.246	19.068	-3.706	11.488	22841.795
70.00	1.761	14.046	19.542	-4.373	11.771	22779.215
80.00	0.492	13.367	19.794	-4.895	12.022	22731.165
90.00	-0.814	12.260	19.815	-5.261	12.261	22693.099

Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 6: Hold 6 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.647	Metres
Longitudinal KM	668.221	Metres
Equilibrium Draught	16.221	Metres
Equilibrium Trim	1.668	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre^3
0.00	0.000	0.000	16.221	1.668	8.447	23810.073
10.00	2.061	4.332	16.126	1.570	8.706	23771.796
20.00	3.877	8.348	16.060	1.358	9.380	23588.969
30.00	4.602	11.139	16.646	0.867	10.099	23216.131
40.00	4.557	12.961	17.561	0.253	10.715	22872.472
50.00	3.920	13.935	18.400	-0.326	11.160	22686.313
60.00	2.948	14.270	19.073	-0.848	11.501	22572.188
70.00	1.781	14.067	19.542	-1.325	11.784	22488.518
80.00	0.508	13.384	19.788	-1.747	12.035	22423.962
90.00	-0.801	12.273	19.803	-2.112	12.273	22370.038

Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 7: Hold 7 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.692	Metres
Longitudinal KM	672.396	Metres
Equilibrium Draught	16.232	Metres
Equilibrium Trim	3.175	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre^3
0.00	0.000	0.000	16.232	3.175	8.465	24098.765
10.00	2.071	4.341	16.140	3.058	8.722	24058.401
20.00	3.887	8.359	16.093	2.986	9.399	23854.265
30.00	4.622	11.159	16.696	2.763	10.120	23438.106
40.00	4.575	12.979	17.616	2.476	10.734	23028.461
50.00	3.936	13.952	18.456	2.223	11.177	22792.704
60.00	2.963	14.286	19.127	1.957	11.516	22642.983
70.00	1.796	14.082	19.594	1.666	11.798	22534.864
80.00	0.523	13.398	19.838	1.339	12.049	22448.709
90.00	-0.787	12.287	19.849	0.978	12.287	22374.269

Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 8: Hold 8 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.750	Metres
Longitudinal KM	666.992	Metres
Equilibrium Draught	16.261	Metres
Equilibrium Trim	4.748	Metres

Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	16.261	4.748	8.494	24767.616
10.00	2.082	4.352	16.173	4.613	8.750	24725.995
20.00	3.888	8.360	16.157	4.695	9.427	24489.589
30.00	4.630	11.167	16.785	4.771	10.148	24048.544
40.00	4.581	12.985	17.716	4.817	10.758	23572.860
50.00	3.942	13.957	18.560	4.881	11.198	23263.513
60.00	2.971	14.293	19.233	4.877	11.535	23067.915
70.00	1.806	14.092	19.703	4.779	11.815	22928.511
80.00	0.536	13.411	19.946	4.548	12.066	22814.716
90.00	-0.771	12.303	19.953	4.195	12.303	22716.457

Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 9: Hold 9 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.800	Metres
Longitudinal KM	653.223	Metres
Equilibrium Draught	16.284	Metres
Equilibrium Trim	6.362	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre^3
0.00	0.000	0.000	16.284	6.362	8.510	25356.824
10.00	2.089	4.360	16.200	6.209	8.766	25311.276
20.00	3.877	8.348	16.222	6.455	9.439	25005.588
30.00	4.630	11.167	16.885	6.865	10.163	24607.772
40.00	4.587	12.991	17.838	7.303	10.775	24223.260
50.00	3.948	13.964	18.696	7.704	11.213	23883.544
60.00	2.977	14.299	19.374	7.968	11.547	23637.561
70.00	1.813	14.098	19.845	8.052	11.826	23455.865
80.00	0.544	13.419	20.089	7.927	12.075	23310.561
90.00	-0.763	12.311	20.098	7.596	12.311	23188.377



Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 10: Hold 10 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.771	Metres
Longitudinal KM	626.771	Metres
Equilibrium Draught	16.260	Metres
Equilibrium Trim	7.898	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	16.260	7.898	8.472	25082.633
10.00	2.080	4.350	16.182	7.739	8.725	25044.632
20.00	3.855	8.327	16.242	8.131	9.399	24651.017
30.00	4.634	11.171	16.943	8.900	10.136	24443.025
40.00	4.602	13.006	17.931	9.818	10.758	24365.677
50.00	3.968	13.983	18.822	10.654	11.203	24231.607
60.00	2.993	14.315	19.520	11.246	11.540	24063.003
70.00	1.822	14.107	20.001	11.548	11.820	23890.372
80.00	0.544	13.419	20.251	11.542	12.067	23715.889
90.00	-0.773	12.301	20.257	11.213	12.301	23550.095

Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 11: Hold 11 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.824	Metres
Longitudinal KM	595.891	Metres
Equilibrium Draught	15.964	Metres
Equilibrium Trim	7.849	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	15.964	7.849	8.247	19655.735
10.00	2.095	4.365	15.890	7.685	8.506	19663.552
20.00	3.954	8.426	15.926	7.993	9.212	19528.833
30.00	4.803	11.340	16.602	8.838	9.996	19724.127
40.00	4.765	13.169	17.560	9.945	10.642	20032.747
50.00	4.098	14.113	18.429	10.983	11.101	20243.261
60.00	3.081	14.403	19.119	11.781	11.450	20366.584
70.00	1.861	14.147	19.604	12.270	11.739	20436.329
80.00	0.531	13.406	19.867	12.429	11.995	20470.642
90.00	-0.838	12.236	19.897	12.232	12.236	20494.195

Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 12: Engine Room flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	12.151	Metres
Longitudinal KM	583.690	Metres
Equilibrium Draught	15.294	Metres
Equilibrium Trim	4.894	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	15.294	4.894	7.866 7194.697
10.00	2.154	4.424	15.225	4.757	8.139 7281.861
20.00	4.232	8.704	15.158	4.763	8.919 7736.993
30.00	5.217	11.754	15.701	5.108	9.791 8460.216
40.00	5.163	13.567	16.500	5.663	10.477 9061.446
50.00	4.420	14.436	17.217	6.221	10.954 9498.192
60.00	3.309	14.631	17.794	6.676	11.318 9838.458
70.00	1.985	14.271	18.206	6.966	11.619 10122.467
80.00	0.546	13.421	18.435	7.052	11.887 10373.667
90.00	-0.933	12.141	18.472	6.932	12.141 10608.600

Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 13: Hold 1 & 2 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	10.895	Metres
Longitudinal KM	327.153	Metres
Equilibrium Draught	18.053	Metres
Equilibrium Trim	-16.909	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	18.053	-16.908	9.349	58126.214
10.00	1.683	3.953	18.212	-18.391	9.544	56998.851
20.00	2.638	7.109	18.960	-22.794	9.963	56733.743
30.00	2.927	9.464	20.242	-28.161	10.413	57072.877
40.00	2.764	11.168	21.745	-33.447	10.818	57494.712
50.00	2.283	12.298	23.184	-38.314	11.153	57853.095
60.00	1.598	12.921	24.402	-42.465	11.432	58087.668
70.00	0.789	13.075	25.319	-45.764	11.674	58194.830
80.00	-0.083	12.792	25.887	-48.066	11.893	58288.218
90.00	-0.974	12.100	26.072	-49.229	12.100	58324.741

Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 14: Hold 2 & 3 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	9.817	Metres
Longitudinal KM	244.656	Metres
Equilibrium Draught	18.599	Metres
Equilibrium Trim	-15.595	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	18.599	-15.595	9.631	66965.265
10.00	1.600	3.870	18.764	-17.111	9.816	65480.184
20.00	2.488	6.960	19.607	-21.674	10.205	65198.094
30.00	2.723	9.260	21.011	-27.056	10.609	65639.056
40.00	2.564	10.967	22.655	-32.378	10.979	66249.596
50.00	2.122	12.137	24.258	-37.394	11.294	66846.926
60.00	1.489	12.812	25.654	-41.799	11.556	67347.058
70.00	0.744	13.029	26.735	-45.320	11.784	67780.743
80.00	-0.064	12.811	27.412	-47.790	11.990	68085.727
90.00	-0.889	12.185	27.644	-49.025	12.185	68162.688

Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 15: Hold 3 & 4 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.173	Metres
Longitudinal KM	578.693	Metres
Equilibrium Draught	18.122	Metres
Equilibrium Trim	-8.592	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre^3
0.00	0.000	0.000	18.122	-8.592	9.468	59088.787
10.00	1.838	4.109	18.086	-9.083	9.676	59088.759
20.00	2.891	7.362	18.526	-11.548	10.113	58797.523
30.00	3.157	9.694	19.574	-14.583	10.549	58795.244
40.00	3.012	11.416	20.924	-17.722	10.964	58948.690
50.00	2.546	12.561	22.258	-20.762	11.315	58962.874
60.00	1.843	13.166	23.365	-23.378	11.592	58758.372
70.00	1.002	13.288	24.166	-25.367	11.825	58550.551
80.00	0.092	12.967	24.631	-26.649	12.035	58408.187
90.00	-0.833	12.241	24.748	-27.156	12.241	58324.023

Damage Stability Data continued  
ACP-Max Bulk Carrier

Damage 16: Hold 4 & 5 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.119	Metres
Longitudinal KM	640.939	Metres
Equilibrium Draught	17.923	Metres
Equilibrium Trim	-4.403	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	17.923	-4.403	9.355	54778.597
10.00	1.934	4.204	17.804	-4.447	9.579	54713.265
20.00	3.105	7.577	18.050	-5.652	10.051	54275.215
30.00	3.398	9.935	18.951	-7.391	10.510	53864.600
40.00	3.256	11.660	20.195	-9.298	10.947	53443.549
50.00	2.767	12.783	21.440	-11.237	11.312	53012.225
60.00	2.032	13.355	22.476	-12.986	11.604	52771.038
70.00	1.149	13.434	23.229	-14.435	11.848	52647.327
80.00	0.187	13.062	23.670	-15.526	12.067	52598.250
90.00	-0.800	12.274	23.778	-16.190	12.274	52593.575

Damage Stability Data continued  
ACP-Max Bulk Carrier

Damage 17: Hold 5 & 6 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.073	Metres
Longitudinal KM	672.688	Metres
Equilibrium Draught	17.814	Metres
Equilibrium Trim	-0.898	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	17.814	-0.898	9.311	52702.420
10.00	1.958	4.228	17.688	-0.897	9.536	52601.393
20.00	3.203	7.675	17.870	-1.334	10.031	52127.466
30.00	3.524	10.061	18.726	-2.165	10.506	51492.713
40.00	3.391	11.795	19.951	-3.214	10.957	50829.553
50.00	2.899	12.915	21.168	-4.330	11.334	50362.899
60.00	2.146	13.469	22.160	-5.361	11.630	50098.116
70.00	1.241	13.526	22.871	-6.230	11.879	49926.039
80.00	0.253	13.128	23.264	-6.927	12.101	49799.988
90.00	-0.763	12.311	23.322	-7.406	12.312	49697.159



Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 18: Hold 6 & 7 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.095	Metres
Longitudinal KM	684.147	Metres
Equilibrium Draught	17.792	Metres
Equilibrium Trim	2.358	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	17.792	2.358	9.322	52453.222
10.00	1.962	4.232	17.677	2.317	9.551	52379.628
20.00	3.232	7.703	17.876	2.496	10.049	51915.606
30.00	3.575	10.112	18.758	2.452	10.533	51234.094
40.00	3.457	11.860	19.997	2.155	10.993	50470.404
50.00	2.963	12.978	21.204	1.791	11.370	49906.753
60.00	2.204	13.526	22.178	1.419	11.665	49557.783
70.00	1.290	13.576	22.866	1.042	11.912	49312.687
80.00	0.293	13.169	23.240	0.669	12.133	49125.630
90.00	-0.732	12.342	23.283	0.301	12.342	48969.959

Damage Stability Data continued  
ACP-Max Bulk Carrier

Damage 19: Hold 7 & 8 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.175	Metres
Longitudinal KM	673.701	Metres
Equilibrium Draught	17.852	Metres
Equilibrium Trim	5.683	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	17.852	5.683	9.390	53916.636
10.00	1.941	4.212	17.769	5.688	9.615	53945.596
20.00	3.191	7.663	18.066	6.556	10.105	53536.034
30.00	3.563	10.100	19.032	7.321	10.596	52949.669
40.00	3.461	11.865	20.317	7.791	11.057	52207.443
50.00	2.968	12.984	21.537	8.173	11.424	51470.703
60.00	2.215	13.537	22.524	8.439	11.712	50986.804
70.00	1.307	13.593	23.224	8.550	11.953	50655.512
80.00	0.318	13.193	23.605	8.476	12.169	50408.100
90.00	-0.699	12.375	23.654	8.215	12.375	50217.553

Damage Stability Data continued  
ACP-Max Bulk Carrier

Damage 20: Hold 8 & 9 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.256	Metres
Longitudinal KM	644.668	Metres
Equilibrium Draught	17.983	Metres
Equilibrium Trim	9.328	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	17.983	9.328	9.491 56786.377
10.00	1.863	4.133	17.991	9.667	9.700 57006.255
20.00	3.068	7.539	18.484	11.482	10.177 56679.748
30.00	3.474	10.011	19.593	13.217	10.673 56308.572
40.00	3.395	11.799	20.984	14.727	11.131 55909.352
50.00	2.919	12.934	22.297	16.109	11.491 55322.330
60.00	2.182	13.505	23.349	17.189	11.769 54749.974
70.00	1.294	13.579	24.091	17.878	12.000 54312.080
80.00	0.325	13.201	24.496	18.129	12.207 53978.823
90.00	-0.670	12.404	24.551	17.935	12.404 53723.882

Damage Stability Data continued  
ACP-Max Bulk Carrier

Damage 21: Hold 9 & 10 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	10.296	Metres
Longitudinal KM	381.525	Metres
Equilibrium Draught	18.212	Metres
Equilibrium Trim	13.813	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre^3
0.00	0.000	0.000	18.212	13.812	9.549 60629.269
10.00	1.701	3.971	18.454	15.207	9.749 60726.636
20.00	2.849	7.320	19.217	18.078	10.209 60173.357
30.00	3.290	9.827	20.556	21.180	10.708 60130.772
40.00	3.205	11.609	22.155	24.344	11.148 60389.223
50.00	2.750	12.765	23.713	27.508	11.498 60726.608
60.00	2.054	13.376	25.033	30.222	11.777 60962.012
70.00	1.211	13.496	26.004	32.211	12.009 61090.185
80.00	0.285	13.160	26.578	33.345	12.214 61182.544
90.00	-0.668	12.406	26.708	33.474	12.406 61203.959

Damage Stability Data continued  
ACP-Max Bulk Carrier

Damage 22: Hold 10 & 11 flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	10.417	Metres
Longitudinal KM	297.299	Metres
Equilibrium Draught	18.326	Metres
Equilibrium Trim	18.219	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	0.000	0.000	18.326	18.219	9.333	58712.338
10.00	1.700	3.970	18.463	18.938	9.533	56755.780
20.00	2.852	7.324	19.267	21.938	10.006	55931.664
30.00	3.325	9.862	20.668	25.831	10.534	56056.634
40.00	3.195	11.599	22.322	29.965	10.968	56534.967
50.00	2.693	12.709	23.940	34.218	11.314	57126.437
60.00	1.963	13.286	25.333	37.948	11.595	57654.299
70.00	1.094	13.380	26.393	40.793	11.835	58121.762
80.00	0.148	13.023	27.047	42.591	12.050	58531.917
90.00	-0.822	12.252	27.257	43.209	12.252	58755.375

Damage Stability Data continued  
 ACP-Max Bulk Carrier

Damage 23: Hold 11 & E/R flooded

Homo. des. load dep.

Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity	7.402	Metres
Vertical Centre of Gravity	13.074	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	0.00	Degrees
Equilibrium GM	11.561	Metres
Longitudinal KM	493.665	Metres
Equilibrium Draught	16.753	Metres
Equilibrium Trim	12.564	Metres
Shiplength	366.000	Metres
Rollcentre	11.800	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
 Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre^3
0.00	0.000	0.000	16.754	12.564	8.522 34620.267
10.00	1.998	4.268	16.723	12.601	8.764 34183.802
20.00	3.516	7.988	17.071	14.122	9.370 33925.253
30.00	4.165	10.702	18.062	16.552	10.042 34484.541
40.00	4.051	12.454	19.357	19.478	10.597 35332.763
50.00	3.430	13.445	20.605	22.508	11.015 36122.470
60.00	2.506	13.828	21.643	25.031	11.338 36710.391
70.00	1.407	13.693	22.405	26.873	11.607 37145.135
80.00	0.217	13.092	22.859	27.938	11.846 37480.619
90.00	-1.002	12.072	22.989	28.232	12.072 37749.979

## **Appendix G: Drawings of arrangements and steel structures**

Damage Stability Data continued  
ACP-Max tanker

Damage 7: Hold 1 & 2 Starboard S.C.O. Tks. flooded

Homo. des. load dep.

Displacement	246554.00	Tonnes
Longitudinal Centre of Gravity	11.098	Metres
Vertical Centre of Gravity	13.392	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	17.85	Degrees
Equilibrium GM	5.139	Metres
Longitudinal KM	526.972	Metres
Equilibrium Draught	17.500	Metres
Equilibrium Trim	-12.954	Metres
Shiplength	366.000	Metres
Rollcentre	14.850	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	-2.649	-2.649	16.694	-8.571	8.702	34026.057
10.00	-0.992	1.334	17.037	-10.605	8.910	39891.121
20.00	0.176	4.756	17.681	-13.612	9.399	40298.865
30.00	0.613	7.309	18.967	-17.100	9.897	40298.865
40.00	0.646	9.254	20.619	-20.719	10.357	40298.865
50.00	0.388	10.646	22.331	-24.370	10.734	40298.865
60.00	-0.042	11.556	23.927	-27.733	11.041	40298.865
70.00	-0.549	12.035	25.319	-30.397	11.310	40298.865
80.00	-1.084	12.105	26.426	-32.136	11.555	40298.865
90.00	-1.609	11.783	27.187	-32.944	11.783	40298.865

Criteria	Result
The final water line shall be below margin points allowing progressive flooding	Ok
The angle of heel due to unsymmetrical flooding shall not exceed 25°	17,85°
The GZ curve shall after flooding have a range of 20° beyond equilibrium heel angle	40°
The min GZ within the 20° range metioned above shall be at least 0.10 m	0,65 m
The min area within the 20° range metioned above shall be at least 0.0175 mrad	Ok



Damage Stability Data continued  
ACP-Max tanker

Damage 8: Hold 2 & 3 Starboard S.C.O. Tks. flooded

Homo. des. load dep.

Displacement	246554.00	Tonnes
Longitudinal Centre of Gravity	11.098	Metres
Vertical Centre of Gravity	13.392	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	17.83	Degrees
Equilibrium GM	4.996	Metres
Longitudinal KM	620.618	Metres
Equilibrium Draught	17.533	Metres
Equilibrium Trim	-6.513	Metres
Shiplength	366.000	Metres
Rollcentre	14.850	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	-2.656	-2.656	16.686	-3.982	8.688 33050.915
10.00	-0.966	1.360	17.046	-4.990	8.898 40510.550
20.00	0.176	4.756	17.713	-6.906	9.377 43181.342
30.00	0.639	7.335	18.960	-9.090	9.890 43236.240
40.00	0.723	9.331	20.618	-11.544	10.382 43236.240
50.00	0.513	10.772	22.361	-14.081	10.797 43236.240
60.00	0.099	11.697	23.960	-16.420	11.126 43236.240
70.00	-0.422	12.163	25.320	-18.350	11.396 43236.240
80.00	-0.984	12.205	26.389	-19.754	11.632 43236.240
90.00	-1.537	11.855	27.123	-20.515	11.855 43236.240

Criteria	Result
The final water line shall be below margin points allowing progressive flooding	Ok
The angle of heel due to unsymmetrical flooding shall not exceed 25°	17,83°
The GZ curve shall after flooding have a range of 20° beyond equilibrium heel angle	40°
The min GZ within the 20° range metioned above shall be at least 0.10 m	0,72 m
The min area within the 20° range metioned above shall be at least 0.0175 mrad	Ok

Damage Stability Data continued  
ACP-Max tanker

Damage 9: Hold 3 & 4 Starboard S.C.O. Tks. flooded

Homo. des. load dep.

Displacement	246554.00	Tonnes
Longitudinal Centre of Gravity	11.098	Metres
Vertical Centre of Gravity	13.392	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	15.59	Degrees
Equilibrium GM	6.014	Metres
Longitudinal KM	653.161	Metres
Equilibrium Draught	17.267	Metres
Equilibrium Trim	0.478	Metres
Shiplength	366.000	Metres
Rollcentre	14.850	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	-2.550	-2.550	16.606	0.534	8.659	31775.690
10.00	-0.786	1.539	16.956	0.553	8.865	39108.967
20.00	0.390	4.970	17.641	0.350	9.351	42897.577
30.00	0.902	7.598	18.887	-0.233	9.896	43127.042
40.00	1.015	9.623	20.571	-1.089	10.422	43127.042
50.00	0.788	11.046	22.295	-1.954	10.851	43127.042
60.00	0.329	11.927	23.830	-2.679	11.182	43127.042
70.00	-0.242	12.342	25.108	-3.272	11.454	43127.042
80.00	-0.857	12.331	26.085	-3.731	11.696	43127.042
90.00	-1.469	11.923	26.736	-4.076	11.923	43127.042

Criteria	Result
The final water line shall be below margin points allowing progressive flooding	Ok
The angle of heel due to unsymmetrical flooding shall not exceed 25°	15,59°
The GZ curve shall after flooding have a range of 20° beyond equilibrium heel angle	50°
The min GZ within the 20° range metioned above shall be at least 0.10 m	0,90 m
The min area within the 20° range metioned above shall be at least 0.0175 mrad	Ok

Damage Stability Data continued  
ACP-Max tanker

Damage 10: Hold 4 & 5 Starboard S.C.O. Tks. flooded

Homo. des. load dep.

Displacement	246554.00	Tonnes
Longitudinal Centre of Gravity	11.098	Metres
Vertical Centre of Gravity	13.392	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	13.15	Degrees
Equilibrium GM	8.728	Metres
Longitudinal KM	629.409	Metres
Equilibrium Draught	16.928	Metres
Equilibrium Trim	5.388	Metres
Shiplength	366.000	Metres
Rollcentre	14.850	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	-2.279	-2.279	16.431	4.087	8.521 29053.421
10.00	-0.524	1.802	16.786	4.998	8.742 36190.982
20.00	0.782	5.362	17.438	5.987	9.275 38836.770
30.00	1.351	8.047	18.700	6.552	9.860 38897.318
40.00	1.441	10.049	20.359	6.988	10.405 38897.318
50.00	1.128	11.387	22.016	7.468	10.826 38897.318
60.00	0.581	12.179	23.502	7.844	11.151 38897.318
70.00	-0.084	12.500	24.752	8.049	11.420 38897.318
80.00	-0.797	12.392	25.725	8.066	11.660 38897.318
90.00	-1.506	11.886	26.388	7.871	11.886 38897.318

Criteria	Result
The final water line shall be below margin points allowing progressive flooding	Ok
The angle of heel due to unsymmetrical flooding shall not exceed 25°	13,15°
The GZ curve shall after flooding have a range of 20° beyond equilibrium heel angle	55°
The min GZ within the 20° range metioned above shall be at least 0.10 m	1,35 m
The min area within the 20° range metioned above shall be at least 0.0175 mrad	Ok

Damage Stability Data continued  
ACP-Max tanker

Damage 11: Hold 5 Starboard S.C.O. Tk., E/R & S/Tks flooded

Homo. des. load dep.

Displacement	246554.00	Tonnes
Longitudinal Centre of Gravity	11.098	Metres
Vertical Centre of Gravity	13.392	Metres
Shell Thickness	0.0000	Metres
Transverse Centre of Gravity	0.000	Metres
Equilibrium Heel Angle	6.28	Degrees
Equilibrium GM	10.334	Metres
Longitudinal KM	489.863	Metres
Equilibrium Draught	17.059	Metres
Equilibrium Trim	11.235	Metres
Shiplength	366.000	Metres
Rollcentre	14.850	Metres
Specific Gravity of Water	1.0250	

Longitudinal Reference Midships  
Vertical & Draught Reference Base Line

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	Added Volume Metre <sup>3</sup>
0.00	-1.138	-1.138	16.904	10.552	8.564	38684.439
10.00	0.649	2.974	17.173	11.732	8.789	41464.302
20.00	1.867	6.448	17.951	13.868	9.314	41601.523
30.00	2.258	8.954	19.453	16.114	9.854	41947.023
40.00	2.118	10.727	21.297	18.809	10.329	42473.223
50.00	1.605	11.863	23.153	21.524	10.697	42930.815
60.00	0.875	12.473	24.838	23.829	10.988	43274.915
70.00	0.033	12.617	26.260	25.528	11.232	43535.354
80.00	-0.854	12.335	27.366	26.531	11.451	43745.374
90.00	-1.732	11.660	28.118	26.787	11.661	43925.974

Criteria	Result
The final water line shall be below margin points allowing progressive flooding	Ok
The angle of heel due to unsymmetrical flooding shall not exceed 25°	6,28°
The GZ curve shall after flooding have a range of 20° beyond equilibrium heel angle	65°
The min GZ within the 20° range mentioned above shall be at least 0.10 m	1,87 m
The min area within the 20° range mentioned above shall be at least 0.0175 mrad	Ok

## **Appendix F: Trim and Stability calculations including longitudinal strength for Bulk Carrier**

Hydrostatic Data Sea Water  
ACP-Max Bulk Carrier

Shiplength= Lbp 352.000 Metres  
Moulded Beam 56.388 Metres  
Mean Shell thickness 0.0000 Metres  
Top of Keel 0.000 Metres  
Underside of Keel 0.000 Metres  
CP and CM referred to Section 16  
Vertical Centre of Gravity 0.000 Metres  
Specific Gravity of Water 1.0250

Longitudinal Datum Midships  
Vertical Datum Base Line

Trim 0.000 Metres

Draught To USK Metres	Moulded Draught Metres	Moulded Displacement Tonnes	Full Displacement Tonnes	LCB Metres	LCF Metres	Moulded VCB Metres	Immersion Tonnes/Cm	WSA Metre <sup>2</sup>
0.000	0.000							
0.250	0.250	3266.66	3266.66	19.110	18.483	0.128	136.010	13285.4
0.500	0.500	6762.56	6762.56	18.654	18.162	0.255	142.430	13937.4
0.750	0.750	10372.96	10372.96	18.410	17.728	0.382	145.756	14308.5
1.000	1.000	14045.81	14045.81	18.193	17.418	0.513	148.633	14645.1
1.250	1.250	17779.01	17779.01	18.014	17.163	0.644	151.140	14954.6
1.500	1.500	21572.99	21572.99	17.853	16.955	0.773	153.243	15233.7
1.750	1.750	25427.83	25427.83	17.704	16.800	0.901	154.954	15484.0
2.000	2.000	29343.74	29343.74	17.563	16.687	1.028	156.262	15703.9
2.250	2.250	33272.52	33272.52	17.452	16.535	1.157	157.460	15927.3
2.500	2.500	37224.02	37224.02	17.348	16.389	1.286	158.572	16146.4
2.750	2.750	41198.25	41198.25	17.248	16.248	1.416	159.597	16361.0
3.000	3.000	45195.24	45195.24	17.153	16.115	1.545	160.539	16571.8
3.250	3.250	49214.47	49214.47	17.062	15.982	1.675	161.398	16778.4
3.500	3.500	53256.18	53256.18	16.975	15.849	1.804	162.174	16980.8
3.750	3.750	57320.36	57320.36	16.891	15.718	1.933	162.865	17179.1
4.000	4.000	61407.02	61407.02	16.809	15.587	2.062	163.473	17373.1
4.250	4.250	65503.33	65503.33	16.729	15.459	2.190	164.068	17566.4
4.500	4.500	69612.48	69612.48	16.651	15.328	2.319	164.638	17758.8
4.750	4.750	73734.46	73734.46	16.572	15.193	2.448	165.186	17950.1
5.000	5.000	77869.29	77869.29	16.495	15.056	2.577	165.709	18140.4
5.250	5.250	82016.73	82016.73	16.418	14.915	2.706	166.209	18329.8
5.500	5.500	86177.09	86177.09	16.342	14.770	2.835	166.687	18518.2
5.750	5.750	90350.36	90350.36	16.266	14.619	2.964	167.144	18705.7
6.000	6.000	94536.55	94536.55	16.190	14.463	3.093	167.578	18892.4
6.250	6.250	98732.45	98732.45	16.114	14.297	3.221	168.001	19078.3
6.500	6.500	102937.8	102937.8	16.037	14.123	3.350	168.413	19263.8
6.750	6.750	107152.7	107152.7	15.957	13.940	3.479	168.814	19448.9
7.000	7.000	111377.1	111377.1	15.877	13.748	3.608	169.205	19633.7
7.250	7.250	115610.9	115610.9	15.795	13.546	3.737	169.587	19818.1
7.500	7.500	119854.8	119854.8	15.711	13.334	3.866	169.960	20002.3
7.750	7.750	124108.7	124108.7	15.626	13.111	3.995	170.326	20186.4
8.000	8.000	128372.6	128372.6	15.539	12.876	4.123	170.684	20370.3
8.250	8.250	132644.8	132644.8	15.450	12.631	4.252	171.042	20554.8
8.500	8.500	136925.5	136925.5	15.358	12.374	4.381	171.400	20739.9
8.750	8.750	141214.8	141214.8	15.263	12.106	4.510	171.759	20925.5
9.000	9.000	145512.6	145512.6	15.165	11.826	4.639	172.118	21111.7
9.250	9.250	149819.6	149819.6	15.065	11.525	4.768	172.487	21299.3
9.500	9.500	154136.2	154136.2	14.961	11.213	4.897	172.857	21487.6
9.750	9.750	158462.5	158462.5	14.854	10.888	5.026	173.228	21676.5
10.000	10.000	162798.4	162798.4	14.745	10.552	5.155	173.601	21866.1

Draught To USK Metres	Moulded Draught Metres	Moulded Displacement Tonnes	Full Displacement Tonnes	LCB Metres	LCF Metres	Moulded VCB Metres	Immersion Tonnes/Cm	WSA Metre^2
10.250	10.250	167142.7	167142.7	14.632	10.209	5.284	173.977	22056.0
10.500	10.500	171497.0	171497.0	14.515	9.847	5.414	174.365	22247.7
10.750	10.750	175861.4	175861.4	14.394	9.468	5.543	174.767	22441.3
11.000	11.000	180235.8	180235.8	14.269	9.071	5.672	175.182	22636.6
11.250	11.250	184621.5	184621.5	14.140	8.666	5.802	175.601	22832.8
11.500	11.500	189017.2	189017.2	14.007	8.251	5.932	176.024	23030.1
11.750	11.750	193422.9	193422.9	13.872	7.827	6.061	176.452	23228.4
12.000	12.000	197840.7	197840.7	13.731	7.255	6.191	177.024	23441.7
12.250	12.250	202277.2	202277.2	13.582	6.661	6.321	177.620	23657.6
12.500	12.500	206724.7	206724.7	13.426	6.085	6.451	178.161	23872.4
12.750	12.750	211183.5	211183.5	13.266	5.539	6.582	178.661	24085.1
13.000	13.000	215653.7	215653.7	13.101	5.008	6.712	179.135	24297.0
13.250	13.250	220136.4	220136.4	12.931	4.397	6.843	179.667	24517.6
13.500	13.500	224633.6	224633.6	12.755	3.749	6.974	180.212	24742.6
13.750	13.750	229146.7	229146.7	12.571	3.133	7.105	180.810	24966.4
14.000	14.000	233679.1	233679.1	12.379	2.484	7.236	181.427	25194.1
14.250	14.250	238223.4	238223.4	12.184	1.988	7.367	181.997	25408.1
14.500	14.500	242779.9	242779.9	11.989	1.530	7.499	182.547	25620.2
14.750	14.750	247348.7	247348.7	11.793	1.117	7.631	183.066	25829.2
15.000	15.000	251930.0	251930.0	11.597	0.753	7.762	183.554	26035.0
15.250	15.250	256523.0	256523.0	11.402	0.434	7.894	184.008	26237.7
15.500	15.500	261127.7	261127.7	11.207	0.163	8.026	184.431	26437.1
15.750	15.750	265743.9	265743.9	11.013	-0.060	8.158	184.820	26633.2
16.000	16.000	270371.7	270371.7	10.819	-0.236	8.290	185.176	26826.0
16.250	16.250	275008.8	275008.8	10.628	-0.363	8.422	185.534	27019.4
16.500	16.500	279653.2	279653.2	10.442	-0.475	8.554	185.879	27212.1
16.750	16.750	284304.9	284304.9	10.262	-0.571	8.686	186.213	27404.2
17.000	17.000	288963.8	288963.8	10.087	-0.651	8.818	186.534	27595.6
17.250	17.250	293629.9	293629.9	9.917	-0.717	8.950	186.843	27786.4
17.500	17.500	298303.4	298303.4	9.751	-0.767	9.082	187.140	27976.6
17.750	17.750	302984.1	302984.1	9.590	-0.801	9.214	187.425	28166.1
18.000	18.000	307672.1	307672.1	9.433	-0.821	9.346	187.698	28355.0
18.250	18.250	312366.4	312366.4	9.281	-0.805	9.478	187.985	28545.0
18.500	18.500	317067.9	317067.9	9.133	-0.777	9.610	188.263	28734.5
18.750	18.750	321776.3	321776.3	8.989	-0.735	9.742	188.530	28923.6
19.000	19.000	326491.9	326491.9	8.850	-0.681	9.874	188.788	29112.3
19.250	19.250	331214.4	331214.4	8.715	-0.615	10.006	189.036	29300.5
19.500	19.500	335944.1	335944.1	8.583	-0.535	10.138	189.275	29488.3
19.750	19.750	340680.7	340680.7	8.455	-0.444	10.270	189.503	29675.6
20.000	20.000	345424.5	345424.5	8.331	-0.340	10.402	189.722	29862.5
20.250	20.250	350171.6	350171.6	8.214	-0.240	10.533	189.932	30049.8
20.500	20.500	354923.1	354923.1	8.102	-0.138	10.665	190.136	30237.0
20.750	20.750	359679.0	359679.0	7.994	-0.035	10.797	190.334	30423.9
21.000	21.000	364439.3	364439.3	7.890	0.070	10.928	190.525	30610.6
21.250	21.250	369204.1	369204.1	7.790	0.183	11.060	190.717	30797.6
21.500	21.500	373973.4	373973.4	7.693	0.297	11.192	190.903	30984.4
21.750	21.750	378747.4	378747.4	7.601	0.413	11.323	191.083	31171.0
22.000	22.000	383526.0	383526.0	7.512	0.531	11.455	191.257	31357.5
22.250	22.250	388308.7	388308.7	7.427	0.643	11.586	191.415	31543.1

Draught To USK Metres	Moulded KMT Metres	GMT Metres	Moulded KML Metres	MCT Tonnes Metres/Cm	CB	CP	CM	CW
0.000								
0.250	818.485	818.485	23974.040	2224.859	0.642	0.697	0.922	0.669
0.500	435.054	435.054	12660.928	2432.394	0.665	0.710	0.937	0.700
0.750	297.114	297.114	8647.166	2548.202	0.680	0.718	0.947	0.716
1.000	228.468	228.468	6637.177	2648.424	0.690	0.724	0.954	0.731
1.250	186.821	186.821	5422.786	2738.971	0.699	0.729	0.959	0.743
1.500	158.423	158.423	4597.241	2817.506	0.707	0.733	0.964	0.753
1.750	137.488	137.488	3993.481	2884.817	0.714	0.738	0.968	0.762
2.000	121.164	121.164	3526.955	2940.172	0.721	0.742	0.972	0.768
2.250	108.496	108.496	3166.884	2993.471	0.727	0.745	0.975	0.774
2.500	98.392	98.392	2878.051	3043.541	0.732	0.749	0.977	0.779
2.750	90.126	90.126	2640.438	3090.381	0.736	0.752	0.979	0.784
3.000	83.222	83.222	2441.060	3134.213	0.740	0.755	0.981	0.789
3.250	77.354	77.354	2270.956	3175.111	0.744	0.758	0.983	0.793
3.500	72.293	72.293	2123.645	3212.989	0.748	0.760	0.984	0.797
3.750	67.871	67.871	1994.479	3247.847	0.751	0.763	0.985	0.801
4.000	63.964	63.964	1879.996	3279.686	0.755	0.765	0.986	0.804
4.250	60.561	60.561	1778.707	3309.978	0.758	0.768	0.987	0.806
4.500	57.554	57.554	1688.500	3339.224	0.760	0.770	0.987	0.809
4.750	54.879	54.879	1607.569	3367.421	0.763	0.772	0.988	0.812
5.000	52.482	52.482	1534.479	3394.569	0.765	0.774	0.989	0.815
5.250	50.324	50.324	1468.079	3420.655	0.768	0.776	0.989	0.817
5.500	48.369	48.369	1407.491	3445.837	0.770	0.778	0.990	0.819
5.750	46.591	46.591	1351.936	3470.112	0.772	0.780	0.990	0.822
6.000	44.966	44.966	1300.771	3493.476	0.774	0.782	0.991	0.824
6.250	43.481	43.481	1253.641	3516.336	0.776	0.784	0.991	0.826
6.500	42.120	42.120	1210.142	3538.905	0.778	0.785	0.991	0.828
6.750	40.868	40.868	1169.858	3561.179	0.780	0.787	0.992	0.830
7.000	39.713	39.713	1132.432	3583.153	0.782	0.788	0.992	0.832
7.250	38.644	38.644	1097.568	3604.856	0.784	0.790	0.992	0.834
7.500	37.653	37.653	1065.042	3626.433	0.785	0.791	0.992	0.835
7.750	36.731	36.731	1034.619	3647.877	0.787	0.793	0.993	0.837
8.000	35.872	35.872	1006.096	3669.181	0.789	0.794	0.993	0.839
8.250	35.074	35.074	979.379	3690.612	0.790	0.796	0.993	0.841
8.500	34.330	34.330	954.350	3712.351	0.792	0.797	0.993	0.842
8.750	33.637	33.637	930.855	3734.390	0.793	0.798	0.994	0.844
9.000	32.988	32.988	908.763	3756.719	0.795	0.800	0.994	0.846
9.250	32.382	32.382	888.102	3779.974	0.796	0.801	0.994	0.848
9.500	31.815	31.815	868.612	3803.540	0.797	0.802	0.994	0.850
9.750	31.283	31.283	850.199	3827.404	0.799	0.804	0.994	0.851
10.000	30.784	30.784	832.777	3851.555	0.800	0.805	0.994	0.853
10.250	30.317	30.317	816.276	3875.984	0.802	0.806	0.994	0.855
10.500	29.880	29.880	800.809	3901.601	0.803	0.807	0.995	0.857
10.750	29.469	29.469	786.297	3928.387	0.804	0.808	0.995	0.859
11.000	29.085	29.085	772.668	3956.320	0.805	0.810	0.995	0.861
11.250	28.723	28.723	759.726	3984.711	0.807	0.811	0.995	0.863
11.500	28.383	28.383	747.441	4013.613	0.808	0.812	0.995	0.865
11.750	28.063	28.063	735.767	4043.014	0.809	0.813	0.995	0.867
12.000	27.763	27.763	726.806	4084.996	0.810	0.814	0.995	0.870
12.250	27.481	27.481	718.509	4128.918	0.812	0.815	0.995	0.873
12.500	27.216	27.216	709.767	4168.361	0.813	0.817	0.995	0.876
12.750	26.967	26.967	700.793	4204.429	0.814	0.818	0.996	0.878
13.000	26.734	26.734	691.846	4238.614	0.815	0.819	0.996	0.880
13.250	26.513	26.513	684.106	4278.312	0.817	0.820	0.996	0.883
13.500	26.305	26.305	676.886	4319.644	0.818	0.821	0.996	0.886
13.750	26.108	26.108	670.685	4366.060	0.819	0.823	0.996	0.889
14.000	25.922	25.922	665.056	4415.050	0.820	0.824	0.996	0.892
14.250	25.745	25.745	659.019	4460.048	0.822	0.825	0.996	0.895



Draught To USK Metres	Moulded KMT Metres	GMT Metres	Moulded KML Metres	MCT Tonnes Metres/Cm	CB	CP	CM	CW
14.500	25.579	25.579	652.937	4503.405	0.823	0.826	0.996	0.897
14.750	25.423	25.423	646.697	4544.308	0.824	0.827	0.996	0.900
15.000	25.275	25.275	640.304	4582.719	0.826	0.829	0.996	0.902
15.250	25.136	25.136	633.740	4618.435	0.827	0.830	0.996	0.904
15.500	25.005	25.005	627.030	4651.558	0.828	0.831	0.996	0.907
15.750	24.881	24.881	620.178	4682.060	0.829	0.832	0.996	0.908
16.000	24.763	24.763	613.197	4709.975	0.831	0.834	0.996	0.910
16.250	24.651	24.651	606.507	4738.491	0.832	0.835	0.997	0.912
16.500	24.546	24.546	599.912	4766.120	0.833	0.836	0.997	0.914
16.750	24.448	24.448	593.409	4792.869	0.834	0.837	0.997	0.915
17.000	24.357	24.357	586.993	4818.742	0.835	0.838	0.997	0.917
17.250	24.271	24.271	580.662	4843.742	0.837	0.839	0.997	0.918
17.500	24.192	24.192	574.412	4867.873	0.838	0.841	0.997	0.920
17.750	24.118	24.118	568.241	4891.137	0.839	0.842	0.997	0.921
18.000	24.049	24.049	562.146	4913.536	0.840	0.843	0.997	0.923
18.250	23.985	23.985	556.399	4937.507	0.841	0.844	0.997	0.924
18.500	23.926	23.926	550.733	4960.789	0.842	0.845	0.997	0.925
18.750	23.872	23.872	545.146	4983.382	0.844	0.846	0.997	0.927
19.000	23.822	23.822	539.634	5005.284	0.845	0.847	0.997	0.928
19.250	23.777	23.777	534.193	5026.493	0.846	0.848	0.997	0.929
19.500	23.736	23.736	528.822	5047.006	0.847	0.849	0.997	0.930
19.750	23.698	23.698	523.517	5066.820	0.848	0.850	0.997	0.931
20.000	23.665	23.665	518.275	5085.931	0.849	0.851	0.997	0.933
20.250	23.634	23.634	513.121	5104.557	0.850	0.852	0.997	0.934
20.500	23.608	23.608	508.052	5122.712	0.851	0.853	0.997	0.935
20.750	23.608	23.608	508.052	5140.394	0.852	0.854	0.997	0.936
21.000	23.586	23.586	503.065	5157.604	0.853	0.855	0.997	0.936
21.250	23.567	23.567	498.156	5174.952	0.854	0.856	0.997	0.937
21.500	23.552	23.552	493.381	5191.841	0.854	0.856	0.997	0.937
21.750	23.531	23.531	488.679	5191.841	0.855	0.857	0.997	0.938
22.000	23.526	23.526	484.046	5208.271	0.856	0.858	0.997	0.939
22.250	23.523	23.523	479.481	5224.241	0.857	0.859	0.997	0.940
			474.903	5238.893	0.858	0.860	0.997	0.941

Hydrostatic Data Tropical Fresh Water  
ACP-Max Bulk Carrier

Shiplength= Lbp 352.000 Metres  
 Moulded Beam 56.388 Metres  
 Mean Shell thickness 0.0000 Metres  
 Top of Keel 0.000 Metres  
 Underside of Keel 0.000 Metres  
 CP and CM referred to Section 16  
 Vertical Centre of Gravity 0.000 Metres  
 Specific Gravity of Water 0.9954

Longitudinal Datum Midships  
 Vertical Datum Base Line

Trim 0.000 Metres

Draught To USK Metres	Moulded Draught Metres	Moulded Displacement Tonnes	Full Displacement Tonnes	LCB Metres	LCF Metres	Moulded VCB Metres	Immersion Tonnes/Cm	WSA Metre^2
0.000	0.000							
0.250	0.250	3172.33	3172.33	19.110	18.483	0.128	132.083	13285.4
0.500	0.500	6567.27	6567.27	18.654	18.162	0.255	138.317	13937.4
0.750	0.750	10073.41	10073.41	18.410	17.728	0.382	141.546	14308.5
1.000	1.000	13640.19	13640.19	18.193	17.418	0.513	144.341	14645.1
1.250	1.250	17265.59	17265.59	18.014	17.163	0.644	146.775	14954.6
1.500	1.500	20950.00	20950.00	17.853	16.955	0.773	148.818	15233.7
1.750	1.750	24693.53	24693.53	17.704	16.800	0.901	150.479	15484.0
2.000	2.000	28496.35	28496.35	17.563	16.687	1.028	151.749	15703.9
2.250	2.250	32311.67	32311.67	17.452	16.535	1.157	152.913	15927.3
2.500	2.500	36149.06	36149.06	17.348	16.389	1.286	153.993	16146.4
2.750	2.750	40008.52	40008.52	17.248	16.248	1.416	154.988	16361.0
3.000	3.000	43890.08	43890.08	17.153	16.115	1.545	155.903	16571.8
3.250	3.250	47793.25	47793.25	17.062	15.982	1.675	156.737	16778.4
3.500	3.500	51718.25	51718.25	16.975	15.849	1.804	157.490	16980.8
3.750	3.750	55665.06	55665.06	16.891	15.718	1.933	158.162	17179.1
4.000	4.000	59633.70	59633.70	16.809	15.587	2.062	158.753	17373.1
4.250	4.250	63611.72	63611.72	16.729	15.459	2.190	159.330	17566.4
4.500	4.500	67602.20	67602.20	16.651	15.328	2.319	159.884	17758.8
4.750	4.750	71605.16	71605.16	16.572	15.193	2.448	160.415	17950.1
5.000	5.000	75620.58	75620.58	16.495	15.056	2.577	160.924	18140.4
5.250	5.250	79648.25	79648.25	16.418	14.915	2.706	161.409	18329.8
5.500	5.500	83688.46	83688.46	16.342	14.770	2.835	161.873	18518.2
5.750	5.750	87741.22	87741.22	16.266	14.619	2.964	162.317	18705.7
6.000	6.000	91806.52	91806.52	16.190	14.463	3.093	162.739	18892.4
6.250	6.250	95881.25	95881.25	16.114	14.297	3.221	163.149	19078.3
6.500	6.500	99965.20	99965.20	16.037	14.123	3.350	163.549	19263.8
6.750	6.750	104058.4	104058.4	15.957	13.940	3.479	163.939	19448.9
7.000	7.000	108160.8	108160.8	15.877	13.748	3.608	164.319	19633.7
7.250	7.250	112272.3	112272.3	15.795	13.546	3.737	164.689	19818.1
7.500	7.500	116393.6	116393.6	15.711	13.334	3.866	165.052	20002.3
7.750	7.750	120524.7	120524.7	15.626	13.111	3.995	165.407	20186.4
8.000	8.000	124665.5	124665.5	15.539	12.876	4.123	165.755	20370.3
8.250	8.250	128814.2	128814.2	15.450	12.631	4.252	166.102	20554.8
8.500	8.500	132971.3	132971.3	15.358	12.374	4.381	166.450	20739.9
8.750	8.750	137136.8	137136.8	15.263	12.106	4.510	166.799	20925.5
9.000	9.000	141310.5	141310.5	15.165	11.826	4.639	167.148	21111.7
9.250	9.250	145493.1	145493.1	15.065	11.525	4.768	167.506	21299.3
9.500	9.500	149685.0	149685.0	14.961	11.213	4.897	167.865	21487.6
9.750	9.750	153886.4	153886.4	14.854	10.888	5.026	168.226	21676.5
10.000	10.000	158097.1	158097.1	14.745	10.552	5.155	168.588	21866.1

Draught To USK Metres	Moulded Draught Metres	Moulded Displacement Tonnes	Full Displacement Tonnes	LCB Metres	LCF Metres	Moulded VCB Metres	Immersion Tonnes/Cm	WSA Metre^2
10.250	10.250	162315.9	162315.9	14.632	10.209	5.284	168.952	22056.0
10.500	10.500	166544.5	166544.5	14.515	9.847	5.414	169.330	22247.7
10.750	10.750	170782.8	170782.8	14.394	9.468	5.543	169.720	22441.3
11.000	11.000	175031.0	175031.0	14.269	9.071	5.672	170.123	22636.6
11.250	11.250	179290.0	179290.0	14.140	8.666	5.802	170.530	22832.8
11.500	11.500	183558.8	183558.8	14.007	8.251	5.932	170.941	23030.1
11.750	11.750	187837.2	187837.2	13.872	7.827	6.061	171.356	23228.4
12.000	12.000	192127.5	192127.5	13.731	7.255	6.191	171.912	23441.7
12.250	12.250	196435.8	196435.8	13.582	6.661	6.321	172.490	23657.6
12.500	12.500	200754.9	200754.9	13.426	6.085	6.451	173.016	23872.4
12.750	12.750	205084.9	205084.9	13.266	5.539	6.582	173.502	24085.1
13.000	13.000	209426.0	209426.0	13.101	5.008	6.712	173.962	24297.0
13.250	13.250	213779.3	213779.3	12.931	4.397	6.843	174.479	24517.6
13.500	13.500	218146.7	218146.7	12.755	3.749	6.974	175.008	24742.6
13.750	13.750	222529.4	222529.4	12.571	3.133	7.105	175.589	24966.4
14.000	14.000	226930.9	226930.9	12.379	2.484	7.236	176.188	25194.1
14.250	14.250	231344.0	231344.0	12.184	1.988	7.367	176.742	25408.1
14.500	14.500	235768.8	235768.8	11.989	1.530	7.499	177.275	25620.2
14.750	14.750	240205.7	240205.7	11.793	1.117	7.631	177.779	25829.2
15.000	15.000	244654.7	244654.7	11.597	0.753	7.762	178.253	26035.0
15.250	15.250	249115.1	249115.1	11.402	0.434	7.894	178.695	26237.7
15.500	15.500	253586.8	253586.8	11.207	0.163	8.026	179.105	26437.1
15.750	15.750	258069.7	258069.7	11.013	-0.060	8.158	179.483	26633.2
16.000	16.000	262563.9	262563.9	10.819	-0.236	8.290	179.829	26826.0
16.250	16.250	267067.1	267067.1	10.628	-0.363	8.422	180.176	27019.4
16.500	16.500	271577.4	271577.4	10.442	-0.475	8.554	180.512	27212.1
16.750	16.750	276094.7	276094.7	10.262	-0.571	8.686	180.835	27404.2
17.000	17.000	280619.1	280619.1	10.087	-0.651	8.818	181.147	27595.6
17.250	17.250	285150.5	285150.5	9.917	-0.717	8.950	181.448	27786.4
17.500	17.500	289689.0	289689.0	9.751	-0.767	9.082	181.736	27976.6
17.750	17.750	294234.5	294234.5	9.590	-0.801	9.214	182.013	28166.1
18.000	18.000	298787.1	298787.1	9.433	-0.821	9.346	182.278	28355.0
18.250	18.250	303345.9	303345.9	9.281	-0.805	9.478	182.557	28545.0
18.500	18.500	307911.5	307911.5	9.133	-0.777	9.610	182.826	28734.5
18.750	18.750	312484.1	312484.1	8.989	-0.735	9.742	183.086	28923.6
19.000	19.000	317063.4	317063.4	8.850	-0.681	9.874	183.336	29112.3
19.250	19.250	321649.6	321649.6	8.715	-0.615	10.006	183.577	29300.5
19.500	19.500	326242.6	326242.6	8.583	-0.535	10.138	183.809	29488.3
19.750	19.750	330842.5	330842.5	8.455	-0.444	10.270	184.031	29675.6
20.000	20.000	335449.3	335449.3	8.331	-0.340	10.402	184.243	29862.5
20.250	20.250	340059.3	340059.3	8.214	-0.240	10.533	184.447	30049.8
20.500	20.500	344673.6	344673.6	8.102	-0.138	10.665	184.645	30237.0
20.750	20.750	349292.1	349292.1	7.994	-0.035	10.797	184.837	30423.9
21.000	21.000	353915.0	353915.0	7.890	0.070	10.928	185.023	30610.6
21.250	21.250	358542.2	358542.2	7.790	0.183	11.060	185.210	30797.6
21.500	21.500	363173.8	363173.8	7.693	0.297	11.192	185.390	30984.4
21.750	21.750	367809.9	367809.9	7.601	0.413	11.323	185.565	31171.0
22.000	22.000	372450.5	372450.5	7.512	0.531	11.455	185.733	31357.5
22.250	22.250	377095.1	377095.1	7.427	0.643	11.586	185.887	31543.1

Draught To USK Metres	Moulded KMT Metres	GMT Metres	Moulded KML Metres	MCT Tonnes Metres/Cm	CB	CP	CM	CW
0.000								
0.250	818.485	818.485	23974.040	2160.610	0.642	0.697	0.922	0.669
0.500	435.054	435.054	12660.928	2362.151	0.665	0.710	0.937	0.700
0.750	297.114	297.114	8647.166	2474.615	0.680	0.718	0.947	0.716
1.000	228.468	228.468	6637.177	2571.942	0.690	0.724	0.954	0.731
1.250	186.821	186.821	5422.786	2659.874	0.699	0.729	0.959	0.743
1.500	158.423	158.423	4597.241	2736.142	0.707	0.733	0.964	0.753
1.750	137.488	137.488	3993.481	2801.509	0.714	0.738	0.968	0.762
2.000	121.164	121.164	3526.955	2855.265	0.721	0.742	0.972	0.768
2.250	108.496	108.496	3166.884	2907.026	0.727	0.745	0.975	0.774
2.500	98.392	98.392	2878.051	2955.649	0.732	0.749	0.977	0.779
2.750	90.126	90.126	2640.438	3001.137	0.736	0.752	0.979	0.784
3.000	83.222	83.222	2441.060	3043.703	0.740	0.755	0.981	0.789
3.250	77.354	77.354	2270.956	3083.420	0.744	0.758	0.983	0.793
3.500	72.293	72.293	2123.645	3120.204	0.748	0.760	0.984	0.797
3.750	67.871	67.871	1994.479	3154.056	0.751	0.763	0.985	0.801
4.000	63.964	63.964	1879.996	3184.975	0.755	0.765	0.986	0.804
4.250	60.561	60.561	1778.707	3214.393	0.758	0.768	0.987	0.806
4.500	57.554	57.554	1688.500	3242.794	0.760	0.770	0.987	0.809
4.750	54.879	54.879	1607.569	3270.176	0.763	0.772	0.988	0.812
5.000	52.482	52.482	1534.479	3296.540	0.765	0.774	0.989	0.815
5.250	50.324	50.324	1468.079	3321.873	0.768	0.776	0.989	0.817
5.500	48.369	48.369	1407.491	3346.328	0.770	0.778	0.990	0.819
5.750	46.591	46.591	1351.936	3369.901	0.772	0.780	0.990	0.822
6.000	44.966	44.966	1300.771	3392.591	0.774	0.782	0.991	0.824
6.250	43.481	43.481	1253.641	3414.791	0.776	0.784	0.991	0.826
6.500	42.120	42.120	1210.142	3436.708	0.778	0.785	0.991	0.828
6.750	40.868	40.868	1169.858	3458.339	0.780	0.787	0.992	0.830
7.000	39.713	39.713	1132.432	3479.679	0.782	0.788	0.992	0.832
7.250	38.644	38.644	1097.568	3500.755	0.784	0.790	0.992	0.834
7.500	37.653	37.653	1065.042	3521.708	0.785	0.791	0.992	0.835
7.750	36.731	36.731	1034.619	3542.533	0.787	0.793	0.993	0.837
8.000	35.872	35.872	1006.096	3563.223	0.789	0.794	0.993	0.839
8.250	35.074	35.074	979.379	3584.034	0.790	0.796	0.993	0.841
8.500	34.330	34.330	954.350	3605.146	0.792	0.797	0.993	0.842
8.750	33.637	33.637	930.855	3626.548	0.793	0.798	0.994	0.844
9.000	32.988	32.988	908.763	3648.232	0.795	0.800	0.994	0.846
9.250	32.382	32.382	888.102	3670.816	0.796	0.801	0.994	0.848
9.500	31.815	31.815	868.612	3693.701	0.797	0.802	0.994	0.850
9.750	31.283	31.283	850.199	3716.876	0.799	0.804	0.994	0.851
10.000	30.784	30.784	832.777	3740.330	0.800	0.805	0.994	0.853
10.250	30.317	30.317	816.276	3764.053	0.802	0.806	0.994	0.855
10.500	29.880	29.880	800.809	3788.931	0.803	0.807	0.995	0.857
10.750	29.469	29.469	786.297	3814.943	0.804	0.808	0.995	0.859
11.000	29.085	29.085	772.668	3842.069	0.805	0.810	0.995	0.861
11.250	28.723	28.723	759.726	3869.640	0.807	0.811	0.995	0.863
11.500	28.383	28.383	747.441	3897.708	0.808	0.812	0.995	0.865
11.750	28.063	28.063	735.767	3926.259	0.809	0.813	0.995	0.867
12.000	27.763	27.763	726.806	3967.029	0.810	0.814	0.995	0.870
12.250	27.481	27.481	718.509	4009.683	0.812	0.815	0.995	0.873
12.500	27.216	27.216	709.767	4047.987	0.813	0.817	0.995	0.876
12.750	26.967	26.967	700.793	4083.013	0.814	0.818	0.996	0.878
13.000	26.734	26.734	691.846	4116.211	0.815	0.819	0.996	0.880
13.250	26.513	26.513	684.106	4154.763	0.817	0.820	0.996	0.883
13.500	26.305	26.305	676.886	4194.901	0.818	0.821	0.996	0.886
13.750	26.108	26.108	670.685	4239.977	0.819	0.823	0.996	0.889
14.000	25.922	25.922	665.056	4287.552	0.820	0.824	0.996	0.892
14.250	25.745	25.745	659.019	4331.251	0.822	0.825	0.996	0.895

Draught To USK Metres	Moulded KMT Metres	GMT Metres	Moulded KML Metres	MCT Tonnes Metres/Cm	CB	CP	CM	CW
14.500	25.579	25.579	652.937	4373.356	0.823	0.826	0.996	0.897
14.750	25.423	25.423	646.697	4413.078	0.824	0.827	0.996	0.900
15.000	25.275	25.275	640.304	4450.379	0.826	0.829	0.996	0.902
15.250	25.136	25.136	633.740	4485.063	0.827	0.830	0.996	0.904
15.500	25.005	25.005	627.030	4517.230	0.828	0.831	0.996	0.907
15.750	24.881	24.881	620.178	4546.852	0.829	0.832	0.996	0.908
16.000	24.763	24.763	613.197	4573.960	0.831	0.834	0.996	0.910
16.250	24.651	24.651	606.507	4601.652	0.832	0.835	0.997	0.912
16.500	24.546	24.546	599.912	4628.484	0.833	0.836	0.997	0.914
16.750	24.448	24.448	593.409	4654.461	0.834	0.837	0.997	0.915
17.000	24.357	24.357	586.993	4679.586	0.835	0.838	0.997	0.917
17.250	24.271	24.271	580.662	4703.864	0.837	0.839	0.997	0.918
17.500	24.192	24.192	574.412	4727.298	0.838	0.841	0.997	0.920
17.750	24.118	24.118	568.241	4749.891	0.839	0.842	0.997	0.921
18.000	24.049	24.049	562.146	4771.643	0.840	0.843	0.997	0.923
18.250	23.985	23.985	556.399	4794.921	0.841	0.844	0.997	0.924
18.500	23.926	23.926	550.733	4817.531	0.842	0.845	0.997	0.925
18.750	23.872	23.872	545.146	4839.471	0.844	0.846	0.997	0.927
19.000	23.822	23.822	539.634	4860.741	0.845	0.847	0.997	0.928
19.250	23.777	23.777	534.193	4881.337	0.846	0.848	0.997	0.929
19.500	23.736	23.736	528.822	4901.258	0.847	0.849	0.997	0.930
19.750	23.698	23.698	523.517	4920.500	0.848	0.850	0.997	0.931
20.000	23.665	23.665	518.275	4939.059	0.849	0.851	0.997	0.933
20.250	23.634	23.634	513.121	4957.148	0.850	0.852	0.997	0.934
20.500	23.608	23.608	508.052	4974.778	0.851	0.853	0.997	0.935
20.750	23.586	23.586	503.065	4991.950	0.852	0.854	0.997	0.936
21.000	23.567	23.567	498.156	5008.663	0.853	0.855	0.997	0.936
21.250	23.552	23.552	493.381	5025.509	0.854	0.856	0.997	0.937
21.500	23.540	23.540	488.679	5041.911	0.855	0.857	0.997	0.938
21.750	23.531	23.531	484.046	5057.866	0.856	0.858	0.997	0.939
22.000	23.526	23.526	479.481	5073.375	0.857	0.859	0.997	0.940
22.250	23.523	23.523	474.903	5087.604	0.858	0.860	0.997	0.941

## Summary of intact stability and strength calculations for ACP-Max Bulk Carrier

Description	Unit	Condition 1	Condition 2	Condition 3	Condition 4
		Lightship cond.	Homo. design load dep. cond	Ore load dep. cond.	Normal ballast dep. cond.
Lightship weight	[T]	43966,0	43966,0	43966,0	43966,0
Bunkering	[T]	0,0	6800,0	6800,0	0
Water ballast	[T]	0,0	3383,0	0,0	97542
Cargo	[T]	0,0	195999,0	195991,0	0
Deadweight	[T]	0,0	206182,0	202791,0	97542,0
Displacement	[T]	43966,0	250148,0	246757,0	141508,0
Draught eqv.	[M]	3,057	14,903	14,719	8,800
Draught at F.P.	[M]	1,376	13,675	13,083	8,284
Draught at A.P.	[M]	4,738	16,131	16,355	9,317
Trim*	[M]	3,362	2,456	3,272	1,033
KG	[M]	12,500	13,074	13,181	10,296
GM0	[M]	73,071	12,386	12,448	23,413
Max B. Moment	[T-M]	400952	403621	918815	534589
Max S. Force	[T]	5213	5623	20129	5555
<b>IMO Intact Stability Criteria</b>					
Area30	[Mrad]	5,377	1,654	1,671	3,113
Area40	[Mrad]	7,540	2,631	2,661	5,040
Area30-40	[Mrad]	2,163	0,977	0,990	1,927
Max GZ 30	[°]	25**	35	35	40
GZ 0.2	[M]	13,028**	5,638	5,720	11,143
GM 0.15	[M]	73,071	12,386	12,448	23,413

### Criteria

- Area30: The area under the GZ-curve to 30° not to be less than 0,055 mrad
- Area40: The area under the GZ-curve to 40° not to be less than 0,090 mrad
- Area30-40: The area under the GZ-curve from 30°-40° not to be less than 0,030 mrad
- Max GZ 30: The max value of GZ to occur at an angle equal or greater than 30°
- GZ 0,2: The value of GZ at an angle equal or greater to 30° not to be less than 0,20 m
- GM 0,15: The value of upright GM not to be less than 0,15 m

\* Positive trim bow up, negative trim bow down

\*\* For lightship conditions this is normally the case, however accepted due to ballast capacities

Loading Conditions Data  
 ACP-Max Bulk Carrier  
Condition 1: Lightship cond.

Item	Weight	LCG	LMom	VCG	VMom	FSM
Hold1	0.000	0.000	0.00	0.000	0.00	0.000
Hold2	0.000	0.000	0.00	0.000	0.00	0.000
Hold3	0.000	0.000	0.00	0.000	0.00	0.000
Hold4	0.000	0.000	0.00	0.000	0.00	0.000
Hold5	0.000	0.000	0.00	0.000	0.00	0.000
Hold6	0.000	0.000	0.00	0.000	0.00	0.000
Hold7	0.000	0.000	0.00	0.000	0.00	0.000
Hold8	0.000	0.000	0.00	0.000	0.00	0.000
Hold9	0.000	0.000	0.00	0.000	0.00	0.000
Hold10	0.000	0.000	0.00	0.000	0.00	0.000
Hold11	0.000	0.000	0.00	0.000	0.00	0.000
HFOTks & Supplies	0.000	0.000	0.00	0.000	0.00	0.000
FPtk	0.000	0.000	0.00	0.000	0.00	0.000
APtk	0.000	0.000	0.00	0.000	0.00	0.000
BWTK1	0.000	0.000	0.00	0.000	0.00	0.000
BWTK2	0.000	0.000	0.00	0.000	0.00	0.000
BWTK3	0.000	0.000	0.00	0.000	0.00	0.000
BWTK4	0.000	0.000	0.00	0.000	0.00	0.000
BWTK5	0.000	0.000	0.00	0.000	0.00	0.000
BWTK6	0.000	0.000	0.00	0.000	0.00	0.000
Deadweight	0.000	0.000	0.00	0.000	0.00	0.000
Lightship	43966.00	-5.678	-249639	12.500	549575	0.000
Displacement	43966.00	-5.678	-249639	12.500	549575	0.000

Draught   Aft   4.738 Metres  
           Mid   3.057 Metres  
           Fwd   1.376 Metres  
 Trim           3.362 Metres by the stern

GM       Solid   73.095 Metres  
           Fluid   73.095 Metres  
 Effective VCG   12.500 Metres

Draught   LCF   2.941 Metres  
 Moulded Disp. 43966.000 Tonnes

Free Trimming Stability Data  
 ACP-Max BULK Carrier  
 Lightship cond.

Displacement	43966.00	Tonnes
Longitudinal Centre of Gravity	-5.678	Metres
Vertical Centre of Gravity	12.500	Metres
Transverse Centre of Gravity	0.000	Metres
GM	73.071	Metres
Shiplength	366.000	
Rollcentre	11.800	
Specific Gravity of Water	1.0250	

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	GZ Curve Area M.Rad
0.0	0.000	0.000	3.055	3.370	1.614	0.000
5.0	6.235	7.324	3.045	3.385	1.921	0.278
10.0	10.384	12.555	2.812	3.859	2.570	1.022
15.0	12.140	15.376	2.240	4.556	3.175	2.017
20.0	12.861	17.136	1.475	5.297	3.740	3.113
25.0	13.028	18.311	0.602	5.981	4.287	4.245
30.0	12.855	19.105	-0.333	6.547	4.840	5.377
35.0	12.430	19.600	-1.307	6.927	5.399	6.481
40.0	11.800	19.835	-2.302	7.085	5.966	7.540
45.0	11.019	19.858	-3.307	7.008	6.561	8.536
50.0	10.136	19.711	-4.298	6.797	7.186	9.460
55.0	9.182	19.422	-5.255	6.551	7.868	10.304
60.0	8.132	18.957	-6.147	6.374	8.569	11.060
65.0	6.985	18.314	-6.943	6.264	9.277	11.720
70.0	5.715	17.462	-7.623	6.197	9.949	12.275
75.0	4.382	16.456	-8.177	6.196	10.624	12.716
80.0	2.959	15.269	-8.587	6.123	11.259	13.037
85.0	1.478	13.930	-8.850	5.992	11.870	13.231
90.0	-0.028	12.472	-8.968	5.802	12.472	13.294

Criteria	Result
The area under the GZ-curve to 30° not to be less than 0.055 mrad	5.377 mrad
The area under the GZ-curve to 40° not to be less than 0.090 mrad	7.540 mrad
The area under the GZ-curve from 30°-40° not to be less than 0.030 mrad	2.163 mrad
The max value of GZ to occur at an angle equal or greater than 30°	25° *
The value of GZ at an angle equal or greater to 30° not to be less than 0,20 m	13.028 m at 25° *
The value of upright GM not to be less than 0.15 m	73.071 m

\* For lightship conditions this is normally the case, however accepted due to ballast capacities



Longitudinal Strength Data  
 ACP-Max Bulk Carrier  
 Condition 1: Lightship cond.

Item	Weight	LCG	LMom	VCG	Vmom	FSM
Hold1	0.000	0.000	0.00	0.000	0.00	0.000
Hold2	0.000	0.000	0.00	0.000	0.00	0.000
Hold3	0.000	0.000	0.00	0.000	0.00	0.000
Hold4	0.000	0.000	0.00	0.000	0.00	0.000
Hold5	0.000	0.000	0.00	0.000	0.00	0.000
Hold6	0.000	0.000	0.00	0.000	0.00	0.000
Hold7	0.000	0.000	0.00	0.000	0.00	0.000
Hold8	0.000	0.000	0.00	0.000	0.00	0.000
Hold9	0.000	0.000	0.00	0.000	0.00	0.000
Hold10	0.000	0.000	0.00	0.000	0.00	0.000
Hold11	0.000	0.000	0.00	0.000	0.00	0.000
HFotks & Supplies	0.000	0.000	0.00	0.000	0.00	0.000
FPtk	0.000	0.000	0.00	0.000	0.00	0.000
APtk	0.000	0.000	0.00	0.000	0.00	0.000
BWTK1	0.000	0.000	0.00	0.000	0.00	0.000
BWTK2	0.000	0.000	0.00	0.000	0.00	0.000
BWTK3	0.000	0.000	0.00	0.000	0.00	0.000
BWTK4	0.000	0.000	0.00	0.000	0.00	0.000
BWTK5	0.000	0.000	0.00	0.000	0.00	0.000
BWTK6	0.000	0.000	0.00	0.000	0.00	0.000
Deadweight	0.000	0.000	0.00	0.000	0.00	0.000
Lightship	43966	-5.678	-249639	12.500	549575	0.000
Displacement	43966	-5.678	-249639	12.500	549575	0.000

Draught 3.057 Metres  
 Trim 3.362 Metres by the stern

S.G. of Water 1.0250  
 Shell Thick. 0.0000 Metres

GM Solid 73.109 Metres  
 Fluid 73.109 Metres  
 Effective VCG 12.500 Metres

Draught LCF 2.940 Metres  
 Moulded Disp. 43972.788 Tonnes

Long. Position Metres	Shear Force Tonnes	Bending Moment Tonne.M
-183.000	0.000	0.000
-181.500	0.027	24.598
-176.500	189.850	581.218
-176.200	217.140	647.183
-175.900	260.335	723.719
-173.000	567.846	1972.099
-171.500	726.903	2967.739
-171.350	734.859	3079.829
-171.200	752.578	3193.844
-168.250	947.239	5749.410
-167.850	984.664	6142.344
-164.350	1339.388	10266.783
-164.300	1340.606	10334.602

-163.000	1479.276	12188.826
-155.500	2213.338	26159.017
-155.300	2264.426	26610.071
-153.000	2656.291	32306.582
-149.800	3187.091	41708.427
-149.500	3249.892	42678.889
-144.000	4363.535	63705.932
-143.500	4422.099	65910.533
-143.000	4480.073	68144.268
-141.500	4650.446	75016.735
-136.000	5194.452	102180.322
-135.500	5212.975	104790.374
-135.050	5190.397	107138.506
-133.000	5022.529	117640.345
-128.300	4600.250	140330.887
-123.000	4642.183	164910.176
-113.000	4540.880	210989.343
-103.000	4203.732	254876.256
-93.000	3630.739	294212.460
-83.000	2823.715	326648.578
-73.000	1961.471	350738.360
-68.500	1573.771	358766.390
-63.000	1831.676	368221.490
-61.300	1911.451	371431.003
-53.000	1392.058	385276.562
-43.000	767.152	396236.468
-33.000	143.195	400952.055
-23.000	-437.228	399645.736
-13.000	-936.431	392941.289
-10.500	-1052.939	390495.538
-3.000	-1382.560	381485.306
-0.500	-1485.799	377940.820
-0.450	-1494.480	377867.132
-0.005	-1512.497	377205.371
0.005	-1512.901	377190.408
7.000	-1782.264	365780.185
17.000	-2122.243	346421.501
27.000	-2409.148	323928.394
37.000	-2640.756	298842.724
47.000	-2820.732	271699.138
56.600	-2944.962	244181.107
57.000	-2906.106	243017.447
67.000	-1907.878	219111.377
68.450	-1758.852	216476.756
77.000	-1996.347	200563.374
87.000	-2217.744	179656.772
97.000	-2378.326	156840.276
107.000	-2478.093	132722.035
117.000	-2540.479	107793.031
127.000	-2451.849	82995.246
137.000	-2185.711	59971.298
147.000	-1742.066	40496.261
155.800	-1204.824	27674.131
157.000	-1249.914	26220.951
167.000	-1509.188	12589.295
167.650	-1515.520	11616.916
173.200	-1091.250	4474.067
173.500	-1045.532	4158.465
173.550	-1034.300	4107.289
177.000	-537.754	1452.023

177.900	-408.193	1041.094
178.200	-349.390	932.372
178.500	-312.180	838.052
179.500	-260.091	568.302
184.500	0.000	0.000

Loading Conditions Data continued  
 ACP-Max Bulk Carrier  
Condition 2: Homo. design load dep. cond.

Item	Weight	LCG	LMom	VCG	VMom	FSM
Hold1	13697.00	150.70	2064138	13.600	186279	0.000
Hold2	18076.00	123.90	2239616	13.100	236796	0.000
Hold3	18699.00	95.600	1787624	12.900	241217	0.000
Hold4	18701.00	68.900	1288499	13.000	243113	0.000
Hold5	18701.00	41.300	772351	13.000	243113	0.000
Hold6	18701.00	13.700	256204	13.000	243113	0.000
Hold7	18701.00	-13.900	-259944	13.000	243113	0.000
Hold8	18700.00	-41.500	-776050	13.000	243100	0.000
Hold9	18578.00	-69.100	-1283740	13.000	241514	0.000
Hold10	17919.00	-96.600	-1730975	13.300	238323	0.000
Hold11	15526.00	-124.10	-1926777	14.100	218917	0.000
HFOTks & Supplies	6800.000	-133.20	-905760	16.000	108800	0.000
FPtk	3383.000	170.30	576125	9.900	33492	0.000
APtk	0.000	0.000	0.00	0.000	0.00	0.000
BWTK1	0.000	0.000	0.00	0.000	0.00	0.000
BWTK2	0.000	0.000	0.00	0.000	0.00	0.000
BWTK3	0.000	0.000	0.00	0.000	0.00	0.000
BWTK4	0.000	0.000	0.00	0.000	0.00	0.000
BWTK5	0.000	0.000	0.00	0.000	0.00	0.000
BWTK6	0.000	0.000	0.00	0.000	0.00	0.000
Deadweight	206182.0	10.192	2101312	13.197	2720889	0.000
Lightship	43966.00	-5.678	-249639	12.500	549575	0.000
Displacement	250148.0	7.402	1851673	13.074	3270464	0.000

Draught   Aft   16.131 Metres  
               Mid   14.903 Metres  
               Fwd   13.675 Metres  
 Trim                2.456 Metres by the stern

GM       Solid   12.387 Metres  
           Fluid   12.387 Metres  
 Effective VCG   13.074 Metres

Draught   LCF   14.906 Metres  
 Moulded Disp.250148.000 Tonnes

Free Trimming Stability Data continued  
 ACP-Max BULK Carrier  
 Homo. Design load dep. cond.

	Displacement	250148.00	Tonnes
Longitudinal Centre of Gravity		7.402	Metres
Vertical Centre of Gravity		13.074	Metres
Transverse Centre of Gravity		0.000	Metres
	GM	12.386	Metres
	Shiplength	366.000	
	Rollcentre	11.800	
	Specific Gravity of Water	1.0250	

Heel Angle Degrees	Righting Lever GZ Metres	Lever KN Metres	Waterline Metres	Trim Metres	VCB Metres	GZ Curve Area M.Rad
0.0	0.000	0.000	14.904	2.449	7.726	0.000
5.0	1.084	2.224	14.885	2.405	7.793	0.047
10.0	2.190	4.460	14.827	2.279	8.002	0.190
15.0	3.341	6.725	14.729	2.072	8.355	0.431
20.0	4.404	8.875	14.667	1.894	8.830	0.771
25.0	5.109	10.634	14.792	1.651	9.308	1.188
30.0	5.523	12.060	15.046	1.358	9.770	1.654
35.0	5.638	13.137	15.346	1.070	10.171	2.143
40.0	5.498	13.902	15.638	0.811	10.495	2.631
45.0	5.182	14.427	15.911	0.572	10.766	3.098
50.0	4.739	14.754	16.162	0.354	10.996	3.531
55.0	4.200	14.910	16.385	0.142	11.197	3.922
60.0	3.588	14.911	16.577	-0.062	11.376	4.262
65.0	2.920	14.770	16.736	-0.259	11.539	4.546
70.0	2.210	14.496	16.861	-0.450	11.690	4.771
75.0	1.469	14.097	16.949	-0.634	11.832	4.931
80.0	0.707	13.582	17.002	-0.809	11.969	5.026
85.0	-0.066	12.959	17.017	-0.974	12.102	5.054
90.0	-0.840	12.234	16.997	-1.124	12.234	5.015

Criteria	Result
The area under the GZ-curve to 30° not to be less than 0.055 mrad	1.654 mrad
The area under the GZ-curve to 40° not to be less than 0.090 mrad	2.631 mrad
The area under the GZ-curve from 30°-40° not to be less than 0.030 mrad	0.977 mrad
The max value of GZ to occur at an angle equal or greater than 30°	35°
The value of GZ at an angle equal or greater to 30° not to be less than 0,20 m	5.638 m at 35°
The value of upright GM not to be less than 0.15 m	12.386 m

Longitudinal Strength Data continued  
 Condition 2: Homo. design load dep. cond.

Item	Weight	LCG	LMom	VCG	Vmom	FSM
Hold1	13697	150.70	2064138	13.600	186279	0.000
Hold2	18076	123.90	2239616	13.100	236796	0.000
Hold3	18699	95.600	1787624	12.900	241217	0.000
Hold4	18701	68.900	1288499	13.000	243113	0.000
Hold5	18701	41.300	772351	13.000	243113	0.000
Hold6	18701	13.700	256204	13.000	243113	0.000
Hold7	18701	-13.900	-259944	13.000	243113	0.000
Hold8	18700	-41.500	-776050	13.000	243100	0.000
Hold9	18578	-69.100	-1283740	13.000	241514	0.000
Hold10	17919	-96.600	-1730975	13.300	238323	0.000
Hold11	15526	-124.10	-1926777	14.100	218917	0.000
HFOTks & Supplies	6800.0	-133.20	-905760	16.000	108800	0.000
FPtk	3383.0	170.30	576125	9.900	33492	0.000
APtk	0.000	0.000	0.00	0.000	0.00	0.000
BWTK1	0.000	0.000	0.00	0.000	0.00	0.000
BWTK2	0.000	0.000	0.00	0.000	0.00	0.000
BWTK3	0.000	0.000	0.00	0.000	0.00	0.000
BWTK4	0.000	0.000	0.00	0.000	0.00	0.000
BWTK5	0.000	0.000	0.00	0.000	0.00	0.000
BWTK6	0.000	0.000	0.00	0.000	0.00	0.000
Deadweight	206182	10.192	2101312	13.197	2720889	0.000
Lightship	43966	-5.678	-249639	12.500	549575	0.000
Displacement	250148	7.402	1851673	13.074	3270464	0.000

Draught 14.903 Metres  
 Trim 2.461 Metres by the stern

S.G. of Water 1.0250  
 Shell Thick. 0.0000 Metres

GM Solid 12.387 Metres  
 Fluid 12.387 Metres  
 Effective VCG 13.074 Metres

Draught LCF 14.906 Metres  
 Moulded Disp. 250132.554 Tonnes

Long. Position Metres	Shear Force Tonnes	Bending Moment Tonne.M
-183.000	0.000	0.000
-181.500	-18.137	49.165
-176.500	64.789	375.021
-176.200	83.541	409.824
-175.900	117.906	452.595
-173.000	324.963	1216.108
-171.500	421.324	1838.592
-171.350	422.607	1908.164
-171.200	433.580	1978.655
-168.250	478.633	3447.614
-167.850	491.255	3658.329
-164.350	577.788	5675.614
-164.300	574.509	5706.513
-163.000	589.685	6517.639

-155.500	243.795	9957.032
-155.300	256.744	10015.455
-153.000	175.622	10608.920
-149.800	-57.691	10931.514
-149.500	-72.838	10924.489
-145.200	-430.559	10022.121
-144.000	-237.304	9671.618
-143.500	-201.954	9582.726
-143.000	-170.159	9510.620
-141.500	-96.097	9373.697
-137.900	-85.038	9198.298
-136.000	836.114	9991.327
-135.500	1050.544	10483.914
-135.050	1203.209	11009.839
-133.000	1820.802	14195.233
-128.300	3119.690	26002.065
-123.000	4969.456	47660.084
-121.200	5550.523	57203.388
-113.000	5571.714	103147.694
-110.400	5474.824	117616.992
-110.300	5535.026	118171.669
-103.000	5623.875	159207.129
-93.000	5107.258	213281.252
-83.000	3869.083	258581.414
-82.900	3858.418	258971.974
-82.800	3915.062	259364.832
-73.000	3092.828	294113.580
-68.500	2708.088	307353.947
-63.000	2963.211	323180.170
-61.300	3040.701	328354.632
-55.300	2651.732	345683.002
-53.000	2510.663	351716.001
-43.000	1883.588	374105.711
-33.000	1234.187	390113.043
-27.700	884.458	395949.233
-23.000	614.658	399668.829
-13.000	69.175	403506.448
-10.500	-61.124	403621.126
-3.000	-437.449	402065.321
-0.500	-558.033	400925.583
-0.450	-567.070	400899.547
-0.100	-583.751	400712.800
-0.005	-588.271	400661.104
0.005	-588.746	400655.637
7.000	-911.864	395699.961
17.000	-1340.772	384855.238
27.000	-1730.820	369915.734
27.500	-1749.143	369066.666
37.000	-2078.973	351280.646
47.000	-2390.176	329353.357
55.100	-2615.192	309420.566
56.600	-2654.204	305531.287
57.000	-2621.467	304492.891
67.000	-1783.849	282884.767
68.450	-1659.330	280449.139
77.000	-2048.339	264956.632
81.800	-2250.613	254840.005
82.700	-1677.498	253110.016
87.000	-1847.208	245711.836
97.000	-2205.866	225864.925
107.000	-2514.150	202683.305

109.400	-2580.642	196669.984
110.100	-3090.899	194714.236
117.000	-3807.011	171205.181
127.000	-4097.862	132099.268
136.900	-3515.004	94829.849
137.000	-3455.070	94485.530
137.700	-3033.054	92243.978
147.000	-3106.033	64086.386
155.800	-2471.057	39915.431
157.000	-2460.429	37006.754
161.800	-2290.616	25805.106
164.500	-1568.290	20708.566
167.000	-1896.800	16481.818
167.650	-1948.502	15259.294
173.200	-1587.646	5678.727
173.500	-1528.831	5223.809
173.550	-1515.252	5149.799
177.000	-738.480	1406.479
177.900	-498.938	887.302
178.200	-400.341	764.963
178.500	-321.769	669.200
178.800	-263.223	594.005
179.500	-259.788	440.243
184.500	-0.000	-0.000



Loading Conditions Data continued  
 ACP-Max Bulk Carrier  
Condition 3: Ore load dep. cond.

Item	Weight	LCG	LMom	VCG	VMom	FSM
Hold1	27344.00	150.70	4120741	13.600	371878	0.000
Hold2	0.000	0.000	0.00	0.000	0.00	0.000
Hold3	37380.00	95.600	3573528	12.900	482202	0.000
Hold4	0.000	0.000	0.00	0.000	0.00	0.000
Hold5	35271.00	41.300	1456692	13.000	458523	0.000
Hold6	0.000	0.000	0.00	0.000	0.00	0.000
Hold7	32726.00	-13.900	-454891	13.000	425438	0.000
Hold8	0.000	0.000	0.00	0.000	0.00	0.000
Hold9	32726.00	-69.100	-2261367	13.000	425438	0.000
Hold10	0.000	0.000	0.00	0.000	0.00	0.000
Hold11	30544.00	-124.10	-3790510	14.100	430670	0.000
HFOTks & Supplies	6800.000	-133.20	-905760	16.000	108800	0.000
FPtk	0.000	0.000	0.00	0.000	0.00	0.000
APtk	0.000	0.000	0.00	0.000	0.00	0.000
BWTK1	0.000	0.000	0.00	0.000	0.00	0.000
BWTK2	0.000	0.000	0.00	0.000	0.00	0.000
BWTK3	0.000	0.000	0.00	0.000	0.00	0.000
BWTK4	0.000	0.000	0.00	0.000	0.00	0.000
BWTK5	0.000	0.000	0.00	0.000	0.00	0.000
BWTK6	0.000	0.000	0.00	0.000	0.00	0.000
Deadweight	202791.0	8.573	1738433	13.329	2702950	0.000
Lightship	43966.00	-5.678	-249639	12.500	549575	0.000
Displacement	246757.0	6.033	1488794	13.181	3252525	0.000

Draught   Aft   16.355 Metres  
               Mid   14.719 Metres  
               Fwd   13.083 Metres  
 Trim                3.272 Metres by the stern

GM       Solid   12.448 Metres  
               Fluid   12.448 Metres  
 Effective VCG   13.181 Metres

Draught   LCF   14.723 Metres  
 Moulded Disp.246757.000 Tonnes

Free Trimming Stability Data continued

ACP-Max BULK Carrier

Ore load dep. cond.

	Displacement	246757.00	Tonnes
Longitudinal Centre of Gravity		6.033	Metres
Vertical Centre of Gravity		13.181	Metres
Transverse Centre of Gravity		0.000	Metres
	GM	12.448	Metres

	Shiplength	366.000
	Rollcentre	11.800
	Specific Gravity of Water	1.0250

Heel Angle Degrees	Righting Lever GZ Metres	Waterline KN Metres	Trim Metres	VCB Metres	GZ Curve Area M.Rad	
0.0	0.000	0.000	14.719	3.272	7.640	0.000
5.0	1.090	2.239	14.701	3.226	7.709	0.047
10.0	2.201	4.490	14.647	3.089	7.920	0.191
15.0	3.358	6.769	14.554	2.865	8.280	0.433
20.0	4.446	8.954	14.488	2.699	8.766	0.775
25.0	5.183	10.753	14.601	2.507	9.264	1.198
30.0	5.610	12.200	14.839	2.286	9.739	1.671
35.0	5.720	13.281	15.113	2.091	10.147	2.167
40.0	5.568	14.041	15.380	1.928	10.476	2.661
45.0	5.238	14.558	15.630	1.778	10.750	3.134
50.0	4.779	14.876	15.859	1.645	10.984	3.572
55.0	4.223	15.021	16.061	1.512	11.187	3.965
60.0	3.594	15.009	16.235	1.377	11.369	4.307
65.0	2.908	14.854	16.379	1.238	11.535	4.591
70.0	2.180	14.566	16.490	1.093	11.688	4.813
75.0	1.421	14.153	16.569	0.943	11.833	4.970
80.0	0.641	13.622	16.614	0.789	11.971	5.061
85.0	-0.149	12.982	16.626	0.632	12.107	5.082
90.0	-0.940	12.241	16.604	0.480	12.241	5.034

Criteria	Result
The area under the GZ-curve to 30° not to be less than 0.055 mrad	1.671 mrad
The area under the GZ-curve to 40° not to be less than 0.090 mrad	2.661 mrad
The area under the GZ-curve from 30°-40° not to be less than 0.030 mrad	0.990 mrad
The max value of GZ to occur at an angle equal or greater than 30°	35°
The value of GZ at an angle equal or greater to 30° not to be less than 0,20 m	5.720 m at 35°
The value of upright GM not to be less than 0.15 m	12.448

Longitudinal Strength Data continued  
 Condition 3: Ore load dep. cond.

Item	Weight	LCG	LMom	VCG	Vmom	FSM
Hold1	27344	150.70	4120741	13.600	371878	0.000
Hold2	0.000	0.000	0.00	0.000	0.00	0.000
Hold3	37380	95.600	3573528	12.900	482202	0.000
Hold4	0.000	0.000	0.00	0.000	0.00	0.000
Hold5	35271	41.300	1456692	13.000	458523	0.000
Hold6	0.000	0.000	0.00	0.000	0.00	0.000
Hold7	32726	-13.900	-454891	13.000	425438	0.000
Hold8	0.000	0.000	0.00	0.000	0.00	0.000
Hold9	32726	-69.100	-2261367	13.000	425438	0.000
Hold10	0.000	0.000	0.00	0.000	0.00	0.000
Hold11	30544	-124.10	-3790510	14.100	430670	0.000
HFOTks & Supplies	6800.0	-133.20	-905760	16.000	108800	0.000
FPTk	0.000	0.000	0.00	0.000	0.00	0.000
APTk	0.000	0.000	0.00	0.000	0.00	0.000
BWTK1	0.000	0.000	0.00	0.000	0.00	0.000
BWTK2	0.000	0.000	0.00	0.000	0.00	0.000
BWTK3	0.000	0.000	0.00	0.000	0.00	0.000
BWTK4	0.000	0.000	0.00	0.000	0.00	0.000
BWTK5	0.000	0.000	0.00	0.000	0.00	0.000
BWTK6	0.000	0.000	0.00	0.000	0.00	0.000
Deadweight	202791	8.573	1738433	13.329	2702950	0.000
Lightship	43966	-5.678	-249639	12.500	549575	0.000
Displacement	246757	6.033	1488794	13.181	3252525	0.000

Draught 14.719 Metres  
 Trim 3.272 Metres by the stern

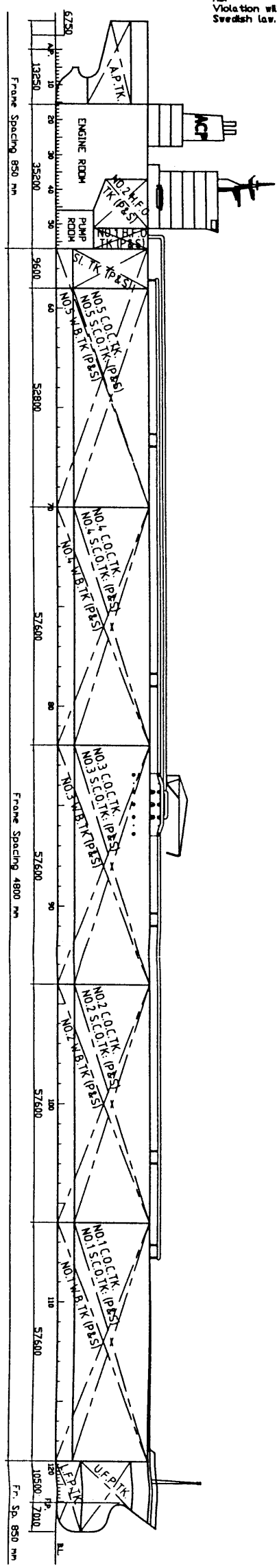
S.G. of Water 1.0250  
 Shell Thick. 0.0000 Metres

GM Solid 12.448 Metres  
 Fluid 12.448 Metres  
 Effective VCG 13.181 Metres

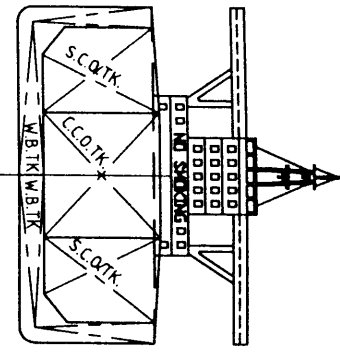
Draught LCF 14.723 Metres  
 Moulded Disp. 246755.941 Tonnes

Long. Position Metres	Shear Force Tonnes	Bending Moment Tonne.M
-183.000	0.000	0.000
-181.500	-21.819	37.147
-176.500	45.104	273.730
-176.200	62.741	300.609
-175.900	95.979	335.119
-173.000	291.448	1000.342
-171.500	381.326	1558.434
-171.350	381.943	1621.030
-171.200	392.247	1684.445
-168.250	423.539	2992.968
-167.850	434.224	3178.790
-164.350	503.098	4943.964
-164.300	499.558	4970.814

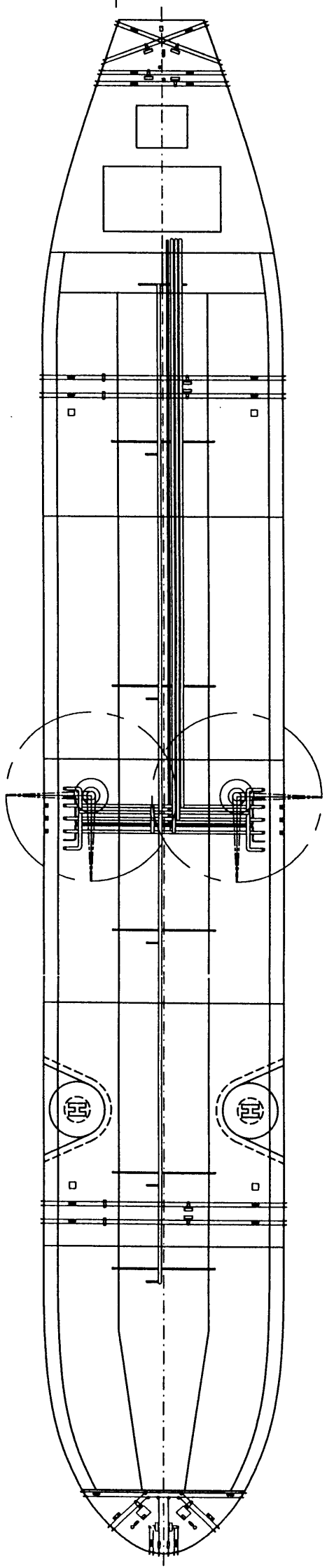
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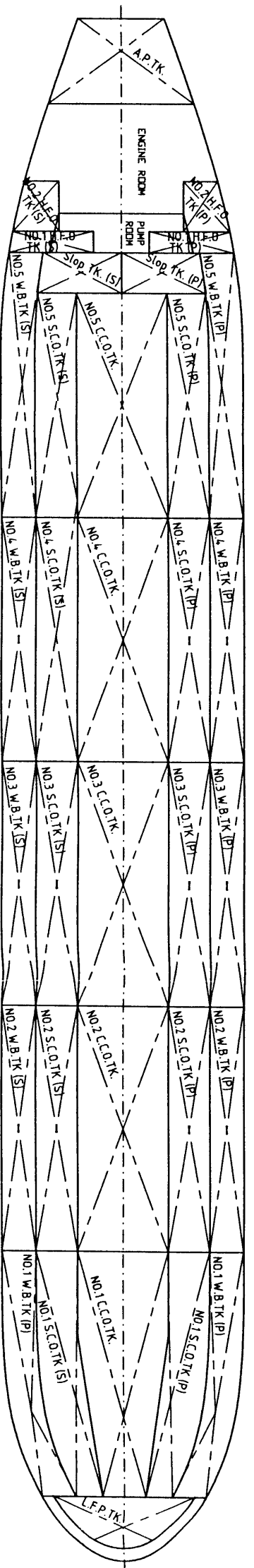
PROFILE



MIDSHIP SECTION



UPPER DECK



TANK TOP

PRINCIPAL DIMENSIONS

LENGTH	D.A.	365.76	M
LENGTH	B.P.	352.00	M
LENGTH	SCANTLING	340.00	M
BREADTH	MOLDED	56.39	M
DEPTH	MOLDED	22.00	M
DRAUGHT	DESIGN	14.85	M
DRAUGHT	SCANTLING	14.85	M
DRAUGHT	T.F.W	15.24	M
SPEED	DESIGN	17.0	KNOTS

CLASSIFICATION

AMERICAN BUREAU OF SHIPPING  
\* A1 DIL CARRIER

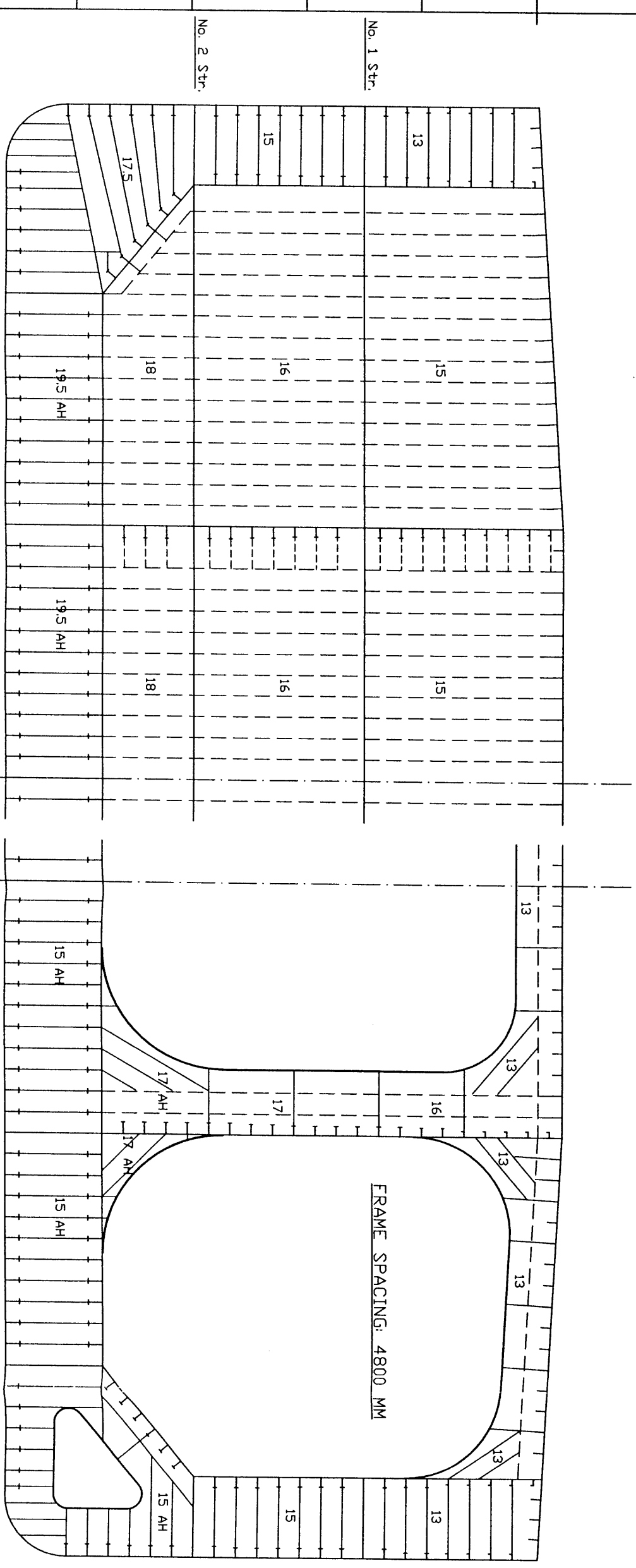
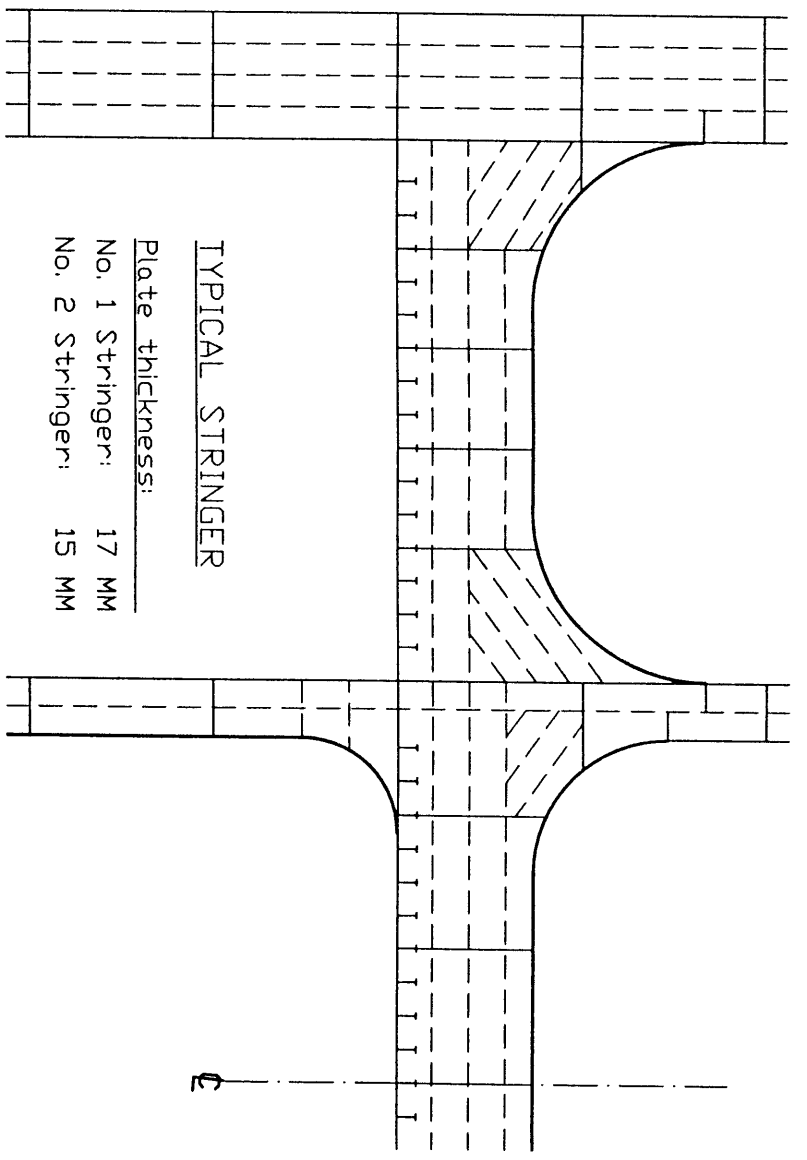
Builder	APL	Year	1980
Classification	AB	Classification	A1 DIL CARRIER
Design	ACP-Max	Design	Tanker
Model	ACP-T001	Model	

**SALTECH**

GENERAL ARR.  
ACP-Max Tanker  
ACP-T001

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16



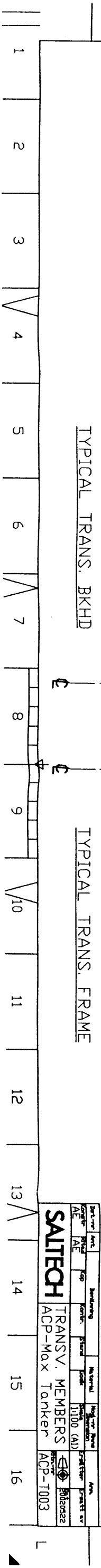


**NOTES**

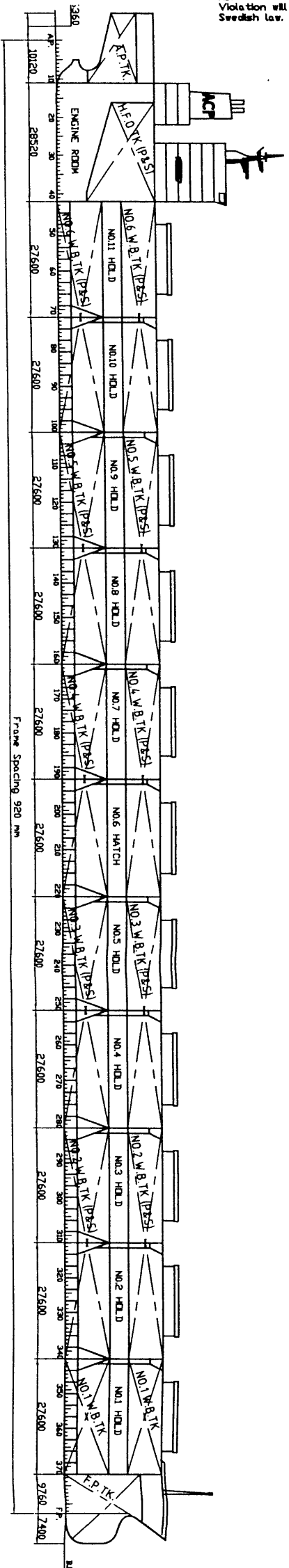
1. GRADES OF STEEL ARE AS FOLLOWS:
2. MARKED AH36 AND DH36, GRADE AH36 AND DH36
3. MARKED AH AND DH, GRADE AH32 AND DH32
4. NO MARKED GRADE A STEEL
5. BOTH SIDES ARE SYMMETRICAL UNLESS OTHERWISE SHOWN
6. THE PLANS, SECTIONS AND ELEVATIONS ARE SHOWN LOOKING DOWNWARD, FORWARD AND PORT RESPECTIVELY

Part No.	Rev.	Issued	By	Checked	Approved
10000000	01	2000-01-01	J. J.	J. J.	J. J.

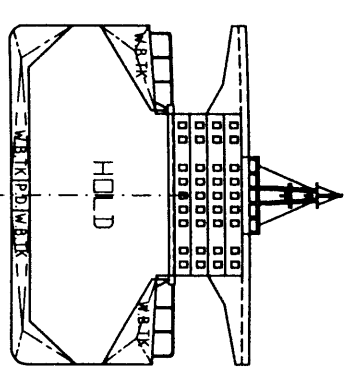
**SALTECH** TRANSV. MEMBERS  
 ACP-Max Tanker ACP-1003



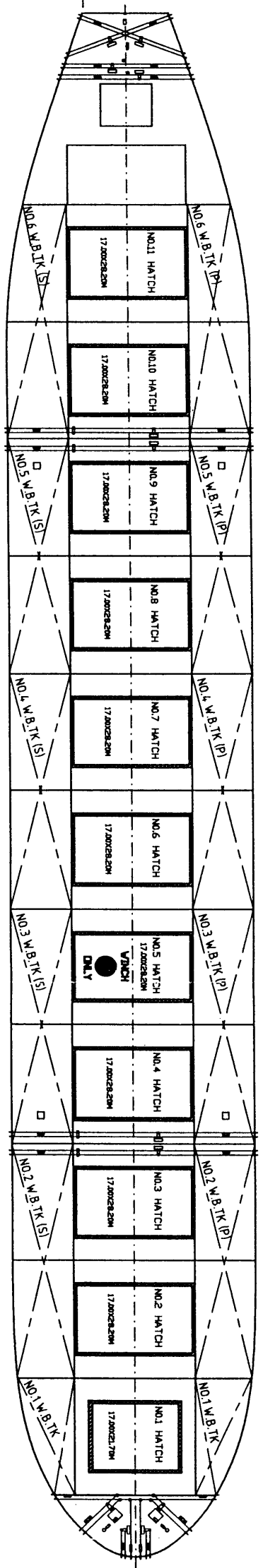
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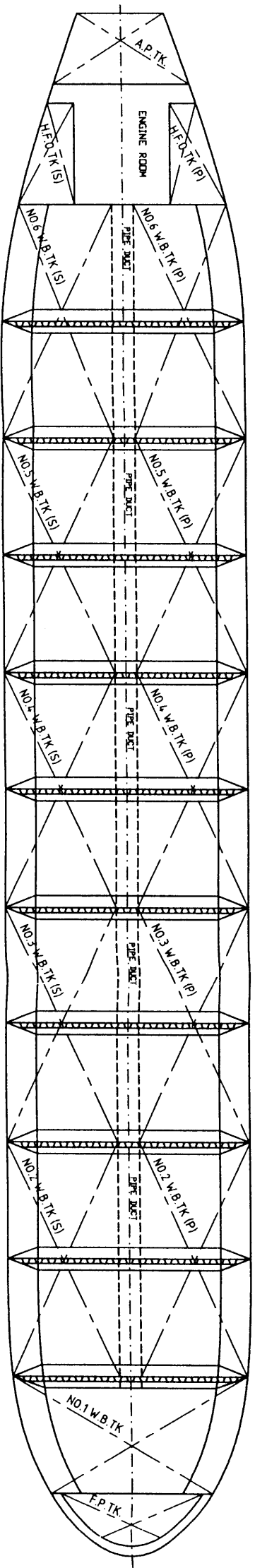
PROFILE



MIDSHIP SECTION



UPPER DECK



TANK TOP

PRINCIPAL DIMENSIONS

LENGTH	D.A.	365.76 M
LENGTH	B.P.	352.00 M
LENGTH	SCANTLING	340.00 M
BREADTH	MULDDED	56.39 M
DEPTH	MULDDED	23.00 M
DRAUGHT	DESIGN	14.85 M
DRAUGHT	SCANTLING	14.85 M
DRAUGHT	T.F.W	15.24 M
SPEED	DESIGN	15.0 KNOTS

CLASSIFICATION

AMERICAN BUREAU OF SHIPPING  
 \* A1 BULK CARRIER

Contract No.	Ordering Party	Contract No.	Contract Date	Area
SAITECH	GENERAL ARR.	11600 (A1)		
ACCP-Max Bulk Carrier	ACCP-8001			

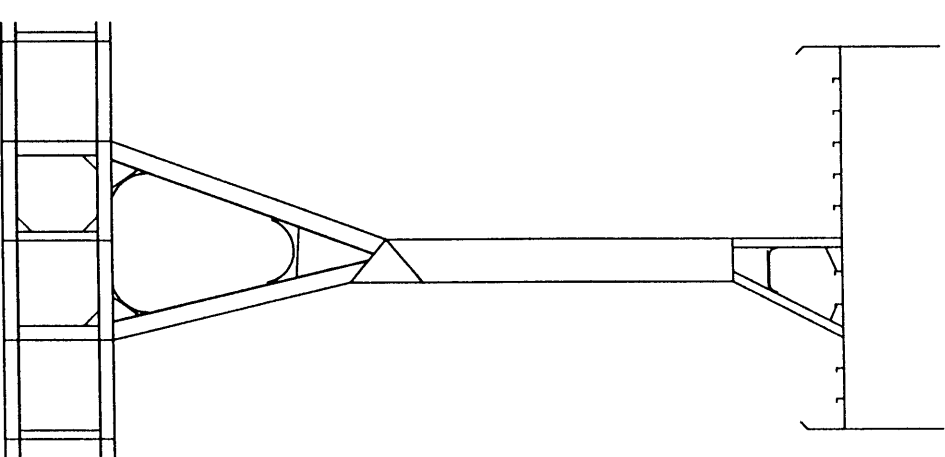
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

K J I H G F E D C B

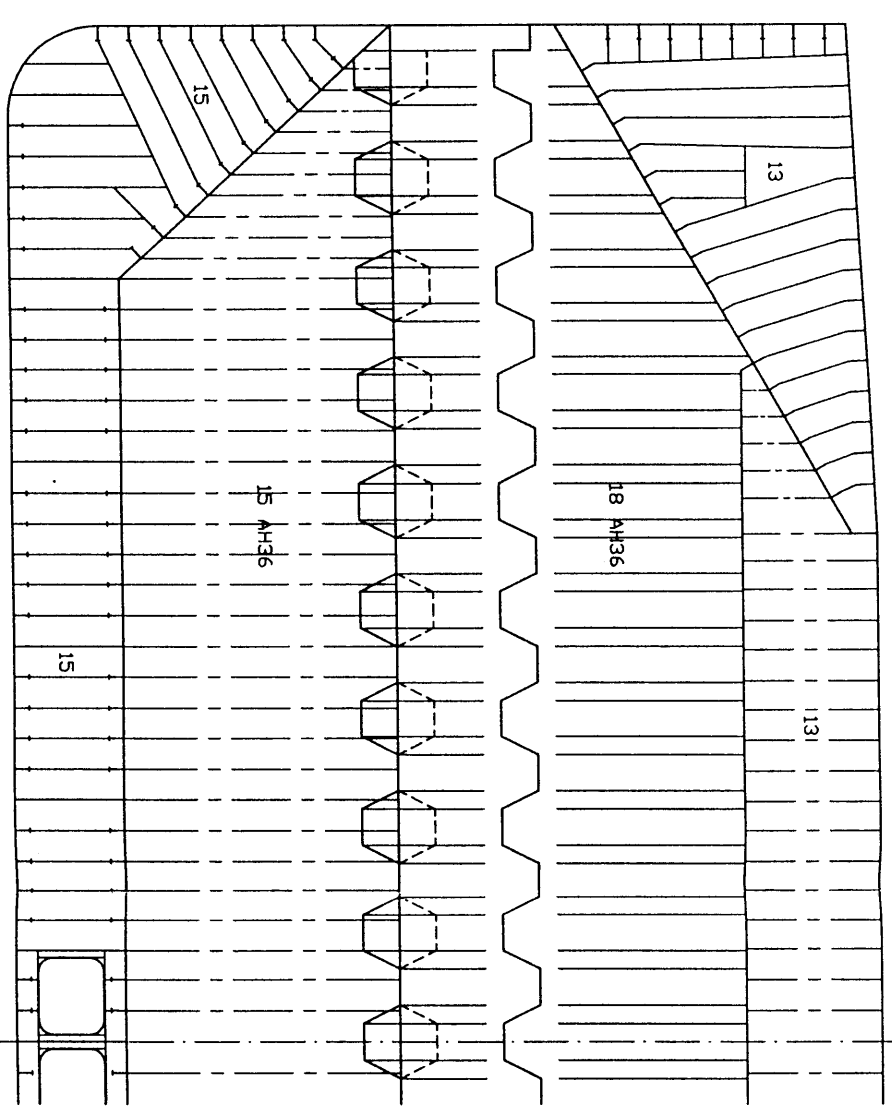




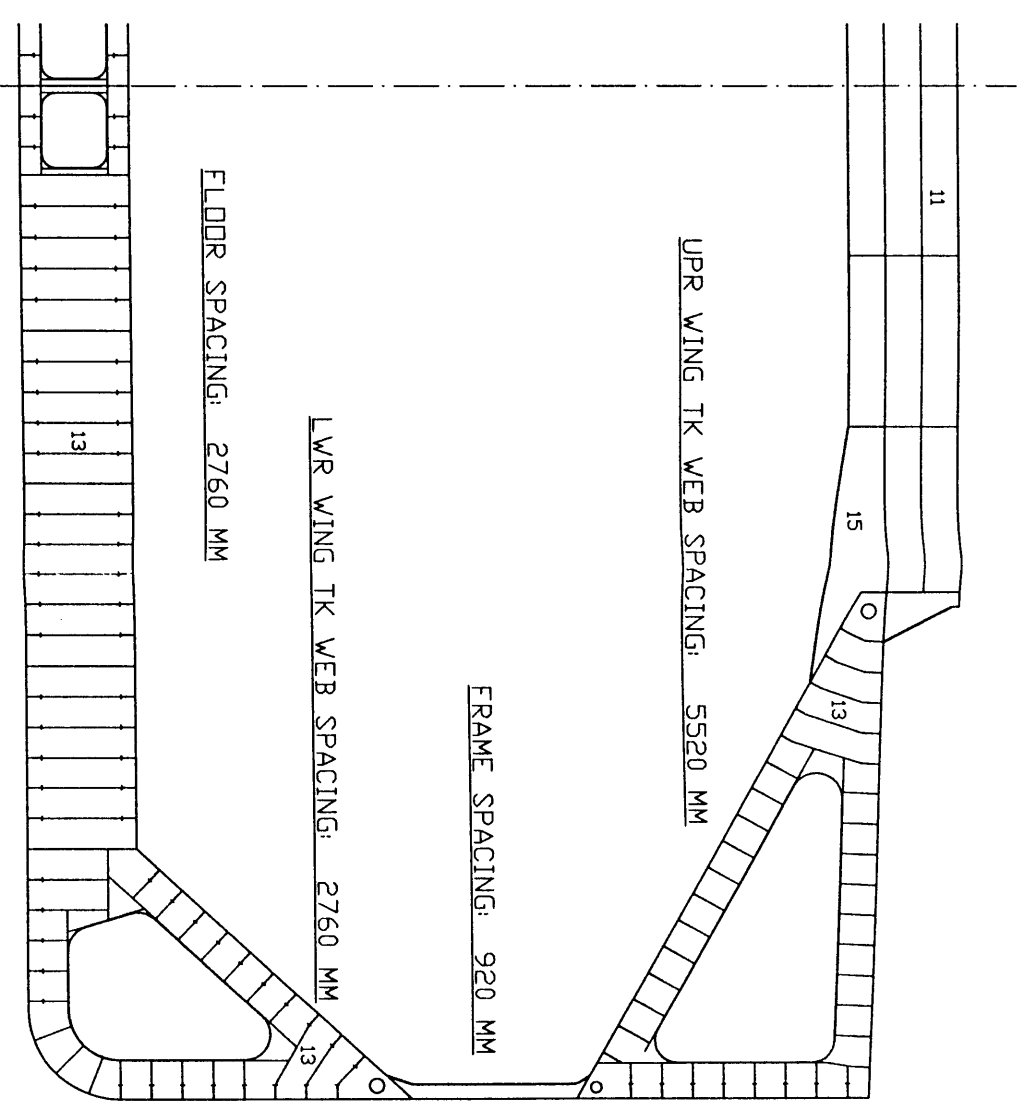
TYPICAL ELEVATION



TYPICAL W.T. BKHD



TYPICAL TRANS. FRAME



NOTES

1. GRADES OF STEEL ARE AS FOLLOWS:
- 1) MARKED AH36 AND DH36, GRADE AH36 AND DH36
- 2) MARKED AH AND DH, GRADE AH32 AND DH32
- 3) ND MARKED, GRADE A STEEL
2. BOTH SIDES ARE SYMMETRICAL UNLESS OTHERWISE SHOWN
3. THE PLANS, SECTIONS AND ELEVATIONS ARE SHOWN LOOKING DOWNWARD, FORWARD AND PORT, RESPECTIVELY

Project Name	SAITECH
Client	TRANSV. MEMBERS
Contract No.	ACP-Max Bulk Cor ACP-8003
Scale	1:100 (A1)
Drawn by	0102022
Checked by	
Project Manager	

