

# **STABILITETSBOK**

**2003-04-11**

**FÖR**

## **"TJB 30"**

**Huvuddata**  
**Handledning vid beräkning av trim och stabilitet**  
**Allmänna råd**  
**Beräkning av lastfall för intakt fartyg**  
**MaxVCG**  
**Hydrostatiska tabeller**  
**Pantokarener (Cross curves)**  
**Tanktabeller**  
**Rapport från krängningsprov**  
**Geometribeskrivning, indata**

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## HUVUDDATA

Fartygets namn:	Tjb 30
Byggnadsvarv:	Marinteknik Verkstads AB, Öregrund
Byggnadsnummer:	B 25
Byggnadsår:	1975
Signalbokstäver:	SCRE
Hemmahamn:	Norrköping
Ägare:	Sjöfartsverket
Brutto:	--
Huvuddimensioner	
Längd över allt:	18,50 m
Längd mellan PP:	18,02 m
Bredd mallad:	5.7 m
Djupgång KVL:	2.75 m

## Handledning vid beräkning av trim och stabilitet.

### 1. DJUPGÅENDE OCH TRIM

#### 1.1 Allmänt

Ett fartygs trim, skillnaden mellan djupgåendet för och akter, uppstår genom att fartygets viktstyngdpunkt i långskeppsled (LCG) inte sammanfaller med displacementstyngdpunkten (LCB) på jämn köl i långskeppsled för samma displacement.

#### 1.2 Beräkningsgång

Vid beräkning av fartygets trim bestäms först viktstyngdpunktens läge. Aktuella hävarmar och vikter fås ur tabeller över kapacitet och tyngdpunktskoordinater för lätt fartyg, lastutrymmen och bunkertankar. Viktstyngdpunkten från L/2 erhålls genom dels summering av alla ingående delvikter ( $w$ ) och dels summering av alla delvikters moment kring L/2 ( $w \cdot x$ ) med avseende på sina tecken. Därvid beaktas att vikter placerade för om L/2 har positiva hävarmar och vikter placerade akter om L/2 har negativa hävarmar.

$LCG = \frac{\sum(w \cdot x)}{\sum w}$ .

Viktstyngdpunkten över köl (VCG) erhålls genom summering av alla delvikters moment över baslinjen ( $w \cdot y$ ).

$VCG = \frac{\sum(w \cdot y)}{\sum w}$ .

Genom interpolation i de hydrostatiska tabellerna erhålls hydrostatiska data för fartyget. Därvid söks ett displacement som motsvarar totalvikten, och ett trimläge som motsvarar viktstyngdpunktens placering i långskeppsled.

Trimmet uppdelning för och akter är beroende av flytcentrums (LCF) läge med avseende på L/2. LCF's läge erhålls från de hydrostatiska tabellerna. Vid överslagsberäkningar antas flytcentrum ligga på L/2 och då erhålls:

Djupgående akter ( $d_a$ )

$$d_a = d + t/2$$

Djupgående för ( $d_f$ )

$$d_f = d - t/2$$

## 2. TVÄRSKEPPSSTABILITET

### 2.1 Allmänt

När fartyget ligger i upprätt läge ligger viktstyngdpunkten (G) och displacementstyngdpunkten (B) på samma vertikala linje i centerplanet, och momentet av tyngdkraft och flytkraft är således noll. Då fartyget kränger, ligger G och B ej på samma vertikala linje, varför tyngdkraft och flytkraft ger upphov till ett rätande moment. För att fartyget ej skall öka sin slagsida måste rätande momentet vara minst lika stort som det på fartyget verkande krängande momentet.

Vid små krängningsvinklar kallas skärningspunkten mellan lodlinjen genom B och centerlinjen genom G för metacentrum och betecknas M. avståndet GM kallas metacenterhöjd och är ett mått på fartygets initialstabilitet. Vid stora krängningsvinklar går uppdriftslinjen genom B inte längre genom M utan skärningspunkten rör sig utefter fartygets centerlinje. Skärningspunkten kallas virtuellt metacentrum och betecknas M'.

Det horisontella avståndet GZ kallas rätande hävarm. Om M ligger under G (negativ metacenterhöjd) får fartyget en permanent slagsida, i sämsta fall kantrar det.

Observera att slagsida beroende på negativ metacenterhöjd aldrig får korrigeras genom tömning av botten tankar, ty då ökar den negativa metacenterhöjden.

Avståndet KM och KM' beror av djupgåendet, KG beror av placering av last, bunker, färskvatten, förråd etc.

### 2.2 Beräkningsgång

KG kan beräknas genom momenträkning kring baslinjen K.

$$KG = VCG = \frac{\sum(w \cdot y)}{\sum w} \quad (\text{Se avsnitt 1.2 ovan})$$

Aktuella vikter och tyngdpunktslägen fås ur tabeller över kapacitet, och tyngdpunktskoordinater för lätt fartyg, last och bunkertankar.

Ur hydrostatiska data erhålls tvärskeppsmetacentrums läge över baslinjen KM.

$$\text{Metacenterhöjden } GM = KM - KG$$

Förekommer fria vätskeytor i tankarna skall GM reduceras.

$$\text{Reduktion } GG' = \frac{\text{summa moment av fria vätskeytor}}{\text{viktsdeplacement}}$$

$$\text{Då erhålls } G'M = GM - GG'$$

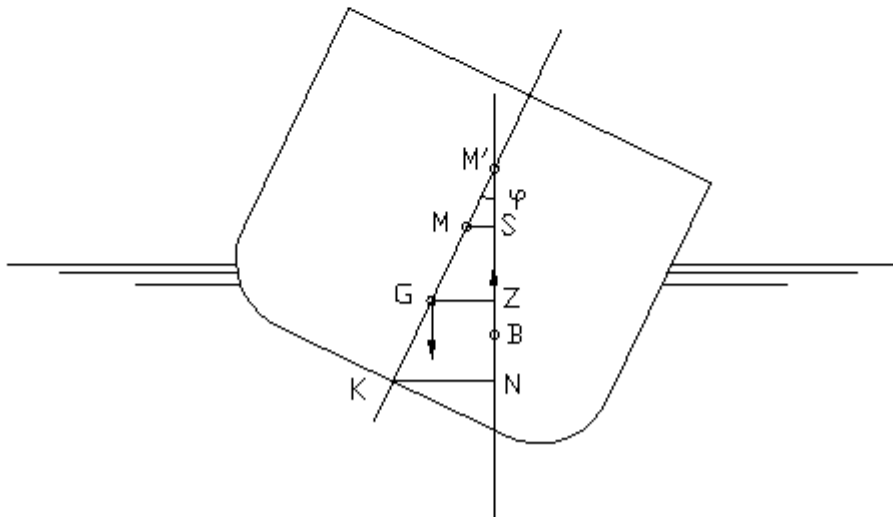
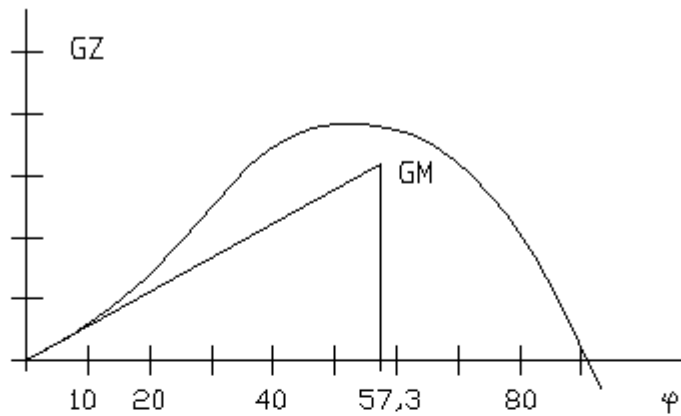
Den rätande hävarmen erhålls sedan som:

Alt 1.

$$G'Z = MS + G'M \cdot \sin \phi$$

Alt 2.

$$G'Z = KN - KG' \cdot \sin \phi$$



Ur  $G'Z$  - kurvorna erhålls bl.a. den maximala rätande hävarmen, vinkeln vid vilken denna uppträder, samt stabilitetsvidden.

## **ALLMÄNNA RÅD.**

Att fartyget uppfyller de allmänna stabilitetskriterierna och har godkända stabilitetshandlingar ombord är ingen garanti för att fartyget oberoende av omständigheterna inte kan kapsejsa och sjunka. Inte heller befriar det fartygets befälhavare från någon av hans skyldigheter i samband med lastning och framförande av fartyget. Befälhavaren skall hantera sitt fartyg med gott omdöme och gott sjömanskap med avseende på väderleksutsikter och geografiska förhållanden mm. och vidta lämpliga åtgärder avseende kurs och fart med hänsyn till rådande omständigheter.

Fartyget skall lastas och barlastas på sådant sätt att kraven på stabilitet, bärighet och styrka uppfylls under hela resan.

Innan resan påbörjas skall åtgärder för att förhindra lastförskjutning vidtas. Nödvändig trimning skall utföras och i förekommande fall, skott sättas upp i lastrummen. Nödvändiga lastsurringar skall utföras.

I stabilitetsboken ingår stabilitetsinformation om ett antal för fartyget typiska lastfall och ytterligare information, som gör det möjligt för fartygets befälhavare att beräkna fartygets stabilitetsegenskaper i alla tänkbara lastkonditioner.

## **LÄTT FARTYG.**

Fartygets displacement, långskeppstyngdpunkt och vertikal tyngdpunkt är beräknat baserat på krängningsprov utfört 2002-12-18.



## Kommentarer och förklaringar till lastfall och tabeller.

Stabilitetsegenskaperna för lastfallen är beräknade enligt de svenska reglerna för lastfartyg, SJÖFS 1993:3.

I beräkningarna är följande förkortningar använda:

MT	Metric Tonnes
LCB	Longitudinal Center of Buoyancy
TCB	Transversal Center of Buoyancy
VCB	Vertical Center of Buoyancy
GML	Longitudinal Metacentric Height
GMT	Transversal Metacentric Height
LCG	Longitudinal Center of Gravity
TCG	Transversal Center of Gravity
VCG	Vertical Center of Gravity
SpGr	Specific Gravity
FSM	Free Surface Moment
RefHt	Reference Point Height
WPA	Water Plane Area
LCF	Longitudinal Center of Flotation
TCF	Transversal Center of Flotation
BML	Longitudinal Metacenter above Center of Buoyancy
BMT	Transversal Metacenter above Center of Buoyancy
MT/CM	Metric Tonnes per Centimeter Immersion

I samtliga tabeller och beräkningar i denna rapport refererar koordinater till en baslinje och ett origo enligt nedan. Se också de två första sidorna i geometribeskrivningen.

### Definition av baslinje och origo.

Baslinjen är en rät horisontell linje, som ligger mellan en och fyra decimeter över underkant köl. Fartyget har en liten styrlastighet. Vertikalt ligger origo på baslinjen. Långskepps ligger origo 9000 mm för om akter perpendikel, och 9020 mm akter om förkant förstäv. Tvärskepps ligger origo i centerlinjen. Placeringen av baslinje i förhållande till underkant köl framgår av bifogade ritning.

### Placering av åmning.

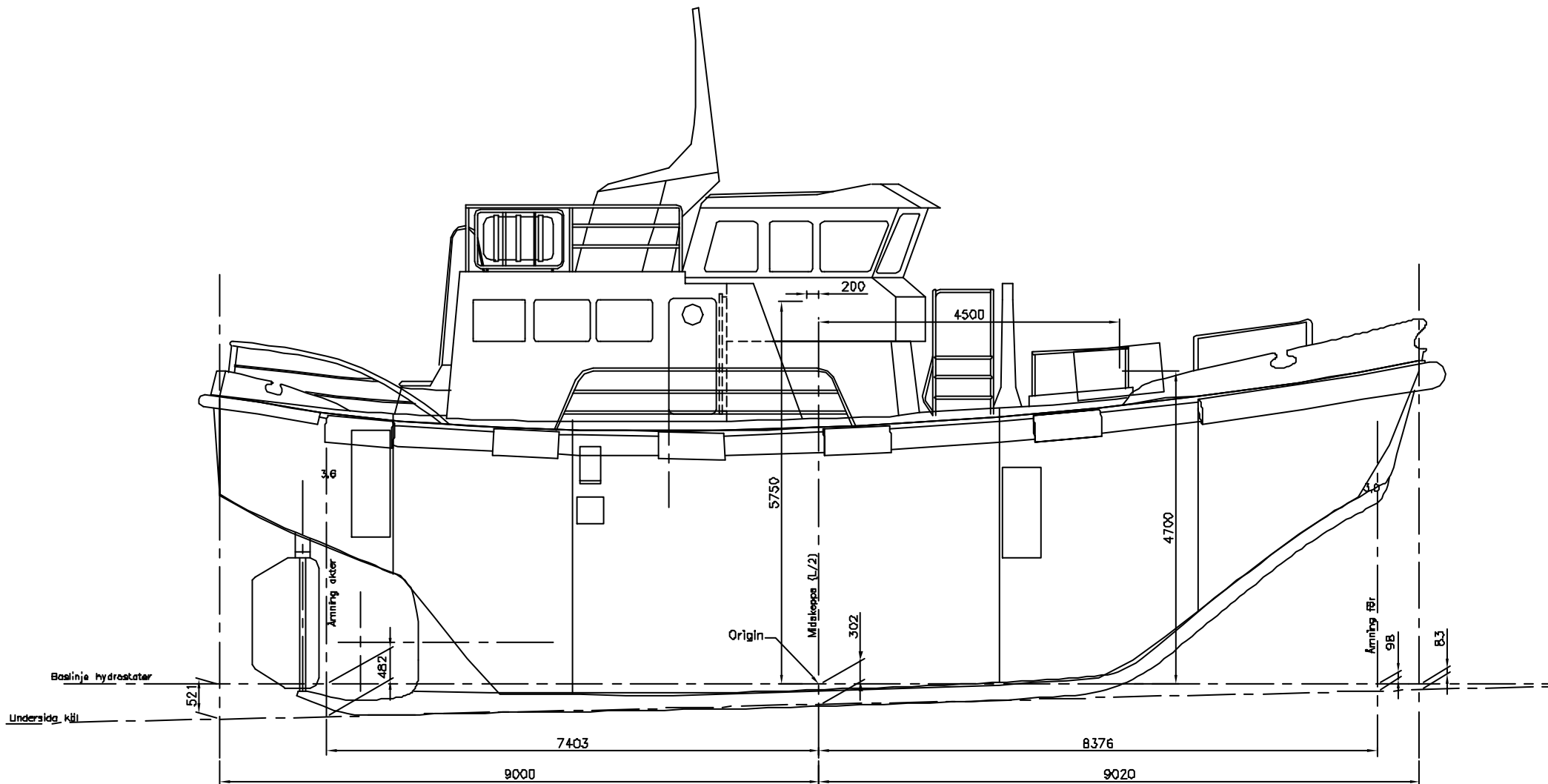
Åmningen är placerad enligt bifogade ritning. Åmningen refererar till undersida köl, vilken ligger under baslinjen, med styrlastighet. Eftersom alla beräkningar och tabeller refererar till baslinjen, måste åmningsavläsning kompenseras för skillnaden mellan köllinje och baslinje. Djupgåendet i beräkningar och tabeller är alltid vid midskepps ( $L/2$ ), till baslinjen enligt bifogade ritning. Trim är beräknat över en längd av 18.02 meter. Horisontell baslinje är lika med 0 trim.

### Skrovdefinition.

I stabilitetsberäkningarna har volymen av överbyggnaden inte tagits med. En kritisk punkt (flödningspunkt) har lagts in vid ventilationshuvens till maskinrummet, placerad mellan överbyggnad och kran. När denna punkt når vattenytan vid krängning ( 75-85 grader krängning ), antas att maskinrummet flödas.

### Redovisning av lastfallsberäkningar

Stabilitetsegenskaper redovisas för flera intaktlastfall. Begränsande kriterier visas för samtliga fall. Kriterierna är definierade enligt SJÖFS 1993:3. Lastfall med nedisning, barlast och med last på däck har också redovisats.



WEIGHT and DISPLACEMENT and WATERPLANE STATUS

BASELINE draft: 2.517 @ Origin

Trim: Aft 0.477/18.020, Heel: zero

Part-----	Weight(MT)----	LCG-----	TCG-----	VCG-----		
WEIGHT	75.65	0.668a	0.000	2.539		
	Load-----	SpGr-----	Weight(MT)----	LCG-----	TCG-----	VCG-----
Total Tanks----->			0.00			0.00
			Displ(MT)----	LCB-----	TCB-----	VCB-----
HULL	1.000		75.65	0.689a	0.000	1.716
						-2.516
-----						
	Righting Arms:		0.001f	0.000		
Part-----	SpGr-----	WPA-----	LCF-----	TCF-----	BML-----	BMT-----
Total Waterplane---->	1.000	62.2	0.972a	0.000	11.74	1.426
		MT/CM-----	M.-MT/CM-----	GML-----	GMT-----	
		0.62		0.46	10.91	0.604
Distances in METERS.-----			Moments in M.-MT.			

RIGHTING ARMS vs HEEL ANGLE  
LCG = 0.668a TCG = 0.000 VCG = 2.539

Origin Depth	Degrees of Trim	Heel	Displacement Weight(MT)	Righting Arms in Trim	in Heel	Area	Flood Pt Height
2.516	1.52a	0.00	75.65	0.000	0.000	0.0000	1.863(1)
2.502	1.51a	5.00s	75.65	0.000	0.053s	0.0023	1.821(1)
2.460	1.47a	10.00s	75.65	0.000	0.106s	0.0092	1.774(1)
2.391	1.43a	15.00s	75.65	0.000	0.159s	0.0208	1.723(1)
2.294	1.36a	20.00s	75.65	0.000	0.214s	0.0371	1.668(1)
2.172	1.28a	25.00s	75.66	0.000	0.270s	0.0582	1.610(1)
2.026	1.20a	30.00s	75.65	0.000	0.323s	0.0840	1.546(1)
1.865	1.16a	35.00s	75.65	0.000	0.359s	0.1139	1.467(1)
1.692	1.14a	40.00s	75.65	0.000	0.380s	0.1463	1.374(1)
1.509	1.13a	45.00s	75.67	0.000	0.387s	0.1798	1.268(1)
1.474	1.13a	45.91s	75.65	0.000	0.387s	0.1859	1.247(1)
1.317	1.14a	50.00s	75.65	0.000	0.384s	0.2135	1.148(1)
1.119	1.14a	55.00s	75.66	0.000	0.372s	0.2465	1.016(1)
0.915	1.16a	60.00s	75.65	0.000	0.354s	0.2783	0.872(1)
0.708	1.18a	65.00s	75.64	0.000	0.331s	0.3082	0.717(1)
0.499	1.21a	70.00s	75.64	0.000	0.305s	0.3360	0.553(1)
0.292	1.25a	75.00s	75.63	0.000	0.280s	0.3615	0.379(1)
0.088	1.30a	80.00s	75.64	0.000	0.256s	0.3848	0.195(1)
-0.115	1.44a	85.00s	75.65	0.000	0.234s	0.4062	0.005(1)
-0.121	1.44a	85.15s	75.64	0.000	0.234s	0.4068	-0.000(1)
-0.324	1.59a	90.00s	75.65	0.000	0.199s	0.4253	-0.178(1)
-0.540	1.72a	95.00s	75.63	0.000	0.152s	0.4407	-0.351(1)

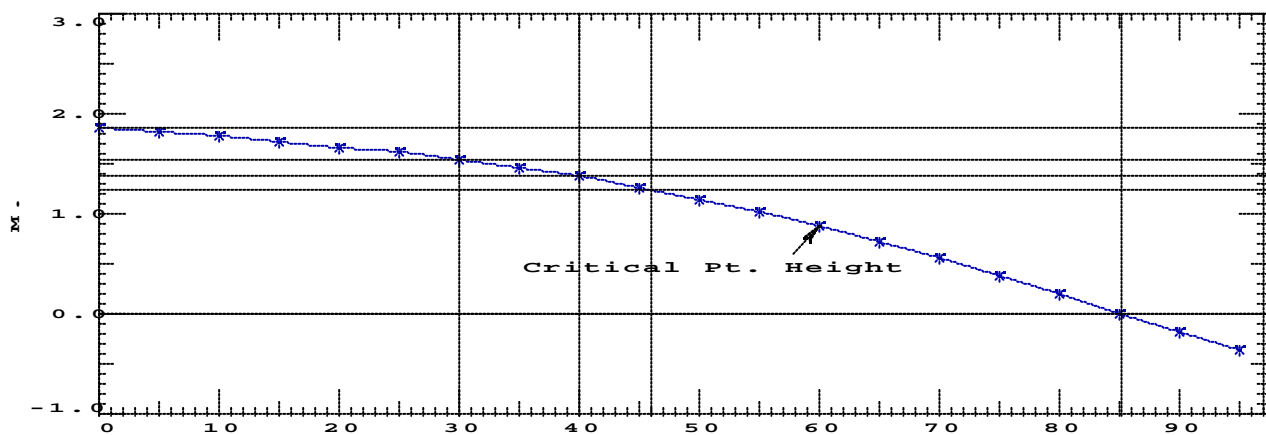
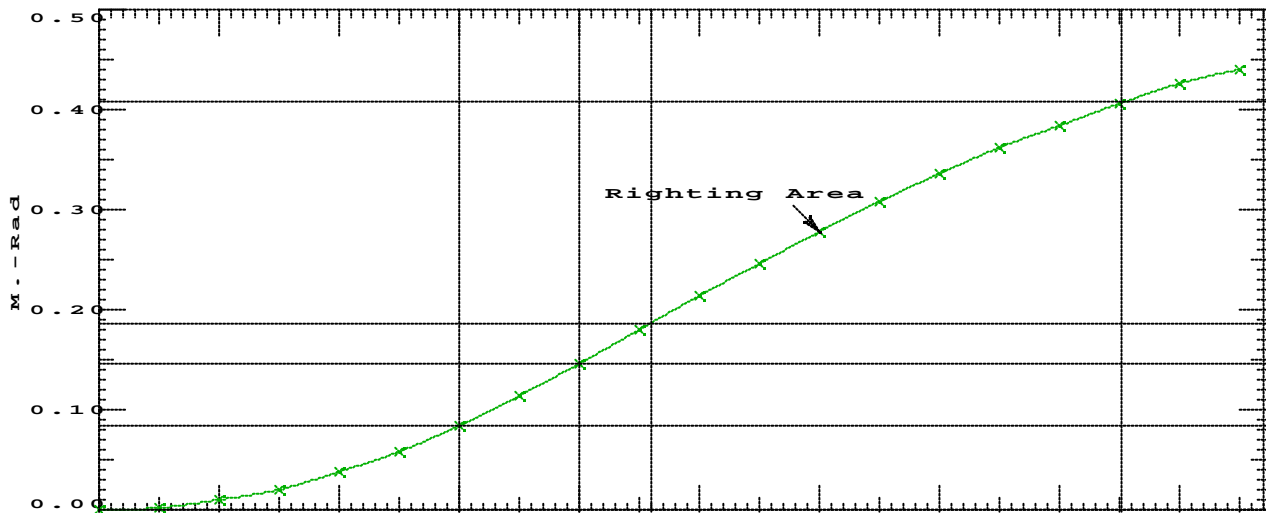
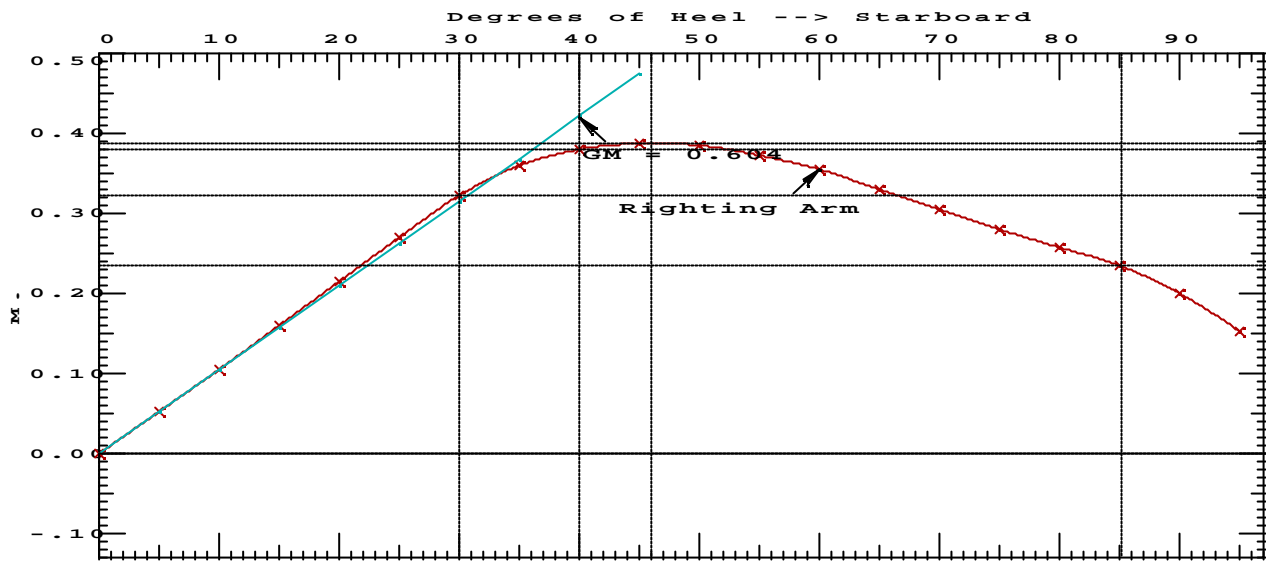
Distances in METERS.-----Specific Gravity = 1.000.-----Area in M.-Rad.

Critical Point----- LCP-----TCP-----VCP  
(1) Vent. eng room FLOOD 1.892a 0.450 4.430

LIM-----	STABILITY CRITERION-----	Min/Max-----	Margin-----
(1) Area from 0 deg to 30	>	0.0550 M.-Rad	53%
(2) Area from 0 deg to 40 or Flood	>	0.0900 M.-Rad	63%
(3) Area from 30 deg to 40 or Flood	>	0.0300 M.-Rad	107%
(4) Righting Arm at 30 deg	>	0.200 M.	61%
(5) Angle from 0 deg to MaxRA	>	30.00 deg	16 deg
(6) GM Upright	>	0.150 M.	302%
(7) Absolute Angle at RAzero	>	60.00 deg	LARGE

-----Relative angles measured from 0.000 -----

TJB 30  
NO 1: LIGHT SHIP



NO 2: 100 % BUNKER + 5 PERS

WEIGHT and DISPLACEMENT and WATERPLANE STATUS

BASELINE draft: 2.722 @ Origin

Trim: Aft 0.472/18.020, Heel: Port 0.04 deg.

Part-----			Weight(MT)----	LCG-----	TCG-----	VCG-----		
LIGHT SHIP			75.65	0.668a	0.000	2.539		
5 CREW AND PAX			0.50	0.200a	0.000	5.750		
Total Fixed----->			76.15	0.665a	0.000	2.560		
	Load-----	SpGr-----	Weight(MT)----	LCG-----	TCG-----	VCG-----	FSM-----	
BROSBAKT.S	1.000	0.840	1.91	2.530a	2.311s	2.764	0.00	
BROSBMITT.S	1.000	0.840	2.16	0.450a	2.331s	2.683	0.00	
BROSBFOR.S	1.000	0.840	1.73	1.561f	2.302s	2.807	0.00	
BROBBAKT.P	1.000	0.840	1.91	2.530a	2.311p	2.764	0.00	
BROBBMITT.P	1.000	0.840	2.16	0.450a	2.331p	2.683	0.00	
BROBBFOR.P	1.000	0.840	1.73	1.561f	2.302p	2.807	0.00	
FWTANK.S	1.000	1.000	0.42	6.750a	0.725s	3.020	0.00	
FWTANK.P	1.000	1.000	0.42	6.750a	0.725p	3.020	0.00	
SEPTICTANK.P	0.100	1.025	0.04	3.046f	1.000p	1.983	0.01	
FODAGTANK.C	1.000	0.870	0.11	3.450a	0.000	3.307	0.00	
LOTANK.C	1.000	0.924	0.15	3.450a	0.000	2.620	0.00	
Total Tanks----->			12.73	0.989a	0.003p	2.766	0.01	
Total Weight----->			88.88	0.711a	0.000	2.590		
			Displ(MT)----	LCB-----	TCB-----	VCB-----	RefHt-----	
HULL	1.000		88.88	0.730a	0.001	1.855	-2.721	
Righting Arms:				0.001f	0.000			
Part-----	SpGr-----	WPA-----	LCF-----	TCF-----	BML-----	BMT-----		
Total Waterplane----->	1.000	66.6	0.987a	0.002p	11.56	1.377		
		MT/CM-----	M.-MT/CM-----	GML-----	GMT-----			
		0.67	0.53	10.82	0.642			
Distances in METERS.-----						Moments in M.-MT.		

NO 2: 100 % BUNKER + 5 PERS

RIGHTING ARMS vs HEEL ANGLE

Fixed CG: LCG = 0.665a TCG = 0.000 VCG = 2.560

Origin	Degrees of		Displacement	Righting Arms		Flood Pt	
Depth---	Trim----	Heel----	Weight(MT)---	in Trim--	in Heel --	Area --	Height
2.721	1.50a	0.04p	88.88	0.000	0.000	0.0000	1.657(1)
2.707	1.49a	4.96s	88.88	0.000	0.056s	0.0025	1.617(1)
2.665	1.47a	9.96s	88.88	0.000	0.113s	0.0098	1.571(1)
2.594	1.44a	14.96s	88.88	0.000	0.169s	0.0221	1.521(1)
2.496	1.39a	19.96s	88.88	0.000	0.227s	0.0394	1.467(1)
2.372	1.35a	24.96s	88.89	0.000	0.281s	0.0616	1.408(1)
2.233	1.34a	29.96s	88.88	0.000	0.319s	0.0879	1.335(1)
2.080	1.37a	34.96s	88.88	0.000	0.339s	0.1167	1.247(1)
1.915	1.41a	39.96s	88.88	0.000	0.345s	0.1466	1.144(1)
1.913	1.41a	40.00s	88.88	0.000	0.345s	0.1469	1.143(1)
1.739	1.46a	44.96s	88.87	0.000	0.340s	0.1766	1.028(1)
1.554	1.52a	49.96s	88.88	0.000	0.326s	0.2058	0.900(1)
1.361	1.59a	54.96s	88.86	0.000	0.304s	0.2334	0.760(1)
1.163	1.67a	59.96s	88.88	0.000	0.277s	0.2588	0.609(1)
0.958	1.75a	64.96s	88.88	0.000	0.245s	0.2816	0.450(1)
0.750	1.84a	69.96s	88.87	0.000	0.212s	0.3016	0.283(1)
0.541	1.91a	74.96s	88.87	0.000	0.177s	0.3185	0.110(1)
0.413	1.95a	78.03s	88.87	0.000	0.157s	0.3275	0.001(1)
0.333	1.97a	79.96s	88.88	0.000	0.145s	0.3326	-0.069(1)
0.127	2.03a	84.96s	88.88	0.000	0.116s	0.3439	-0.254(1)
-0.077	2.13a	89.96s	88.89	0.000	0.090s	0.3529	-0.441(1)
-0.282	2.31a	94.96s	88.90	0.000	0.062s	0.3595	-0.626(1)

Distances in METERS.-----Specific Gravity = 1.000.-----Area in M.-Rad.

Note: The Center of Gravity shown above is for the Fixed Weight of 76.15 MT. As the tank load centers shift with heel and trim, the total Center of Gravity varies. The righting arms shown above include the effect of the C.G. variation.

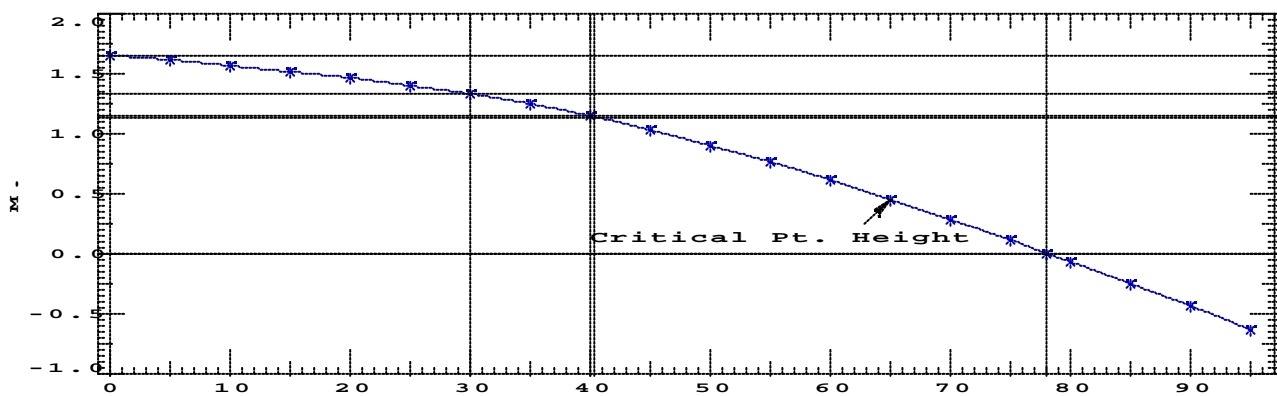
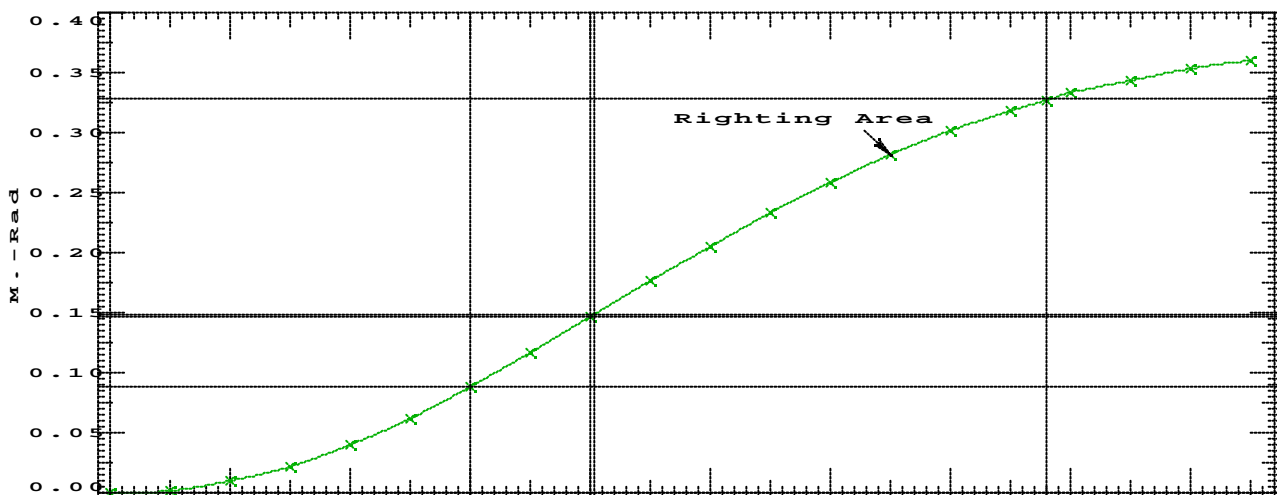
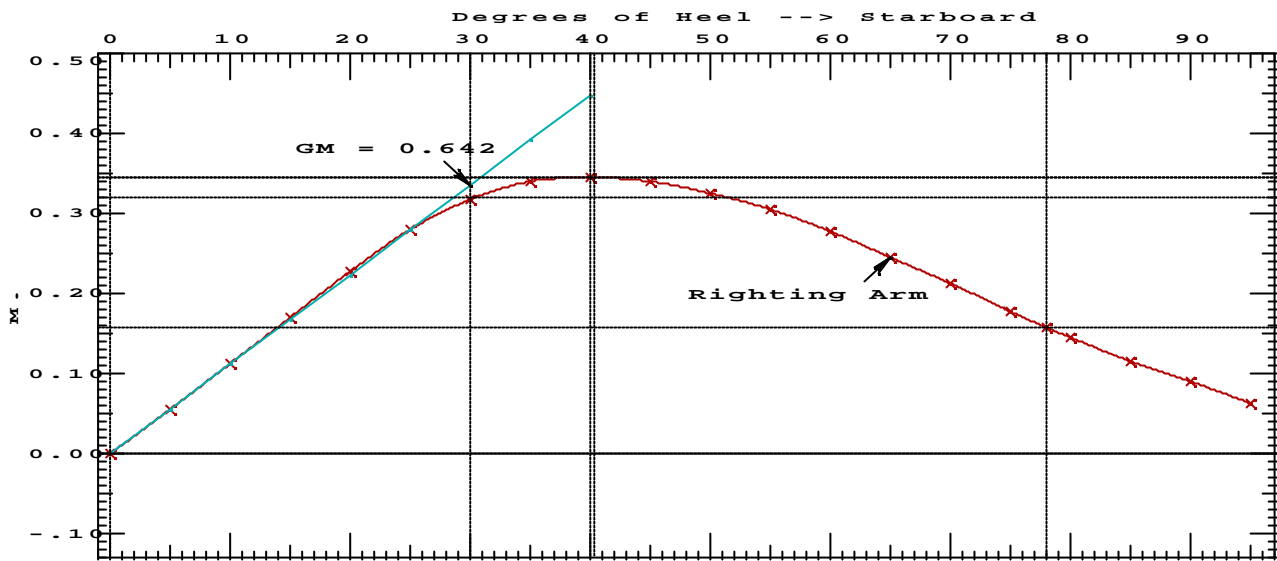
Critical Point-----	LCP-----	TCP-----	VCP
(1) Vent. eng room	FLOOD 1.892a	0.450	4.430

LIM-----STABILITY CRITERION-----Min/Max-----Margin

(1) Area from 0 deg to 30	>	0.0550 M.-Rad	60%
(2) Area from 0 deg to 40 or Flood	>	0.0900 M.-Rad	63%
(3) Area from 30 deg to 40 or Flood	>	0.0300 M.-Rad	96%
(4) Righting Arm at 30 deg	>	0.200 M.	59%
(5) Angle from 0 deg to MaxRA	>	30.00 deg	10 deg
(6) GM Upright	>	0.150 M.	328%
(7) Absolute Angle at RZero	>	60.00 deg	LARGE

-----Relative angles measured from 0.036 -----

TJB 30  
NO 2: 100 % BUNKER + 5 PERS





NO 3: 100 % BUNKER + KYLV TANK + 5 PERS

WEIGHT and DISPLACEMENT and WATERPLANE STATUS

BASELINE draft: 2.775 @ Origin

Trim: Aft 0.744/18.020, Heel: Port 0.03 deg.

Part-----	Weight(MT)----	LCG-----	TCG-----	VCG-----	FSM-----		
LIGHT SHIP	75.65	0.668a	0.000	2.539			
5 CREW AND PAX	0.50	0.200a	0.000	5.750			
Total Fixed----->	76.15	0.665a	0.000	2.560			
Load-----	SpGr-----	Weight(MT)----	LCG-----	TCG-----	VCG-----	FSM-----	
AKTRAKYL.C	1.000	1.025	4.60	4.283a	0.000	1.315	0.00
BROSBAKT.S	1.000	0.840	1.91	2.530a	2.311s	2.764	0.00
BROSBMITT.S	1.000	0.840	2.16	0.450a	2.331s	2.683	0.00
BROSBFOR.S	1.000	0.840	1.73	1.561f	2.302s	2.807	0.00
BROBBAKT.P	1.000	0.840	1.91	2.530a	2.311p	2.764	0.00
BROBBMITT.P	1.000	0.840	2.16	0.450a	2.331p	2.683	0.00
BROBBFOR.P	1.000	0.840	1.73	1.561f	2.302p	2.807	0.00
FWTANK.S	1.000	1.000	0.42	6.750a	0.725s	3.020	0.00
FWTANK.P	1.000	1.000	0.42	6.750a	0.725p	3.020	0.00
SEPTICTANK.P	0.100	1.025	0.04	3.044f	1.000p	1.983	0.01
FODAGTANK.C	1.000	0.870	0.11	3.450a	0.000	3.307	0.00
LOTANK.C	1.000	0.924	0.15	3.450a	0.000	2.620	0.00
Total Tanks----->			17.33	1.863a	0.002p	2.381	0.01
Total Weight----->			93.48	0.887a	0.000	2.527	
HULL	1.000		Displ(MT)----	LCB-----	TCB-----	VCB-----	RefHt-----
			93.48	0.914a	0.001	1.906	-2.772
Righting Arms:			0.001a	0.000			
Part-----	SpGr-----	WPA-----	LCF-----	TCF-----	BML-----	BMT-----	
Total Waterplane----->	1.000	67.9	1.122a	0.002p	11.44	1.359	
		MT/CM-----	M.-MT/CM-----	GML-----	GMT-----		
		0.68	0.56	10.82	0.738		
Distances in METERS.-----			Moments in M.-MT.				

NO 3: 100 % BUNKER + KYLV TANK + 5 PERS

RIGHTING ARMS vs HEEL ANGLE

Fixed CG: LCG = 0.665a TCG = 0.000 VCG = 2.560

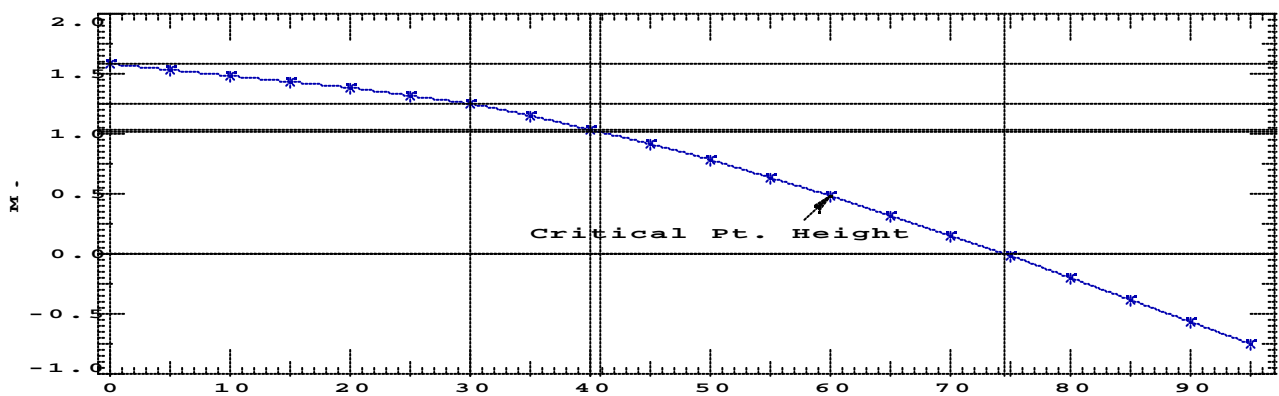
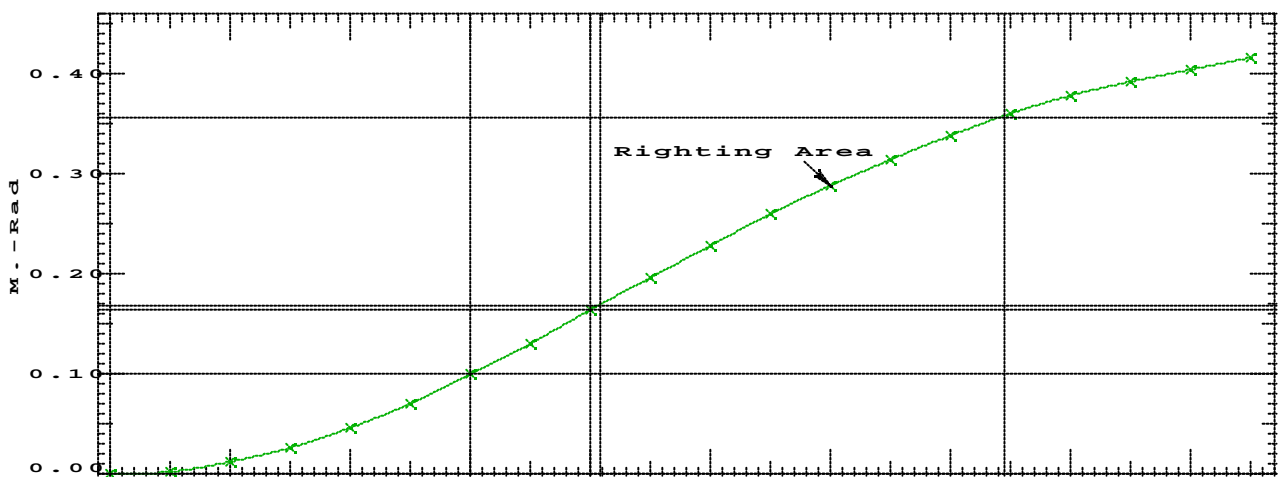
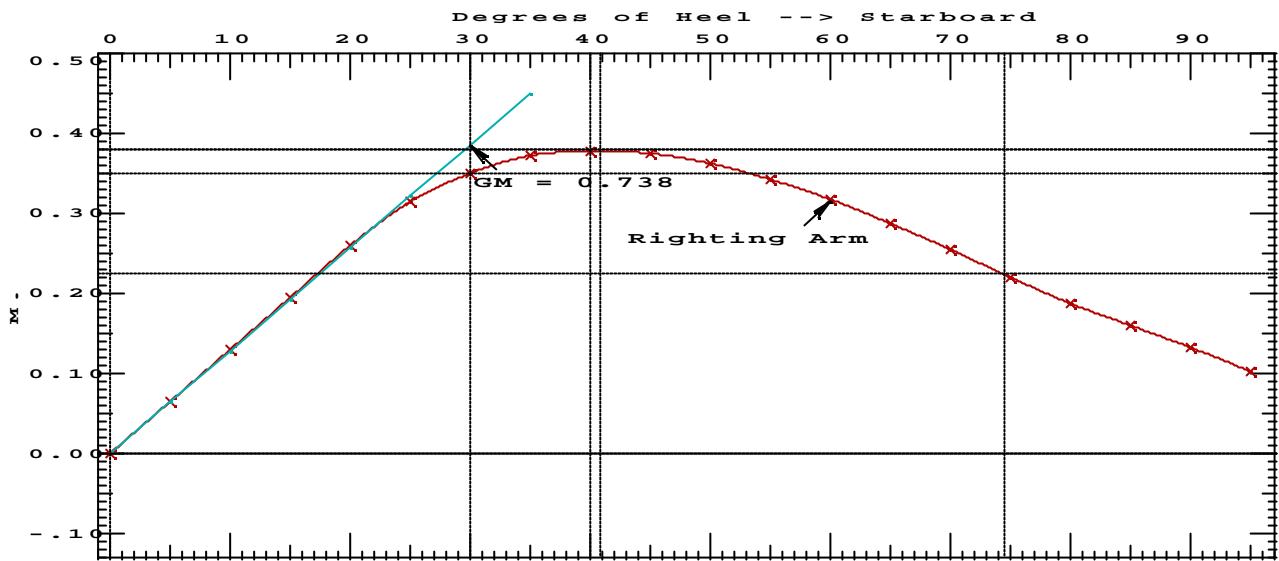
Origin	Degrees of		Displacement	Righting Arms		Flood Pt	
Depth---	Trim----	Heel----	Weight(MT)---	in Trim--	in Heel --	Area -->	Height
2.772	2.36a	0.03p	93.48	0.000	0.000	0.0000	1.576(1)
2.758	2.35a	4.97s	93.48	0.000	0.064s	0.0028	1.535(1)
2.716	2.32a	9.97s	93.48	0.000	0.129s	0.0113	1.489(1)
2.645	2.29a	14.97s	93.48	0.000	0.194s	0.0253	1.439(1)
2.547	2.24a	19.97s	93.49	0.000	0.259s	0.0451	1.386(1)
2.427	2.21a	24.97s	93.49	0.000	0.314s	0.0702	1.323(1)
2.291	2.24a	29.97s	93.47	0.000	0.351s	0.0993	1.245(1)
2.143	2.31a	34.97s	93.48	0.000	0.371s	0.1310	1.150(1)
1.983	2.39a	39.97s	93.48	0.000	0.379s	0.1638	1.042(1)
1.962	2.40a	40.60s	93.48	0.000	0.379s	0.1679	1.027(1)
1.812	2.49a	44.97s	93.48	0.000	0.375s	0.1967	0.920(1)
1.631	2.61a	49.97s	93.50	0.000	0.362s	0.2290	0.785(1)
1.441	2.73a	54.97s	93.47	0.000	0.342s	0.2598	0.641(1)
1.245	2.85a	59.97s	93.48	0.000	0.316s	0.2885	0.486(1)
1.043	2.97a	64.97s	93.48	0.000	0.287s	0.3149	0.324(1)
0.837	3.07a	69.97s	93.47	0.000	0.254s	0.3385	0.155(1)
0.652	3.14a	74.42s	93.48	0.000	0.225s	0.3571	0.000(1)
0.629	3.16a	74.97s	93.48	0.000	0.221s	0.3592	-0.020(1)
0.420	3.22a	79.97s	93.47	0.000	0.189s	0.3771	-0.198(1)
0.213	3.27a	84.97s	93.47	0.000	0.159s	0.3923	-0.380(1)
0.006	3.33a	89.97s	93.47	0.000	0.132s	0.4050	-0.563(1)
-0.200	3.46a	94.97s	93.47	0.000	0.104s	0.4152	-0.744(1)

Distances in METERS.-----Specific Gravity = 1.000.-----Area in M.-Rad.

Note: The Center of Gravity shown above is for the Fixed Weight of 76.15 MT. As the tank load centers shift with heel and trim, the total Center of Gravity varies. The righting arms shown above include the effect of the C.G. variation.

Critical Point-----	LCP-----	TCP-----	VCP
(1) Vent. eng room	FLOOD 1.892a	0.450	4.430
LIM-----	STABILITY CRITERION-----		Min/Max-----Margin
(1) Area from 0 deg to 30	>	0.0550 M.-Rad	81%
(2) Area from 0 deg to 40 or Flood	>	0.0900 M.-Rad	82%
(3) Area from 30 deg to 40 or Flood	>	0.0300 M.-Rad	115%
(4) Righting Arm at 30 deg	>	0.200 M.	75%
(5) Angle from 0 deg to MaxRA	>	30.00 deg	11 deg
(6) GM Upright	>	0.150 M.	392%
(7) Absolute Angle at RZero	>	60.00 deg	LARGE
-----Relative angles measured from 0.030 -----			

TJB 30  
NO 3: 100 % BUNKER + KYLV TANK + 5 PERS



NO 4: 10 % BUNKER + 5 PERS

WEIGHT and DISPLACEMENT and WATERPLANE STATUS

BASELINE draft: 2.553 @ Origin

Trim: Aft 0.441/18.020, Heel: Port 0.44 deg.

Part-----	Weight(MT)----	LCG-----	TCG-----	VCG-----	FSM-----		
LIGHT SHIP	75.65	0.668a	0.000	2.539			
5 CREW AND PAX	0.50	0.200a	0.000	5.750			
Total Fixed----->	76.15	0.665a	0.000	2.560			
Load-----	SpGr-----	Weight(MT)----	LCG-----	TCG-----	VCG-----	FSM-----	
BROSBAKT.S	0.100	0.840	0.19	2.361a	2.011s	1.849	0.01
BROSBMITT.S	0.100	0.840	0.22	0.488a	2.035s	1.748	0.01
BROSBFOR.S	0.100	0.840	0.17	1.342f	2.006s	1.846	0.01
BROBBAKT.P	0.100	0.840	0.19	2.360a	2.012p	1.849	0.01
BROBBMITT.P	0.100	0.840	0.22	0.488a	2.036p	1.748	0.01
BROBBFOR.P	0.100	0.840	0.17	1.341f	2.006p	1.846	0.01
FWTANK.S	0.100	1.000	0.04	6.753a	0.724s	2.300	0.01
FWTANK.P	0.100	1.000	0.04	6.753a	0.726p	2.300	0.01
SEPTICTANK.P	1.000	1.025	0.36	3.050f	1.000p	2.590	0.00
FODAGTANK.C	0.100	0.870	0.01	3.454a	0.008p	3.070	0.01
LOTANK.C	0.100	0.924	0.01	3.458a	0.016p	2.440	0.03
Total Tanks----->			1.63	0.121a	0.223p	2.022	0.12
Total Weight----->			77.78	0.654a	0.005p	2.549	
HULL	1.000	Displ(MT)----	LCB-----	TCB-----	VCB-----	RefHt	
		77.79	0.673a	0.011p	1.739	-2.552	
Righting Arms:			0.000	0.000p			
Part-----	SpGr-----	WPA-----	LCF-----	TCF-----	BML-----	BMT	
Total Waterplane----->	1.000	63.0	0.958a	0.028p	11.68	1.417	
		MT/CM-----	M.-MT/CM-----	GML-----	GMT		
		0.63		0.47	10.87	0.607	
Distances in METERS.-----			Moments in M.-MT.				

NO 4: 10 % BUNKER + 5 PERS

RIGHTING ARMS vs HEEL ANGLE

Fixed CG: LCG = 0.665a TCG = 0.000 VCG = 2.560

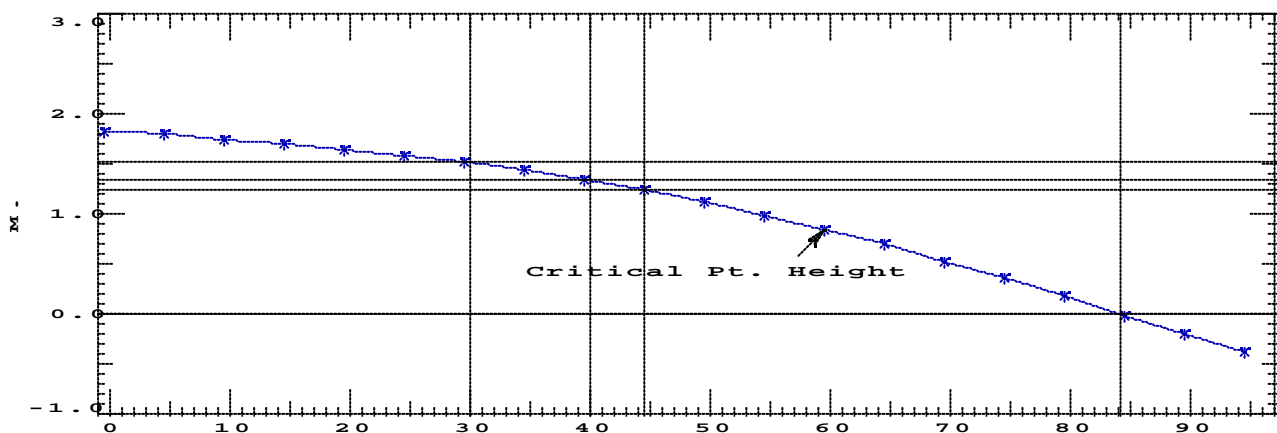
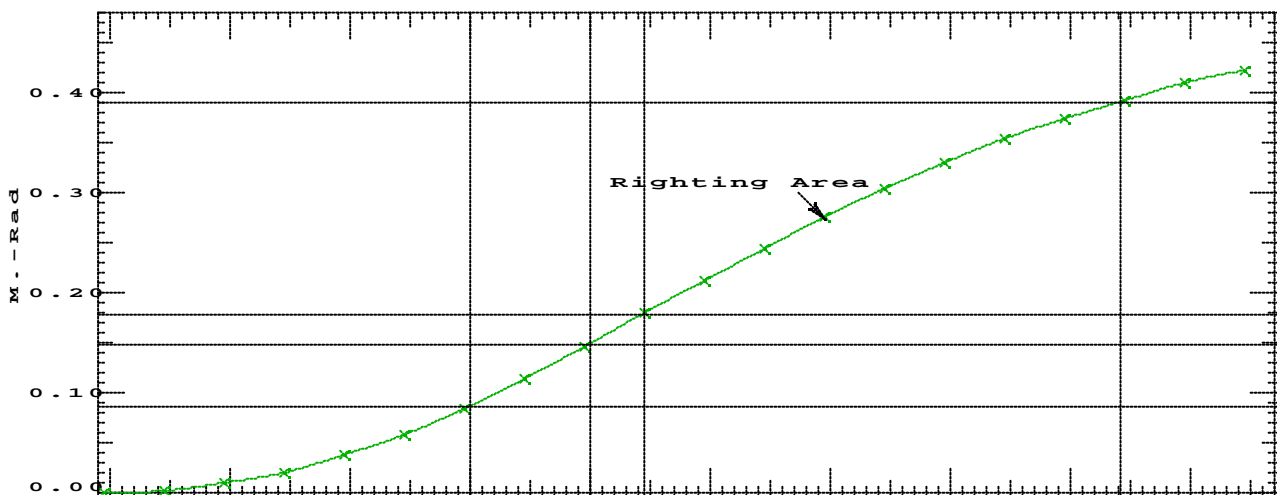
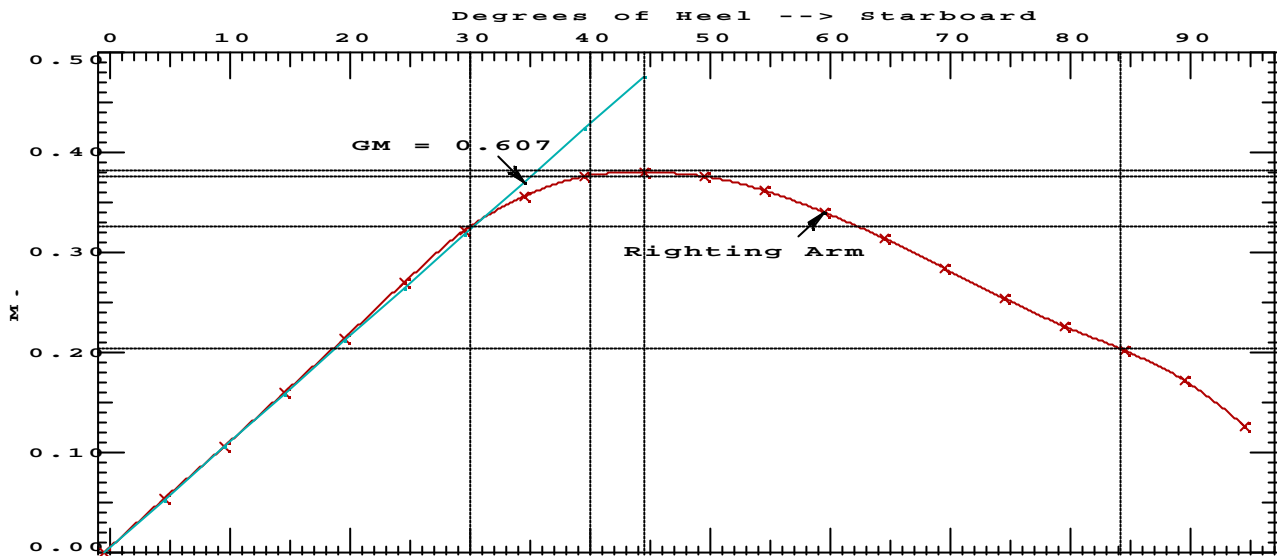
Origin	Degrees of		Displacement	Righting Arms		Flood Pt	
Depth---	Trim----	Heel----	Weight(MT)---	in Trim--	in Heel --	Area --	Height
2.552	1.41a	0.44p	77.79	0.000	0.000p	0.0000	1.827(1)
2.540	1.39a	4.56s	77.78	0.000	0.053s	0.0023	1.793(1)
2.501	1.36a	9.56s	77.78	0.000	0.106s	0.0093	1.747(1)
2.434	1.32a	14.56s	77.78	0.000	0.160s	0.0209	1.696(1)
2.339	1.26a	19.56s	77.78	0.000	0.215s	0.0372	1.642(1)
2.218	1.18a	24.56s	77.79	0.000	0.271s	0.0584	1.584(1)
2.074	1.12a	29.56s	77.80	0.000	0.322s	0.0843	1.520(1)
1.915	1.08a	34.56s	77.79	0.000	0.357s	0.1140	1.441(1)
1.744	1.07a	39.56s	77.78	0.000	0.375s	0.1461	1.348(1)
1.563	1.07a	44.56s	77.78	0.000	0.381s	0.1792	1.242(1)
1.516	1.07a	45.81s	77.78	0.000	0.380s	0.1875	1.213(1)
1.373	1.08a	49.56s	77.78	0.000	0.375s	0.2123	1.122(1)
1.176	1.10a	54.56s	77.79	0.000	0.361s	0.2445	0.990(1)
0.972	1.12a	59.56s	77.77	0.000	0.340s	0.2751	0.846(1)
0.766	1.15a	64.56s	77.77	0.000	0.314s	0.3037	0.692(1)
0.558	1.19a	69.56s	77.77	0.000	0.284s	0.3298	0.528(1)
0.350	1.24a	74.56s	77.78	0.000	0.254s	0.3532	0.354(1)
0.144	1.29a	79.56s	77.76	0.000	0.226s	0.3741	0.173(1)
-0.041	1.38a	84.13s	77.78	0.000	0.205s	0.3913	0.000(1)
-0.058	1.40a	84.56s	77.78	0.000	0.203s	0.3928	-0.016(1)
-0.264	1.56a	89.56s	77.78	0.000	0.171s	0.4092	-0.203(1)
-0.478	1.70a	94.56s	77.77	0.000	0.126s	0.4222	-0.379(1)

Distances in METERS.-----Specific Gravity = 1.000.-----Area in M.-Rad.

Note: The Center of Gravity shown above is for the Fixed Weight of 76.15 MT. As the tank load centers shift with heel and trim, the total Center of Gravity varies. The righting arms shown above include the effect of the C.G. variation.

Critical Point-----	LCP-----	TCP-----	VCP
(1) Vent. eng room	FLOOD 1.892a	0.450	4.430
LIM-----	STABILITY CRITERION-----		Min/Max-----
(1) Area from 0 deg to 30	>	0.0550 M.-Rad	53%
(2) Area from 0 deg to 40 or Flood	>	0.0900 M.-Rad	62%
(3) Area from 30 deg to 40 or Flood	>	0.0300 M.-Rad	106%
(4) Righting Arm at 30 deg	>	0.200 M.	61%
(5) Angle from 0 deg to MaxRA	>	30.00 deg	15 deg
(6) GM Upright	>	0.150 M.	304%
(7) Absolute Angle at RZero	>	60.00 deg	LARGE
-----Relative angles measured from 0.435p-----			

TJB 30  
NO 4: 10 % BUNKER + 5 PERS



NO 5: 50 % BUNKER + 5 PERS

WEIGHT and DISPLACEMENT and WATERPLANE STATUS

BASELINE draft: 2.628 @ Origin

Trim: Aft 0.460/18.020, Heel: Port 0.19 deg.

Part-----	Weight(MT)----	LCG-----	TCG-----	VCG-----	FSM-----		
LIGHT SHIP	75.65	0.668a	0.000	2.539			
5 CREW AND PAX	0.50	0.200a	0.000	5.750			
Total Fixed----->	76.15	0.665a	0.000	2.560			
Load-----	SpGr-----	Weight(MT)----	LCG-----	TCG-----	VCG-----	FSM-----	
BROSBAKT.S	0.500	0.840	0.95	2.491a	2.191s	2.327	0.04
BROSBMITT.S	0.500	0.840	1.08	0.469a	2.207s	2.218	0.05
BROSBFOR.S	0.500	0.840	0.87	1.496f	2.178s	2.354	0.03
BROBBAKT.P	0.500	0.840	0.95	2.491a	2.192p	2.327	0.04
BROBBMITT.P	0.500	0.840	1.08	0.469a	2.207p	2.218	0.05
BROBBFOR.P	0.500	0.840	0.87	1.495f	2.178p	2.354	0.03
FWTANK.S	0.500	1.000	0.21	6.751a	0.725s	2.620	0.01
FWTANK.P	0.500	1.000	0.21	6.751a	0.725p	2.620	0.01
SEPTICTANK.P	0.500	1.025	0.18	3.049f	1.000p	2.253	0.01
FODAGTANK.C	0.500	0.870	0.05	3.451a	0.001	3.176	0.01
LOTANK.C	0.500	0.924	0.07	3.452a	0.001p	2.520	0.03
Total Tanks----->			6.53	0.901a	0.028p	2.324	0.31
Total Weight----->			82.68	0.684a	0.002p	2.541	
HULL	1.000		Displ(MT)----	LCB-----	TCB-----	VCB-----	RefHt-----
			82.67	0.703a	0.005p	1.791	-2.627
Righting Arms:			0.000	0.000p			
Part-----	SpGr-----	WPA-----	LCF-----	TCF-----	BML-----	BMT-----	
Total Waterplane----->	1.000	64.6	0.972a	0.013p	11.58	1.397	
		MT/CM-----	M.-MT/CM-----	GML-----	GMT-----		
		0.65	0.50	10.83	0.646		
Distances in METERS.-----			Moments in M.-MT.				

NO 5: 50 % BUNKER + 5 PERS

RIGHTING ARMS vs HEEL ANGLE

Fixed CG: LCG = 0.665a TCG = 0.000 VCG = 2.560

Origin	Degrees of	Displacement	Righting Arms	Flood Pt
Depth---	Trim----	Heel----	Weight(MT)---	in Trim--in Heel --> Area --Height
2.627	1.46a	0.19p	82.67	0.000 0.000p 0.0000 1.752(1)
2.614	1.45a	4.81s	82.68	0.000 0.057s 0.0025 1.713(1)
2.573	1.42a	9.81s	82.68	0.000 0.113s 0.0099 1.667(1)
2.504	1.39a	14.81s	82.68	0.000 0.170s 0.0222 1.617(1)
2.408	1.33a	19.81s	82.68	0.000 0.228s 0.0396 1.563(1)
2.285	1.27a	24.81s	82.69	0.000 0.287s 0.0621 1.505(1)
2.142	1.23a	29.81s	82.69	0.000 0.334s 0.0892 1.437(1)
1.985	1.21a	34.81s	82.68	0.000 0.363s 0.1198 1.355(1)
1.817	1.23a	39.81s	82.70	0.000 0.377s 0.1522 1.257(1)
1.706	1.25a	42.93s	82.69	0.000 0.379s 0.1728 1.189(1)
1.638	1.26a	44.81s	82.68	0.000 0.378s 0.1852 1.146(1)
1.450	1.28a	49.81s	82.70	0.000 0.369s 0.2179 1.022(1)
1.254	1.33a	54.81s	82.67	0.000 0.352s 0.2494 0.887(1)
1.053	1.37a	59.81s	82.67	0.000 0.327s 0.2791 0.741(1)
0.847	1.43a	64.81s	82.66	0.000 0.295s 0.3063 0.584(1)
0.639	1.48a	69.81s	82.66	0.000 0.260s 0.3305 0.419(1)
0.431	1.54a	74.81s	82.68	0.000 0.224s 0.3517 0.245(1)
0.224	1.59a	79.81s	82.68	0.000 0.191s 0.3697 0.064(1)
0.154	1.62a	81.53s	82.68	0.000 0.181s 0.3753 0.001(1)
0.020	1.67a	84.81s	82.68	0.000 0.162s 0.3851 -0.123(1)
-0.183	1.83a	89.81s	82.70	0.000 0.133s 0.3980 -0.313(1)
-0.392	1.99a	94.81s	82.69	0.000 0.093s 0.4080 -0.492(1)

Distances in METERS.-----Specific Gravity = 1.000.-----Area in M.-Rad.

Note: The Center of Gravity shown above is for the Fixed Weight of 76.15 MT. As the tank load centers shift with heel and trim, the total Center of Gravity varies. The righting arms shown above include the effect of the C.G. variation.

Critical Point-----	LCP-----	TCP-----	VCP
(1) Vent. eng room	FLOOD 1.892a	0.450	4.430

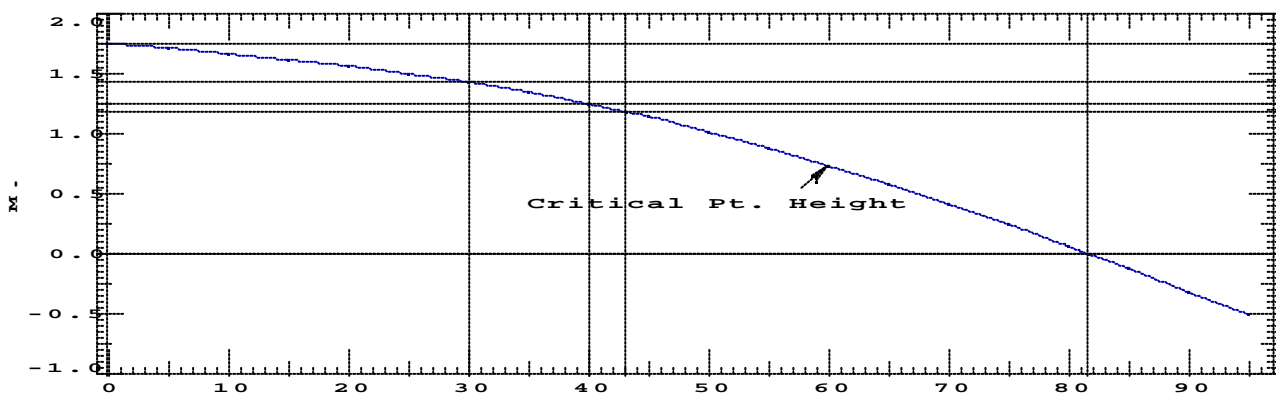
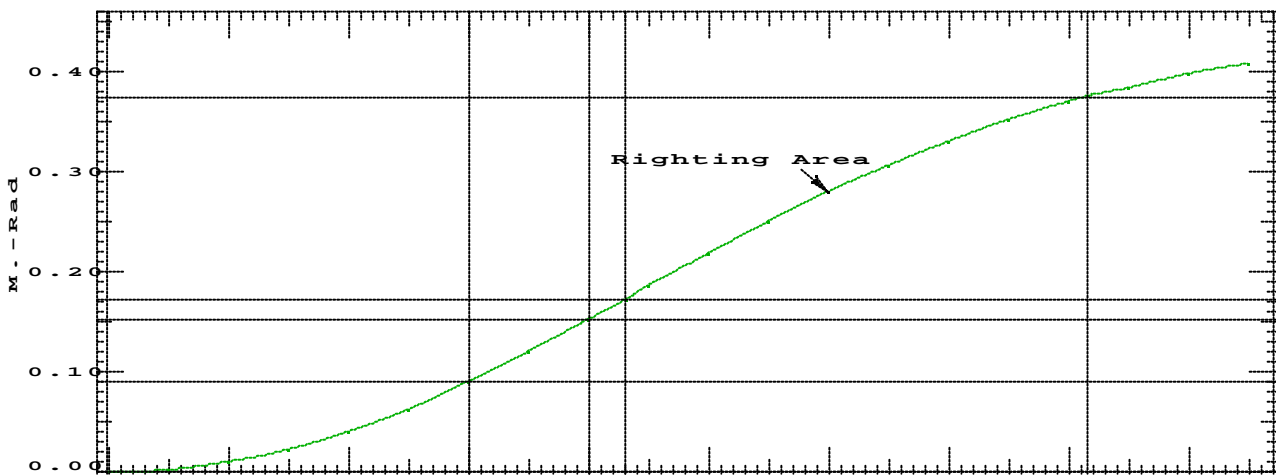
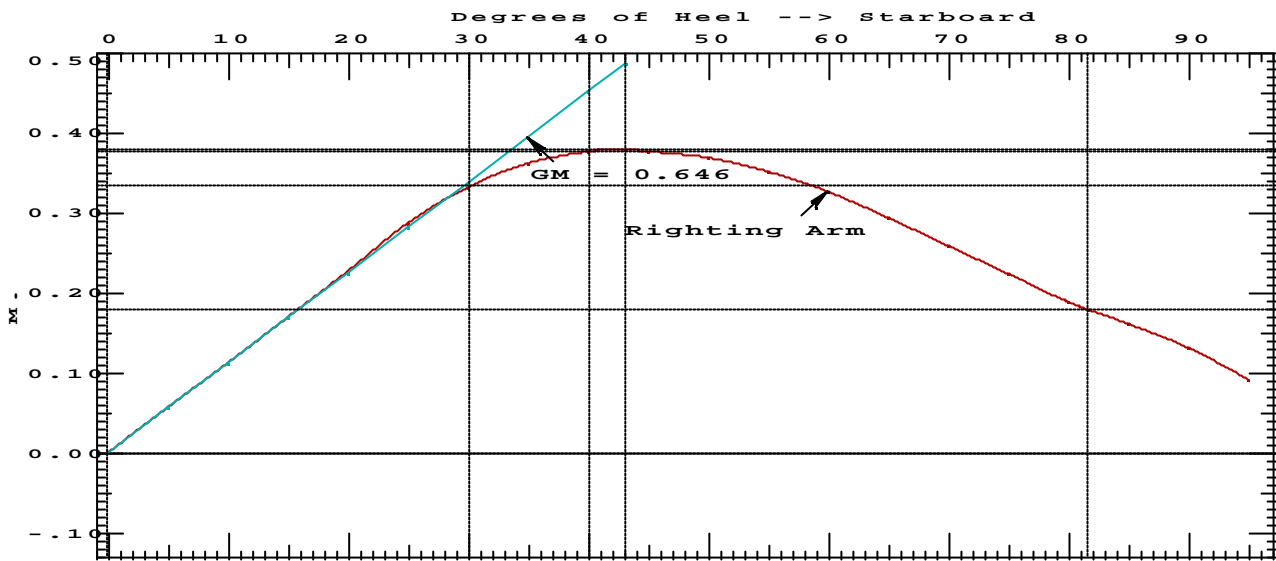
LIM-----STABILITY CRITERION-----Min/Max-----Margin

(1) Area from 0 deg to 30	>	0.0550 M.-Rad	62%
(2) Area from 0 deg to 40 or Flood	>	0.0900 M.-Rad	69%
(3) Area from 30 deg to 40 or Flood	>	0.0300 M.-Rad	110%
(4) Righting Arm at 30 deg	>	0.200 M.	67%
(5) Angle from 0 deg to MaxRA	>	30.00 deg	13 deg
(6) GM Upright	>	0.150 M.	331%
(7) Absolute Angle at RAzero	>	60.00 deg	LARGE

-----Relative angles measured from 0.194p-----



TJB 30  
NO 5: 50 % BUNKER + 5 PERS



NO 6: 10 % BUNKER + 5 PERS + NEDISNING

WEIGHT and DISPLACEMENT and WATERPLANE STATUS

BASELINE draft: 2.610 @ Origin

Trim: Aft 0.388/18.020, Heel: Port 0.47 deg.

Part	Weight (MT)	LCG	TCG	VCG	FSM		
LIGHT SHIP	75.65	0.668a	0.000	2.539			
5 CREW AND PAX	0.50	0.200a	0.000	5.750			
ice on vertical sides	0.83	0.270a	0.000	4.840			
ice on deck etc	2.64	0.150a	0.000	4.700			
Total Fixed	79.62	0.644a	0.000	2.655			
Part	Load	SpGr	Weight (MT)	LCG	TCG	VCG	FSM
BROSBAKT.S	0.100	0.840	0.19	2.358a	2.012s	1.849	0.01
BROSBMITT.S	0.100	0.840	0.22	0.484a	2.035s	1.748	0.01
BROSBFOR.S	0.100	0.840	0.17	1.345f	2.005s	1.846	0.01
BROBBAKT.P	0.100	0.840	0.19	2.356a	2.012p	1.849	0.01
BROBBMITT.P	0.100	0.840	0.22	0.485a	2.036p	1.748	0.01
BROBBFOR.P	0.100	0.840	0.17	1.344f	2.006p	1.846	0.01
FWTANK.S	0.100	1.000	0.04	6.753a	0.724s	2.300	0.01
FWTANK.P	0.100	1.000	0.04	6.753a	0.726p	2.300	0.01
SEPTICTANK.P	1.000	1.025	0.36	3.050f	1.000p	2.590	0.00
FODAGTANK.C	0.100	0.870	0.01	3.453a	0.008p	3.070	0.01
LOTANK.C	0.100	0.924	0.01	3.457a	0.017p	2.440	0.03
Total Tanks			1.63	0.119a	0.222p	2.022	0.12
Total Weight			81.25	0.633a	0.004p	2.642	
Part	Displ (MT)	LCB	TCB	VCB	RefHt		
HULL	1.000	81.26	0.652a	0.012p	1.775	-2.609	
Righting Arms:		0.000	0.000p				
Part	SpGr	WPA	LCF	TCF	BML	BMT	
Total Waterplane	1.000	64.2	0.938a	0.031p	11.65	1.404	
		MT/CM	M.	MT/CM	GML	GMT	
		0.64		0.49	10.78	0.537	
Distances in METERS.		Moments in M.-MT.					

NO 6: 10 % BUNKER + 5 PERS + NEDISNING

RIGHTING ARMS vs HEEL ANGLE

Fixed CG: LCG = 0.644a TCG = 0.000 VCG = 2.655

Origin	Degrees of		Displacement	Righting Arms		Flood Pt	
Depth---	Trim----	Heel----	Weight(MT)---	in Trim--	in Heel --	Area -->	Height
2.609	1.23a	0.47p	81.26	0.000	0.000p	0.0000	1.775(1)
2.598	1.22a	4.53s	81.25	0.000	0.047s	0.0021	1.741(1)
2.558	1.20a	9.53s	81.25	0.000	0.094s	0.0082	1.696(1)
2.491	1.16a	14.53s	81.25	0.000	0.142s	0.0185	1.645(1)
2.396	1.11a	19.53s	81.25	0.000	0.191s	0.0330	1.591(1)
2.274	1.04a	24.53s	81.26	0.000	0.241s	0.0518	1.534(1)
2.131	1.00a	29.53s	81.26	0.000	0.283s	0.0747	1.468(1)
1.974	0.98a	34.53s	81.26	0.000	0.307s	0.1006	1.388(1)
1.805	0.99a	39.53s	81.27	0.000	0.317s	0.1279	1.292(1)
1.767	0.98a	40.60s	81.25	0.000	0.317s	0.1338	1.271(1)
1.625	1.00a	44.53s	81.25	0.000	0.313s	0.1555	1.184(1)
1.437	1.02a	49.53s	81.25	0.000	0.300s	0.1823	1.062(1)
1.241	1.05a	54.53s	81.25	0.000	0.279s	0.2077	0.928(1)
1.039	1.08a	59.53s	81.24	0.000	0.252s	0.2309	0.783(1)
0.833	1.13a	64.53s	81.24	0.000	0.219s	0.2515	0.628(1)
0.625	1.18a	69.53s	81.24	0.000	0.184s	0.2691	0.464(1)
0.416	1.24a	74.53s	81.24	0.000	0.150s	0.2837	0.291(1)
0.209	1.29a	79.53s	81.23	0.000	0.118s	0.2953	0.110(1)
0.090	1.33a	82.47s	81.26	0.000	0.102s	0.3010	0.000(1)
0.006	1.37a	84.53s	81.24	0.000	0.092s	0.3045	-0.077(1)
-0.197	1.54a	89.53s	81.25	0.000	0.064s	0.3113	-0.267(1)
-0.408	1.68a	94.53s	81.24	0.000	0.024s	0.3152	-0.446(1)

Distances in METERS.-----Specific Gravity = 1.000.-----Area in M.-Rad.

Note: The Center of Gravity shown above is for the Fixed Weight of 79.62 MT. As the tank load centers shift with heel and trim, the total Center of Gravity varies. The righting arms shown above include the effect of the C.G. variation.

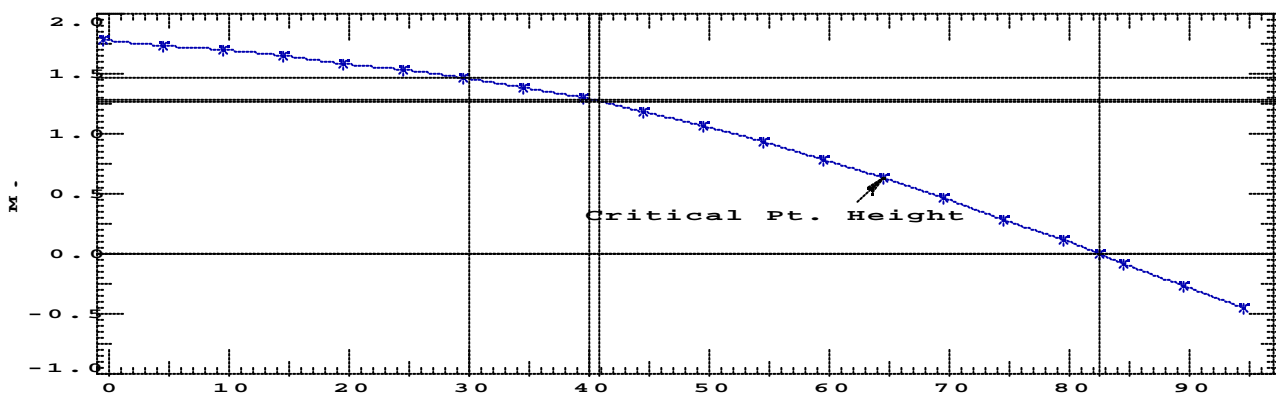
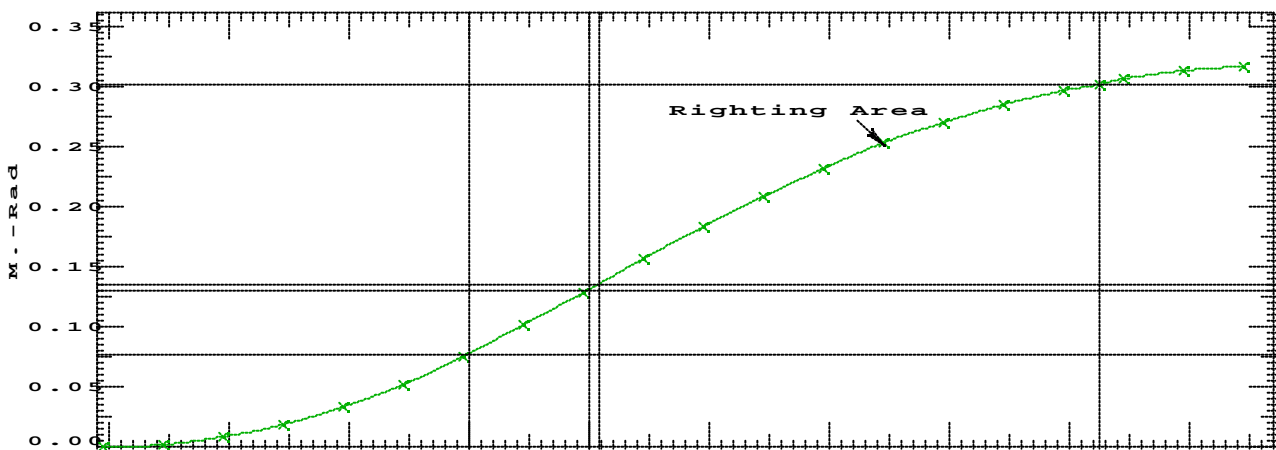
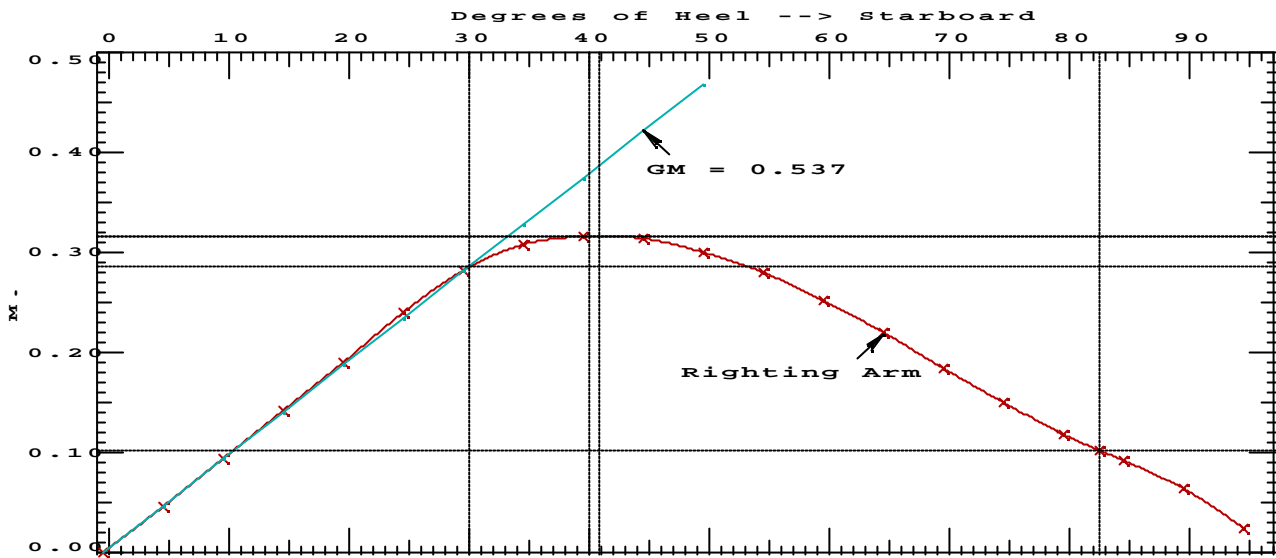
Critical Point-----	LCP-----	TCP-----	VCP
(1) Vent. eng room	FLOOD 1.892a	0.450	4.430

LIM-----STABILITY CRITERION-----Min/Max-----Margin

(1) Area from 0 deg to 30	>	0.0550 M.-Rad	36%
(2) Area from 0 deg to 40 or Flood	>	0.0900 M.-Rad	42%
(3) Area from 30 deg to 40 or Flood	>	0.0300 M.-Rad	77%
(4) Righting Arm at 30 deg	>	0.200 M.	41%
(5) Angle from 0 deg to MaxRA	>	30.00 deg	11 deg
(6) GM Upright	>	0.150 M.	258%
(7) Absolute Angle at RZero	>	60.00 deg	LARGE

-----Relative angles measured from 0.472p-----

TJB 30  
NO 6: 10 % BUNKER + 5 PERS + NEDISNING



NO 7: 10 % BUNKER + KYLV TANK + 5 PERS + NEDISNING

WEIGHT and DISPLACEMENT and WATERPLANE STATUS

BASELINE draft: 2.664 @ Origin

Trim: Aft 0.685/18.020, Heel: Port 0.37 deg.

Part	Weight (MT)		LCG	TCG	VCG	FSM	
LIGHT SHIP	75.65	0.668a	0.000	2.539			
5 CREW AND PAX	0.50	0.200a	0.000	5.750			
ice on vertical sides	0.83	0.270a	0.000	4.840			
ice on deck etc	2.64	0.150a	0.000	4.700			
Total Fixed	79.62	0.644a	0.000	2.655			
Part	Load	SpGr	Weight (MT)	LCG	TCG	VCG	FSM
AKTRAKYL.C	1.000	1.025	4.60	4.283a	0.000	1.315	0.00
BROSBAKT.S	0.100	0.840	0.19	2.380a	2.011s	1.850	0.01
BROSBMITT.S	0.100	0.840	0.22	0.506a	2.035s	1.748	0.01
BROSBFOR.S	0.100	0.840	0.17	1.329f	2.007s	1.846	0.01
BROBBAKT.P	0.100	0.840	0.19	2.379a	2.011p	1.850	0.01
BROBBMITT.P	0.100	0.840	0.22	0.506a	2.036p	1.748	0.01
BROBBFOR.P	0.100	0.840	0.17	1.328f	2.007p	1.846	0.01
FWTANK.S	0.100	1.000	0.04	6.755a	0.724s	2.300	0.01
FWTANK.P	0.100	1.000	0.04	6.755a	0.726p	2.300	0.01
SEPTICTANK.P	1.000	1.025	0.36	3.050f	1.000p	2.590	0.00
FODAGTANK.C	0.100	0.870	0.01	3.455a	0.007p	3.070	0.01
LOTANK.C	0.100	0.924	0.01	3.463a	0.014p	2.440	0.03
Total Tanks			6.23	3.196a	0.058p	1.501	0.12
Total Weight			85.85	0.829a	0.004p	2.571	
HULL	Load	SpGr	Displ (MT)	LCB	TCB	VCB	RefHt
HULL	1.000		85.84	0.857a	0.009p	1.828	-2.662
Righting Arms:				0.000	0.000p		
Part	SpGr	WPA	LCF	TCF	BML	BMT	
Total Waterplane	1.000	65.7	1.105a	0.024p	11.62	1.388	
		MT/CM	M.	MT/CM	GML	GMT	
		0.66		0.52	10.87	0.645	
Distances in METERS.				Moments in M.-MT.			

NO 7: 10 % BUNKER + KYLV TANK + 5 PERS + NEDISNING

RIGHTING ARMS vs HEEL ANGLE

Fixed CG: LCG = 0.644a TCG = 0.000 VCG = 2.655

Origin	Degrees of	Displacement	Righting Arms	Flood Pt
Depth---	Trim----	Heel----	Weight(MT)---	in Trim--in Heel --> Area --Height
2.662	2.17a	0.37p	85.84	0.000 0.000p 0.0000 1.690(1)
2.650	2.17a	4.63s	85.85	0.000 0.056s 0.0025 1.655(1)
2.610	2.14a	9.63s	85.85	0.000 0.113s 0.0099 1.609(1)
2.542	2.10a	14.63s	85.85	0.000 0.170s 0.0222 1.559(1)
2.446	2.04a	19.63s	85.85	0.000 0.228s 0.0395 1.505(1)
2.325	1.97a	24.63s	85.86	0.000 0.284s 0.0619 1.447(1)
2.186	1.94a	29.63s	85.85	0.000 0.325s 0.0886 1.376(1)
2.032	1.95a	34.63s	85.85	0.000 0.350s 0.1182 1.291(1)
1.867	1.99a	39.63s	85.85	0.000 0.360s 0.1492 1.190(1)
1.817	1.99a	41.10s	85.85	0.000 0.360s 0.1585 1.158(1)
1.692	2.03a	44.63s	85.85	0.000 0.358s 0.1806 1.076(1)
1.507	2.09a	49.63s	85.85	0.000 0.346s 0.2114 0.949(1)
1.314	2.16a	54.63s	85.85	0.000 0.325s 0.2407 0.811(1)
1.115	2.23a	59.63s	85.85	0.000 0.299s 0.2680 0.662(1)
0.911	2.31a	64.63s	85.84	0.000 0.267s 0.2927 0.504(1)
0.704	2.38a	69.63s	85.84	0.000 0.233s 0.3145 0.337(1)
0.496	2.44a	74.63s	85.84	0.000 0.198s 0.3334 0.164(1)
0.307	2.48a	79.18s	85.85	0.000 0.168s 0.3480 0.000(1)
0.289	2.50a	79.63s	85.85	0.000 0.166s 0.3493 -0.016(1)
0.084	2.55a	84.63s	85.85	0.000 0.137s 0.3624 -0.201(1)
-0.122	2.67a	89.63s	85.85	0.000 0.108s 0.3731 -0.387(1)
-0.328	2.85a	94.63s	85.83	0.000 0.075s 0.3811 -0.571(1)

Distances in METERS.-----Specific Gravity = 1.000.-----Area in M.-Rad.

Note: The Center of Gravity shown above is for the Fixed Weight of 79.62 MT. As the tank load centers shift with heel and trim, the total Center of Gravity varies. The righting arms shown above include the effect of the C.G. variation.

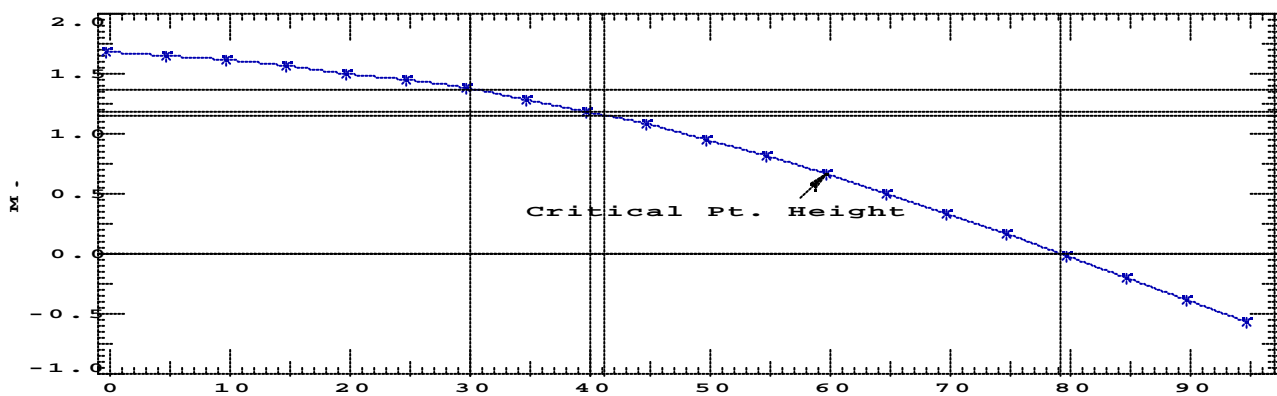
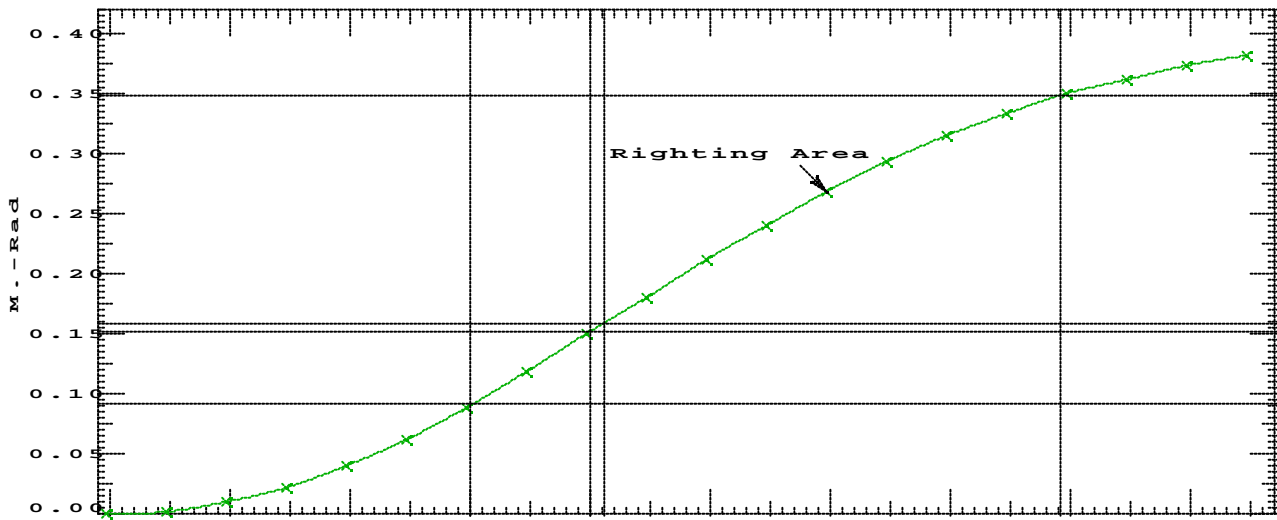
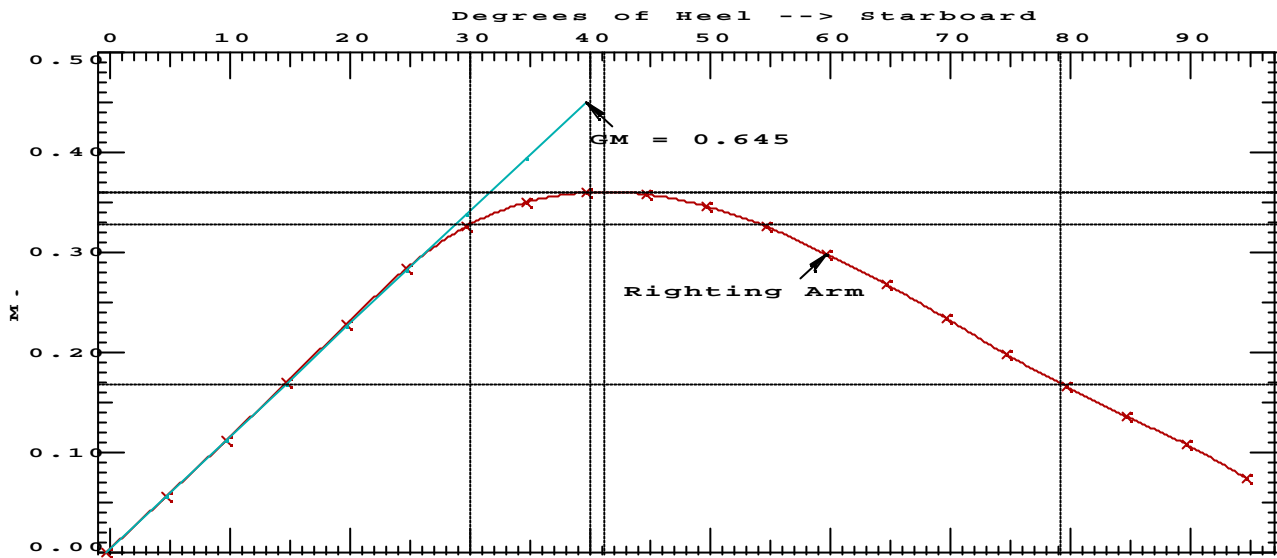
Critical Point-----	LCP-----	TCP-----	VCP
(1) Vent. eng room	FLOOD 1.892a	0.450	4.430

LIM-----STABILITY CRITERION-----Min/Max-----Margin

(1) Area from 0 deg to 30	>	0.0550 M.-Rad	61%
(2) Area from 0 deg to 40 or Flood	>	0.0900 M.-Rad	66%
(3) Area from 30 deg to 40 or Flood	>	0.0300 M.-Rad	102%
(4) Righting Arm at 30 deg	>	0.200 M.	63%
(5) Angle from 0 deg to MaxRA	>	30.00 deg	11 deg
(6) GM Upright	>	0.150 M.	330%
(7) Absolute Angle at RZero	>	60.00 deg	LARGE

-----Relative angles measured from 0.373p-----

TJB 30  
NO 7: 10 % BUNKER + KYLV TANK + 5 PERS + NEDISNING



NO 8: 10 % BUNKER + 5 PERS + 4 TON BALLAST

WEIGHT and DISPLACEMENT and WATERPLANE STATUS

BASELINE draft: 2.633 @ Origin

Trim: Aft 0.076/18.020, Heel: Port 0.36 deg.

Part-----	Weight(MT)----	LCG-----	TCG-----	VCG-----	FSM-----		
LIGHT SHIP	75.65	0.668a	0.000	2.539			
5 CREW AND PAX	0.50	0.200a	0.000	5.750			
Ballast	4.00	3.500f	0.000	1.000			
Total Fixed----->	80.15	0.457a	0.000	2.482			
Load-----	SpGr-----	Weight(MT)----	LCG-----	TCG-----	VCG-----	FSM-----	
BROSBAKT.S	0.100	0.840	0.19	2.335a	2.013s	1.848	0.01
BROSBMITT.S	0.100	0.840	0.22	0.461a	2.035s	1.747	0.01
BROSBFOR.S	0.100	0.840	0.17	1.363f	2.004s	1.846	0.01
BROBBAKT.P	0.100	0.840	0.19	2.334a	2.014p	1.848	0.01
BROBBMITT.P	0.100	0.840	0.22	0.462a	2.036p	1.747	0.01
BROBBFOR.P	0.100	0.840	0.17	1.362f	2.005p	1.846	0.01
FWTANK.S	0.100	1.000	0.04	6.751a	0.724s	2.300	0.01
FWTANK.P	0.100	1.000	0.04	6.751a	0.726p	2.300	0.01
SEPTICTANK.P	1.000	1.025	0.36	3.050f	1.000p	2.590	0.00
FODAGTANK.C	0.100	0.870	0.01	3.451a	0.006p	3.070	0.01
LOTANK.C	0.100	0.924	0.01	3.452a	0.013p	2.440	0.03
Total Tanks----->			1.63	0.103a	0.222p	2.022	0.12
Total Weight----->			81.78	0.450a	0.004p	2.473	
Displ(MT)----	LCB-----	TCB-----	VCB-----	RefHt-----			
HULL	1.000	81.78	0.453a	0.009p	1.778	-2.633	
Righting Arms:		0.000	0.000p				
Part-----	SpGr-----	WPA-----	LCF-----	TCF-----	BML-----	BMT-----	
Total Waterplane----->	1.000	64.1	0.736a	0.024p	11.49	1.398	
MT/CM-----	M.-MT/CM-----	GML-----	GMT-----				
0.64	0.49	10.80	0.703				
Distances in METERS.-----		Moments in M.-MT.					



NO 8: 10 % BUNKER + 5 PERS + 4 TON BALLAST

RIGHTING ARMS vs HEEL ANGLE

Fixed CG: LCG = 0.457a TCG = 0.000 VCG = 2.482

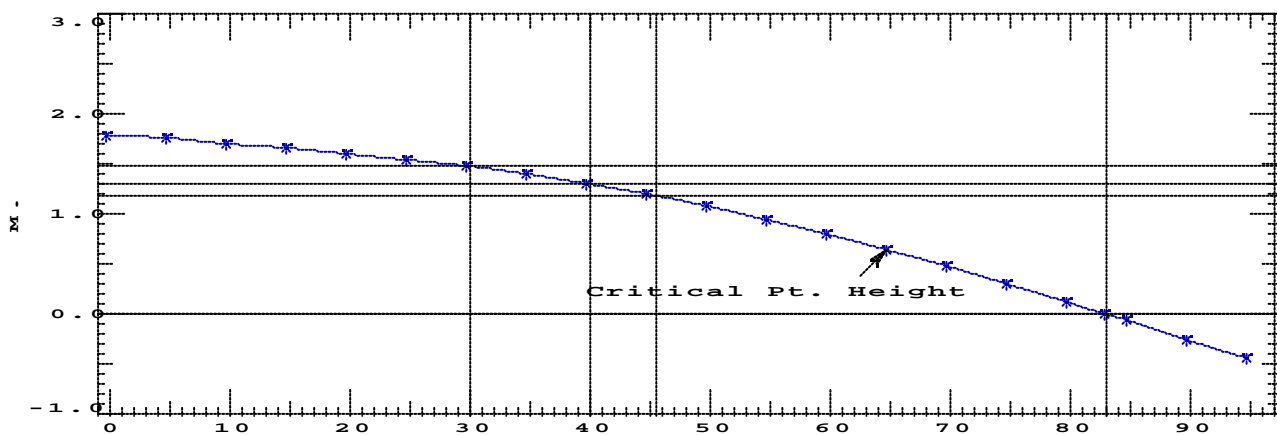
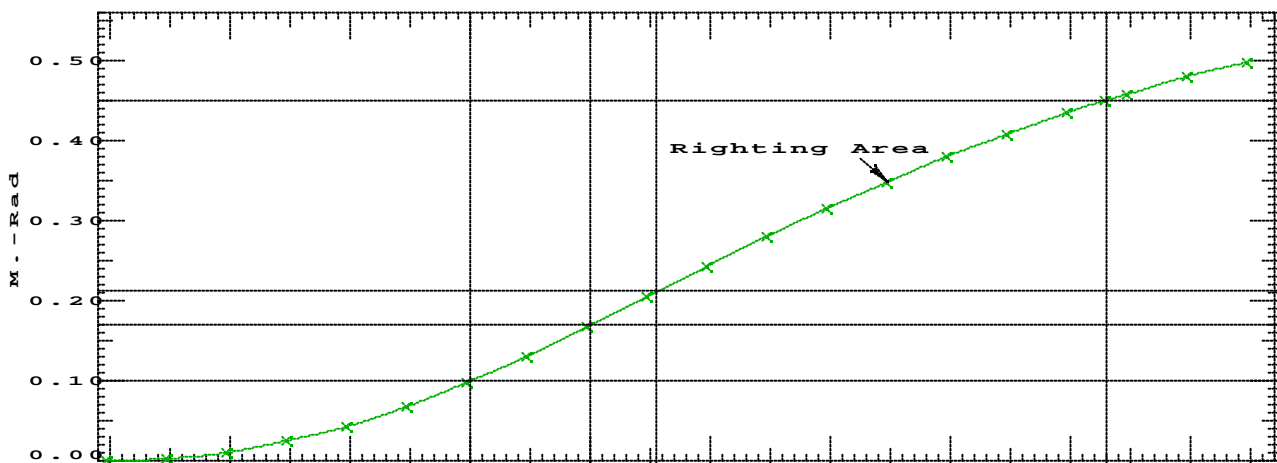
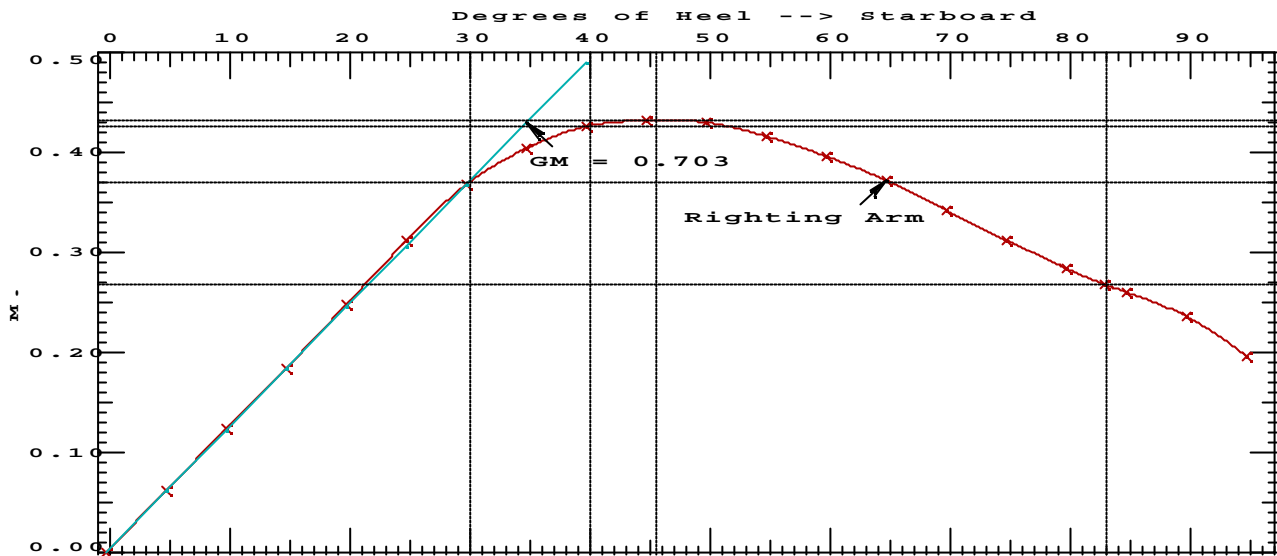
Origin	Degrees of		Displacement	Righting Arms		Flood Pt	
Depth---	Trim----	Heel----	Weight(MT)---	in Trim--	in Heel --	Area -->	Height
2.633	0.24a	0.36p	81.78	0.000	0.000p	0.0000	1.787(1)
2.620	0.24a	4.64s	81.78	0.000	0.062s	0.0027	1.751(1)
2.580	0.21a	9.64s	81.78	0.000	0.123s	0.0107	1.705(1)
2.511	0.19a	14.64s	81.78	0.000	0.185s	0.0242	1.655(1)
2.415	0.15a	19.64s	81.78	0.000	0.248s	0.0430	1.601(1)
2.292	0.10a	24.64s	81.79	0.000	0.312s	0.0674	1.544(1)
2.147	0.07a	29.64s	81.79	0.000	0.367s	0.0971	1.478(1)
1.989	0.06a	34.64s	81.78	0.000	0.404s	0.1309	1.398(1)
1.819	0.08a	39.64s	81.78	0.000	0.425s	0.1673	1.303(1)
1.639	0.10a	44.64s	81.79	0.000	0.432s	0.2048	1.194(1)
1.613	0.10a	45.33s	81.78	0.000	0.433s	0.2100	1.178(1)
1.449	0.11a	49.64s	81.78	0.000	0.429s	0.2424	1.073(1)
1.253	0.14a	54.64s	81.79	0.000	0.416s	0.2794	0.939(1)
1.049	0.17a	59.64s	81.77	0.000	0.397s	0.3150	0.796(1)
0.843	0.21a	64.64s	81.77	0.000	0.372s	0.3485	0.641(1)
0.633	0.27a	69.64s	81.78	0.000	0.342s	0.3797	0.477(1)
0.424	0.33a	74.64s	81.79	0.000	0.312s	0.4083	0.304(1)
0.217	0.41a	79.64s	81.78	0.000	0.284s	0.4342	0.124(1)
0.084	0.46a	82.92s	81.78	0.000	0.268s	0.4500	0.001(1)
0.015	0.50a	84.64s	81.78	0.000	0.261s	0.4580	-0.065(1)
-0.188	0.64a	89.64s	81.78	0.000	0.236s	0.4796	-0.255(1)
-0.400	0.78a	94.64s	81.77	0.000	0.196s	0.4986	-0.433(1)

Distances in METERS.-----Specific Gravity = 1.000.-----Area in M.-Rad.

Note: The Center of Gravity shown above is for the Fixed Weight of 80.15 MT. As the tank load centers shift with heel and trim, the total Center of Gravity varies. The righting arms shown above include the effect of the C.G. variation.

Critical Point-----	LCP-----	TCP-----	VCP
(1) Vent. eng room	FLOOD	1.892a	0.450 4.430
LIM-----	STABILITY CRITERION-----		Min/Max-----Margin
(1) Area from 0 deg to 30	>	0.0550 M.-Rad	77%
(2) Area from 0 deg to 40 or Flood	>	0.0900 M.-Rad	86%
(3) Area from 30 deg to 40 or Flood	>	0.0300 M.-Rad	134%
(4) Righting Arm at 30 deg	>	0.200 M.	84%
(5) Angle from 0 deg to MaxRA	>	30.00 deg	16 deg
(6) GM Upright	>	0.150 M.	369%
(7) Absolute Angle at RZero	>	60.00 deg	LARGE
-----Relative angles measured from 0.359p-----			

TJB 30  
NO 8: 10 % BUNKER + 5 PERS + 4 TON BALLAST



NO 9: 10 % BUNKER + 5 PERS + 4 TON DECKLOAD

WEIGHT and DISPLACEMENT and WATERPLANE STATUS

BASELINE draft: 2.636 @ Origin

Trim: Fwd 0.005/18.020, Heel: Port 0.48 deg.

Part	Weight(MT)	LCG	TCG	VCG	FSM		
LIGHT SHIP	75.65	0.668a	0.000	2.539			
5 CREW AND PAX	0.50	0.200a	0.000	5.750			
Deck Load	4.00	4.500f	0.000	4.700			
Total Fixed	80.15	0.407a	0.000	2.667			
Load	SpGr	Weight(MT)	LCG	TCG	VCG	FSM	
BROSBAKT.S	0.100	0.840	0.19	2.329a	2.013s	1.848	0.01
BROSBMITT.S	0.100	0.840	0.22	0.455a	2.035s	1.747	0.01
BROSBFOR.S	0.100	0.840	0.17	1.368f	2.004s	1.846	0.01
BROBBAKT.P	0.100	0.840	0.19	2.328a	2.014p	1.848	0.01
BROBBMITT.P	0.100	0.840	0.22	0.456a	2.036p	1.747	0.01
BROBBFOR.P	0.100	0.840	0.17	1.366f	2.005p	1.847	0.01
FWTANK.S	0.100	1.000	0.04	6.750a	0.724s	2.300	0.01
FWTANK.P	0.100	1.000	0.04	6.750a	0.726p	2.300	0.01
SEPTICTANK.P	1.000	1.025	0.36	3.050f	1.000p	2.590	0.00
FODAGTANK.C	0.100	0.870	0.01	3.450a	0.009p	3.070	0.01
LOTANK.C	0.100	0.924	0.01	3.450a	0.018p	2.440	0.03
Total Tanks			1.63	0.099a	0.222p	2.022	0.12
Total Weight			81.78	0.401a	0.004p	2.654	
HULL	1.000	Displ(MT)	LCB	TCB	VCB	RefHt	
		81.79	0.401a	0.012p	1.778	-2.636	
Righting Arms:			0.000	0.000p			
Part	SpGr	WPA	LCF	TCF	BML	BMT	
Total Waterplane	1.000	64.1	0.684a	0.032p	11.46	1.397	
		MT/CM	M.	MT/CM	GML	GMT	
		0.64		0.48	10.58	0.521	
Distances in METERS.			Moments in M.-MT.				

NO 9: 10 % BUNKER + 5 PERS + 4 TON DECKLOAD

RIGHTING ARMS vs HEEL ANGLE

Fixed CG: LCG = 0.407a TCG = 0.000 VCG = 2.667

Origin	Degrees of		Displacement	Righting Arms		Flood Pt	
Depth---	Trim----	Heel----	Weight(MT)---	in Trim--	in Heel --	Area --	Height
2.636	0.02f	0.48p	81.79	0.000	0.000p	0.0000	1.791(1)
2.624	0.01f	4.52s	81.78	0.000	0.046s	0.0020	1.757(1)
2.584	0.04f	9.52s	81.78	0.000	0.091s	0.0080	1.712(1)
2.516	0.07f	14.52s	81.78	0.000	0.138s	0.0180	1.662(1)
2.420	0.10f	19.52s	81.78	0.000	0.185s	0.0320	1.608(1)
2.298	0.15f	24.52s	81.79	0.000	0.234s	0.0503	1.551(1)
2.153	0.18f	29.52s	81.79	0.000	0.277s	0.0727	1.486(1)
1.995	0.19f	34.52s	81.78	0.000	0.301s	0.0981	1.407(1)
1.825	0.17f	39.52s	81.78	0.000	0.310s	0.1248	1.312(1)
1.804	0.17f	40.10s	81.78	0.000	0.310s	0.1280	1.300(1)
1.645	0.15f	44.52s	81.78	0.000	0.306s	0.1518	1.203(1)
1.456	0.13f	49.52s	81.79	0.000	0.292s	0.1780	1.082(1)
1.259	0.11f	54.52s	81.78	0.000	0.270s	0.2025	0.950(1)
1.056	0.07f	59.52s	81.78	0.000	0.242s	0.2249	0.806(1)
0.849	0.03f	64.52s	81.77	0.000	0.209s	0.2446	0.652(1)
0.639	0.02a	69.52s	81.77	0.000	0.174s	0.2614	0.489(1)
0.430	0.09a	74.52s	81.78	0.000	0.139s	0.2750	0.316(1)
0.222	0.17a	79.52s	81.78	0.000	0.107s	0.2857	0.136(1)
0.076	0.23a	83.11s	81.78	0.000	0.088s	0.2919	0.001(1)
0.020	0.26a	84.52s	81.78	0.000	0.082s	0.2940	-0.053(1)
-0.183	0.40a	89.52s	81.78	0.000	0.057s	0.3000	-0.243(1)
-0.394	0.53a	94.52s	81.77	0.000	0.018s	0.3034	-0.421(1)

Distances in METERS.-----Specific Gravity = 1.000.-----Area in M.-Rad.

Note: The Center of Gravity shown above is for the Fixed Weight of 80.15 MT. As the tank load centers shift with heel and trim, the total Center of Gravity varies. The righting arms shown above include the effect of the C.G. variation.

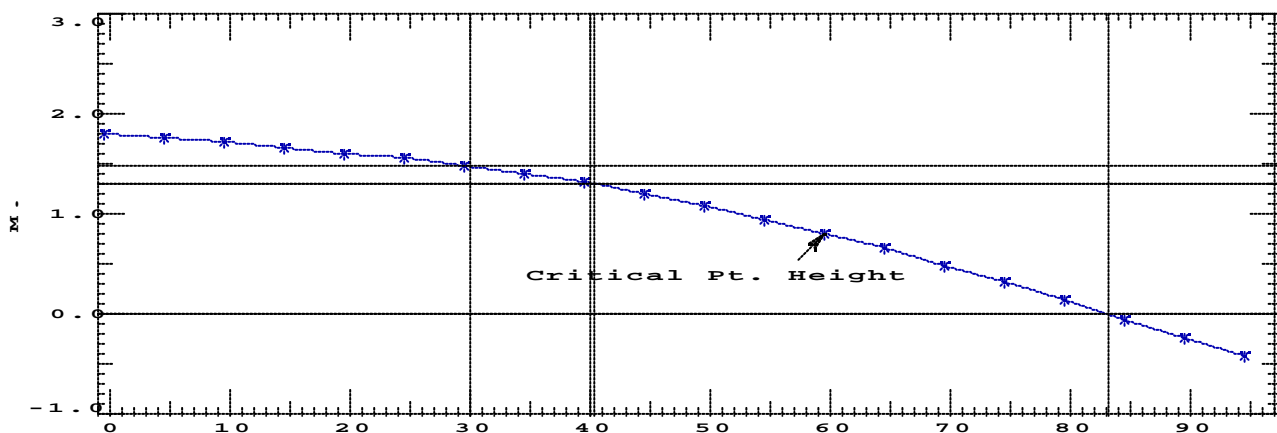
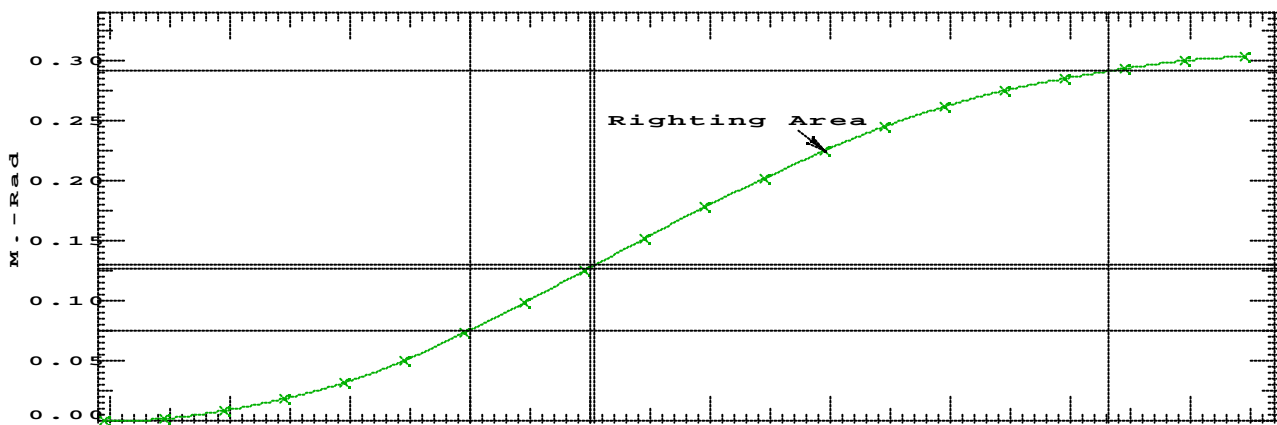
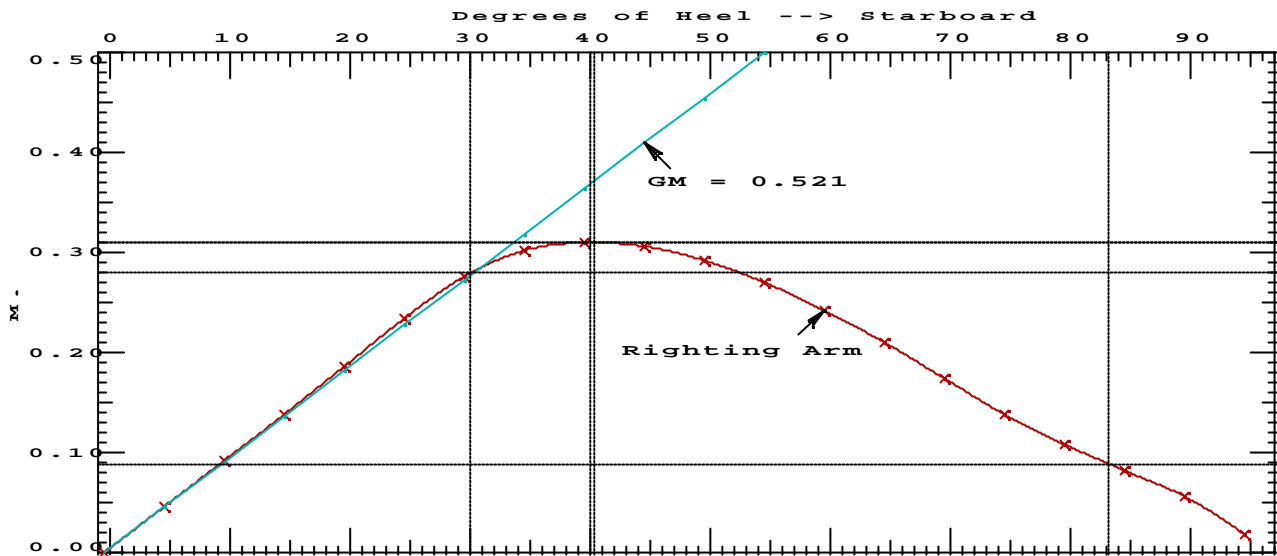
Critical Point-----	LCP-----	TCP-----	VCP
(1) Vent. eng room	FLOOD 1.892a	0.450	4.430

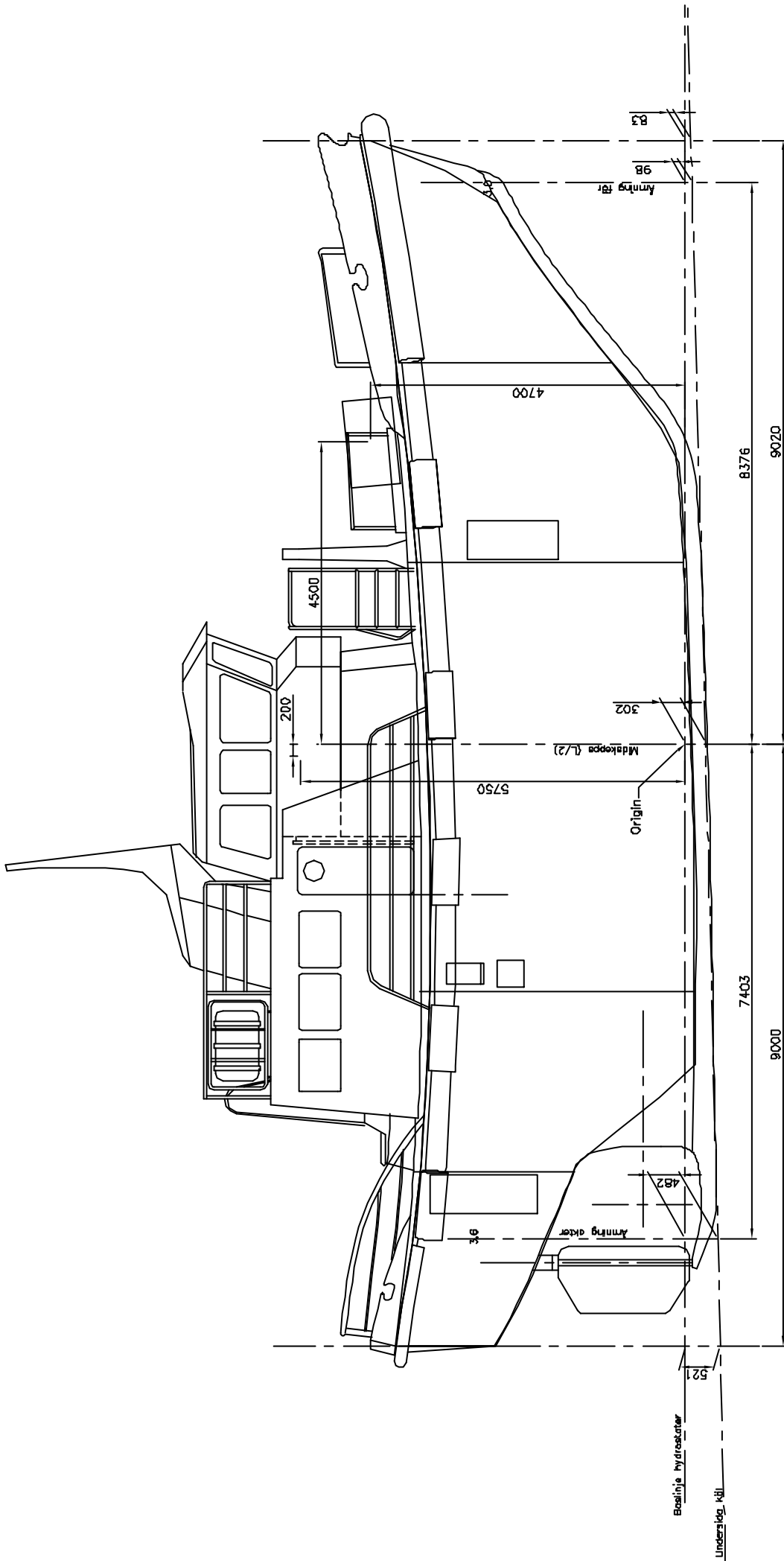
LIM-----STABILITY CRITERION-----Min/Max-----Margin

(1) Area from 0 deg to 30	>	0.0550 M.-Rad	32%
(2) Area from 0 deg to 40 or Flood	>	0.0900 M.-Rad	39%
(3) Area from 30 deg to 40 or Flood	>	0.0300 M.-Rad	74%
(4) Righting Arm at 30 deg	>	0.200 M.	38%
(5) Angle from 0 deg to MaxRA	>	30.00 deg	11 deg
(6) GM Upright	>	0.150 M.	247%
(7) Absolute Angle at RZero	>	60.00 deg	LARGE

-----Relative angles measured from 0.484p-----

TJB 30  
NO 9: 10 % BUNKER + 5 PERS + 4 TON DECKLOAD







## Lastfallsberäkning

Kondition \_\_\_\_\_

Trim	?	
Displacement	$d$	
Medeldjupgående	LCB	
Displacementstygndpunkt från L/2	$KM_L$	
Längskeppsmetacentrum över köl	KG	
Viktstygndpunkt över köl	$t$	
Totalt trim	LCF	
Flytcentrum från L/2	$d_F$	
Djupgående för	$d_A$	
Djupgående akter		

Stabilitet

Tvårskeppsmetacentrum över köl	$KM$	
Viktstygndpunkt över köl	KG	
Tvårskeppsmetacentrerhöjd över köl	$KM-KG$	GM
Reduktion för fria vätskeytor	$GM-GG'$	<b>G'M'</b>



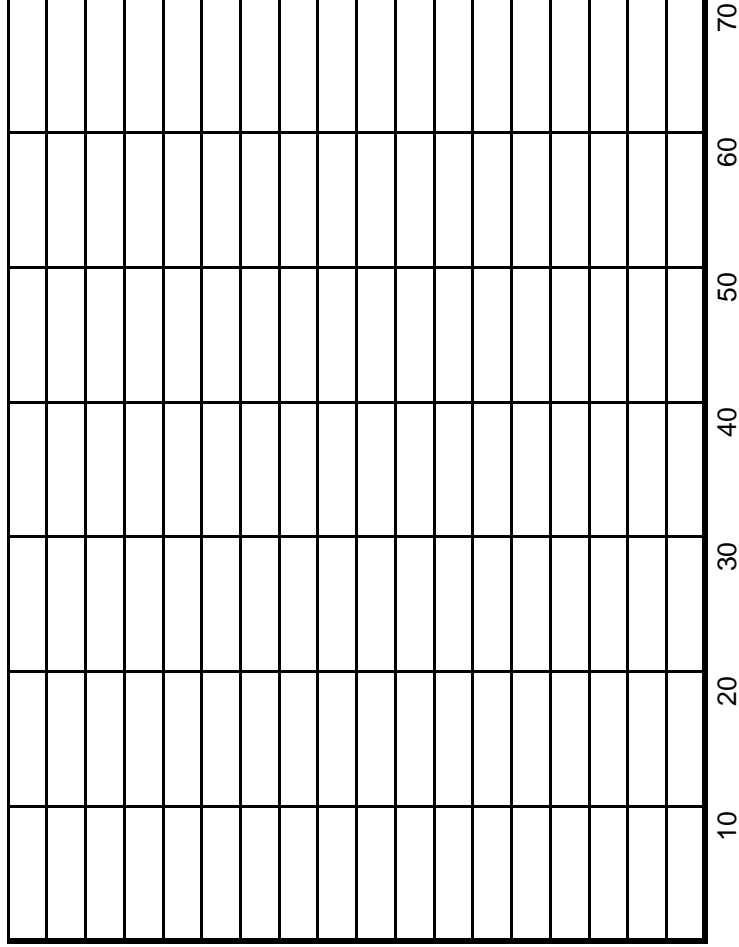
### Lastfallsberäkning

Kondition \_\_\_\_\_

#### GZ-Tabell

	5	10	12	20	30	40	50	60
f								
sinf								
KN								
KG' x sinf								
GZ=KN-KG' x sinf								
Dyn. Hävarm								

#### GZ-Kurva



MAXIMUM VCG vs. DISPLACEMENT

Trim = zero at zero heel (trim righting arm held at zero)

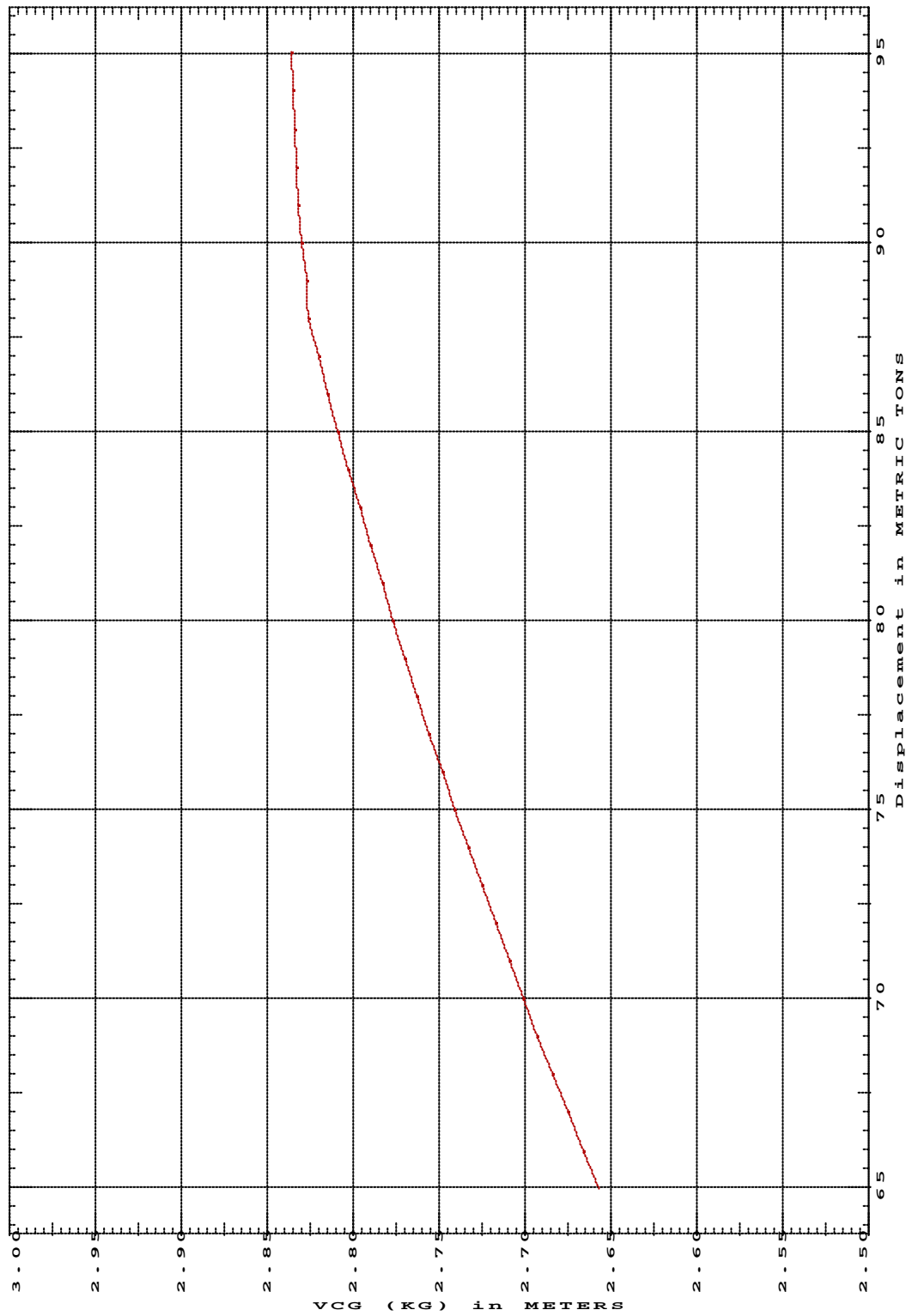
Displacement	----- Margins -----							
METRIC TONS	Max VCG	LIM1	LIM2	LIM3	LIM4	LIM5	LIM6	LIM7
65.00	2.657	0%	12%	52%	11%	18d	151%	LARGE
66.00	2.666	0%	11%	51%	11%	17d	152%	LARGE
67.00	2.675	0%	11%	49%	11%	16d	152%	LARGE
68.00	2.684	0%	11%	48%	11%	15d	153%	LARGE
69.00	2.692	0%	10%	47%	10%	15d	154%	LARGE
70.00	2.701	0%	10%	46%	10%	14d	154%	LARGE
71.00	2.709	0%	9%	44%	10%	13d	155%	LARGE
72.00	2.717	0%	9%	43%	10%	12d	155%	34d
73.00	2.725	0%	8%	42%	9%	12d	155%	33d
74.00	2.733	0%	8%	40%	9%	11d	155%	32d
75.00	2.741	0%	7%	39%	9%	10d	155%	31d
76.00	2.748	0%	7%	37%	8%	10d	156%	29d
77.00	2.756	0%	6%	36%	8%	10d	156%	28d
78.00	2.763	0%	6%	34%	7%	9d	156%	26d
79.00	2.770	0%	5%	33%	7%	8d	157%	23d
80.00	2.777	0%	5%	31%	6%	8d	157%	20d
81.00	2.783	0%	4%	30%	5%	7d	158%	18d
82.00	2.790	0%	4%	28%	5%	7d	159%	17d
83.00	2.796	0%	3%	26%	4%	6d	159%	15d
84.00	2.803	0%	3%	25%	3%	6d	160%	14d
85.00	2.809	0%	2%	23%	2%	5d	160%	13d
86.00	2.814	0%	2%	21%	2%	5d	161%	12d
87.00	2.820	0%	1%	20%	1%	5d	161%	11d
88.00	2.826	0%	0%	18%	0%	4d	162%	10d
89.00	2.827	1%	1%	18%	0%	4d	165%	9d
90.00	2.830	1%	1%	17%	0%	3d	167%	8d
91.00	2.832	2%	1%	16%	0%	3d	170%	8d
92.00	2.833	3%	2%	16%	0%	3d	173%	7d
93.00	2.834	4%	2%	15%	0%	3d	177%	7d
94.00	2.835	5%	2%	15%	0%	2d	180%	7d
95.00	2.836	6%	3%	14%	0%	2d	184%	6d

Distances in METERS.---Specific Gravity = 1.000.---d = degrees.

LIM-----	STABILITY CRITERION-----	Min/Max
(1)	Area from 0 deg to 30	> 0.0550 M.-Rad
(2)	Area from 0 deg to 40 or Flood	> 0.0900 M.-Rad
(3)	Area from 30 deg to 40 or Flood	> 0.0300 M.-Rad
(4)	Righting Arm at 30 deg	> 0.200 M.
(5)	Angle from 0 deg to MaxRA	> 30.00 deg
(6)	GM Upright	> 0.150 M.
(7)	Absolute Angle at RAzero	> 60.00 deg

TJB 30  
MAX VCG CALCULATION

MAXIMUM VCG (KG)  
at LEVEL TRIM (initial)



Specific Gravity = 1.000 "K" = BASELINE

HYDROSTATIC PROPERTIES

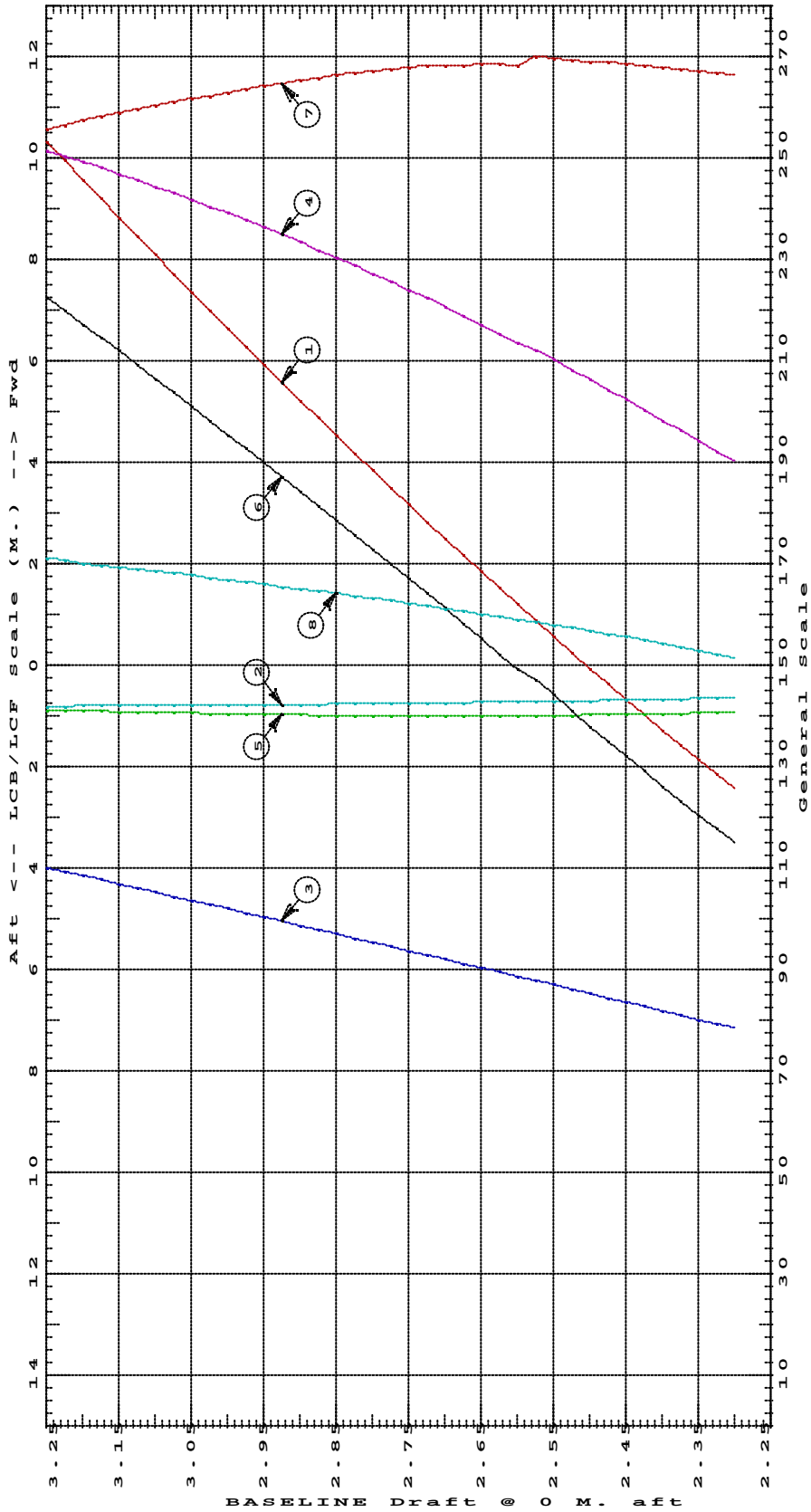
Trim: Aft 0.500/18.200, No Heel, VCG = 0.000

Draft@ Origin	Displacement Weight(MT)	Buoyancy-Ctr. LCB-----VCB-----		Weight/ CM-----	Moment/ LCF---CM trim---			KML-----	KMT
2.300	62.77	0.648a	1.569	0.57	0.926a	0.46	13.33	3.031	
2.325	64.20	0.654a	1.586	0.58	0.934a	0.47	13.34	3.045	
2.350	65.65	0.660a	1.603	0.58	0.942a	0.48	13.35	3.059	
2.375	67.12	0.667a	1.620	0.59	0.949a	0.49	13.37	3.073	
2.400	68.60	0.673a	1.638	0.60	0.955a	0.50	13.38	3.086	
2.425	70.10	0.679a	1.655	0.60	0.962a	0.52	13.41	3.099	
2.450	71.61	0.685a	1.672	0.61	0.968a	0.53	13.43	3.111	
2.475	73.14	0.691a	1.689	0.61	0.974a	0.54	13.44	3.124	
2.500	74.68	0.697a	1.706	0.62	0.980a	0.55	13.45	3.136	
2.525	76.23	0.703a	1.723	0.62	0.986a	0.56	13.47	3.147	
2.550	77.80	0.709a	1.740	0.63	0.994a	0.58	13.49	3.159	
2.575	79.39	0.714a	1.757	0.64	0.999a	0.59	13.49	3.170	
2.600	80.98	0.720a	1.774	0.64	0.990a	0.60	13.41	3.181	
2.625	82.59	0.725a	1.791	0.65	0.994a	0.61	13.42	3.192	
2.650	84.22	0.730a	1.808	0.65	0.997a	0.62	13.42	3.202	
2.675	85.85	0.735a	1.825	0.66	0.998a	0.63	13.42	3.212	
2.700	87.50	0.740a	1.841	0.66	1.000a	0.65	13.42	3.223	
2.725	89.16	0.745a	1.858	0.67	1.000a	0.66	13.41	3.233	
2.750	90.84	0.749a	1.875	0.67	0.999a	0.67	13.39	3.244	
2.775	92.52	0.754a	1.892	0.68	0.995a	0.68	13.38	3.254	
2.800	94.22	0.758a	1.908	0.68	0.992a	0.69	13.36	3.263	
2.825	95.93	0.762a	1.925	0.69	0.989a	0.70	13.34	3.273	
2.850	97.65	0.766a	1.941	0.69	0.986a	0.71	13.32	3.282	
2.875	99.39	0.770a	1.958	0.70	0.983a	0.73	13.29	3.292	
2.900	101.13	0.774a	1.975	0.70	0.979a	0.74	13.27	3.301	
2.925	102.89	0.777a	1.991	0.70	0.975a	0.75	13.24	3.310	
2.950	104.66	0.780a	2.008	0.71	0.970a	0.76	13.21	3.319	
2.975	106.43	0.783a	2.024	0.71	0.964a	0.77	13.18	3.329	
3.000	108.22	0.786a	2.040	0.72	0.958a	0.78	13.15	3.337	
3.025	110.02	0.789a	2.057	0.72	0.951a	0.79	13.12	3.346	
3.050	111.83	0.791a	2.073	0.73	0.942a	0.80	13.09	3.354	
3.075	113.65	0.794a	2.089	0.73	0.935a	0.82	13.06	3.362	
3.100	115.48	0.796a	2.105	0.73	0.928a	0.83	13.02	3.370	
3.125	117.32	0.798a	2.122	0.74	0.922a	0.84	12.98	3.379	
3.150	119.16	0.800a	2.138	0.74	0.915a	0.85	12.95	3.387	
3.175	121.02	0.802a	2.154	0.74	0.907a	0.86	12.91	3.395	
3.200	122.88	0.803a	2.170	0.75	0.899a	0.87	12.87	3.403	
3.225	124.76	0.804a	2.186	0.75	0.890a	0.88	12.83	3.411	
3.250	126.64	0.806a	2.202	0.75	0.881a	0.89	12.78	3.419	

Distances in METERS.-----Specific Gravity = 1.000.-----Moment in M.-MT.  
Trim is per 18.20M.

Draft is from BASELINE.

HYDROSTATIC PROPERTIES at 0.5 M. AFT TRIM



- ① Displacement 1 = .5 MT
- ② LCB (use top scale)
- ③ VCB (KB) 1 = .02 M.
- ④ Immersion 1 = .003 MT/CM
- ⑤ WPA 1 = .3 Sq.M.
- ⑥ LCF (use top scale)
- ⑦ Moment/Trim 1 = .004 M.-MT/CM
- ⑧ KML 1 = .05 M.

Specific Gravity = 1.000      Assumed KG = 0.00 M.  
Trim is per 18.2 M.      "K" = BASELINE

HYDROSTATIC PROPERTIES

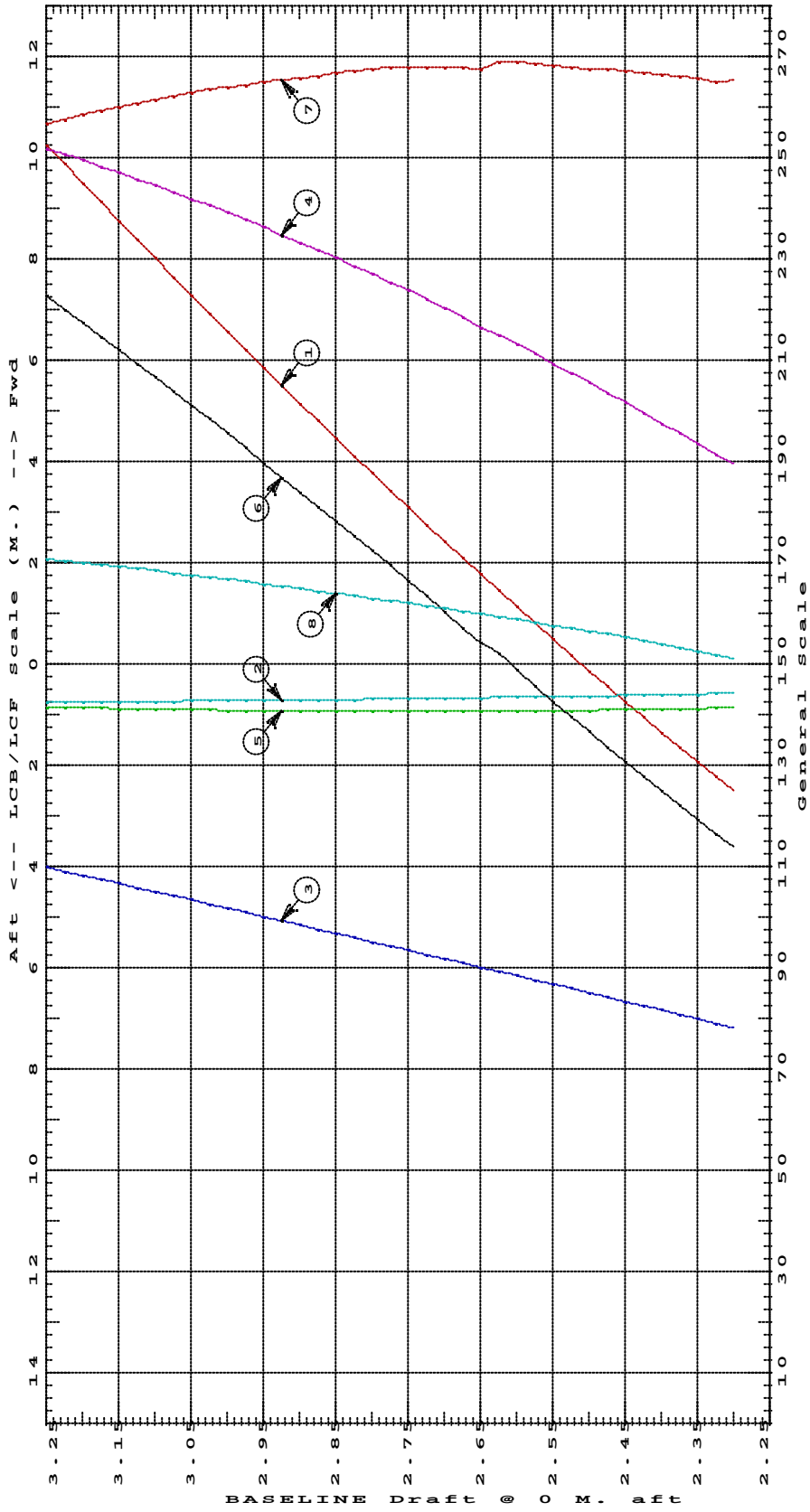
Trim: Aft 0.400/18.200, No Heel, VCG = 0.000

Draft@ Origin	Displacement Weight(MT)	Buoyancy-Ctr. LCB-----VCB-----		Weight/ CM-----	Moment/ LCF-----CM trim-----			KML-----	KMT
2.300	62.49	0.583a	1.564	0.57	0.864a	0.46	13.26	3.024	
2.325	63.92	0.589a	1.581	0.57	0.869a	0.47	13.26	3.038	
2.350	65.36	0.595a	1.598	0.58	0.876a	0.48	13.28	3.052	
2.375	66.83	0.601a	1.615	0.59	0.883a	0.49	13.30	3.066	
2.400	68.30	0.607a	1.633	0.59	0.889a	0.50	13.31	3.079	
2.425	69.79	0.613a	1.650	0.60	0.895a	0.51	13.33	3.092	
2.450	71.30	0.619a	1.667	0.61	0.902a	0.52	13.35	3.105	
2.475	72.82	0.625a	1.684	0.61	0.909a	0.53	13.37	3.118	
2.500	74.35	0.631a	1.701	0.62	0.915a	0.55	13.38	3.130	
2.525	75.90	0.637a	1.718	0.62	0.921a	0.56	13.39	3.142	
2.550	77.47	0.643a	1.735	0.63	0.928a	0.57	13.40	3.153	
2.575	79.05	0.649a	1.752	0.63	0.935a	0.58	13.42	3.165	
2.600	80.64	0.655a	1.769	0.64	0.941a	0.60	13.44	3.177	
2.625	82.25	0.660a	1.786	0.65	0.946a	0.61	13.45	3.188	
2.650	83.87	0.666a	1.803	0.65	0.935a	0.62	13.38	3.198	
2.675	85.50	0.671a	1.819	0.66	0.939a	0.63	13.39	3.208	
2.700	87.15	0.676a	1.836	0.66	0.941a	0.64	13.39	3.219	
2.725	88.81	0.681a	1.853	0.67	0.941a	0.65	13.40	3.229	
2.750	90.48	0.685a	1.870	0.67	0.942a	0.67	13.40	3.240	
2.775	92.16	0.690a	1.887	0.68	0.942a	0.68	13.39	3.250	
2.800	93.86	0.695a	1.903	0.68	0.941a	0.69	13.37	3.260	
2.825	95.57	0.699a	1.920	0.69	0.939a	0.70	13.35	3.270	
2.850	97.29	0.703a	1.936	0.69	0.936a	0.71	13.33	3.279	
2.875	99.02	0.707a	1.953	0.70	0.934a	0.72	13.31	3.288	
2.900	100.77	0.711a	1.970	0.70	0.931a	0.74	13.29	3.298	
2.925	102.52	0.715a	1.986	0.70	0.927a	0.75	13.27	3.307	
2.950	104.29	0.718a	2.003	0.71	0.923a	0.76	13.25	3.316	
2.975	106.07	0.722a	2.019	0.71	0.919a	0.77	13.22	3.325	
3.000	107.86	0.725a	2.035	0.72	0.912a	0.78	13.21	3.335	
3.025	109.66	0.728a	2.052	0.72	0.906a	0.79	13.17	3.343	
3.050	111.47	0.731a	2.068	0.73	0.900a	0.80	13.14	3.352	
3.075	113.28	0.733a	2.084	0.73	0.894a	0.82	13.10	3.360	
3.100	115.11	0.736a	2.101	0.73	0.888a	0.83	13.07	3.368	
3.125	116.95	0.738a	2.117	0.74	0.882a	0.84	13.03	3.376	
3.150	118.80	0.740a	2.133	0.74	0.875a	0.85	12.99	3.385	
3.175	120.65	0.742a	2.149	0.74	0.869a	0.86	12.96	3.393	
3.200	122.52	0.744a	2.165	0.75	0.862a	0.87	12.92	3.402	
3.225	124.40	0.746a	2.182	0.75	0.854a	0.88	12.88	3.410	
3.250	126.28	0.747a	2.198	0.76	0.846a	0.89	12.84	3.418	

Distances in METERS.-----Specific Gravity = 1.000.-----Moment in M.-MT.  
Trim is per 18.20M.

Draft is from BASELINE.

HYDROSTATIC PROPERTIES at 0.4 M. AFT TRIM



- ① Displacement 1 = .5 MT
- ② LCB (use top scale)
- ③ VCB (KB) 1 = .02 M.
- ④ Immersion 1 = .003 MT/CM
- ④ WPA 1 = .3 Sq.M.
- ⑤ LCF (use top scale)
- ⑥ Moment/Trim 1 = .004 M.-MT/CM
- ⑦ KML 1 = .05 M.
- ⑧ KMT 1 = .02 M.

Specific Gravity = 1.000      Assumed KG = 0.00 M.  
Trim is per 18.2 M.      "K" = BASELINE

HYDROSTATIC PROPERTIES

Trim: Aft 0.300/18.200, No Heel, VCG = 0.000

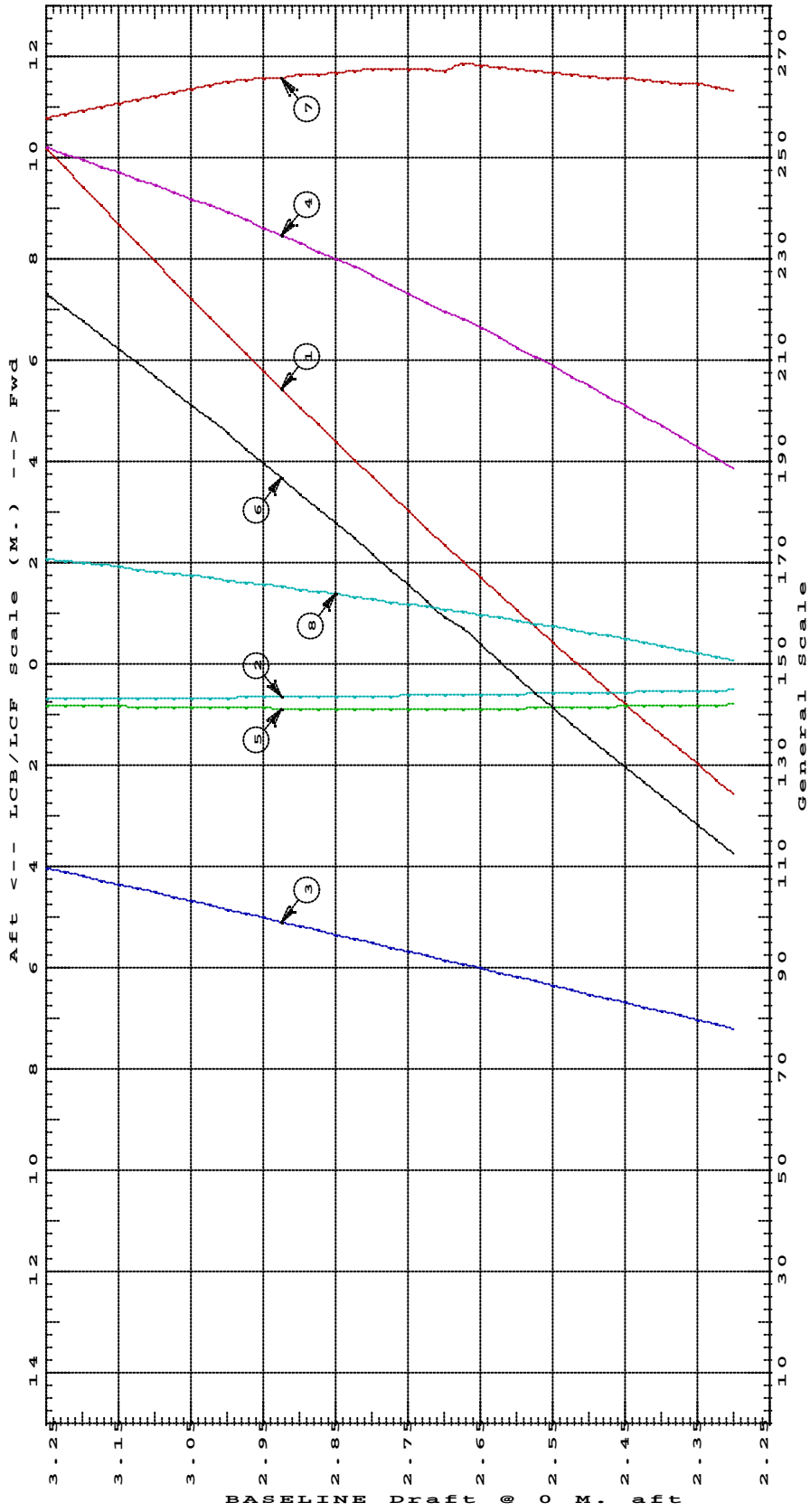
Draft@ Origin	Displacement Weight(MT)	Buoyancy-Ctr. LCB-----VCB-----		Weight/ CM-----	Moment/ LCF---CM trim---			KML-----	KMT
2.300	62.23	0.517a	1.560	0.57	0.795a	0.45	13.17	3.017	
2.325	63.66	0.524a	1.577	0.57	0.805a	0.46	13.20	3.031	
2.350	65.10	0.530a	1.594	0.58	0.814a	0.47	13.23	3.045	
2.375	66.55	0.536a	1.611	0.58	0.817a	0.48	13.23	3.060	
2.400	68.02	0.542a	1.628	0.59	0.824a	0.50	13.25	3.073	
2.425	69.51	0.548a	1.645	0.60	0.831a	0.51	13.27	3.087	
2.450	71.01	0.554a	1.662	0.60	0.837a	0.52	13.28	3.100	
2.475	72.52	0.560a	1.679	0.61	0.844a	0.53	13.29	3.112	
2.500	74.05	0.566a	1.696	0.61	0.851a	0.54	13.31	3.125	
2.525	75.60	0.572a	1.713	0.62	0.858a	0.55	13.33	3.137	
2.550	77.16	0.578a	1.730	0.63	0.863a	0.57	13.34	3.148	
2.575	78.73	0.584a	1.747	0.63	0.869a	0.58	13.35	3.160	
2.600	80.32	0.589a	1.764	0.64	0.875a	0.59	13.37	3.172	
2.625	81.93	0.595a	1.781	0.64	0.881a	0.60	13.39	3.183	
2.650	83.55	0.601a	1.798	0.65	0.886a	0.62	13.41	3.194	
2.675	85.18	0.606a	1.815	0.65	0.889a	0.63	13.43	3.204	
2.700	86.82	0.612a	1.832	0.66	0.878a	0.64	13.36	3.215	
2.725	88.48	0.617a	1.848	0.66	0.881a	0.65	13.37	3.225	
2.750	90.14	0.622a	1.865	0.67	0.883a	0.66	13.38	3.236	
2.775	91.82	0.626a	1.882	0.68	0.885a	0.67	13.38	3.246	
2.800	93.52	0.631a	1.899	0.68	0.887a	0.69	13.37	3.256	
2.825	95.23	0.636a	1.915	0.69	0.887a	0.70	13.36	3.266	
2.850	96.95	0.640a	1.932	0.69	0.885a	0.71	13.35	3.276	
2.875	98.68	0.644a	1.949	0.69	0.883a	0.72	13.33	3.285	
2.900	100.42	0.648a	1.965	0.70	0.881a	0.73	13.31	3.294	
2.925	102.18	0.652a	1.982	0.70	0.878a	0.75	13.29	3.304	
2.950	103.94	0.656a	1.998	0.71	0.872a	0.76	13.29	3.313	
2.975	105.72	0.659a	2.015	0.71	0.869a	0.77	13.27	3.323	
3.000	107.51	0.663a	2.031	0.72	0.865a	0.78	13.24	3.332	
3.025	109.31	0.666a	2.047	0.72	0.862a	0.79	13.22	3.341	
3.050	111.11	0.669a	2.064	0.73	0.857a	0.80	13.18	3.349	
3.075	112.93	0.672a	2.080	0.73	0.852a	0.82	13.15	3.358	
3.100	114.76	0.675a	2.096	0.73	0.847a	0.83	13.11	3.366	
3.125	116.60	0.678a	2.113	0.74	0.841a	0.84	13.08	3.374	
3.150	118.45	0.680a	2.129	0.74	0.835a	0.85	13.04	3.383	
3.175	120.31	0.683a	2.145	0.75	0.829a	0.86	13.01	3.391	
3.200	122.17	0.685a	2.161	0.75	0.823a	0.87	12.97	3.400	
3.225	124.05	0.687a	2.177	0.75	0.816a	0.88	12.93	3.408	
3.250	125.94	0.689a	2.194	0.76	0.810a	0.89	12.90	3.416	

Distances in METERS.-----Specific Gravity = 1.000.-----Moment in M.-MT.  
Trim is per 18.20M.

Draft is from BASELINE.



HYDROSTATIC PROPERTIES at 0.3 M. AFT TRIM



- ① Displacement 1 = .5 MT
- ② LCB (use top scale)
- ③ VCB (KB) 1 = .02 M.
- ④ Immersion 1 = .003 MT/CM
- ⑤ WPA 1 = .3 Sq.M.
- ⑥ LCF (use top scale)
- ⑦ KML 1 = .05 M.
- ⑧ KMT 1 = .02 M.

Specific Gravity = 1.000      Assumed KG = 0.00 M.  
Trim is per 18.2 M.      "K" = BASELINE

HYDROSTATIC PROPERTIES

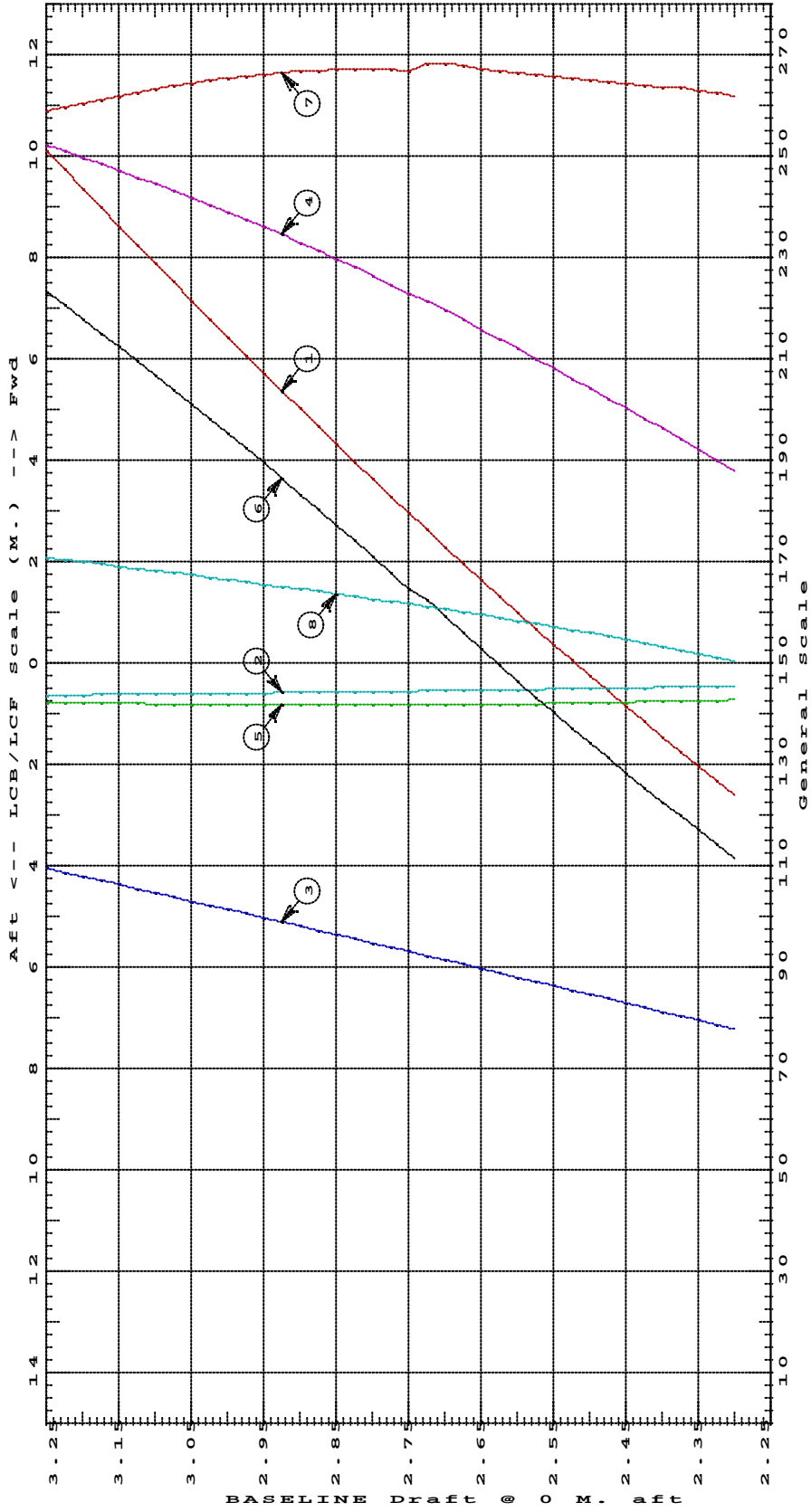
Trim: Aft 0.200/18.200, No Heel, VCG = 0.000

Draft@ Origin	Displacement Weight(MT)	Buoyancy-Ctr. LCB-----VCB-----		Weight/ CM-----	Moment/ LCF-----CM trim-----			KML-----	KMT
2.300	62.00	0.452a	1.556	0.56	0.727a	0.45	13.09	3.010	
2.325	63.42	0.459a	1.573	0.57	0.735a	0.46	13.12	3.024	
2.350	64.85	0.465a	1.590	0.58	0.744a	0.47	13.15	3.039	
2.375	66.30	0.471a	1.607	0.58	0.754a	0.48	13.18	3.053	
2.400	67.77	0.478a	1.624	0.59	0.757a	0.49	13.17	3.068	
2.425	69.25	0.484a	1.641	0.59	0.766a	0.50	13.20	3.081	
2.450	70.74	0.490a	1.658	0.60	0.773a	0.51	13.21	3.095	
2.475	72.25	0.496a	1.675	0.61	0.780a	0.53	13.23	3.107	
2.500	73.78	0.502a	1.692	0.61	0.786a	0.54	13.24	3.120	
2.525	75.32	0.507a	1.709	0.62	0.793a	0.55	13.26	3.132	
2.550	76.87	0.513a	1.726	0.62	0.799a	0.56	13.28	3.143	
2.575	78.44	0.519a	1.743	0.63	0.805a	0.57	13.30	3.155	
2.600	80.03	0.525a	1.760	0.64	0.810a	0.59	13.31	3.167	
2.625	81.63	0.530a	1.777	0.64	0.815a	0.60	13.33	3.179	
2.650	83.24	0.536a	1.794	0.65	0.819a	0.61	13.36	3.190	
2.675	84.87	0.541a	1.811	0.65	0.825a	0.62	13.39	3.201	
2.700	86.51	0.547a	1.828	0.66	0.829a	0.64	13.40	3.211	
2.725	88.16	0.553a	1.844	0.66	0.833a	0.65	13.41	3.222	
2.750	89.83	0.558a	1.861	0.67	0.823a	0.66	13.34	3.232	
2.775	91.51	0.562a	1.878	0.67	0.826a	0.67	13.35	3.242	
2.800	93.20	0.567a	1.895	0.68	0.829a	0.68	13.35	3.253	
2.825	94.90	0.572a	1.911	0.68	0.831a	0.70	13.36	3.263	
2.850	96.62	0.576a	1.928	0.69	0.832a	0.71	13.36	3.273	
2.875	98.35	0.581a	1.945	0.69	0.831a	0.72	13.35	3.282	
2.900	100.09	0.585a	1.961	0.70	0.829a	0.73	13.33	3.292	
2.925	101.85	0.589a	1.978	0.70	0.825a	0.75	13.33	3.301	
2.950	103.61	0.593a	1.994	0.71	0.822a	0.76	13.31	3.311	
2.975	105.39	0.597a	2.011	0.71	0.820a	0.77	13.29	3.320	
3.000	107.17	0.601a	2.027	0.72	0.818a	0.78	13.27	3.329	
3.025	108.97	0.604a	2.044	0.72	0.815a	0.79	13.24	3.338	
3.050	110.78	0.608a	2.060	0.73	0.812a	0.80	13.22	3.347	
3.075	112.60	0.611a	2.076	0.73	0.809a	0.82	13.19	3.356	
3.100	114.43	0.614a	2.093	0.73	0.804a	0.83	13.16	3.364	
3.125	116.27	0.617a	2.109	0.74	0.799a	0.84	13.12	3.373	
3.150	118.12	0.620a	2.125	0.74	0.794a	0.85	13.09	3.381	
3.175	119.98	0.622a	2.141	0.75	0.788a	0.86	13.05	3.390	
3.200	121.84	0.625a	2.158	0.75	0.783a	0.87	13.02	3.398	
3.225	123.72	0.627a	2.174	0.75	0.777a	0.88	12.98	3.406	
3.250	125.61	0.630a	2.190	0.76	0.772a	0.89	12.94	3.415	

Distances in METERS.-----Specific Gravity = 1.000.-----Moment in M.-MT.  
Trim is per 18.20M.

Draft is from BASELINE.

HYDROSTATIC PROPERTIES at 0.2 M. AFT TRIM



- ① Displacement 1=.5 MT
- ② LCB (use top scale)
- ③ VCB (KB) 1=.02 M.
- ④ Immersion 1=.003 MT/CM
- ⑤ WPA 1=.3 Sq.M.
- ⑥ LCF (use top scale)
- ⑦ Moment/Trim 1=.004 M.-MT/CM
- ⑧ KML 1=.05 M.
- ⑨ KMT 1=.02 M.

Specific Gravity = 1.000      Assumed KG = 0.00 M.  
Trim is per 18.2 M.      "K" = BASELINE

HYDROSTATIC PROPERTIES

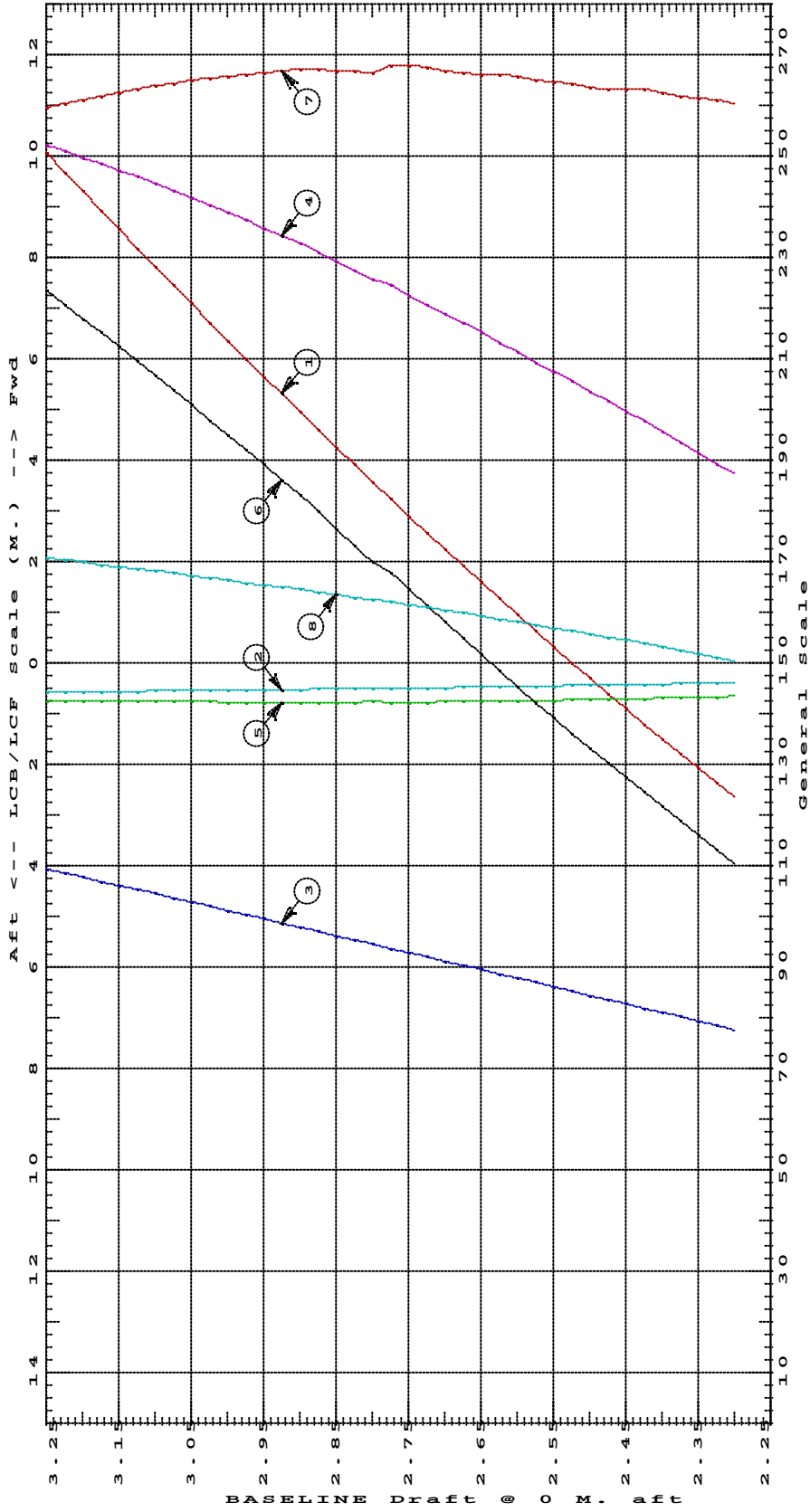
Trim: Aft 0.100/18.200, No Heel, VCG = 0.000

Draft@ Origin	Displacement Weight(MT)	Buoyancy-Ctr. LCB-----VCB-----		Weight/ CM-----	Moment/ LCF-----CM trim-----			KML-----	KMT
2.300	61.78	0.388a	1.553	0.56	0.660a	0.44	13.02	3.005	
2.325	63.20	0.394a	1.570	0.57	0.669a	0.45	13.05	3.019	
2.350	64.62	0.401a	1.587	0.57	0.677a	0.46	13.07	3.033	
2.375	66.07	0.407a	1.604	0.58	0.686a	0.48	13.10	3.047	
2.400	67.53	0.413a	1.621	0.59	0.695a	0.49	13.13	3.062	
2.425	69.01	0.419a	1.638	0.59	0.705a	0.50	13.16	3.076	
2.450	70.50	0.426a	1.655	0.60	0.709a	0.51	13.15	3.090	
2.475	72.00	0.431a	1.672	0.60	0.715a	0.52	13.17	3.103	
2.500	73.53	0.437a	1.689	0.61	0.722a	0.53	13.19	3.115	
2.525	75.06	0.443a	1.706	0.62	0.728a	0.54	13.21	3.127	
2.550	76.61	0.449a	1.723	0.62	0.734a	0.56	13.23	3.139	
2.575	78.18	0.454a	1.740	0.63	0.740a	0.57	13.25	3.151	
2.600	79.76	0.460a	1.757	0.63	0.744a	0.58	13.28	3.163	
2.625	81.35	0.466a	1.774	0.64	0.749a	0.59	13.30	3.175	
2.650	82.96	0.471a	1.791	0.65	0.754a	0.61	13.31	3.187	
2.675	84.58	0.477a	1.807	0.65	0.759a	0.62	13.33	3.198	
2.700	86.22	0.482a	1.824	0.66	0.764a	0.63	13.35	3.208	
2.725	87.87	0.488a	1.841	0.66	0.770a	0.65	13.37	3.219	
2.750	89.53	0.493a	1.858	0.67	0.774a	0.66	13.39	3.229	
2.775	91.21	0.499a	1.875	0.67	0.779a	0.67	13.40	3.239	
2.800	92.90	0.504a	1.891	0.68	0.768a	0.68	13.33	3.250	
2.825	94.61	0.508a	1.908	0.68	0.771a	0.69	13.34	3.260	
2.850	96.32	0.513a	1.925	0.69	0.773a	0.71	13.34	3.270	
2.875	98.05	0.517a	1.941	0.69	0.773a	0.72	13.36	3.280	
2.900	99.79	0.522a	1.958	0.70	0.773a	0.73	13.36	3.289	
2.925	101.54	0.526a	1.974	0.70	0.773a	0.74	13.35	3.299	
2.950	103.30	0.530a	1.991	0.71	0.772a	0.76	13.33	3.308	
2.975	105.08	0.534a	2.007	0.71	0.770a	0.77	13.31	3.318	
3.000	106.86	0.538a	2.024	0.72	0.769a	0.78	13.29	3.327	
3.025	108.66	0.542a	2.040	0.72	0.768a	0.79	13.26	3.336	
3.050	110.47	0.546a	2.057	0.73	0.766a	0.80	13.24	3.345	
3.075	112.29	0.549a	2.073	0.73	0.763a	0.82	13.22	3.354	
3.100	114.11	0.553a	2.089	0.73	0.760a	0.83	13.19	3.363	
3.125	115.95	0.556a	2.106	0.74	0.756a	0.84	13.16	3.371	
3.150	117.80	0.559a	2.122	0.74	0.752a	0.85	13.13	3.380	
3.175	119.66	0.562a	2.138	0.75	0.747a	0.86	13.10	3.388	
3.200	121.53	0.565a	2.154	0.75	0.743a	0.87	13.06	3.397	
3.225	123.41	0.568a	2.171	0.75	0.738a	0.88	13.02	3.405	
3.250	125.29	0.570a	2.187	0.76	0.733a	0.89	12.99	3.413	

Distances in METERS.-----Specific Gravity = 1.000.-----Moment in M.-MT.  
Trim is per 18.20M.

Draft is from BASELINE.

HYDROSTATIC PROPERTIES at 0.1 M. AFT TRIM



- ① Displacement 1=.5 MT
- ② LCB (use top scale)
- ③ VCB (KB) 1=.02 M.
- ④ Immersion 1=.003 MT/CM
- ⑤ WPA 1=.3 Sq.M.
- ⑥ LCF (use top scale)
- ⑦ Moment/Trim 1=.004 M.-MT/CM
- ⑧ KML 1=.05 M.
- ⑨ KMT 1=.02 M.

Specific Gravity = 1.000      Assumed KG = 0.00 M.  
Trim is per 18.2 M.      "K" = BASELINE

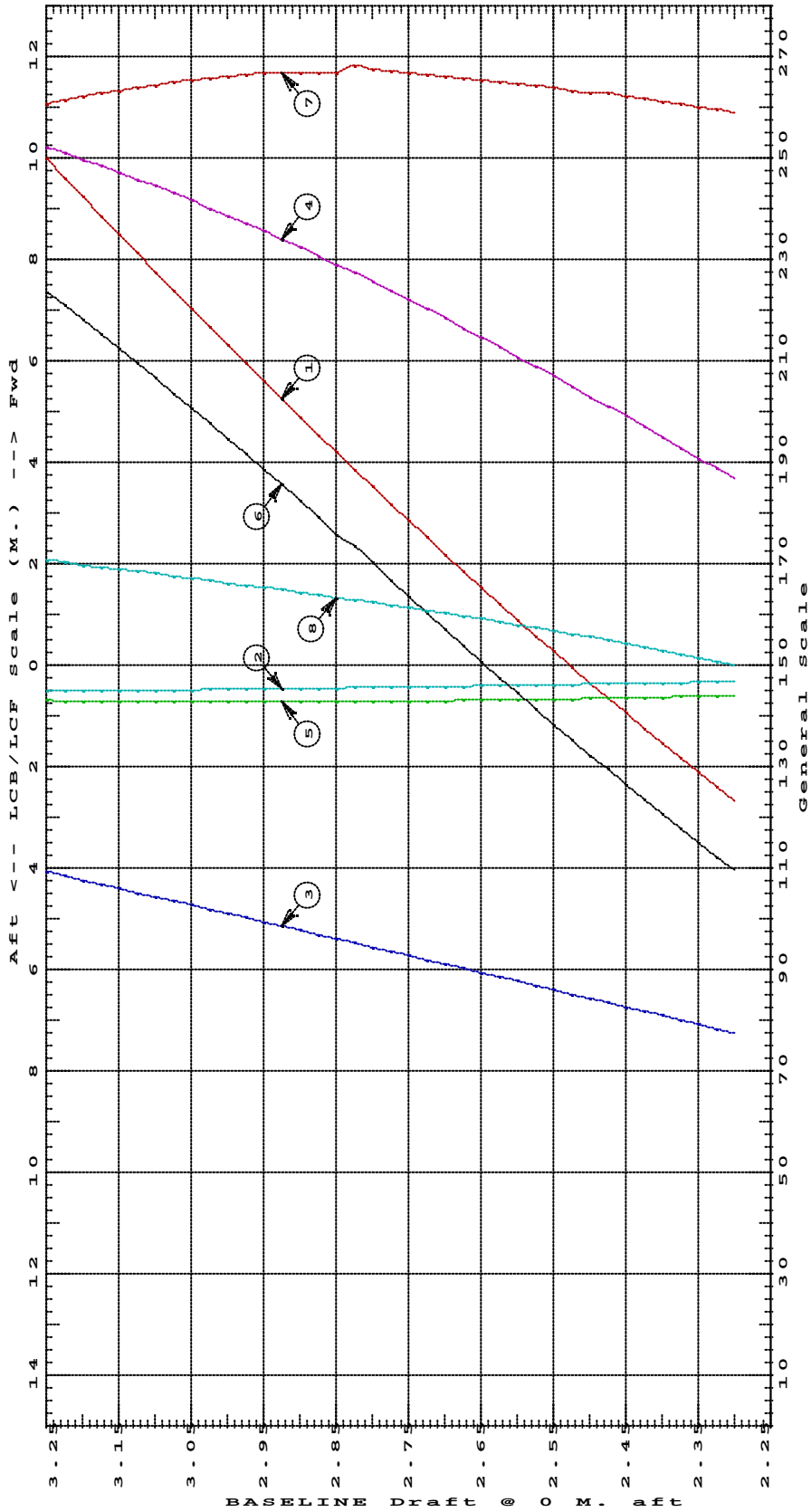
HYDROSTATIC PROPERTIES  
No Trim, No Heel, VCG = 0.000

Draft@ Origin	Displacement Weight(MT)	Buoyancy-Ctr. LCB-----VCB-----		Weight/ CM-----	Moment/ LCF---CM trim---KML-----KMT			
2.300	61.59	0.325a	1.550	0.56	0.593a	0.44	12.95	3.000
2.325	63.00	0.331a	1.567	0.57	0.602a	0.45	12.98	3.014
2.350	64.42	0.337a	1.584	0.57	0.611a	0.46	13.01	3.028
2.375	65.86	0.343a	1.601	0.58	0.620a	0.47	13.03	3.042
2.400	67.32	0.349a	1.618	0.58	0.628a	0.48	13.05	3.056
2.425	68.79	0.355a	1.635	0.59	0.637a	0.49	13.08	3.071
2.450	70.27	0.361a	1.652	0.60	0.646a	0.51	13.11	3.085
2.475	71.78	0.367a	1.669	0.60	0.655a	0.52	13.14	3.098
2.500	73.30	0.373a	1.686	0.61	0.657a	0.53	13.14	3.111
2.525	74.83	0.379a	1.703	0.61	0.663a	0.54	13.16	3.123
2.550	76.37	0.385a	1.720	0.62	0.667a	0.55	13.19	3.135
2.575	77.93	0.390a	1.737	0.63	0.673a	0.57	13.21	3.147
2.600	79.51	0.396a	1.754	0.63	0.679a	0.58	13.23	3.159
2.625	81.10	0.402a	1.771	0.64	0.685a	0.59	13.25	3.171
2.650	82.70	0.407a	1.788	0.64	0.690a	0.60	13.27	3.183
2.675	84.32	0.413a	1.805	0.65	0.695a	0.62	13.28	3.195
2.700	85.95	0.418a	1.821	0.66	0.699a	0.63	13.30	3.206
2.725	87.60	0.424a	1.838	0.66	0.704a	0.64	13.32	3.216
2.750	89.26	0.429a	1.855	0.67	0.710a	0.65	13.34	3.226
2.775	90.94	0.434a	1.872	0.67	0.715a	0.67	13.36	3.237
2.800	92.63	0.439a	1.888	0.68	0.719a	0.68	13.38	3.247
2.825	94.33	0.445a	1.905	0.68	0.721a	0.69	13.40	3.258
2.850	96.04	0.449a	1.922	0.69	0.710a	0.70	13.33	3.268
2.875	97.77	0.454a	1.938	0.69	0.714a	0.72	13.34	3.278
2.900	99.50	0.459a	1.955	0.70	0.716a	0.73	13.34	3.288
2.925	101.25	0.463a	1.971	0.70	0.718a	0.74	13.34	3.297
2.950	103.01	0.467a	1.988	0.71	0.720a	0.75	13.34	3.306
2.975	104.79	0.472a	2.004	0.71	0.720a	0.77	13.32	3.316
3.000	106.57	0.476a	2.021	0.72	0.719a	0.78	13.30	3.325
3.025	108.37	0.480a	2.037	0.72	0.718a	0.79	13.28	3.334
3.050	110.17	0.484a	2.054	0.72	0.717a	0.80	13.26	3.343
3.075	111.99	0.488a	2.070	0.73	0.715a	0.81	13.24	3.353
3.100	113.82	0.491a	2.087	0.73	0.713a	0.83	13.22	3.362
3.125	115.66	0.495a	2.103	0.74	0.711a	0.84	13.19	3.370
3.150	117.51	0.498a	2.119	0.74	0.708a	0.85	13.16	3.379
3.175	119.36	0.501a	2.136	0.75	0.706a	0.86	13.14	3.387
3.200	121.23	0.504a	2.152	0.75	0.702a	0.87	13.10	3.396
3.225	123.11	0.507a	2.168	0.75	0.698a	0.88	13.06	3.404
3.250	125.00	0.510a	2.184	0.76	0.694a	0.89	13.03	3.412

Distances in METERS.-----Specific Gravity = 1.000.-----Moment in M.-MT.  
Trim is per 18.20M.

Draft is from BASELINE.

HYDROSTATIC PROPERTIES at LEVEL TRIM



- ① Displacement 1=.5 MT
- ② LCB (use top scale)
- ③ VCB (KB) 1=.02 M.
- ④ Immersion 1=.003 MT/CM
- ⑤ WPA 1=.3 Sq.M.
- ⑥ LCF (use top scale)
- ⑦ Moment/Trim 1=.004 M.-MT/CM
- ⑧ KML 1=.05 M.
- ⑨ KMT 1=.02 M.

Specific Gravity = 1.000      Assumed KG = 0.00 M.  
Trim is per 18.2 M.      "K" = BASELINE

HYDROSTATIC PROPERTIES

Trim: Fwd 0.100/18.200, No Heel, VCG = 0.000

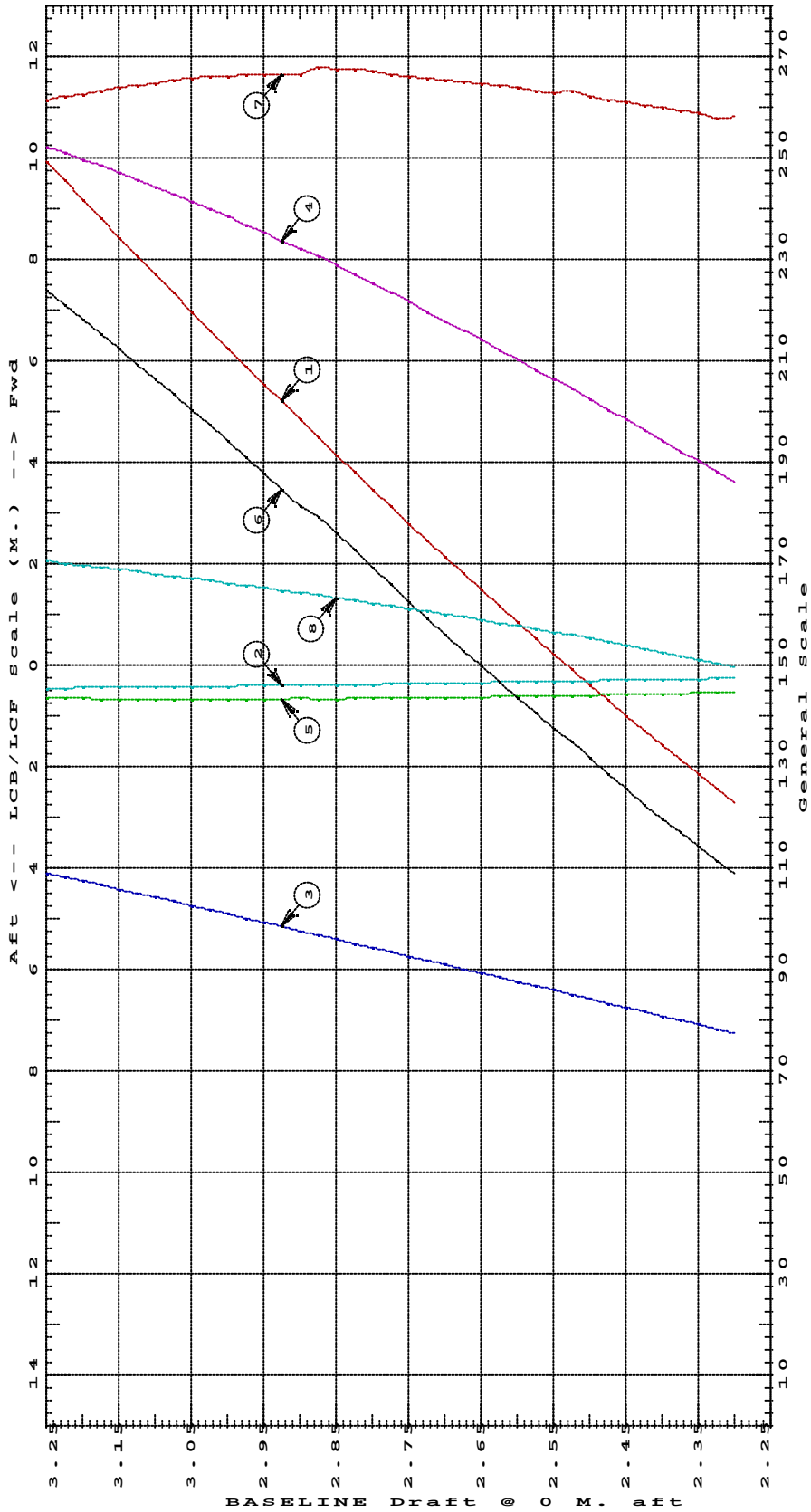
Draft@ Origin	Displacement Weight(MT)	Buoyancy-Ctr. LCB-----VCB-----		Weight/ CM-----	Moment/ LCF---CM trim---			KML-----	KMT
2.300	61.42	0.261a	1.548	0.56	0.531a	0.44	12.91	2.995	
2.325	62.82	0.268a	1.565	0.56	0.534a	0.45	12.90	3.009	
2.350	64.24	0.274a	1.582	0.57	0.544a	0.46	12.94	3.023	
2.375	65.67	0.280a	1.599	0.58	0.554a	0.47	12.97	3.037	
2.400	67.12	0.286a	1.616	0.58	0.562a	0.48	12.99	3.052	
2.425	68.59	0.292a	1.633	0.59	0.570a	0.49	13.02	3.066	
2.450	70.07	0.298a	1.650	0.60	0.578a	0.50	13.05	3.081	
2.475	71.57	0.303a	1.667	0.60	0.586a	0.51	13.08	3.094	
2.500	73.09	0.309a	1.684	0.61	0.595a	0.53	13.12	3.107	
2.525	74.62	0.315a	1.701	0.61	0.600a	0.54	13.16	3.119	
2.550	76.16	0.321a	1.718	0.62	0.602a	0.55	13.15	3.131	
2.575	77.71	0.327a	1.735	0.63	0.608a	0.56	13.17	3.143	
2.600	79.28	0.333a	1.752	0.63	0.614a	0.57	13.19	3.155	
2.625	80.87	0.338a	1.769	0.64	0.620a	0.59	13.21	3.168	
2.650	82.47	0.344a	1.785	0.64	0.626a	0.60	13.23	3.180	
2.675	84.08	0.349a	1.802	0.65	0.631a	0.61	13.25	3.192	
2.700	85.71	0.354a	1.819	0.65	0.636a	0.62	13.26	3.203	
2.725	87.36	0.360a	1.836	0.66	0.641a	0.64	13.28	3.214	
2.750	89.01	0.365a	1.853	0.66	0.645a	0.65	13.30	3.224	
2.775	90.68	0.370a	1.869	0.67	0.648a	0.66	13.33	3.234	
2.800	92.37	0.375a	1.886	0.68	0.653a	0.68	13.35	3.245	
2.825	94.07	0.381a	1.903	0.68	0.659a	0.69	13.37	3.255	
2.850	95.78	0.386a	1.919	0.69	0.663a	0.70	13.38	3.266	
2.875	97.50	0.391a	1.936	0.69	0.667a	0.72	13.39	3.276	
2.900	99.24	0.396a	1.953	0.70	0.657a	0.73	13.32	3.286	
2.925	100.99	0.400a	1.969	0.70	0.661a	0.74	13.32	3.295	
2.950	102.74	0.405a	1.986	0.71	0.664a	0.75	13.32	3.305	
2.975	104.51	0.409a	2.002	0.71	0.666a	0.76	13.32	3.314	
3.000	106.30	0.413a	2.019	0.72	0.668a	0.78	13.31	3.323	
3.025	108.09	0.418a	2.035	0.72	0.668a	0.79	13.30	3.332	
3.050	109.90	0.422a	2.052	0.72	0.667a	0.80	13.28	3.342	
3.075	111.71	0.426a	2.068	0.73	0.667a	0.81	13.26	3.351	
3.100	113.54	0.430a	2.084	0.73	0.666a	0.83	13.24	3.360	
3.125	115.38	0.433a	2.101	0.74	0.665a	0.84	13.22	3.369	
3.150	117.23	0.437a	2.117	0.74	0.663a	0.85	13.19	3.378	
3.175	119.08	0.440a	2.133	0.75	0.661a	0.86	13.16	3.387	
3.200	120.95	0.444a	2.149	0.75	0.659a	0.87	13.13	3.395	
3.225	122.83	0.447a	2.166	0.75	0.657a	0.88	13.10	3.403	
3.250	124.72	0.450a	2.182	0.76	0.654a	0.90	13.07	3.411	

Distances in METERS.-----Specific Gravity = 1.000.-----Moment in M.-MT.  
Trim is per 18.20M.

Draft is from BASELINE.



HYDROSTATIC PROPERTIES at 0.1 M. FWD TRIM



- ① Displacement 1=.5 MT
- ② LCB (use top scale)
- ③ VCB (KB) 1=.02 M.
- ④ Immersion 1=.003 MT/CM
- ④ WPA 1=.3 Sq.M.
- ⑤ LCF (use top scale)
- ⑥ Moment/Trim 1=.004 M.-MT/CM
- ⑦ KML 1=.05 M.
- ⑧ KMT 1=.02 M.

Specific Gravity = 1.000      Assumed KG = 0.00 M.  
Trim is per 18.2 M.      "K" = BASELINE

HYDROSTATIC PROPERTIES

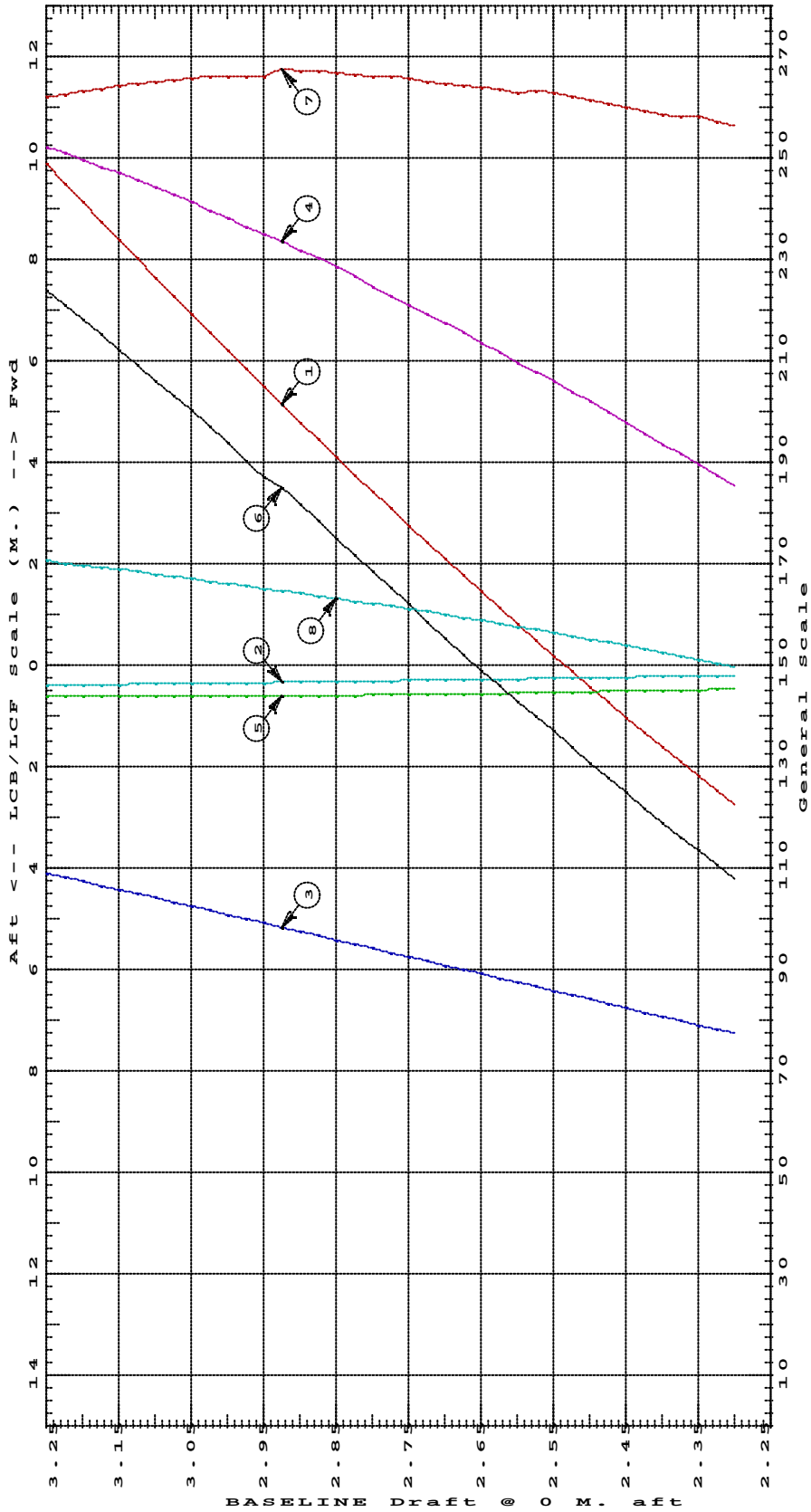
Trim: Fwd 0.200/18.200, No Heel, VCG = 0.000

Draft@ Origin	Displacement Weight(MT)	Buoyancy-Ctr. LCB-----VCB-----		Weight/ CM-----	Moment/ LCF---CM trim---			KML-----	KMT
2.300	61.26	0.199a	1.547	0.56	0.459a	0.43	12.82	2.990	
2.325	62.66	0.205a	1.564	0.56	0.471a	0.44	12.87	3.005	
2.350	64.08	0.211a	1.581	0.57	0.483a	0.45	12.91	3.019	
2.375	65.51	0.217a	1.598	0.57	0.487a	0.46	12.91	3.033	
2.400	66.96	0.223a	1.615	0.58	0.496a	0.48	12.94	3.047	
2.425	68.42	0.228a	1.632	0.59	0.504a	0.49	12.97	3.062	
2.450	69.90	0.234a	1.649	0.59	0.512a	0.50	13.00	3.076	
2.475	71.39	0.240a	1.666	0.60	0.517a	0.51	13.04	3.090	
2.500	72.90	0.246a	1.683	0.61	0.525a	0.52	13.07	3.103	
2.525	74.42	0.252a	1.700	0.61	0.533a	0.54	13.10	3.115	
2.550	75.96	0.258a	1.716	0.62	0.541a	0.55	13.13	3.128	
2.575	77.52	0.264a	1.733	0.62	0.548a	0.56	13.16	3.140	
2.600	79.08	0.269a	1.750	0.63	0.550a	0.57	13.15	3.152	
2.625	80.66	0.275a	1.767	0.64	0.555a	0.58	13.17	3.165	
2.650	82.26	0.280a	1.784	0.64	0.561a	0.60	13.19	3.177	
2.675	83.87	0.286a	1.801	0.65	0.567a	0.61	13.21	3.189	
2.700	85.50	0.291a	1.817	0.65	0.572a	0.62	13.23	3.200	
2.725	87.14	0.296a	1.834	0.66	0.577a	0.63	13.25	3.211	
2.750	88.79	0.301a	1.851	0.66	0.580a	0.65	13.28	3.222	
2.775	90.46	0.307a	1.868	0.67	0.584a	0.66	13.30	3.232	
2.800	92.14	0.312a	1.884	0.67	0.589a	0.67	13.31	3.242	
2.825	93.83	0.317a	1.901	0.68	0.594a	0.69	13.33	3.253	
2.850	95.54	0.322a	1.917	0.69	0.600a	0.70	13.34	3.264	
2.875	97.26	0.327a	1.934	0.69	0.607a	0.71	13.36	3.274	
2.900	98.99	0.332a	1.951	0.70	0.611a	0.73	13.37	3.284	
2.925	100.74	0.337a	1.967	0.70	0.616a	0.74	13.37	3.294	
2.950	102.50	0.342a	1.984	0.70	0.605a	0.75	13.30	3.304	
2.975	104.27	0.346a	2.000	0.71	0.609a	0.76	13.30	3.313	
3.000	106.05	0.351a	2.017	0.71	0.613a	0.78	13.30	3.322	
3.025	107.84	0.355a	2.033	0.72	0.615a	0.79	13.30	3.331	
3.050	109.64	0.360a	2.050	0.72	0.617a	0.80	13.29	3.341	
3.075	111.46	0.364a	2.066	0.73	0.617a	0.81	13.27	3.350	
3.100	113.28	0.368a	2.082	0.73	0.617a	0.82	13.25	3.359	
3.125	115.12	0.372a	2.099	0.74	0.617a	0.84	13.23	3.369	
3.150	116.97	0.376a	2.115	0.74	0.617a	0.85	13.21	3.377	
3.175	118.82	0.379a	2.131	0.75	0.616a	0.86	13.18	3.386	
3.200	120.69	0.383a	2.148	0.75	0.615a	0.87	13.16	3.394	
3.225	122.57	0.387a	2.164	0.75	0.614a	0.88	13.13	3.402	
3.250	124.46	0.390a	2.180	0.76	0.612a	0.90	13.10	3.411	

Distances in METERS.-----Specific Gravity = 1.000.-----Moment in M.-MT.  
Trim is per 18.20M.

Draft is from BASELINE.

HYDROSTATIC PROPERTIES at 0.2 M. FWD TRIM



- ① Displacement 1 = .5 MT
- ② LCB (use top scale)
- ③ VCB (KB) 1 = .02 M.
- ④ Immersion 1 = .003 MT/CM
- ④ WPA 1 = .3 Sq.M.
- ⑤ LCF (use top scale)
- ⑥ Moment/Trim 1 = .004 M.-MT/CM
- ⑦ KML 1 = .05 M.
- ⑧ KMT 1 = .02 M.

Specific Gravity = 1.000      Assumed KG = 0.00 M.  
Trim is per 18.2 M.      "K" = BASELINE

HYDROSTATIC PROPERTIES

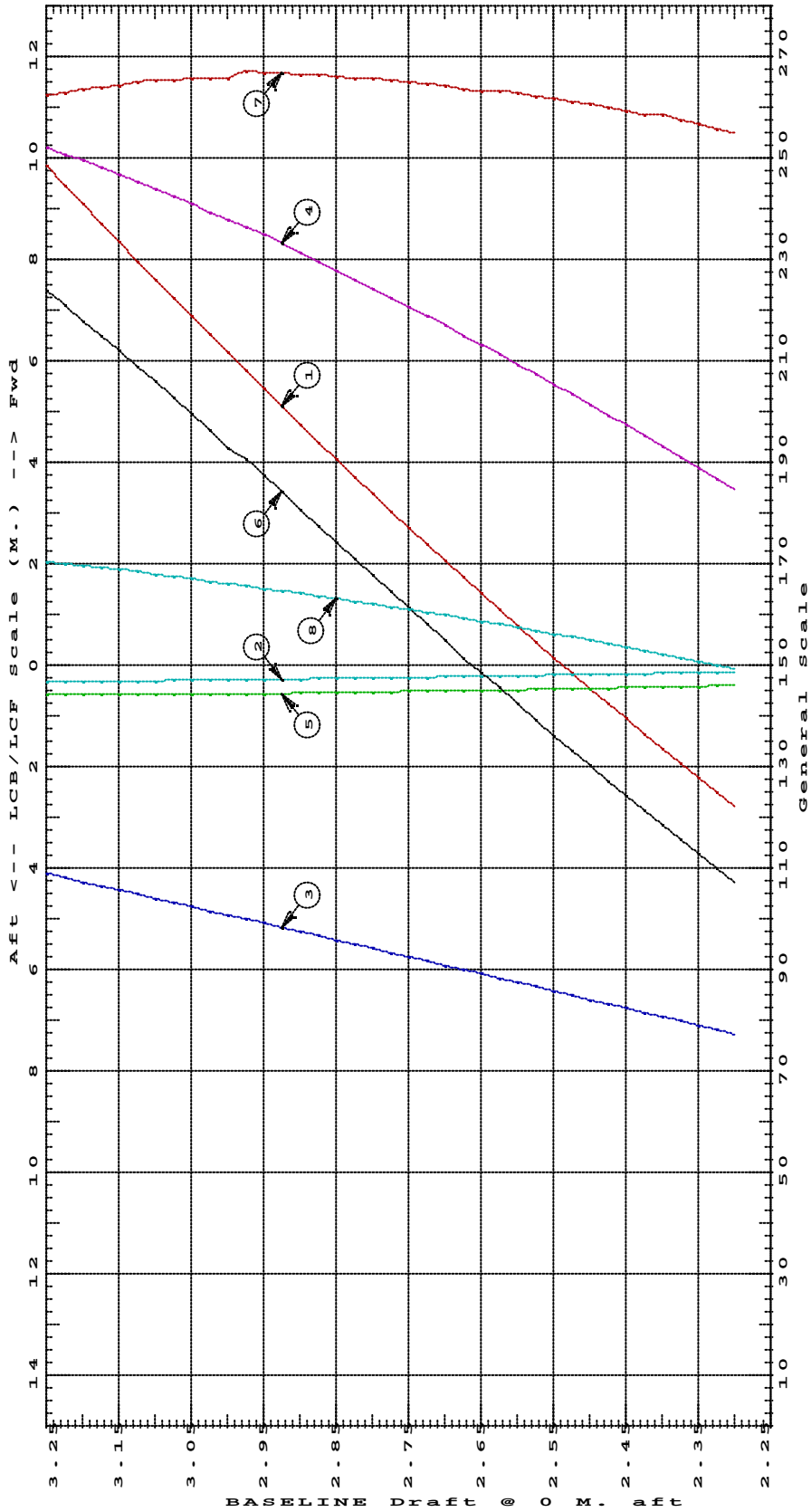
Trim: Fwd 0.300/18.200, No Heel, VCG = 0.000

Draft@ Origin	Displacement Weight(MT)	Buoyancy-Ctr. LCB-----VCB-----		Weight/ CM-----	Moment/ LCF-----CM trim-----			KML-----	KMT
2.300	61.13	0.136a	1.546	0.55	0.391a	0.43	12.75	2.986	
2.325	62.53	0.142a	1.563	0.56	0.402a	0.44	12.79	3.000	
2.350	63.94	0.148a	1.580	0.57	0.413a	0.45	12.83	3.015	
2.375	65.37	0.154a	1.597	0.57	0.424a	0.46	12.88	3.029	
2.400	66.81	0.160a	1.614	0.58	0.434a	0.47	12.93	3.044	
2.425	68.27	0.166a	1.631	0.59	0.435a	0.49	12.94	3.058	
2.450	69.74	0.171a	1.648	0.59	0.443a	0.50	12.97	3.073	
2.475	71.23	0.177a	1.665	0.60	0.451a	0.51	13.00	3.086	
2.500	72.73	0.183a	1.682	0.60	0.458a	0.52	13.03	3.099	
2.525	74.25	0.189a	1.699	0.61	0.466a	0.53	13.05	3.112	
2.550	75.79	0.194a	1.715	0.62	0.474a	0.54	13.08	3.125	
2.575	77.34	0.200a	1.732	0.62	0.482a	0.56	13.12	3.137	
2.600	78.90	0.206a	1.749	0.63	0.489a	0.57	13.15	3.149	
2.625	80.48	0.212a	1.766	0.63	0.496a	0.58	13.17	3.162	
2.650	82.08	0.217a	1.783	0.64	0.496a	0.59	13.16	3.174	
2.675	83.68	0.222a	1.799	0.65	0.502a	0.61	13.19	3.186	
2.700	85.30	0.228a	1.816	0.65	0.506a	0.62	13.22	3.198	
2.725	86.94	0.233a	1.833	0.66	0.511a	0.63	13.24	3.209	
2.750	88.59	0.238a	1.850	0.66	0.517a	0.65	13.26	3.220	
2.775	90.25	0.243a	1.866	0.67	0.522a	0.66	13.27	3.231	
2.800	91.93	0.249a	1.883	0.67	0.527a	0.67	13.28	3.241	
2.825	93.62	0.254a	1.900	0.68	0.532a	0.68	13.29	3.251	
2.850	95.32	0.259a	1.916	0.68	0.537a	0.70	13.30	3.262	
2.875	97.04	0.264a	1.933	0.69	0.544a	0.71	13.31	3.273	
2.900	98.77	0.269a	1.949	0.69	0.550a	0.72	13.33	3.283	
2.925	100.51	0.274a	1.966	0.70	0.556a	0.74	13.34	3.293	
2.950	102.27	0.279a	1.983	0.70	0.560a	0.75	13.35	3.303	
2.975	104.04	0.284a	1.999	0.71	0.565a	0.76	13.35	3.312	
3.000	105.82	0.289a	2.016	0.71	0.554a	0.77	13.28	3.321	
3.025	107.61	0.293a	2.032	0.72	0.559a	0.79	13.28	3.330	
3.050	109.41	0.297a	2.048	0.72	0.563a	0.80	13.28	3.340	
3.075	111.22	0.302a	2.065	0.73	0.566a	0.81	13.27	3.349	
3.100	113.04	0.306a	2.081	0.73	0.568a	0.82	13.26	3.359	
3.125	114.88	0.310a	2.098	0.74	0.569a	0.84	13.24	3.368	
3.150	116.73	0.314a	2.114	0.74	0.569a	0.85	13.22	3.377	
3.175	118.58	0.318a	2.130	0.74	0.569a	0.86	13.20	3.386	
3.200	120.45	0.322a	2.146	0.75	0.570a	0.87	13.18	3.394	
3.225	122.32	0.326a	2.163	0.75	0.569a	0.88	13.15	3.402	
3.250	124.21	0.330a	2.179	0.76	0.568a	0.90	13.12	3.410	

Distances in METERS.-----Specific Gravity = 1.000.-----Moment in M.-MT.  
Trim is per 18.20M.

Draft is from BASELINE.

HYDROSTATIC PROPERTIES at 0.3 M. FWD TRIM



- ① Displacement 1=.5 MT
- ② LCB (use top scale)
- ③ VCB (KB) 1=.02 M.
- ④ Immersion 1=.003 MT/CM
- ⑤ WPA 1=.3 Sq.M.
- ⑥ LCF (use top scale)
- ⑦ Moment/Trim 1=.004 M.-MT/CM
- ⑧ KML 1=.05 M.
- ⑨ KMT 1=.02 M.

Specific Gravity = 1.000      Assumed KG = 0.00 M.  
Trim is per 18.2 M.      "K" = BASELINE

HYDROSTATIC PROPERTIES

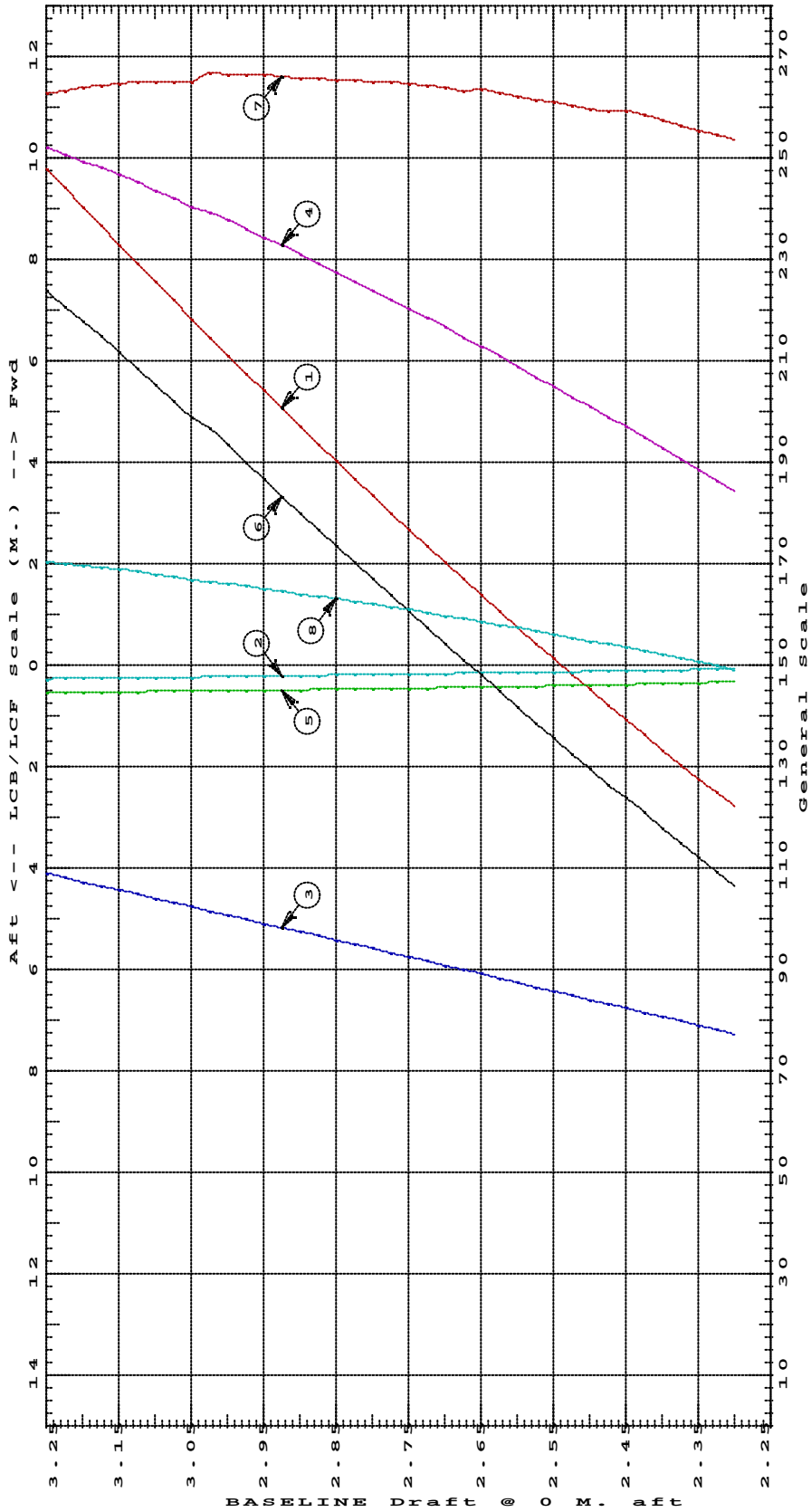
Trim: Fwd 0.400/18.200, No Heel, VCG = 0.000

Draft@ Origin	Displacement Weight(MT)	Buoyancy-Ctr. LCB-----VCB-----		Weight/ CM-----	Moment/ LCF-----CM trim-----			KML-----	KMT
2.300	61.03	0.075a	1.546	0.55	0.322a	0.43	12.69	2.982	
2.325	62.42	0.080a	1.563	0.56	0.333a	0.44	12.73	2.997	
2.350	63.82	0.086a	1.580	0.57	0.344a	0.45	12.77	3.011	
2.375	65.25	0.092a	1.597	0.57	0.353a	0.46	12.82	3.026	
2.400	66.68	0.097a	1.614	0.58	0.362a	0.47	12.88	3.041	
2.425	68.14	0.103a	1.631	0.58	0.372a	0.48	12.93	3.055	
2.450	69.61	0.109a	1.648	0.59	0.382a	0.50	12.97	3.069	
2.475	71.09	0.115a	1.664	0.60	0.384a	0.51	12.96	3.083	
2.500	72.59	0.120a	1.681	0.60	0.392a	0.52	12.99	3.096	
2.525	74.11	0.126a	1.698	0.61	0.400a	0.53	13.02	3.109	
2.550	75.64	0.132a	1.715	0.61	0.408a	0.54	13.05	3.122	
2.575	77.18	0.137a	1.732	0.62	0.415a	0.55	13.08	3.134	
2.600	78.74	0.143a	1.749	0.63	0.422a	0.57	13.11	3.147	
2.625	80.32	0.148a	1.765	0.63	0.429a	0.58	13.14	3.160	
2.650	81.91	0.154a	1.782	0.64	0.434a	0.59	13.18	3.172	
2.675	83.52	0.159a	1.799	0.64	0.435a	0.60	13.17	3.184	
2.700	85.13	0.165a	1.816	0.65	0.441a	0.62	13.19	3.196	
2.725	86.77	0.170a	1.832	0.66	0.448a	0.63	13.21	3.207	
2.750	88.41	0.175a	1.849	0.66	0.454a	0.64	13.23	3.218	
2.775	90.07	0.180a	1.866	0.67	0.460a	0.66	13.24	3.229	
2.800	91.74	0.186a	1.882	0.67	0.466a	0.67	13.25	3.240	
2.825	93.43	0.191a	1.899	0.68	0.471a	0.68	13.26	3.250	
2.850	95.13	0.196a	1.916	0.68	0.476a	0.69	13.27	3.261	
2.875	96.84	0.201a	1.932	0.69	0.482a	0.71	13.28	3.272	
2.900	98.57	0.206a	1.949	0.69	0.487a	0.72	13.29	3.282	
2.925	100.31	0.211a	1.965	0.70	0.493a	0.73	13.30	3.292	
2.950	102.06	0.216a	1.982	0.70	0.500a	0.75	13.32	3.302	
2.975	103.83	0.221a	1.998	0.71	0.506a	0.76	13.33	3.311	
3.000	105.61	0.226a	2.015	0.71	0.511a	0.77	13.33	3.321	
3.025	107.40	0.231a	2.031	0.72	0.515a	0.79	13.33	3.330	
3.050	109.20	0.236a	2.048	0.72	0.506a	0.80	13.25	3.339	
3.075	111.01	0.240a	2.064	0.73	0.511a	0.81	13.26	3.349	
3.100	112.83	0.244a	2.080	0.73	0.515a	0.82	13.25	3.358	
3.125	114.66	0.249a	2.097	0.74	0.518a	0.83	13.24	3.368	
3.150	116.50	0.253a	2.113	0.74	0.521a	0.85	13.23	3.377	
3.175	118.36	0.257a	2.129	0.74	0.522a	0.86	13.21	3.385	
3.200	120.22	0.261a	2.146	0.75	0.523a	0.87	13.19	3.394	
3.225	122.10	0.265a	2.162	0.75	0.523a	0.88	13.17	3.402	
3.250	123.98	0.269a	2.178	0.76	0.524a	0.90	13.14	3.410	

Distances in METERS.-----Specific Gravity = 1.000.-----Moment in M.-MT.  
Trim is per 18.20M.

Draft is from BASELINE.

HYDROSTATIC PROPERTIES at 0.4 M. FWD TRIM



- ① Displacement 1 = .5 MT
- ② LCB (use top scale)
- ③ VCB (KB) 1 = .02 M.
- ④ Immersion 1 = .003 MT/CM
- ④ WPA 1 = .3 Sq.M.
- ⑤ LCF (use top scale)
- ⑥ Moment/Trim 1 = .004 M.-MT/CM
- ⑦ KML 1 = .05 M.
- ⑧ KMT 1 = .02 M.

Specific Gravity = 1.000      Assumed KG = 0.00 M.  
Trim is per 18.2 M.      "K" = BASELINE

HYDROSTATIC PROPERTIES

Trim: Fwd 0.500/18.200, No Heel, VCG = 0.000

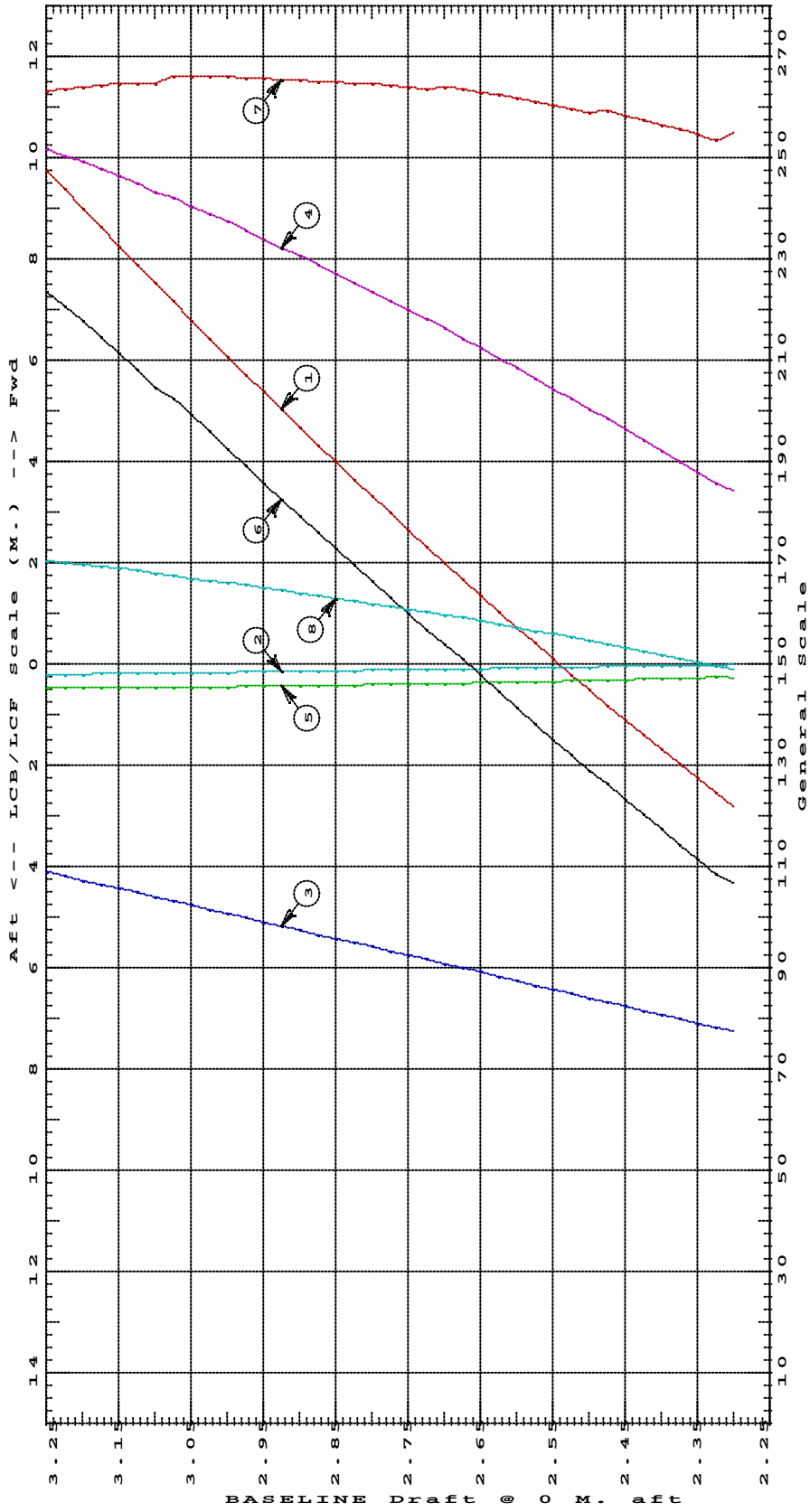
Draft@ Origin	Displacement Weight(MT)	Buoyancy-Ctr. LCB-----VCB-----		Weight/ CM-----	Moment/ LCF---CM trim---			KML-----	KMT
2.300	60.94	0.014a	1.546	0.55	0.273a	0.43	12.75	2.979	
2.325	62.33	0.019a	1.563	0.56	0.264a	0.43	12.68	2.993	
2.350	63.73	0.024a	1.580	0.56	0.273a	0.45	12.74	3.008	
2.375	65.15	0.030a	1.597	0.57	0.283a	0.46	12.78	3.023	
2.400	66.58	0.035a	1.614	0.58	0.292a	0.47	12.83	3.038	
2.425	68.03	0.041a	1.631	0.58	0.302a	0.48	12.87	3.052	
2.450	69.49	0.047a	1.648	0.59	0.312a	0.49	12.91	3.066	
2.475	70.98	0.053a	1.665	0.60	0.323a	0.51	12.96	3.081	
2.500	72.48	0.058a	1.682	0.60	0.325a	0.52	12.95	3.094	
2.525	73.99	0.064a	1.698	0.61	0.334a	0.53	12.99	3.106	
2.550	75.51	0.069a	1.715	0.61	0.341a	0.54	13.02	3.119	
2.575	77.06	0.075a	1.732	0.62	0.349a	0.55	13.05	3.132	
2.600	78.61	0.080a	1.749	0.63	0.353a	0.57	13.09	3.145	
2.625	80.18	0.086a	1.765	0.63	0.361a	0.58	13.12	3.158	
2.650	81.77	0.091a	1.782	0.64	0.368a	0.59	13.15	3.170	
2.675	83.37	0.096a	1.799	0.64	0.376a	0.60	13.17	3.182	
2.700	84.99	0.102a	1.816	0.65	0.383a	0.62	13.19	3.194	
2.725	86.62	0.107a	1.832	0.65	0.385a	0.63	13.18	3.205	
2.750	88.26	0.113a	1.849	0.66	0.391a	0.64	13.20	3.216	
2.775	89.91	0.118a	1.866	0.67	0.398a	0.65	13.21	3.227	
2.800	91.58	0.123a	1.882	0.67	0.405a	0.67	13.23	3.239	
2.825	93.27	0.128a	1.899	0.68	0.411a	0.68	13.24	3.250	
2.850	94.96	0.133a	1.916	0.68	0.416a	0.69	13.24	3.260	
2.875	96.67	0.138a	1.932	0.69	0.421a	0.70	13.25	3.271	
2.900	98.39	0.143a	1.949	0.69	0.427a	0.72	13.26	3.282	
2.925	100.13	0.148a	1.965	0.70	0.432a	0.73	13.27	3.292	
2.950	101.88	0.153a	1.982	0.70	0.438a	0.74	13.28	3.301	
2.975	103.64	0.158a	1.998	0.71	0.445a	0.76	13.29	3.311	
3.000	105.41	0.163a	2.015	0.71	0.452a	0.77	13.30	3.321	
3.025	107.20	0.168a	2.031	0.72	0.458a	0.78	13.31	3.330	
3.050	109.00	0.173a	2.047	0.72	0.463a	0.80	13.30	3.339	
3.075	110.81	0.178a	2.064	0.73	0.469a	0.81	13.31	3.349	
3.100	112.63	0.183a	2.080	0.73	0.459a	0.82	13.23	3.358	
3.125	114.46	0.187a	2.097	0.73	0.465a	0.83	13.23	3.368	
3.150	116.30	0.192a	2.113	0.74	0.469a	0.85	13.23	3.377	
3.175	118.16	0.196a	2.129	0.74	0.472a	0.86	13.21	3.386	
3.200	120.02	0.200a	2.145	0.75	0.475a	0.87	13.20	3.394	
3.225	121.89	0.205a	2.162	0.75	0.477a	0.88	13.18	3.402	
3.250	123.78	0.209a	2.178	0.76	0.479a	0.89	13.15	3.410	

Distances in METERS.-----Specific Gravity = 1.000.-----Moment in M.-MT.  
Trim is per 18.20M.

Draft is from BASELINE.



HYDROSTATIC PROPERTIES at 0.5 M. FWD TRIM



- ① Displacement 1 = .5 MT
- ② LCB (use top scale)
- ③ VCB (KB) 1 = .02 M.
- ④ Immersion 1 = .003 MT/CM
- ④ WPA 1 = .3 Sq.M.
- ⑤ LCF (use top scale)
- ⑥ Moment/Trim 1 = .004 M.-MT/CM
- ⑦ KML 1 = .05 M.
- ⑧ KMT 1 = .02 M.

Specific Gravity = 1.000      Assumed KG = 0.00 M.  
Trim is per 18.2 M.      "K" = BASELINE

CROSS CURVES OF STABILITY

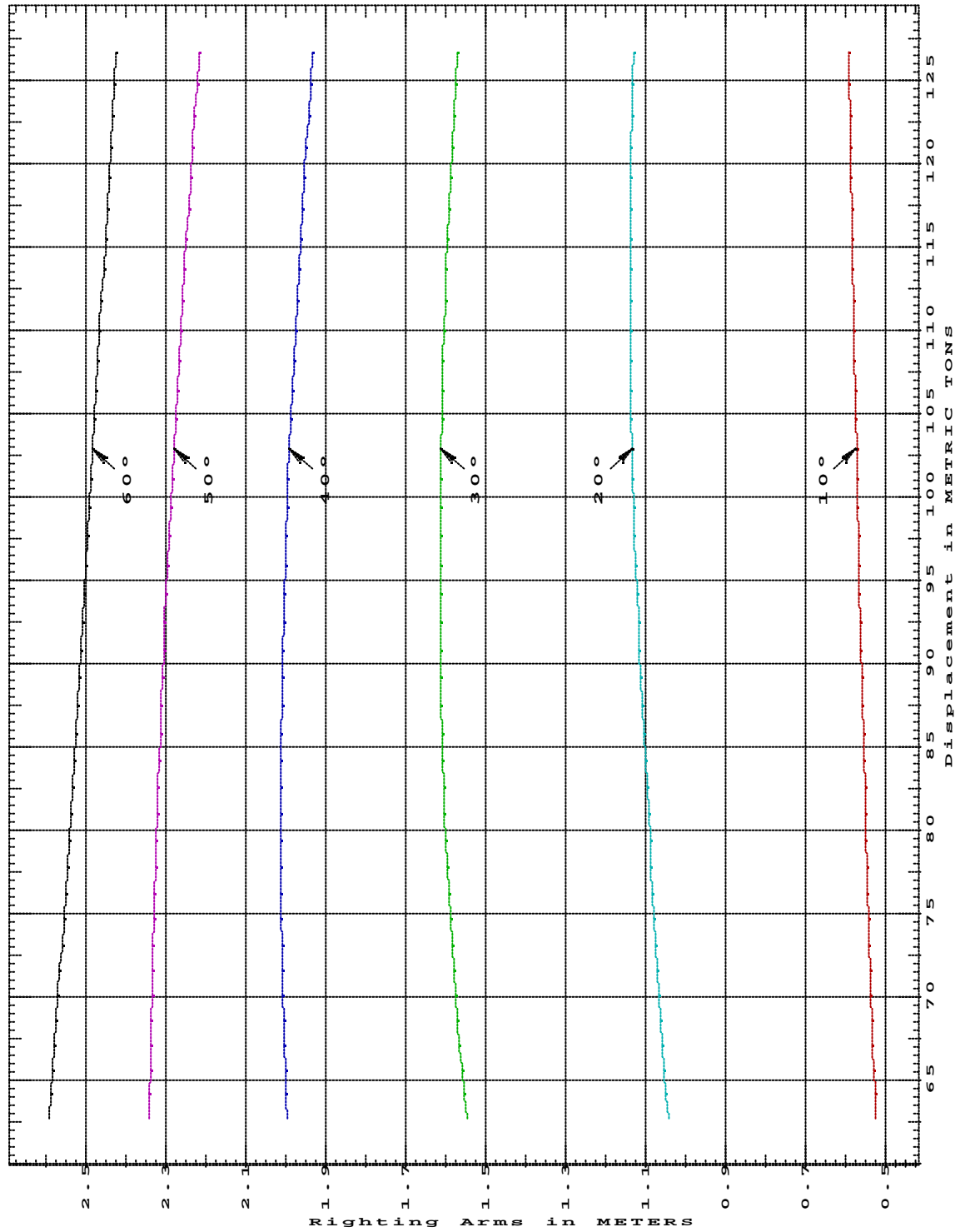
Showing righting arms in heel at VCG = 0.00

Trim: Aft 0.500/18.200 at zero heel (trim righting arm held at zero)

Displacement METRIC TONS	Heel Angles in Degrees					
	10.00s	20.00s	30.00s	40.00s	50.00s	60.00s
62.77	0.528s	1.046s	1.548s	1.996s	2.341s	2.590s
64.20	0.530s	1.050s	1.554s	1.999s	2.340s	2.585s
65.65	0.532s	1.055s	1.560s	2.001s	2.338s	2.581s
67.12	0.535s	1.059s	1.565s	2.004s	2.337s	2.576s
68.60	0.537s	1.063s	1.571s	2.006s	2.336s	2.572s
70.10	0.539s	1.067s	1.576s	2.007s	2.334s	2.567s
71.61	0.541s	1.072s	1.581s	2.009s	2.333s	2.563s
73.14	0.543s	1.076s	1.585s	2.010s	2.331s	2.559s
74.68	0.545s	1.080s	1.590s	2.011s	2.329s	2.555s
76.23	0.547s	1.084s	1.594s	2.011s	2.328s	2.550s
77.80	0.549s	1.088s	1.597s	2.012s	2.326s	2.546s
79.39	0.551s	1.091s	1.600s	2.012s	2.323s	2.542s
80.98	0.553s	1.095s	1.603s	2.012s	2.321s	2.538s
82.59	0.555s	1.099s	1.606s	2.012s	2.319s	2.533s
84.22	0.557s	1.103s	1.608s	2.011s	2.316s	2.529s
85.85	0.559s	1.106s	1.610s	2.011s	2.313s	2.525s
87.50	0.561s	1.110s	1.612s	2.010s	2.311s	2.521s
89.16	0.562s	1.113s	1.613s	2.008s	2.308s	2.517s
90.84	0.564s	1.117s	1.614s	2.007s	2.305s	2.512s
92.52	0.566s	1.120s	1.615s	2.005s	2.301s	2.508s
94.22	0.568s	1.123s	1.615s	2.004s	2.298s	2.504s
95.93	0.569s	1.126s	1.615s	2.001s	2.294s	2.500s
97.65	0.571s	1.129s	1.615s	1.999s	2.291s	2.495s
99.39	0.573s	1.132s	1.614s	1.997s	2.287s	2.491s
101.13	0.574s	1.134s	1.613s	1.994s	2.283s	2.486s
102.89	0.576s	1.136s	1.612s	1.991s	2.279s	2.482s
104.66	0.577s	1.137s	1.611s	1.988s	2.275s	2.478s
106.43	0.579s	1.139s	1.609s	1.984s	2.271s	2.473s
108.22	0.580s	1.140s	1.607s	1.980s	2.266s	2.469s
110.02	0.582s	1.140s	1.605s	1.977s	2.262s	2.464s
111.83	0.583s	1.141s	1.603s	1.972s	2.257s	2.460s
113.65	0.585s	1.141s	1.600s	1.968s	2.252s	2.455s
115.48	0.586s	1.140s	1.597s	1.964s	2.247s	2.451s
117.32	0.588s	1.140s	1.593s	1.959s	2.242s	2.446s
119.16	0.589s	1.139s	1.590s	1.954s	2.237s	2.441s
121.02	0.591s	1.137s	1.586s	1.949s	2.232s	2.437s
122.88	0.592s	1.135s	1.582s	1.944s	2.227s	2.432s
124.76	0.593s	1.133s	1.577s	1.938s	2.221s	2.427s
126.64	0.595s	1.131s	1.572s	1.932s	2.216s	2.422s

Distances in METERS.---Specific Gravity = 1.000.-----

CROSS CURVES OF STABILITY WITH - STBD HEEL  
at 0.5 M. AFT TRIM (initial)



Specific Gravity = 1.000 Assumed KG = 0.00 M.  
"K" = BASELINE

CROSS CURVES OF STABILITY

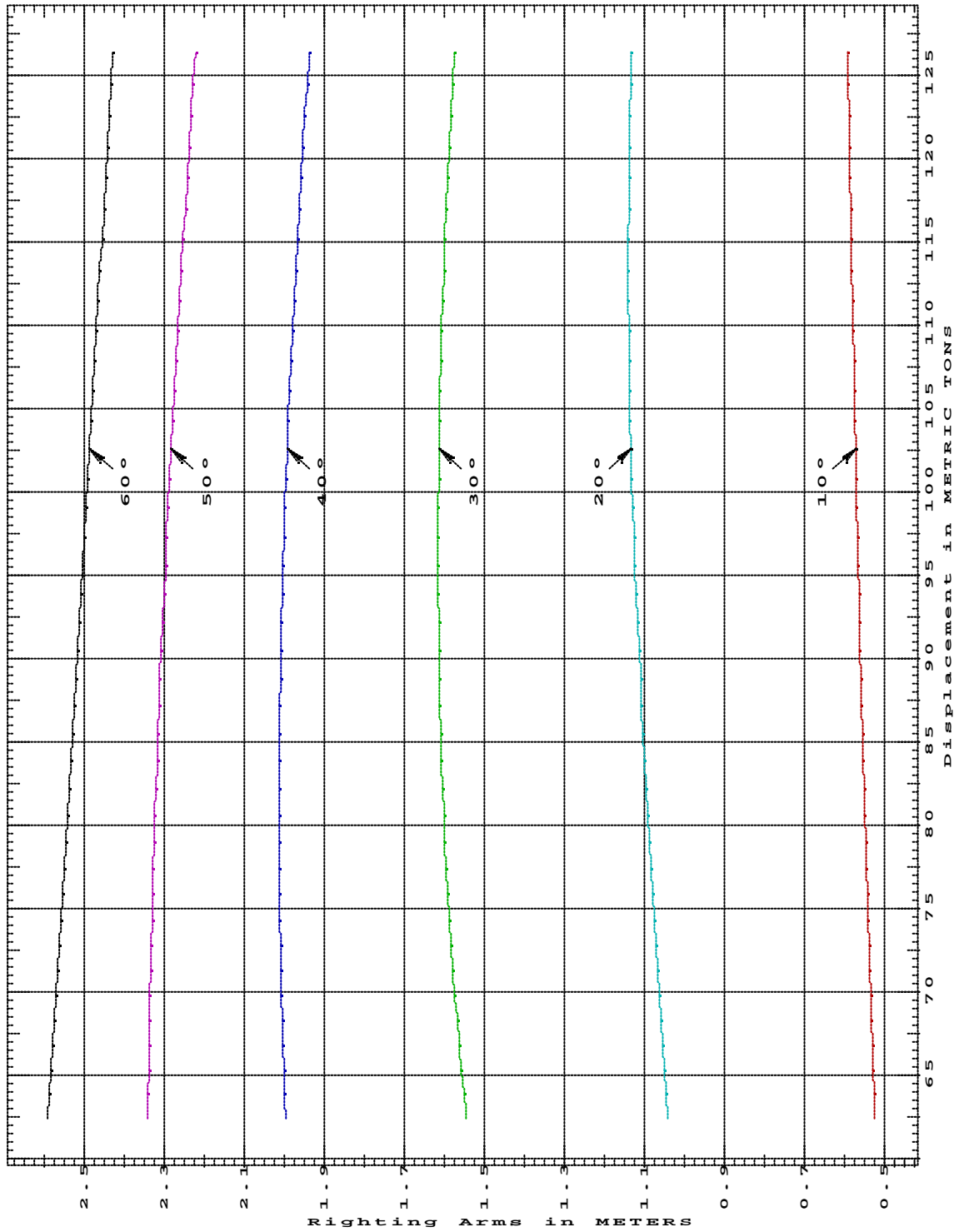
Showing righting arms in heel at VCG = 0.00

Trim: Aft 0.400/18.200 at zero heel (trim righting arm held at zero)

Displacement METRIC TONS	Heel Angles in Degrees					
	10.00s	20.00s	30.00s	40.00s	50.00s	60.00s
62.49	0.527s	1.043s	1.545s	1.995s	2.341s	2.590s
63.92	0.529s	1.048s	1.551s	1.998s	2.340s	2.586s
65.36	0.531s	1.053s	1.557s	2.001s	2.339s	2.582s
66.83	0.534s	1.057s	1.563s	2.003s	2.337s	2.577s
68.30	0.536s	1.061s	1.569s	2.005s	2.336s	2.573s
69.79	0.538s	1.066s	1.574s	2.007s	2.335s	2.569s
71.30	0.540s	1.070s	1.579s	2.008s	2.333s	2.564s
72.82	0.542s	1.074s	1.584s	2.010s	2.332s	2.560s
74.35	0.544s	1.078s	1.588s	2.011s	2.330s	2.556s
75.90	0.547s	1.082s	1.592s	2.011s	2.328s	2.552s
77.47	0.549s	1.086s	1.596s	2.012s	2.326s	2.548s
79.05	0.551s	1.090s	1.599s	2.012s	2.324s	2.544s
80.64	0.552s	1.094s	1.602s	2.012s	2.322s	2.539s
82.25	0.554s	1.097s	1.605s	2.012s	2.320s	2.535s
83.87	0.556s	1.101s	1.608s	2.012s	2.317s	2.531s
85.50	0.558s	1.105s	1.610s	2.011s	2.315s	2.527s
87.15	0.560s	1.108s	1.612s	2.011s	2.312s	2.523s
88.81	0.562s	1.112s	1.613s	2.010s	2.310s	2.519s
90.48	0.564s	1.115s	1.614s	2.008s	2.307s	2.515s
92.16	0.565s	1.119s	1.615s	2.007s	2.304s	2.511s
93.86	0.567s	1.122s	1.616s	2.005s	2.300s	2.507s
95.57	0.569s	1.125s	1.616s	2.003s	2.297s	2.502s
97.29	0.570s	1.128s	1.616s	2.001s	2.293s	2.498s
99.02	0.572s	1.131s	1.615s	1.999s	2.290s	2.494s
100.77	0.574s	1.133s	1.615s	1.996s	2.286s	2.490s
102.52	0.575s	1.135s	1.614s	1.993s	2.282s	2.485s
104.29	0.577s	1.137s	1.613s	1.990s	2.278s	2.481s
106.07	0.578s	1.139s	1.611s	1.987s	2.274s	2.477s
107.86	0.580s	1.140s	1.609s	1.983s	2.270s	2.473s
109.66	0.582s	1.141s	1.607s	1.980s	2.265s	2.468s
111.47	0.583s	1.141s	1.605s	1.976s	2.261s	2.464s
113.28	0.585s	1.142s	1.602s	1.972s	2.256s	2.459s
115.11	0.586s	1.142s	1.600s	1.967s	2.252s	2.455s
116.95	0.587s	1.141s	1.596s	1.963s	2.247s	2.450s
118.80	0.589s	1.140s	1.593s	1.958s	2.242s	2.446s
120.65	0.590s	1.139s	1.589s	1.953s	2.237s	2.441s
122.52	0.592s	1.138s	1.585s	1.948s	2.232s	2.437s
124.40	0.593s	1.136s	1.581s	1.943s	2.226s	2.432s
126.28	0.594s	1.134s	1.576s	1.937s	2.221s	2.428s

Distances in METERS.---Specific Gravity = 1.000.-----

CROSS CURVES OF STABILITY WITH - STBD HEEL  
at 0.4 M. AFT TRIM (initial)



Specific Gravity = 1.000 Assumed KG = 0.00 M.  
"K" = BASELINE

CROSS CURVES OF STABILITY

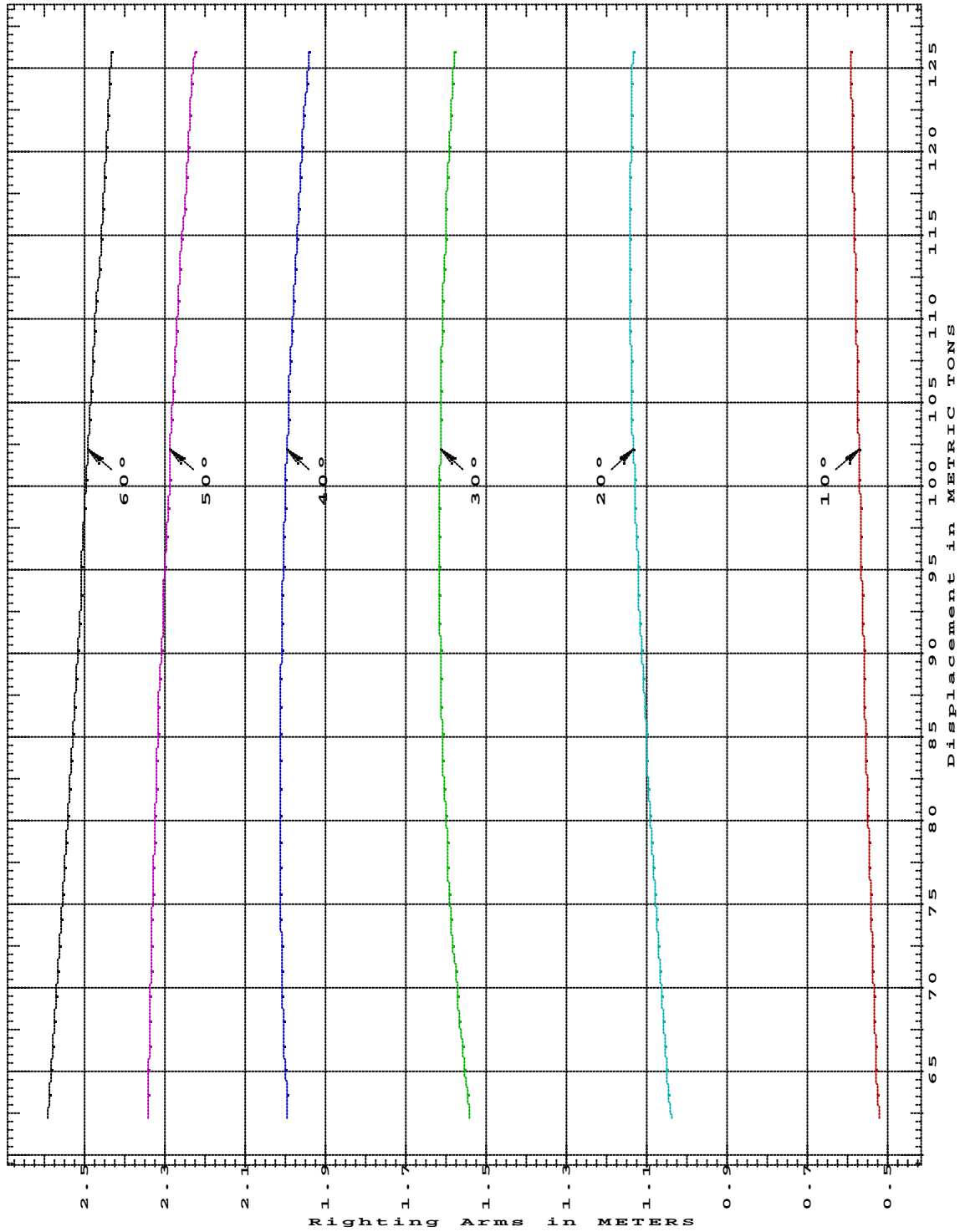
Showing righting arms in heel at VCG = 0.00

Trim: Aft 0.300/18.200 at zero heel (trim righting arm held at zero)

Displacement METRIC TONS	Heel Angles in Degrees					
	10.00s	20.00s	30.00s	40.00s	50.00s	60.00s
62.23	0.525s	1.042s	1.542s	1.994s	2.341s	2.591s
63.66	0.528s	1.046s	1.549s	1.997s	2.340s	2.587s
65.10	0.530s	1.051s	1.555s	2.000s	2.339s	2.582s
66.55	0.533s	1.055s	1.561s	2.002s	2.338s	2.578s
68.02	0.535s	1.060s	1.567s	2.004s	2.336s	2.574s
69.51	0.537s	1.064s	1.572s	2.006s	2.335s	2.569s
71.01	0.539s	1.068s	1.577s	2.008s	2.334s	2.565s
72.52	0.541s	1.072s	1.582s	2.009s	2.332s	2.561s
74.05	0.544s	1.076s	1.587s	2.011s	2.331s	2.557s
75.60	0.546s	1.080s	1.591s	2.011s	2.329s	2.553s
77.16	0.548s	1.084s	1.595s	2.012s	2.327s	2.549s
78.73	0.550s	1.088s	1.598s	2.013s	2.325s	2.545s
80.32	0.552s	1.092s	1.602s	2.013s	2.323s	2.541s
81.93	0.554s	1.096s	1.605s	2.013s	2.321s	2.537s
83.55	0.556s	1.100s	1.607s	2.013s	2.319s	2.533s
85.18	0.557s	1.104s	1.609s	2.012s	2.316s	2.529s
86.82	0.559s	1.107s	1.611s	2.011s	2.314s	2.525s
88.48	0.561s	1.111s	1.613s	2.011s	2.311s	2.521s
90.14	0.563s	1.114s	1.614s	2.009s	2.308s	2.517s
91.82	0.565s	1.118s	1.615s	2.008s	2.305s	2.513s
93.52	0.566s	1.121s	1.616s	2.007s	2.302s	2.509s
95.23	0.568s	1.124s	1.616s	2.005s	2.299s	2.505s
96.95	0.570s	1.127s	1.617s	2.003s	2.296s	2.501s
98.68	0.572s	1.130s	1.616s	2.000s	2.292s	2.497s
100.42	0.573s	1.133s	1.616s	1.998s	2.289s	2.493s
102.18	0.575s	1.135s	1.615s	1.995s	2.285s	2.489s
103.94	0.576s	1.137s	1.614s	1.993s	2.281s	2.484s
105.72	0.578s	1.139s	1.613s	1.989s	2.277s	2.480s
107.51	0.580s	1.140s	1.611s	1.986s	2.273s	2.476s
109.31	0.581s	1.141s	1.609s	1.983s	2.269s	2.472s
111.11	0.583s	1.142s	1.607s	1.979s	2.265s	2.468s
112.93	0.584s	1.143s	1.605s	1.975s	2.260s	2.463s
114.76	0.586s	1.143s	1.602s	1.971s	2.256s	2.459s
116.60	0.587s	1.142s	1.599s	1.966s	2.251s	2.455s
118.45	0.589s	1.142s	1.596s	1.962s	2.246s	2.450s
120.31	0.590s	1.141s	1.592s	1.957s	2.241s	2.446s
122.17	0.591s	1.139s	1.588s	1.952s	2.236s	2.441s
124.05	0.593s	1.138s	1.584s	1.947s	2.231s	2.437s
125.94	0.594s	1.136s	1.580s	1.942s	2.226s	2.432s

Distances in METERS.---Specific Gravity = 1.000.-----

CROSS CURVES OF STABILITY WITH - STBD HEEL  
at 0.3 M. AFT TRIM (initial)



Specific Gravity = 1.000 Assumed KG = 0.00 M.  
"K" = BASELINE

CROSS CURVES OF STABILITY

Showing righting arms in heel at VCG = 0.00

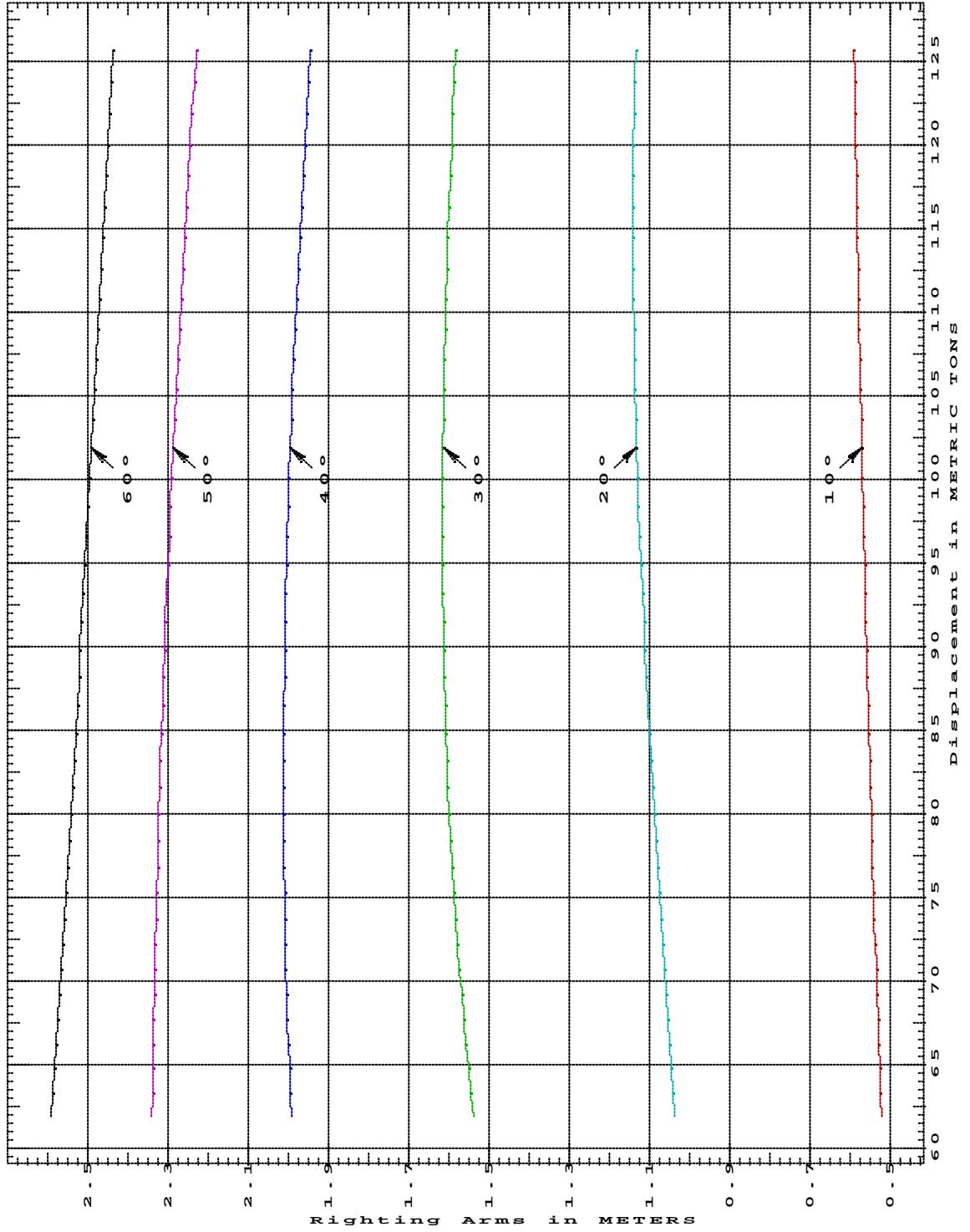
Trim: Aft 0.200/18.200 at zero heel (trim righting arm held at zero)

Displacement METRIC TONS	Heel Angles in Degrees					
	10.00s	20.00s	30.00s	40.00s	50.00s	60.00s
62.00	0.524s	1.040s	1.540s	1.993s	2.341s	2.592s
63.42	0.527s	1.044s	1.546s	1.996s	2.340s	2.587s
64.85	0.529s	1.049s	1.552s	1.999s	2.339s	2.583s
66.30	0.532s	1.053s	1.559s	2.001s	2.338s	2.578s
67.77	0.534s	1.058s	1.564s	2.004s	2.337s	2.574s
69.25	0.536s	1.062s	1.570s	2.006s	2.335s	2.570s
70.74	0.538s	1.067s	1.575s	2.008s	2.334s	2.566s
72.25	0.541s	1.071s	1.580s	2.009s	2.332s	2.562s
73.78	0.543s	1.075s	1.585s	2.010s	2.331s	2.558s
75.32	0.545s	1.079s	1.590s	2.011s	2.329s	2.554s
76.87	0.547s	1.083s	1.594s	2.012s	2.328s	2.550s
78.44	0.549s	1.087s	1.597s	2.013s	2.326s	2.546s
80.03	0.551s	1.091s	1.601s	2.013s	2.324s	2.542s
81.63	0.553s	1.095s	1.604s	2.013s	2.322s	2.538s
83.24	0.555s	1.099s	1.607s	2.013s	2.320s	2.535s
84.87	0.557s	1.102s	1.609s	2.013s	2.317s	2.531s
86.51	0.559s	1.106s	1.611s	2.012s	2.315s	2.527s
88.16	0.561s	1.110s	1.613s	2.011s	2.312s	2.523s
89.83	0.562s	1.113s	1.614s	2.010s	2.310s	2.519s
91.51	0.564s	1.117s	1.616s	2.009s	2.307s	2.515s
93.20	0.566s	1.120s	1.616s	2.008s	2.304s	2.511s
94.90	0.568s	1.123s	1.617s	2.006s	2.301s	2.507s
96.62	0.569s	1.127s	1.617s	2.004s	2.298s	2.503s
98.35	0.571s	1.130s	1.617s	2.002s	2.295s	2.500s
100.09	0.573s	1.132s	1.617s	2.000s	2.291s	2.496s
101.85	0.574s	1.135s	1.616s	1.997s	2.288s	2.492s
103.61	0.576s	1.137s	1.615s	1.995s	2.284s	2.487s
105.39	0.578s	1.139s	1.614s	1.992s	2.280s	2.483s
107.17	0.579s	1.140s	1.613s	1.988s	2.276s	2.479s
108.97	0.581s	1.142s	1.611s	1.985s	2.272s	2.475s
110.78	0.582s	1.143s	1.609s	1.982s	2.268s	2.471s
112.60	0.584s	1.143s	1.607s	1.978s	2.264s	2.467s
114.43	0.585s	1.143s	1.604s	1.974s	2.259s	2.463s
116.27	0.587s	1.143s	1.601s	1.970s	2.255s	2.458s
118.12	0.588s	1.143s	1.598s	1.965s	2.250s	2.454s
119.98	0.590s	1.142s	1.595s	1.961s	2.245s	2.450s
121.84	0.591s	1.141s	1.591s	1.956s	2.240s	2.446s
123.72	0.593s	1.140s	1.587s	1.951s	2.235s	2.441s
125.61	0.594s	1.138s	1.583s	1.946s	2.230s	2.437s

Distances in METERS.---Specific Gravity = 1.000.-----



CROSS CURVES OF STABILITY WITH - STBD HEEL  
at 0.2 M. AFT TRIM (initial)



Specific Gravity = 1.000 Assumed KG = 0.00 M.  
"K" = BASELINE

CROSS CURVES OF STABILITY

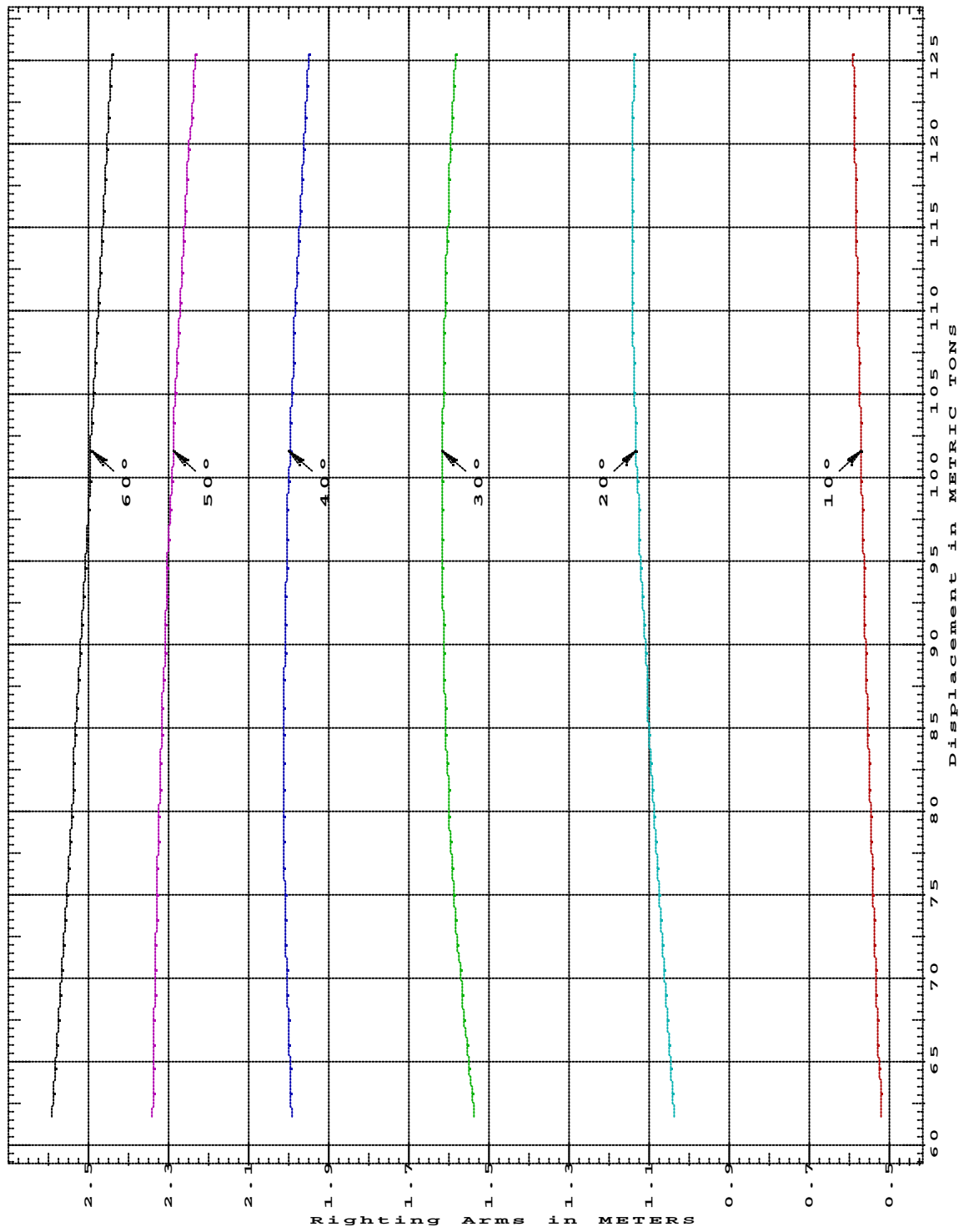
Showing righting arms in heel at VCG = 0.00

Trim: Aft 0.100/18.200 at zero heel (trim righting arm held at zero)

Displacement METRIC TONS	Heel Angles in Degrees					
	10.00s	20.00s	30.00s	40.00s	50.00s	60.00s
61.78	0.523s	1.038s	1.538s	1.991s	2.341s	2.593s
63.20	0.526s	1.043s	1.544s	1.995s	2.340s	2.588s
64.62	0.528s	1.047s	1.550s	1.998s	2.339s	2.583s
66.07	0.531s	1.052s	1.556s	2.001s	2.338s	2.579s
67.53	0.533s	1.056s	1.562s	2.003s	2.337s	2.575s
69.01	0.535s	1.061s	1.568s	2.005s	2.336s	2.571s
70.50	0.538s	1.065s	1.574s	2.007s	2.334s	2.567s
72.00	0.540s	1.069s	1.579s	2.009s	2.333s	2.563s
73.53	0.542s	1.074s	1.584s	2.010s	2.331s	2.559s
75.06	0.544s	1.078s	1.588s	2.011s	2.330s	2.555s
76.61	0.546s	1.082s	1.593s	2.012s	2.328s	2.551s
78.18	0.548s	1.086s	1.596s	2.013s	2.326s	2.547s
79.76	0.550s	1.090s	1.600s	2.013s	2.325s	2.543s
81.35	0.552s	1.094s	1.603s	2.013s	2.323s	2.540s
82.96	0.554s	1.097s	1.606s	2.013s	2.321s	2.536s
84.58	0.556s	1.101s	1.609s	2.013s	2.318s	2.532s
86.22	0.558s	1.105s	1.611s	2.013s	2.316s	2.528s
87.87	0.560s	1.108s	1.613s	2.012s	2.313s	2.525s
89.53	0.562s	1.112s	1.614s	2.011s	2.311s	2.521s
91.21	0.564s	1.116s	1.616s	2.010s	2.308s	2.517s
92.90	0.565s	1.119s	1.617s	2.009s	2.306s	2.513s
94.61	0.567s	1.123s	1.617s	2.007s	2.303s	2.510s
96.32	0.569s	1.126s	1.618s	2.005s	2.300s	2.506s
98.05	0.571s	1.129s	1.618s	2.003s	2.296s	2.502s
99.79	0.572s	1.132s	1.618s	2.001s	2.293s	2.498s
101.54	0.574s	1.134s	1.617s	1.999s	2.290s	2.494s
103.30	0.576s	1.137s	1.617s	1.996s	2.286s	2.490s
105.08	0.577s	1.139s	1.615s	1.994s	2.283s	2.486s
106.86	0.579s	1.141s	1.614s	1.991s	2.279s	2.482s
108.66	0.580s	1.142s	1.613s	1.987s	2.275s	2.478s
110.47	0.582s	1.143s	1.611s	1.984s	2.271s	2.474s
112.29	0.584s	1.144s	1.609s	1.980s	2.267s	2.470s
114.11	0.585s	1.144s	1.606s	1.977s	2.262s	2.466s
115.95	0.587s	1.144s	1.603s	1.972s	2.258s	2.462s
117.80	0.588s	1.144s	1.601s	1.968s	2.253s	2.458s
119.66	0.590s	1.143s	1.597s	1.964s	2.249s	2.454s
121.53	0.591s	1.142s	1.594s	1.959s	2.244s	2.450s
123.41	0.592s	1.141s	1.590s	1.954s	2.239s	2.445s
125.29	0.594s	1.139s	1.586s	1.949s	2.234s	2.441s

Distances in METERS.---Specific Gravity = 1.000.-----

CROSS CURVES OF STABILITY with - Stbd Heel  
at 0.1 M. AFT TRIM (initial)



Specific Gravity = 1.000 Assumed KG = 0.00 M.  
"K" = BASELINE

CROSS CURVES OF STABILITY

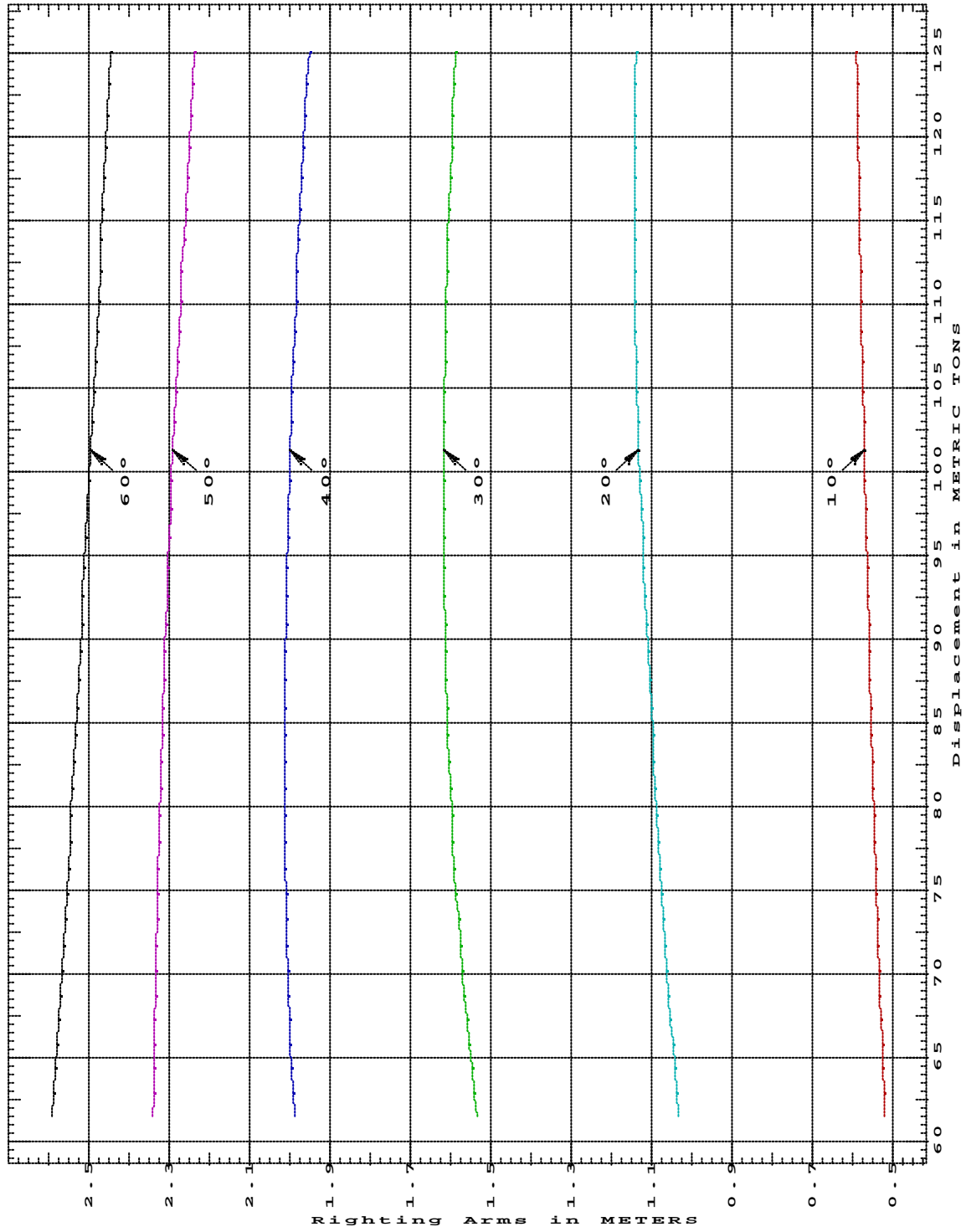
Showing righting arms in heel at VCG = 0.00

Trim: zero at zero heel (trim righting arm held at zero)

Displacement METRIC TONS	Heel Angles in Degrees					
	10.00s	20.00s	30.00s	40.00s	50.00s	60.00s
61.59	0.523s	1.036s	1.535s	1.990s	2.341s	2.593s
63.00	0.525s	1.041s	1.542s	1.994s	2.340s	2.589s
64.42	0.528s	1.046s	1.548s	1.997s	2.339s	2.584s
65.86	0.530s	1.050s	1.554s	2.000s	2.338s	2.580s
67.32	0.532s	1.055s	1.561s	2.002s	2.337s	2.575s
68.79	0.535s	1.059s	1.566s	2.005s	2.336s	2.571s
70.27	0.537s	1.064s	1.572s	2.007s	2.335s	2.567s
71.78	0.539s	1.068s	1.577s	2.008s	2.333s	2.563s
73.30	0.541s	1.072s	1.582s	2.010s	2.332s	2.560s
74.83	0.543s	1.076s	1.587s	2.011s	2.330s	2.556s
76.37	0.546s	1.080s	1.591s	2.012s	2.329s	2.552s
77.93	0.548s	1.084s	1.595s	2.013s	2.327s	2.548s
79.51	0.550s	1.088s	1.599s	2.013s	2.325s	2.544s
81.10	0.552s	1.092s	1.603s	2.014s	2.323s	2.541s
82.70	0.554s	1.096s	1.606s	2.014s	2.321s	2.537s
84.32	0.556s	1.100s	1.608s	2.014s	2.319s	2.533s
85.95	0.558s	1.104s	1.611s	2.013s	2.317s	2.530s
87.60	0.560s	1.107s	1.613s	2.013s	2.314s	2.526s
89.26	0.561s	1.111s	1.614s	2.012s	2.312s	2.522s
90.94	0.563s	1.115s	1.616s	2.011s	2.309s	2.519s
92.63	0.565s	1.118s	1.617s	2.010s	2.307s	2.515s
94.33	0.567s	1.122s	1.618s	2.008s	2.304s	2.511s
96.04	0.569s	1.125s	1.618s	2.006s	2.301s	2.508s
97.77	0.570s	1.128s	1.619s	2.005s	2.298s	2.504s
99.50	0.572s	1.131s	1.618s	2.003s	2.295s	2.500s
101.25	0.574s	1.134s	1.618s	2.000s	2.292s	2.496s
103.01	0.575s	1.137s	1.617s	1.998s	2.288s	2.493s
104.79	0.577s	1.139s	1.617s	1.995s	2.285s	2.489s
106.57	0.579s	1.141s	1.615s	1.992s	2.281s	2.485s
108.37	0.580s	1.142s	1.614s	1.989s	2.277s	2.481s
110.17	0.582s	1.143s	1.612s	1.986s	2.273s	2.477s
111.99	0.583s	1.144s	1.610s	1.983s	2.269s	2.473s
113.82	0.585s	1.145s	1.608s	1.979s	2.265s	2.469s
115.66	0.586s	1.145s	1.605s	1.975s	2.261s	2.465s
117.51	0.588s	1.145s	1.602s	1.971s	2.256s	2.461s
119.36	0.589s	1.144s	1.599s	1.967s	2.252s	2.457s
121.23	0.591s	1.144s	1.596s	1.962s	2.247s	2.453s
123.11	0.592s	1.142s	1.592s	1.957s	2.243s	2.449s
125.00	0.594s	1.141s	1.588s	1.953s	2.238s	2.445s

Distances in METERS.---Specific Gravity = 1.000.-----

CROSS CURVES OF STABILITY WITH - stbd Heel  
at LEVEL TRIM (initial)



Specific Gravity = 1.000 Assumed KG = 0.00 M.  
"K" = BASELINE

CROSS CURVES OF STABILITY

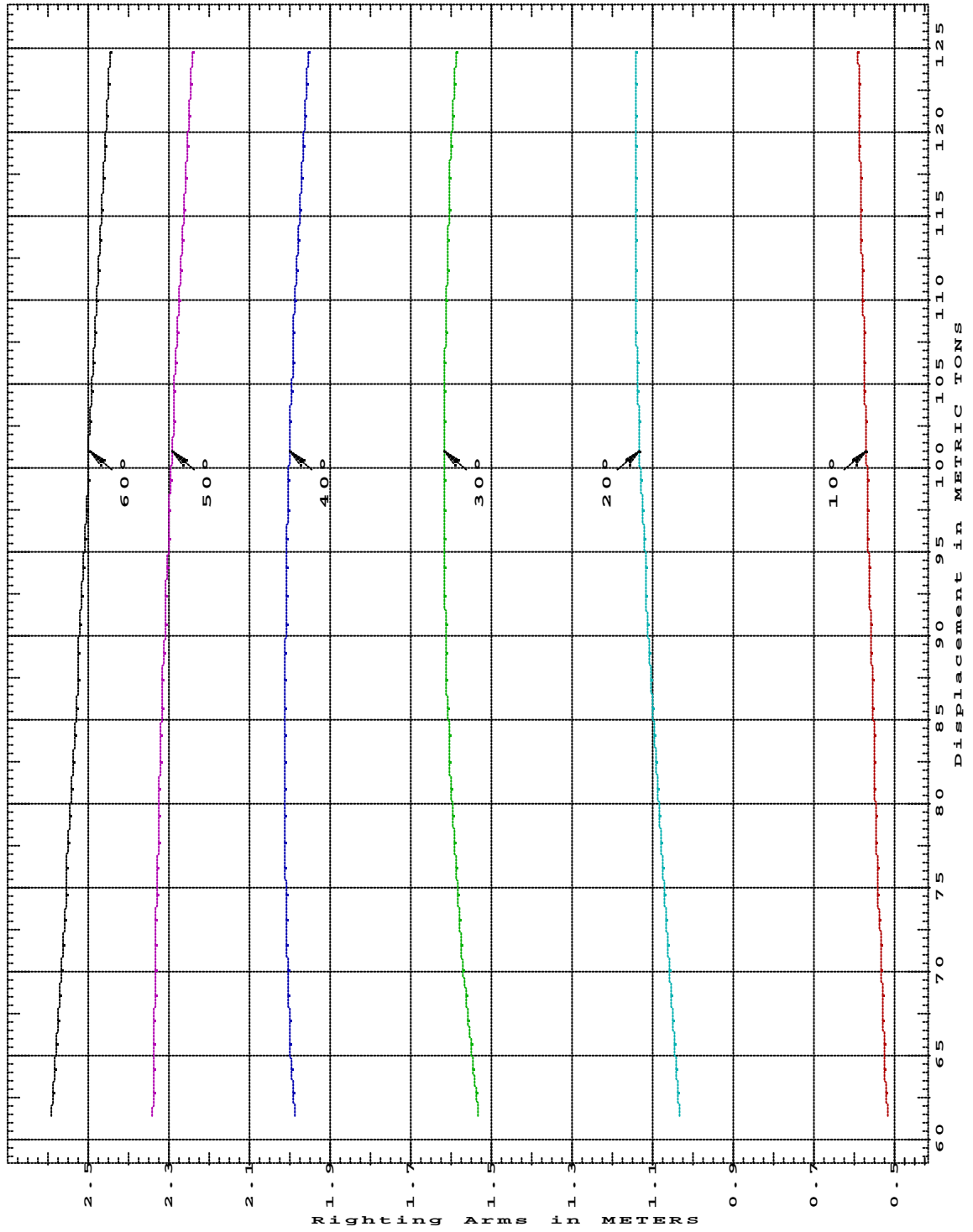
Showing righting arms in heel at VCG = 0.00

Trim: Fwd 0.100/18.200 at zero heel (trim righting arm held at zero)

Displacement METRIC TONS	Heel Angles in Degrees					
	10.00s	20.00s	30.00s	40.00s	50.00s	60.00s
61.42	0.522s	1.035s	1.533s	1.989s	2.341s	2.594s
62.82	0.524s	1.040s	1.540s	1.993s	2.340s	2.589s
64.24	0.527s	1.044s	1.546s	1.996s	2.339s	2.585s
65.67	0.529s	1.049s	1.553s	1.999s	2.338s	2.580s
67.12	0.532s	1.053s	1.559s	2.002s	2.337s	2.576s
68.59	0.534s	1.058s	1.565s	2.004s	2.336s	2.572s
70.07	0.536s	1.062s	1.571s	2.006s	2.335s	2.568s
71.57	0.538s	1.067s	1.576s	2.008s	2.333s	2.564s
73.09	0.541s	1.071s	1.581s	2.010s	2.332s	2.560s
74.62	0.543s	1.075s	1.586s	2.011s	2.331s	2.556s
76.16	0.545s	1.079s	1.590s	2.012s	2.329s	2.553s
77.71	0.547s	1.083s	1.594s	2.013s	2.327s	2.549s
79.28	0.549s	1.087s	1.598s	2.014s	2.325s	2.545s
80.87	0.551s	1.091s	1.602s	2.014s	2.324s	2.542s
82.47	0.553s	1.095s	1.605s	2.014s	2.322s	2.538s
84.08	0.555s	1.099s	1.608s	2.014s	2.320s	2.534s
85.71	0.557s	1.103s	1.610s	2.014s	2.317s	2.531s
87.36	0.559s	1.107s	1.612s	2.013s	2.315s	2.527s
89.01	0.561s	1.110s	1.614s	2.012s	2.313s	2.524s
90.68	0.563s	1.114s	1.616s	2.011s	2.310s	2.520s
92.37	0.565s	1.117s	1.617s	2.010s	2.308s	2.517s
94.07	0.566s	1.121s	1.618s	2.009s	2.305s	2.513s
95.78	0.568s	1.124s	1.619s	2.007s	2.302s	2.509s
97.50	0.570s	1.128s	1.619s	2.006s	2.299s	2.506s
99.24	0.572s	1.131s	1.619s	2.004s	2.296s	2.502s
100.99	0.573s	1.134s	1.619s	2.001s	2.293s	2.498s
102.74	0.575s	1.136s	1.618s	1.999s	2.290s	2.495s
104.51	0.577s	1.139s	1.617s	1.997s	2.287s	2.491s
106.30	0.578s	1.141s	1.616s	1.994s	2.283s	2.487s
108.09	0.580s	1.142s	1.615s	1.991s	2.280s	2.483s
109.90	0.581s	1.144s	1.613s	1.988s	2.276s	2.480s
111.71	0.583s	1.145s	1.611s	1.984s	2.272s	2.476s
113.54	0.585s	1.145s	1.609s	1.981s	2.268s	2.472s
115.38	0.586s	1.146s	1.607s	1.977s	2.263s	2.468s
117.23	0.588s	1.146s	1.604s	1.973s	2.259s	2.464s
119.08	0.589s	1.145s	1.601s	1.969s	2.255s	2.460s
120.95	0.591s	1.145s	1.598s	1.965s	2.250s	2.456s
122.83	0.592s	1.144s	1.594s	1.960s	2.246s	2.452s
124.72	0.594s	1.142s	1.591s	1.955s	2.241s	2.448s

Distances in METERS.---Specific Gravity = 1.000.-----

CROSS CURVES OF STABILITY with - stbd Heel  
at 0.1 M. FWD TRIM (initial)



Specific Gravity = 1.000 Assumed KG = 0.00 M.  
"K" = BASELINE

CROSS CURVES OF STABILITY

Showing righting arms in heel at VCG = 0.00

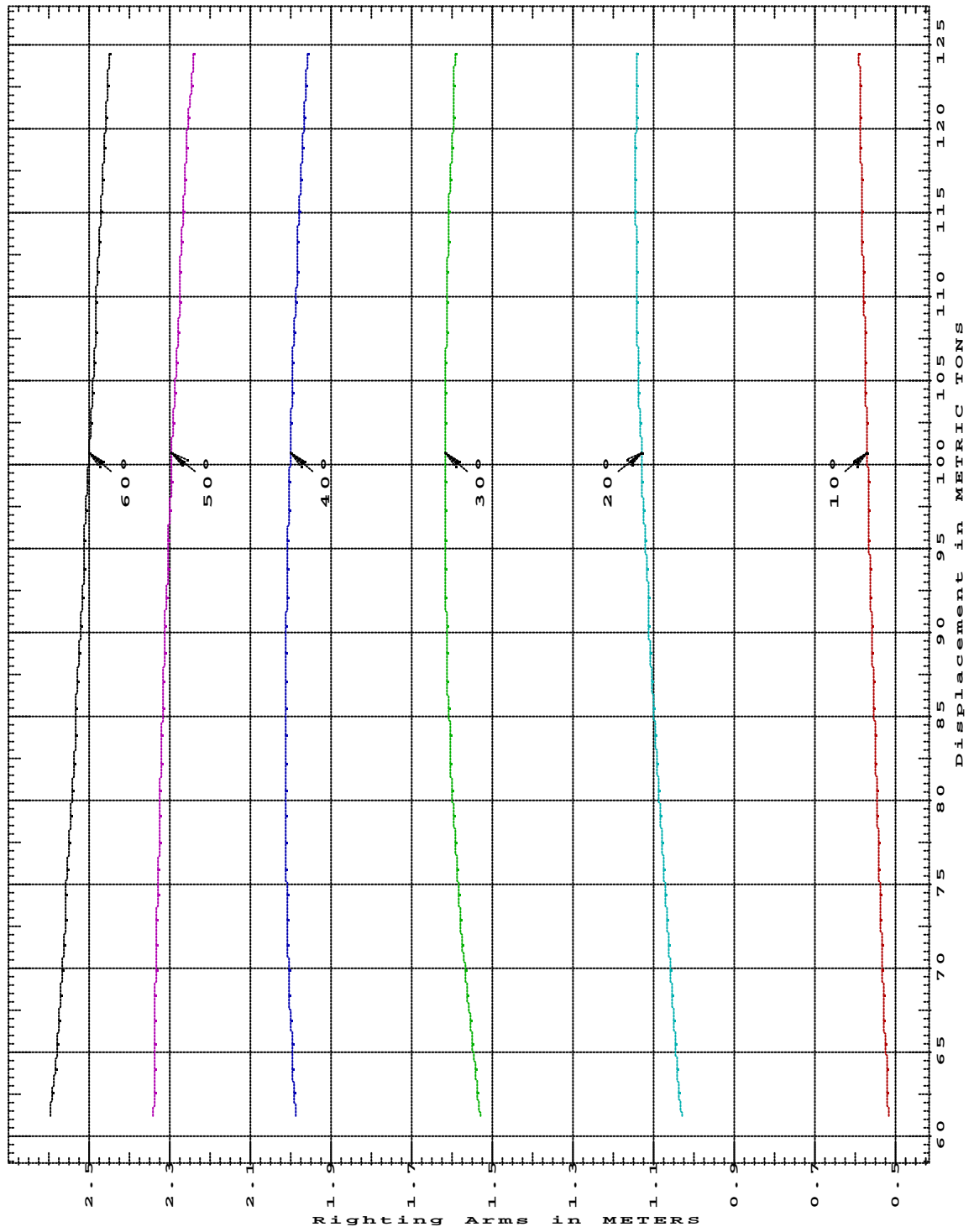
Trim: Fwd 0.200/18.200 at zero heel (trim righting arm held at zero)

Displacement METRIC TONS	Heel Angles in Degrees					
	10.00s	20.00s	30.00s	40.00s	50.00s	60.00s
61.26	0.521s	1.033s	1.532s	1.988s	2.341s	2.594s
62.66	0.523s	1.038s	1.538s	1.992s	2.340s	2.590s
64.08	0.526s	1.043s	1.545s	1.995s	2.339s	2.585s
65.51	0.528s	1.048s	1.551s	1.998s	2.338s	2.581s
66.96	0.531s	1.052s	1.557s	2.001s	2.337s	2.577s
68.42	0.533s	1.057s	1.563s	2.004s	2.336s	2.572s
69.90	0.536s	1.061s	1.569s	2.006s	2.335s	2.568s
71.39	0.538s	1.065s	1.575s	2.008s	2.334s	2.564s
72.90	0.540s	1.070s	1.580s	2.010s	2.332s	2.561s
74.42	0.542s	1.074s	1.585s	2.011s	2.331s	2.557s
75.96	0.544s	1.078s	1.589s	2.012s	2.329s	2.553s
77.52	0.547s	1.082s	1.594s	2.013s	2.328s	2.550s
79.08	0.549s	1.086s	1.598s	2.014s	2.326s	2.546s
80.66	0.551s	1.090s	1.601s	2.014s	2.324s	2.542s
82.26	0.553s	1.094s	1.604s	2.014s	2.322s	2.539s
83.87	0.555s	1.098s	1.607s	2.014s	2.320s	2.535s
85.50	0.557s	1.102s	1.610s	2.014s	2.318s	2.532s
87.14	0.559s	1.106s	1.612s	2.013s	2.316s	2.528s
88.79	0.560s	1.109s	1.614s	2.013s	2.314s	2.525s
90.46	0.562s	1.113s	1.616s	2.012s	2.311s	2.521s
92.14	0.564s	1.117s	1.617s	2.011s	2.309s	2.518s
93.83	0.566s	1.120s	1.618s	2.010s	2.306s	2.514s
95.54	0.568s	1.124s	1.619s	2.008s	2.303s	2.511s
97.26	0.570s	1.127s	1.619s	2.006s	2.301s	2.507s
98.99	0.571s	1.130s	1.620s	2.005s	2.298s	2.504s
100.74	0.573s	1.133s	1.619s	2.002s	2.295s	2.500s
102.50	0.575s	1.136s	1.619s	2.000s	2.292s	2.497s
104.27	0.576s	1.138s	1.618s	1.998s	2.288s	2.493s
106.05	0.578s	1.140s	1.617s	1.995s	2.285s	2.489s
107.84	0.580s	1.142s	1.616s	1.992s	2.281s	2.486s
109.64	0.581s	1.144s	1.614s	1.989s	2.278s	2.482s
111.46	0.583s	1.145s	1.613s	1.986s	2.274s	2.478s
113.28	0.584s	1.146s	1.611s	1.983s	2.270s	2.474s
115.12	0.586s	1.146s	1.608s	1.979s	2.266s	2.471s
116.97	0.588s	1.146s	1.606s	1.975s	2.262s	2.467s
118.82	0.589s	1.146s	1.603s	1.971s	2.257s	2.463s
120.69	0.591s	1.146s	1.600s	1.967s	2.253s	2.459s
122.57	0.592s	1.145s	1.596s	1.962s	2.248s	2.455s
124.46	0.593s	1.143s	1.592s	1.958s	2.244s	2.451s

Distances in METERS.---Specific Gravity = 1.000.-----



CROSS CURVES OF STABILITY WITH - stbd Heel  
at 0.2 M. FWD TRIM (initial)



Specific Gravity = 1.000 Assumed KG = 0.00 M.  
"K" = BASELINE

CROSS CURVES OF STABILITY

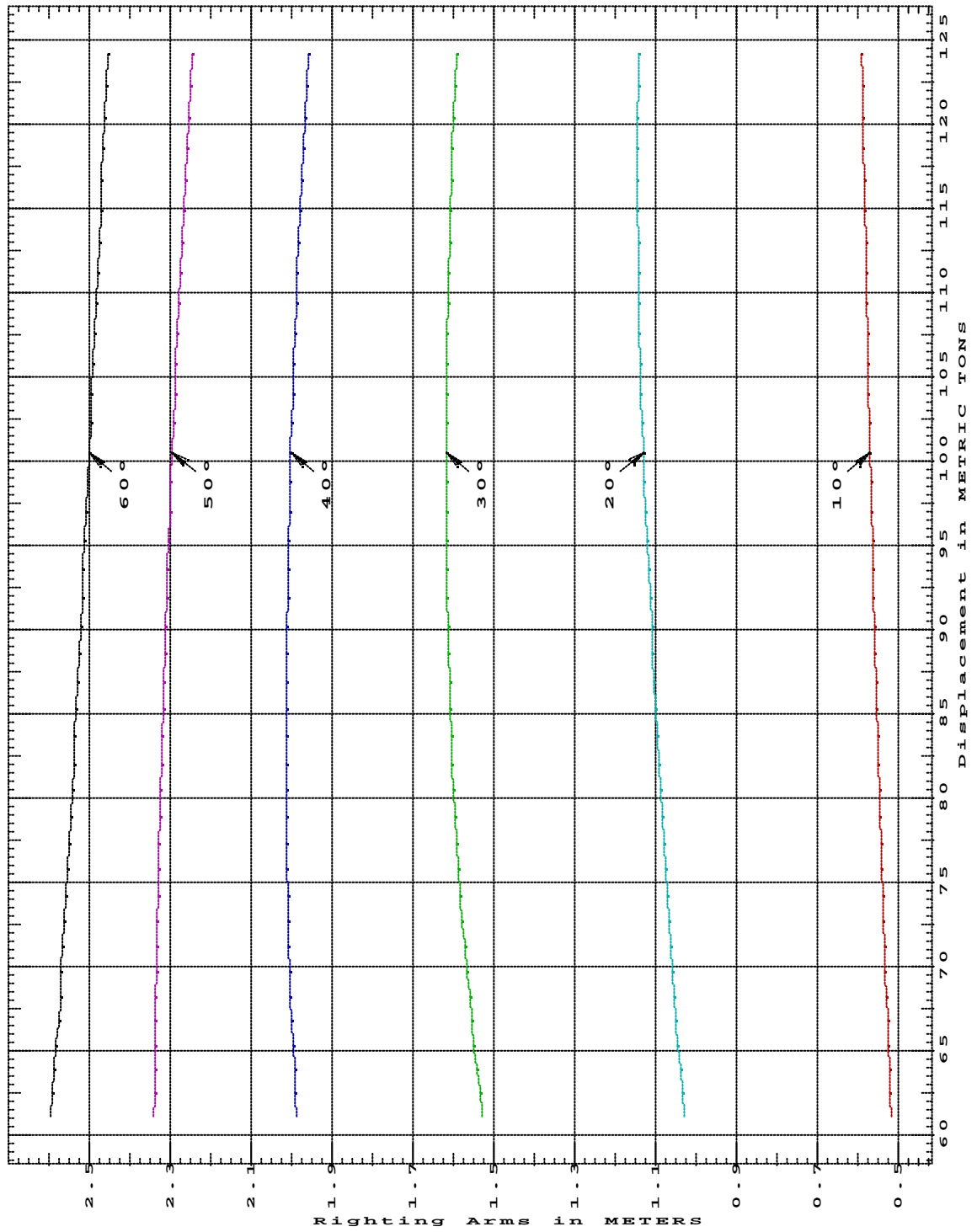
Showing righting arms in heel at VCG = 0.00

Trim: Fwd 0.300/18.200 at zero heel (trim righting arm held at zero)

Displacement METRIC TONS	Heel Angles in Degrees					
	10.00s	20.00s	30.00s	40.00s	50.00s	60.00s
61.13	0.520s	1.032s	1.530s	1.988s	2.340s	2.595s
62.53	0.523s	1.037s	1.537s	1.991s	2.340s	2.590s
63.94	0.525s	1.042s	1.543s	1.995s	2.339s	2.586s
65.37	0.528s	1.046s	1.550s	1.998s	2.338s	2.581s
66.81	0.530s	1.051s	1.556s	2.001s	2.337s	2.577s
68.27	0.533s	1.056s	1.562s	2.003s	2.336s	2.573s
69.74	0.535s	1.060s	1.568s	2.005s	2.335s	2.569s
71.23	0.537s	1.064s	1.574s	2.008s	2.334s	2.565s
72.73	0.539s	1.069s	1.579s	2.009s	2.333s	2.561s
74.25	0.542s	1.073s	1.584s	2.011s	2.331s	2.557s
75.79	0.544s	1.077s	1.588s	2.012s	2.330s	2.554s
77.34	0.546s	1.081s	1.593s	2.013s	2.328s	2.550s
78.90	0.548s	1.085s	1.597s	2.014s	2.326s	2.546s
80.48	0.550s	1.089s	1.601s	2.014s	2.324s	2.543s
82.08	0.552s	1.093s	1.604s	2.014s	2.322s	2.539s
83.68	0.554s	1.097s	1.607s	2.014s	2.321s	2.536s
85.30	0.556s	1.101s	1.610s	2.014s	2.318s	2.533s
86.94	0.558s	1.105s	1.612s	2.014s	2.316s	2.529s
88.59	0.560s	1.109s	1.614s	2.013s	2.314s	2.526s
90.25	0.562s	1.112s	1.616s	2.012s	2.312s	2.522s
91.93	0.564s	1.116s	1.617s	2.011s	2.309s	2.519s
93.62	0.566s	1.120s	1.618s	2.010s	2.307s	2.516s
95.32	0.568s	1.123s	1.619s	2.009s	2.304s	2.512s
97.04	0.569s	1.127s	1.620s	2.007s	2.302s	2.509s
98.77	0.571s	1.130s	1.620s	2.005s	2.299s	2.505s
100.51	0.573s	1.133s	1.620s	2.003s	2.296s	2.502s
102.27	0.574s	1.136s	1.619s	2.001s	2.293s	2.498s
104.04	0.576s	1.138s	1.619s	1.999s	2.289s	2.495s
105.82	0.578s	1.140s	1.618s	1.996s	2.286s	2.491s
107.61	0.579s	1.142s	1.617s	1.993s	2.283s	2.487s
109.41	0.581s	1.144s	1.615s	1.990s	2.279s	2.484s
111.22	0.583s	1.145s	1.614s	1.987s	2.275s	2.480s
113.04	0.584s	1.146s	1.612s	1.984s	2.272s	2.477s
114.88	0.586s	1.147s	1.609s	1.980s	2.268s	2.473s
116.73	0.587s	1.147s	1.607s	1.977s	2.264s	2.469s
118.58	0.589s	1.147s	1.604s	1.973s	2.260s	2.465s
120.45	0.590s	1.146s	1.601s	1.969s	2.255s	2.461s
122.32	0.592s	1.145s	1.598s	1.964s	2.251s	2.458s
124.21	0.593s	1.144s	1.594s	1.960s	2.246s	2.454s

Distances in METERS.---Specific Gravity = 1.000.-----

CROSS CURVES OF STABILITY WITH - STBD HEEL  
at 0.3 M. FWD TRIM (initial)



Specific Gravity = 1.000 Assumed KG = 0.00 M.  
"K" = BASELINE

CROSS CURVES OF STABILITY

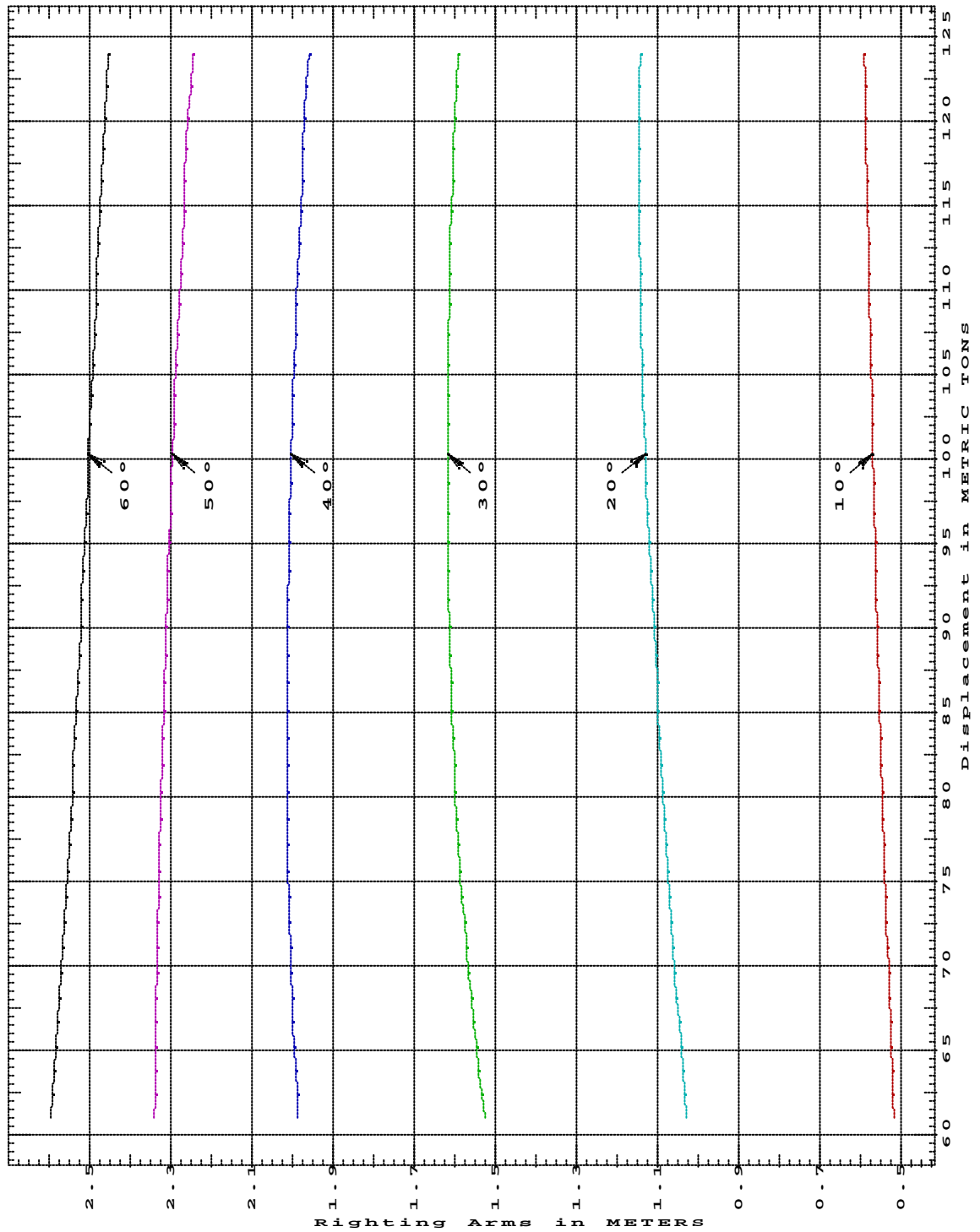
Showing righting arms in heel at VCG = 0.00

Trim: Fwd 0.400/18.200 at zero heel (trim righting arm held at zero)

Displacement METRIC TONS	Heel Angles in Degrees					
	10.00s	20.00s	30.00s	40.00s	50.00s	60.00s
61.03	0.519s	1.031s	1.529s	1.987s	2.340s	2.596s
62.42	0.522s	1.036s	1.535s	1.991s	2.340s	2.591s
63.82	0.525s	1.041s	1.542s	1.994s	2.339s	2.586s
65.25	0.527s	1.045s	1.548s	1.997s	2.338s	2.582s
66.68	0.530s	1.050s	1.555s	2.000s	2.338s	2.578s
68.14	0.532s	1.055s	1.561s	2.003s	2.337s	2.574s
69.61	0.534s	1.059s	1.567s	2.005s	2.335s	2.570s
71.09	0.537s	1.063s	1.572s	2.007s	2.334s	2.566s
72.59	0.539s	1.068s	1.578s	2.009s	2.333s	2.562s
74.11	0.541s	1.072s	1.583s	2.011s	2.331s	2.558s
75.64	0.543s	1.076s	1.588s	2.012s	2.330s	2.554s
77.18	0.546s	1.081s	1.592s	2.013s	2.328s	2.550s
78.74	0.548s	1.085s	1.596s	2.014s	2.327s	2.547s
80.32	0.550s	1.089s	1.600s	2.014s	2.325s	2.543s
81.91	0.552s	1.093s	1.603s	2.015s	2.323s	2.540s
83.52	0.554s	1.097s	1.607s	2.015s	2.321s	2.537s
85.13	0.556s	1.100s	1.609s	2.014s	2.319s	2.533s
86.77	0.558s	1.104s	1.612s	2.014s	2.317s	2.530s
88.41	0.560s	1.108s	1.614s	2.014s	2.315s	2.526s
90.07	0.562s	1.112s	1.616s	2.013s	2.312s	2.523s
91.74	0.564s	1.115s	1.617s	2.012s	2.310s	2.520s
93.43	0.565s	1.119s	1.618s	2.010s	2.308s	2.516s
95.13	0.567s	1.123s	1.619s	2.009s	2.305s	2.513s
96.84	0.569s	1.126s	1.620s	2.008s	2.302s	2.510s
98.57	0.571s	1.129s	1.620s	2.006s	2.300s	2.506s
100.31	0.573s	1.133s	1.620s	2.004s	2.297s	2.503s
102.06	0.574s	1.135s	1.620s	2.002s	2.294s	2.500s
103.83	0.576s	1.138s	1.619s	1.999s	2.290s	2.496s
105.61	0.578s	1.140s	1.619s	1.997s	2.287s	2.493s
107.40	0.579s	1.142s	1.617s	1.994s	2.284s	2.489s
109.20	0.581s	1.144s	1.616s	1.991s	2.280s	2.485s
111.01	0.583s	1.145s	1.614s	1.988s	2.277s	2.482s
112.83	0.584s	1.146s	1.612s	1.985s	2.273s	2.478s
114.66	0.586s	1.147s	1.610s	1.981s	2.269s	2.475s
116.50	0.587s	1.147s	1.608s	1.978s	2.265s	2.471s
118.36	0.589s	1.147s	1.605s	1.974s	2.261s	2.467s
120.22	0.590s	1.147s	1.602s	1.970s	2.257s	2.464s
122.10	0.592s	1.146s	1.599s	1.966s	2.253s	2.460s
123.98	0.593s	1.145s	1.595s	1.961s	2.248s	2.456s

Distances in METERS.---Specific Gravity = 1.000.-----

CROSS CURVES OF STABILITY WITH - STBD HEEL  
at 0.4 M. FWD TRIM (initial)



Specific Gravity = 1.000 Assumed KG = 0.00 M.  
"K" = BASELINE

CROSS CURVES OF STABILITY

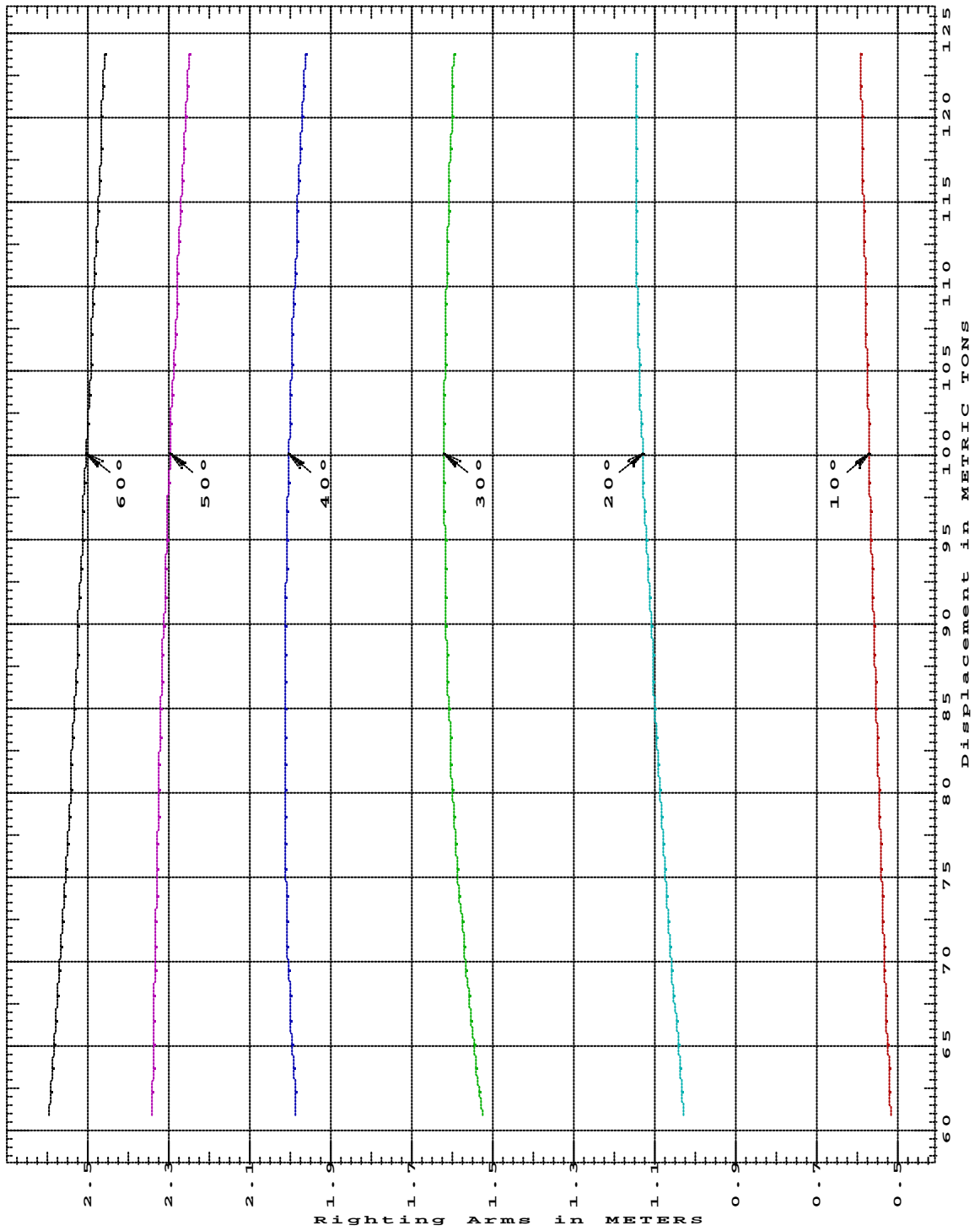
Showing righting arms in heel at VCG = 0.00

Trim: Fwd 0.500/18.200 at zero heel (trim righting arm held at zero)

Displacement METRIC TONS	Heel Angles in Degrees					
	10.00s	20.00s	30.00s	40.00s	50.00s	60.00s
60.94	0.519s	1.030s	1.527s	1.986s	2.340s	2.596s
62.33	0.521s	1.035s	1.534s	1.990s	2.340s	2.592s
63.73	0.524s	1.040s	1.541s	1.993s	2.339s	2.587s
65.15	0.527s	1.044s	1.547s	1.997s	2.338s	2.583s
66.58	0.529s	1.049s	1.553s	2.000s	2.338s	2.578s
68.03	0.531s	1.054s	1.560s	2.002s	2.337s	2.574s
69.49	0.534s	1.058s	1.566s	2.005s	2.335s	2.570s
70.98	0.536s	1.063s	1.572s	2.007s	2.334s	2.566s
72.48	0.538s	1.067s	1.577s	2.009s	2.333s	2.562s
73.99	0.541s	1.071s	1.582s	2.010s	2.332s	2.558s
75.51	0.543s	1.075s	1.587s	2.012s	2.330s	2.555s
77.06	0.545s	1.080s	1.591s	2.013s	2.328s	2.551s
78.61	0.547s	1.084s	1.596s	2.014s	2.327s	2.547s
80.18	0.549s	1.088s	1.599s	2.014s	2.325s	2.544s
81.77	0.551s	1.092s	1.603s	2.015s	2.323s	2.540s
83.37	0.554s	1.096s	1.606s	2.015s	2.321s	2.537s
84.99	0.556s	1.100s	1.609s	2.015s	2.319s	2.534s
86.62	0.558s	1.104s	1.612s	2.014s	2.317s	2.530s
88.26	0.559s	1.107s	1.614s	2.014s	2.315s	2.527s
89.91	0.561s	1.111s	1.616s	2.013s	2.313s	2.524s
91.58	0.563s	1.115s	1.617s	2.012s	2.310s	2.520s
93.27	0.565s	1.119s	1.618s	2.011s	2.308s	2.517s
94.96	0.567s	1.122s	1.619s	2.010s	2.306s	2.514s
96.67	0.569s	1.126s	1.620s	2.008s	2.303s	2.511s
98.39	0.571s	1.129s	1.620s	2.006s	2.300s	2.507s
100.13	0.572s	1.132s	1.620s	2.004s	2.297s	2.504s
101.88	0.574s	1.135s	1.620s	2.002s	2.294s	2.501s
103.64	0.576s	1.138s	1.620s	2.000s	2.291s	2.497s
105.41	0.577s	1.140s	1.619s	1.998s	2.288s	2.494s
107.20	0.579s	1.142s	1.618s	1.995s	2.285s	2.490s
109.00	0.581s	1.144s	1.617s	1.992s	2.281s	2.487s
110.81	0.582s	1.145s	1.615s	1.989s	2.278s	2.483s
112.63	0.584s	1.146s	1.613s	1.986s	2.274s	2.480s
114.46	0.586s	1.147s	1.611s	1.982s	2.271s	2.476s
116.30	0.587s	1.148s	1.608s	1.979s	2.267s	2.473s
118.16	0.589s	1.148s	1.606s	1.975s	2.263s	2.469s
120.02	0.590s	1.147s	1.603s	1.971s	2.258s	2.465s
121.89	0.592s	1.147s	1.600s	1.967s	2.254s	2.462s
123.78	0.593s	1.146s	1.596s	1.963s	2.250s	2.458s

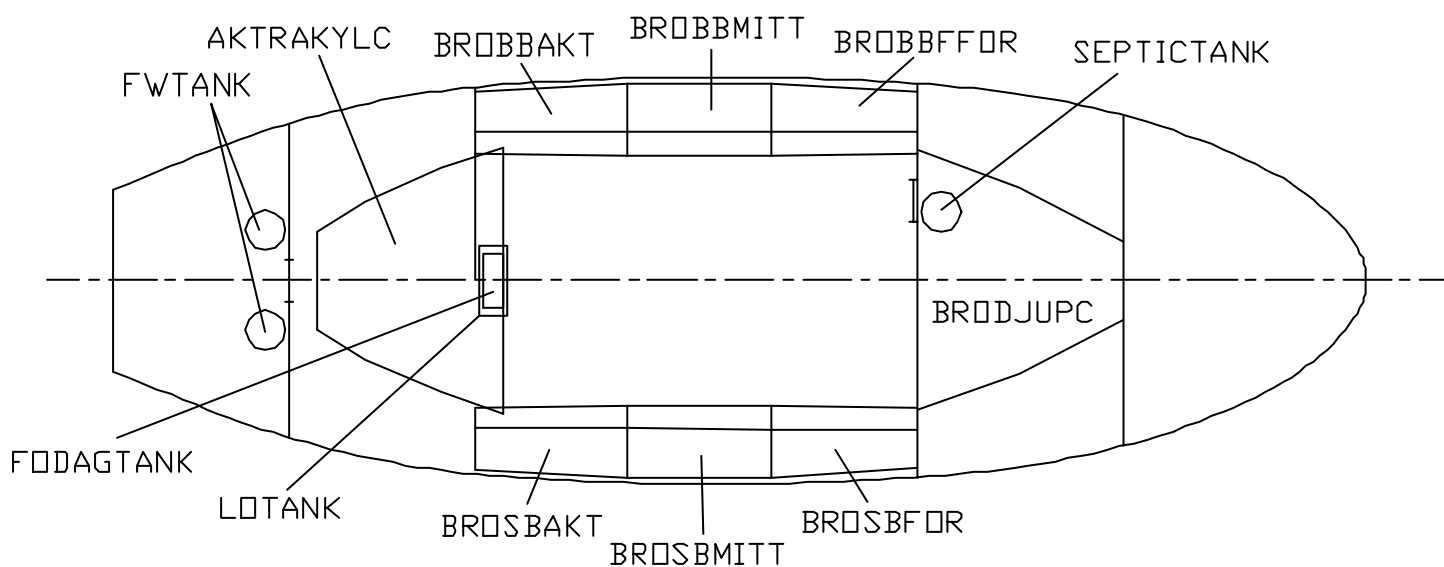
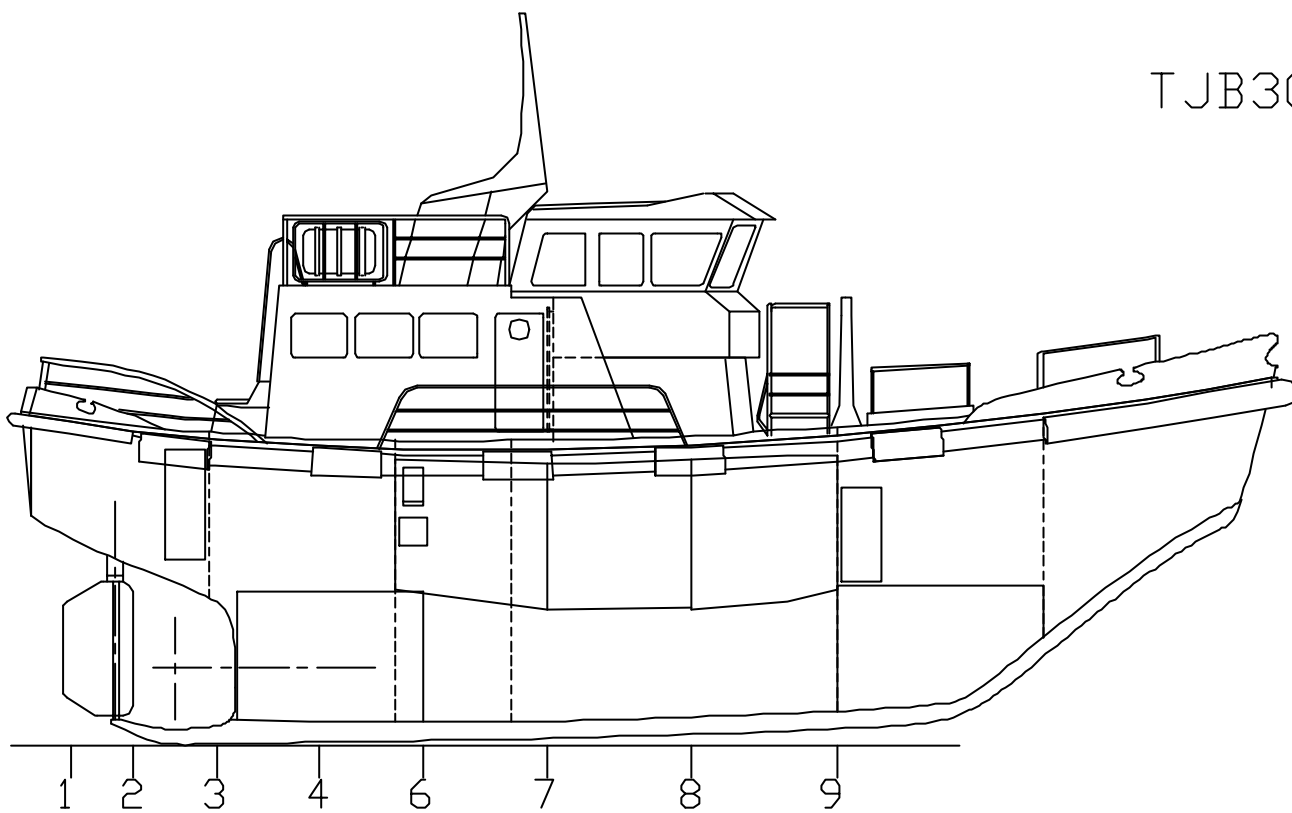
Distances in METERS.---Specific Gravity = 1.000.-----

CROSS CURVES OF STABILITY WITH - STBD HEEL  
at 0.5 M. FWD TRIM (initial)



Specific Gravity = 1.000 Assumed KG = 0.00 M.  
"K" = BASELINE

TJB30





TANK CHARACTERISTICS

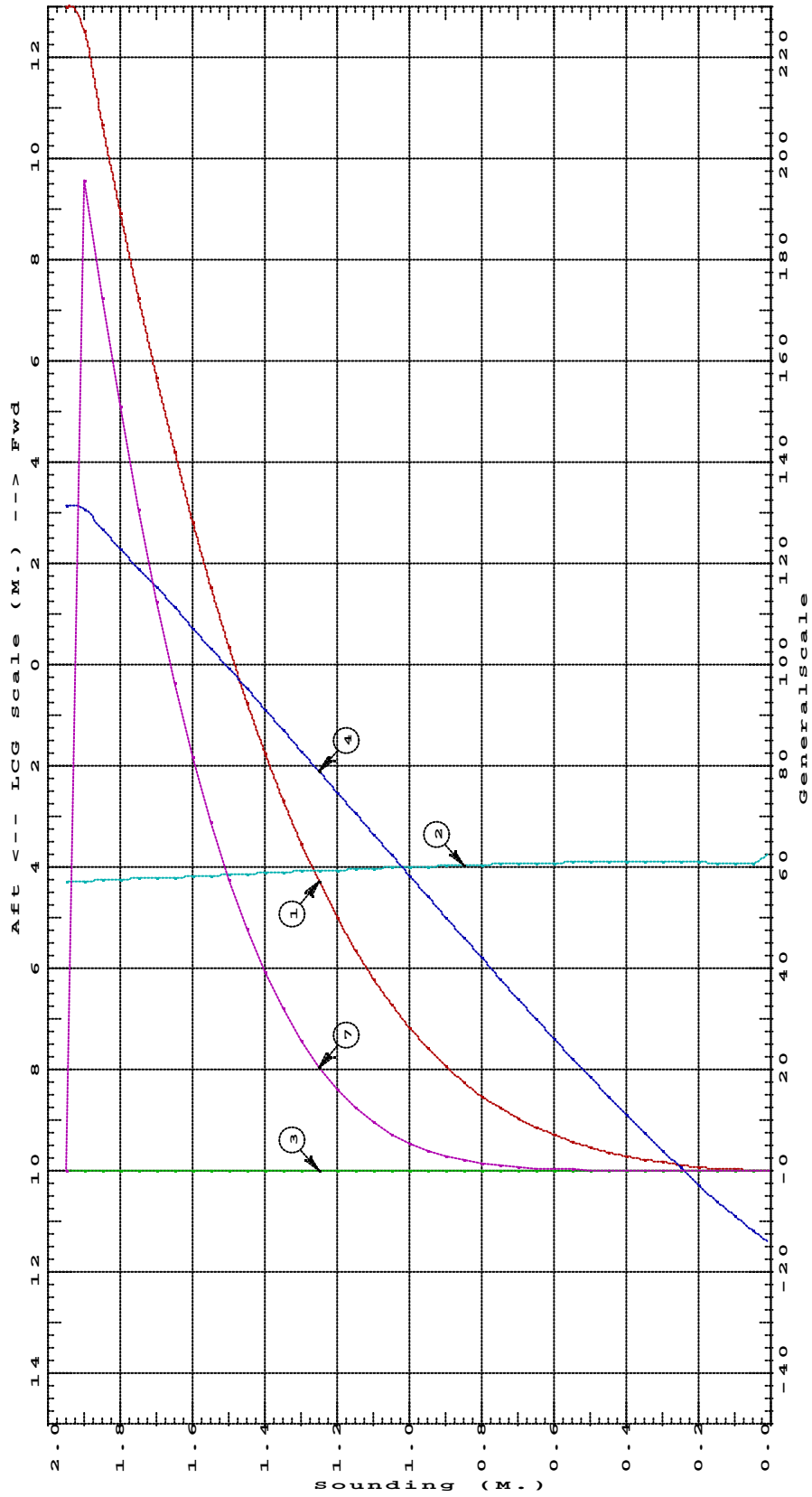
No Trim, No Heel

Tank: AKTRAKYL.C, Contents: SALT WATER at 1.025 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.000	0.00	3.751a	0.000	-0.140	0.00
50	0.002	0.00	3.932a	0.000	-0.118	0.00
100	0.005	0.01	3.925a	0.000	-0.090	0.00
150	0.010	0.01	3.916a	0.000	-0.060	0.00
200	0.015	0.02	3.906a	0.000	-0.028	0.00
250	0.023	0.02	3.899a	0.000	0.005	0.00
300	0.031	0.03	3.897a	0.000	0.040	0.00
350	0.042	0.04	3.896a	0.000	0.074	0.00
400	0.055	0.06	3.896a	0.000	0.110	0.00
450	0.071	0.07	3.900a	0.000	0.148	0.00
500	0.090	0.09	3.905a	0.000	0.185	0.00
550	0.112	0.11	3.909a	0.000	0.222	0.01
600	0.137	0.14	3.913a	0.000	0.261	0.01
650	0.167	0.17	3.921a	0.000	0.300	0.01
700	0.201	0.21	3.930a	0.000	0.340	0.02
750	0.241	0.25	3.940a	0.000	0.380	0.03
800	0.288	0.29	3.951a	0.000	0.420	0.04
850	0.341	0.35	3.963a	0.000	0.460	0.06
900	0.402	0.41	3.976a	0.000	0.501	0.08
950	0.472	0.48	3.988a	0.000	0.543	0.12
1000	0.551	0.56	4.002a	0.000	0.584	0.16
1050	0.640	0.66	4.016a	0.000	0.625	0.22
1100	0.741	0.76	4.030a	0.000	0.666	0.29
1150	0.852	0.87	4.044a	0.000	0.707	0.37
1200	0.976	1.00	4.058a	0.000	0.748	0.48
1250	1.112	1.14	4.070a	0.000	0.789	0.62
1300	1.262	1.29	4.083a	0.000	0.830	0.77
1350	1.427	1.46	4.099a	0.000	0.871	0.96
1400	1.609	1.65	4.115a	0.000	0.912	1.18
1450	1.807	1.85	4.132a	0.000	0.953	1.43
1500	2.022	2.07	4.148a	0.000	0.993	1.72
1550	2.254	2.31	4.165a	0.000	1.033	2.06
1600	2.504	2.57	4.182a	0.000	1.073	2.45
1650	2.773	2.84	4.199a	0.000	1.113	2.89
1700	3.060	3.14	4.216a	0.000	1.152	3.38
1750	3.366	3.45	4.232a	0.000	1.191	3.93
1800	3.691	3.78	4.248a	0.000	1.230	4.53
1850	4.035	4.14	4.264a	0.000	1.268	5.18
1900	4.398	4.51	4.279a	0.000	1.306	5.87
1950	4.488	4.60	4.283a	0.000	1.315	

Soundings in mm.---Other distances in METERS.-----  
 AKTRAKYL.C Reference Point: Long.= 3.300a Trans.= 0.000 Vert.= -0.147  
 (Zero Sounding is at the Reference Point.)

AKTRAKYL.C  
TANK CHARACTERISTICS at LEVEL TRIM



- ① Weight 1=.02 MT
- ② LCG (see top scale)
- ③ TCG 1=.1 M.
- ④ VCG 1=.01 M.

⑦ FSMT 1=.03 M.MT

SALT WATER Specific Gravity = 1.025

TANK CHARACTERISTICS

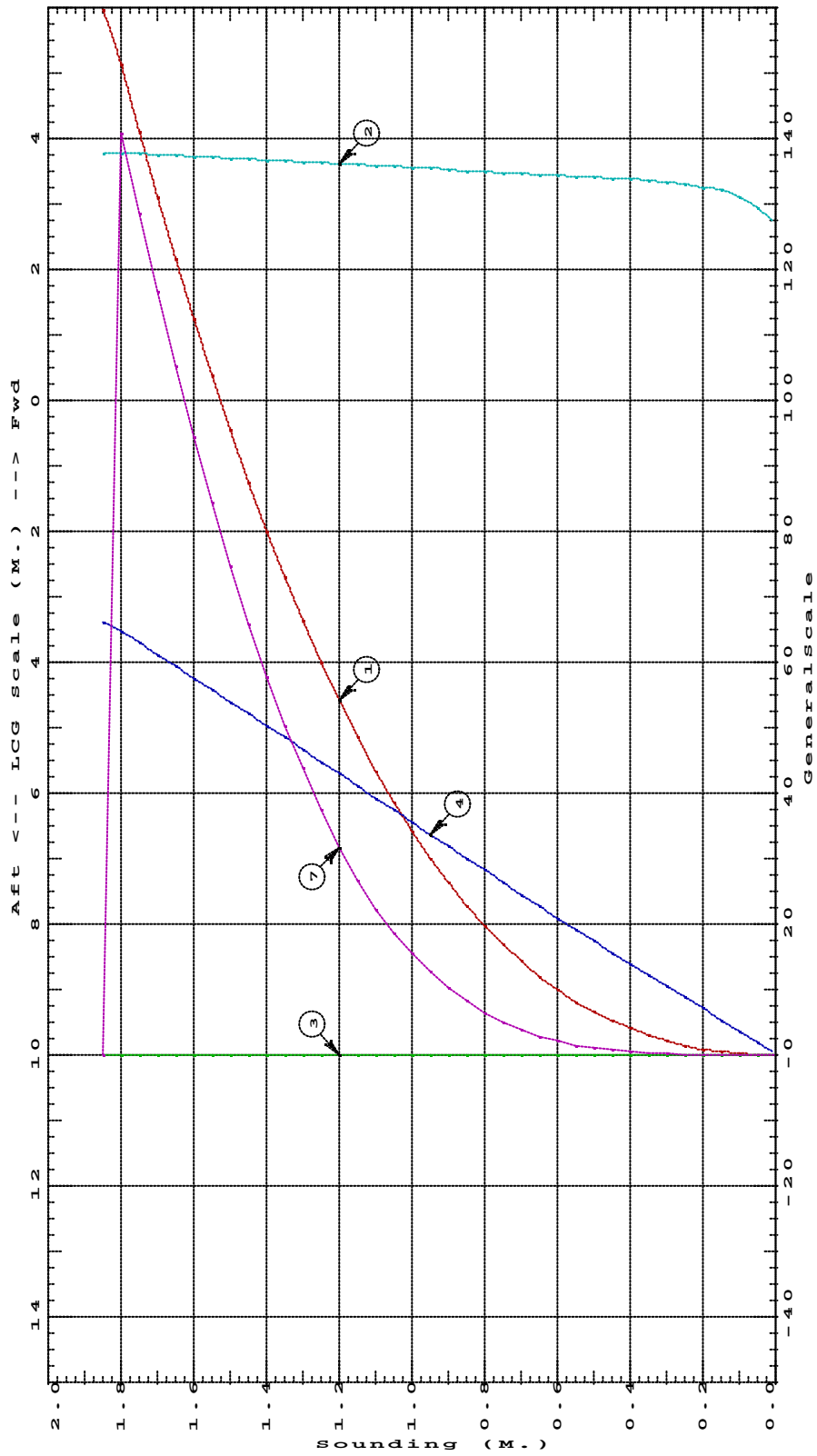
No Trim, No Heel

Tank: BRODJUP.C, Contents: FUELOIL at 0.840 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.000	0.00	2.756f	0.000	0.011	0.00
50	0.002	0.00	2.944f	0.000	0.039	0.00
100	0.007	0.01	3.115f	0.000	0.074	0.00
150	0.018	0.02	3.211f	0.000	0.108	0.00
200	0.033	0.03	3.261f	0.000	0.142	0.00
250	0.053	0.04	3.297f	0.000	0.175	0.00
300	0.078	0.07	3.328f	0.000	0.209	0.01
350	0.109	0.09	3.356f	0.000	0.243	0.01
400	0.145	0.12	3.377f	0.000	0.278	0.01
450	0.187	0.16	3.391f	0.000	0.312	0.02
500	0.236	0.20	3.406f	0.000	0.348	0.03
550	0.292	0.25	3.421f	0.000	0.383	0.04
600	0.357	0.30	3.437f	0.000	0.419	0.06
650	0.430	0.36	3.453f	0.000	0.455	0.09
700	0.512	0.43	3.469f	0.000	0.492	0.12
750	0.604	0.51	3.484f	0.000	0.528	0.15
800	0.705	0.59	3.497f	0.000	0.565	0.19
850	0.817	0.69	3.512f	0.000	0.601	0.25
900	0.939	0.79	3.526f	0.000	0.638	0.31
950	1.074	0.90	3.542f	0.000	0.675	0.38
1000	1.220	1.02	3.558f	0.000	0.712	0.46
1050	1.379	1.16	3.575f	0.000	0.749	0.56
1100	1.551	1.30	3.592f	0.000	0.786	0.67
1150	1.735	1.46	3.607f	0.000	0.822	0.80
1200	1.932	1.62	3.622f	0.000	0.859	0.95
1250	2.143	1.80	3.637f	0.000	0.896	1.13
1300	2.369	1.99	3.652f	0.000	0.933	1.31
1350	2.608	2.19	3.666f	0.000	0.970	1.51
1400	2.862	2.40	3.680f	0.000	1.006	1.73
1450	3.130	2.63	3.694f	0.000	1.043	1.98
1500	3.412	2.87	3.707f	0.000	1.079	2.24
1550	3.709	3.12	3.720f	0.000	1.116	2.53
1600	4.020	3.38	3.733f	0.000	1.152	2.83
1650	4.345	3.65	3.745f	0.000	1.188	3.16
1700	4.684	3.93	3.757f	0.000	1.223	3.50
1750	5.036	4.23	3.769f	0.000	1.259	3.86
1800	5.403	4.54	3.780f	0.000	1.295	4.23
1850	5.709	4.80	3.788f	0.000	1.323	

Soundings in mm.---Other distances in METERS.-----  
 BRODJUP.C Reference Point: Long.= 2.700f Trans.= 0.000 Vert.= 0.005  
 (Zero Sounding is at the Reference Point.)

BRODJUP.C  
TANK CHARACTERISTICS at LEVEL TRIM



① Weight 1=.03 MT  
② LCG (see top scale)

③ TCG 1=.1 M.  
④ VCG 1=.02 M.

⑦ FSMT 1=.03 M.MT

FUELOIL Specific Gravity = 0.840

TANK CHARACTERISTICS

No Trim, No Heel

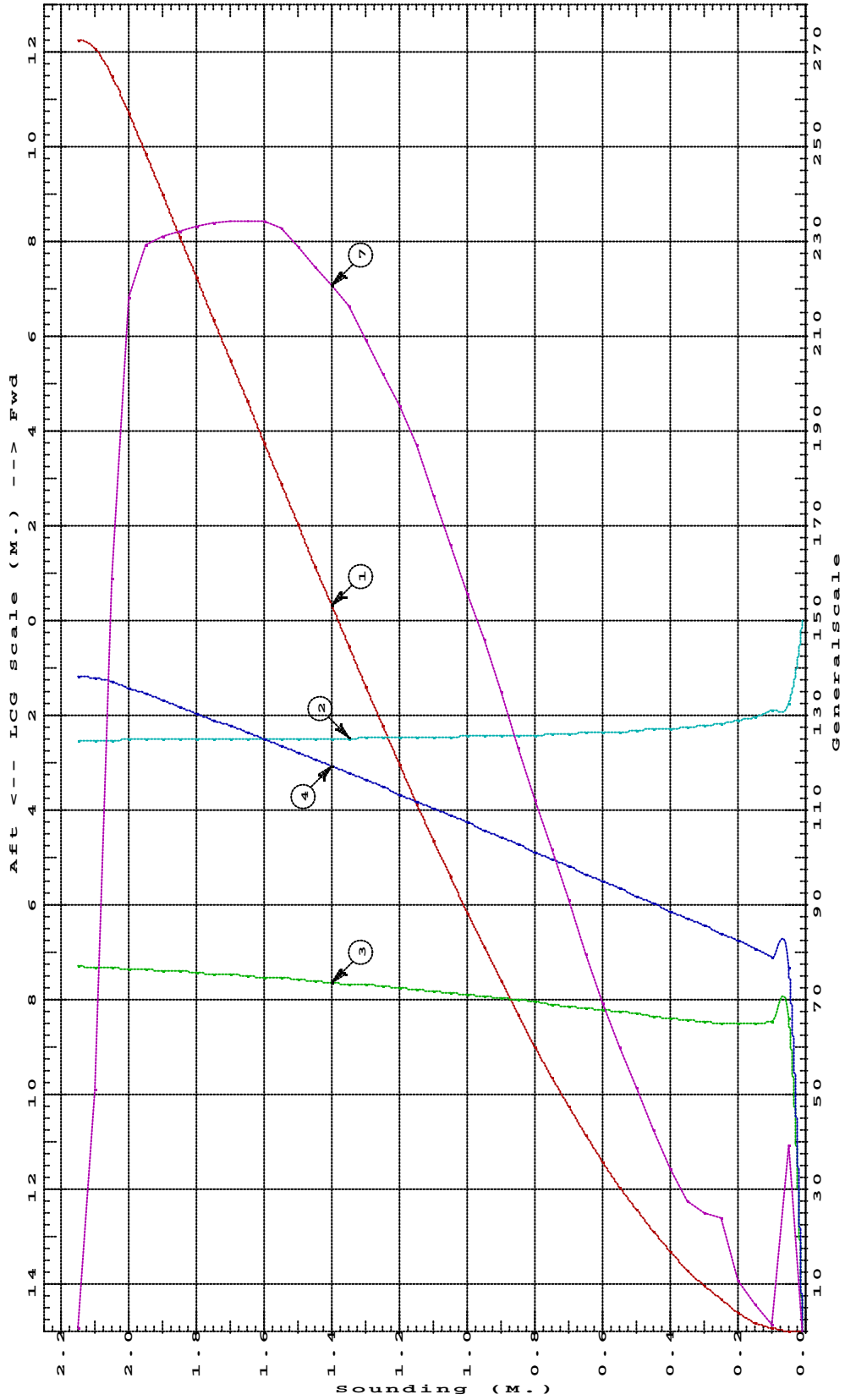
Tank: BROSBAKT.S, Contents: FUELOIL at 0.840 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.000	0.00				
50	0.001	0.00	1.733a	1.985s	1.538	0.01
100	0.005	0.00	1.910a	1.964s	1.578	0.00
150	0.016	0.01	2.020a	1.951s	1.614	0.00
200	0.033	0.03	2.107a	1.945s	1.648	0.00
250	0.055	0.05	2.178a	1.951s	1.680	0.00
300	0.080	0.07	2.211a	1.961s	1.711	0.00
350	0.108	0.09	2.244a	1.972s	1.743	0.01
400	0.140	0.12	2.274a	1.984s	1.774	0.01
450	0.175	0.15	2.299a	1.996s	1.806	0.01
500	0.213	0.18	2.322a	2.009s	1.837	0.01
550	0.254	0.21	2.342a	2.022s	1.869	0.01
600	0.299	0.25	2.359a	2.035s	1.900	0.01
650	0.345	0.29	2.375a	2.047s	1.931	0.02
700	0.395	0.33	2.388a	2.060s	1.962	0.02
750	0.447	0.38	2.401a	2.072s	1.993	0.02
800	0.501	0.42	2.412a	2.084s	2.024	0.02
850	0.557	0.47	2.421a	2.096s	2.055	0.02
900	0.615	0.52	2.430a	2.108s	2.086	0.03
950	0.675	0.57	2.438a	2.119s	2.116	0.03
1000	0.736	0.62	2.445a	2.130s	2.147	0.03
1050	0.799	0.67	2.452a	2.141s	2.177	0.03
1100	0.864	0.73	2.458a	2.152s	2.207	0.04
1150	0.930	0.78	2.464a	2.162s	2.237	0.04
1200	0.997	0.84	2.469a	2.172s	2.267	0.04
1250	1.066	0.90	2.474a	2.182s	2.296	0.04
1300	1.135	0.95	2.478a	2.192s	2.326	0.04
1350	1.205	1.01	2.482a	2.201s	2.355	0.04
1400	1.275	1.07	2.486a	2.210s	2.384	0.04
1450	1.347	1.13	2.490a	2.219s	2.413	0.04
1500	1.418	1.19	2.493a	2.227s	2.442	0.05
1550	1.490	1.25	2.496a	2.235s	2.470	0.05
1600	1.563	1.31	2.499a	2.243s	2.498	0.05
1650	1.636	1.37	2.502a	2.251s	2.526	0.05
1700	1.708	1.43	2.504a	2.258s	2.554	0.05
1750	1.781	1.50	2.507a	2.265s	2.582	0.05
1800	1.854	1.56	2.509a	2.272s	2.609	0.05
1850	1.926	1.62	2.511a	2.278s	2.636	0.05
1900	1.999	1.68	2.513a	2.285s	2.663	0.05
1950	2.071	1.74	2.515a	2.291s	2.690	0.05
2000	2.143	1.80	2.517a	2.297s	2.716	0.04
2050	2.210	1.86	2.520a	2.303s	2.741	0.03
2100	2.255	1.89	2.526a	2.308s	2.758	0.01
2150	2.271	1.91	2.530a	2.311s	2.764	0.00

Soundings in mm.---Other distances in METERS.-----

BROSBAKT.S Reference Point: Long.= 1.500a Trans.= 1.992s Vert.= 1.503  
(Zero Sounding is at the Reference Point.)

BROSBAKT.S  
TANK CHARACTERISTICS at LEVEL TRIM



- ① Weight 1=.007 MT
- ② LCG (see top scale)
- ③ TCG 1=.03 M.
- ④ VCG 1=.02 M.
- ⑦ FSMT 1=.0002 M.MT

FUELOIL Specific Gravity = 0.840

TANK CHARACTERISTICS

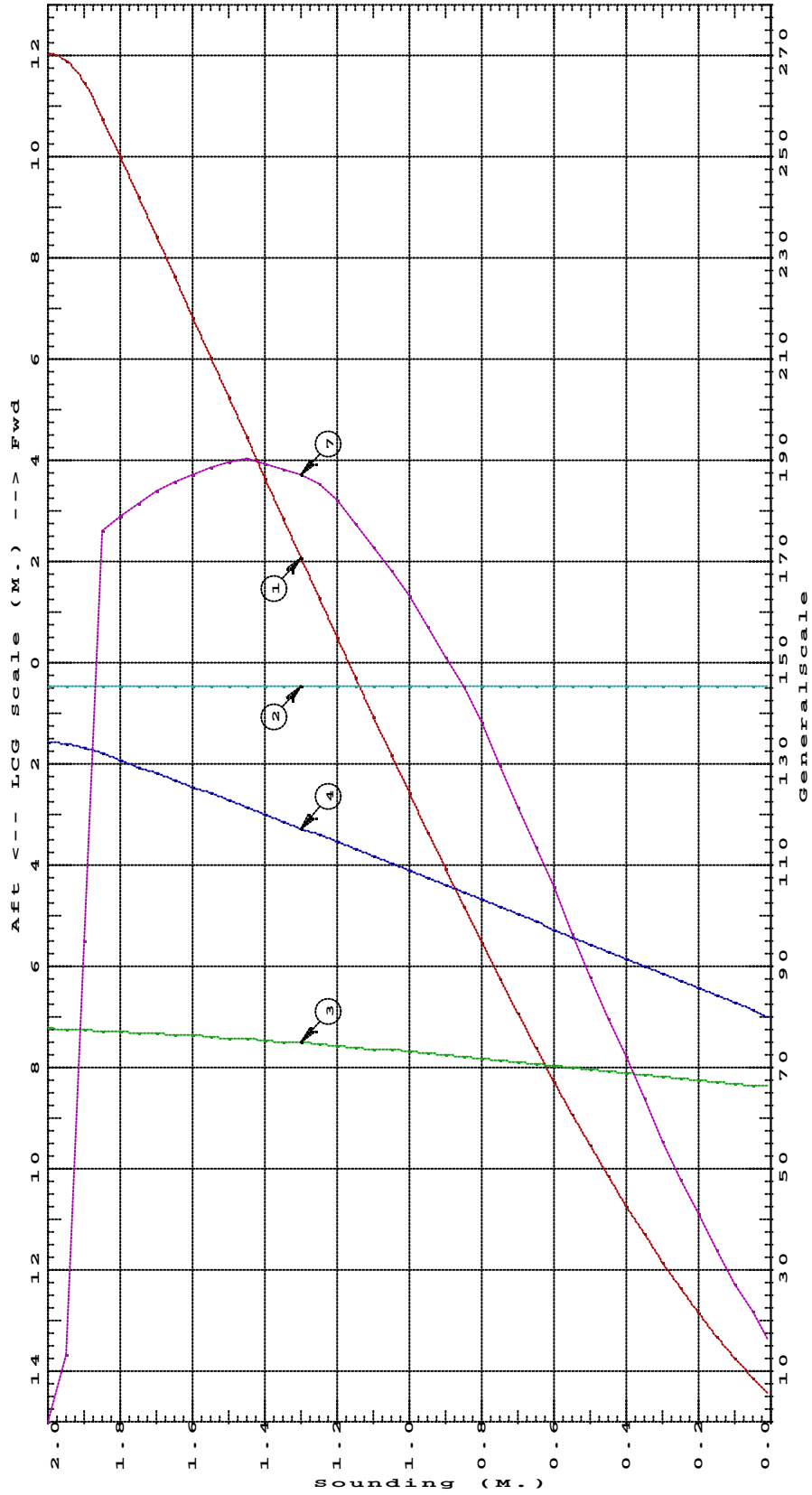
No Trim, No Heel

Tank: BROSBMITT.S, Contents: FUELOIL at 0.840 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.054	0.05	0.447a	1.997s	1.603	0.00
50	0.082	0.07	0.449a	1.996s	1.628	0.01
100	0.120	0.10	0.452a	2.003s	1.657	0.01
150	0.161	0.14	0.453a	2.012s	1.686	0.01
200	0.205	0.17	0.455a	2.023s	1.715	0.01
250	0.252	0.21	0.456a	2.034s	1.744	0.01
300	0.301	0.25	0.456a	2.045s	1.772	0.02
350	0.352	0.30	0.457a	2.057s	1.801	0.02
400	0.406	0.34	0.457a	2.068s	1.830	0.02
450	0.462	0.39	0.458a	2.080s	1.859	0.02
500	0.520	0.44	0.458a	2.091s	1.888	0.03
550	0.579	0.49	0.458a	2.102s	1.917	0.03
600	0.640	0.54	0.458a	2.113s	1.946	0.03
650	0.703	0.59	0.458a	2.124s	1.975	0.03
700	0.768	0.65	0.458a	2.135s	2.004	0.04
750	0.834	0.70	0.459a	2.145s	2.033	0.04
800	0.901	0.76	0.459a	2.155s	2.062	0.04
850	0.970	0.81	0.459a	2.165s	2.091	0.04
900	1.040	0.87	0.459a	2.175s	2.120	0.05
950	1.110	0.93	0.459a	2.185s	2.148	0.05
1000	1.182	0.99	0.459a	2.194s	2.177	0.05
1050	1.254	1.05	0.459a	2.203s	2.205	0.05
1100	1.328	1.12	0.458a	2.212s	2.234	0.05
1150	1.401	1.18	0.458a	2.220s	2.262	0.05
1200	1.476	1.24	0.458a	2.229s	2.290	0.05
1250	1.551	1.30	0.458a	2.237s	2.318	0.06
1300	1.626	1.37	0.458a	2.245s	2.346	0.06
1350	1.701	1.43	0.458a	2.253s	2.374	0.06
1400	1.777	1.49	0.458a	2.260s	2.401	0.06
1450	1.853	1.56	0.458a	2.267s	2.429	0.06
1500	1.929	1.62	0.457a	2.274s	2.456	0.06
1550	2.004	1.68	0.457a	2.281s	2.483	0.06
1600	2.080	1.75	0.457a	2.288s	2.510	0.06
1650	2.155	1.81	0.457a	2.294s	2.536	0.06
1700	2.230	1.87	0.457a	2.301s	2.563	0.06
1750	2.305	1.94	0.457a	2.307s	2.589	0.05
1800	2.379	2.00	0.456a	2.313s	2.615	0.05
1850	2.453	2.06	0.456a	2.318s	2.641	0.05
1900	2.521	2.12	0.455a	2.324s	2.664	0.03
1950	2.563	2.15	0.452a	2.329s	2.679	0.00
2000	2.575	2.16	0.451a	2.331s	2.683	0.00

Soundings in mm.---Other distances in METERS.-----  
 BROSBMITT.S Reference Point: Long.= 0.600f Trans.= 1.820s Vert.= 1.645  
 (Zero Sounding is at the Reference Point.)

BROSBMITT.S  
TANK CHARACTERISTICS at LEVEL TRIM



- ① Weight 1=.008 MT
- ② LCG (see top scale)
- ③ TCG 1=.03 M.
- ④ VCG 1=.02 M.

⑦ FSMT 1=.0003 M.MT

FUELOIL Specific Gravity = 0.840



TANK CHARACTERISTICS

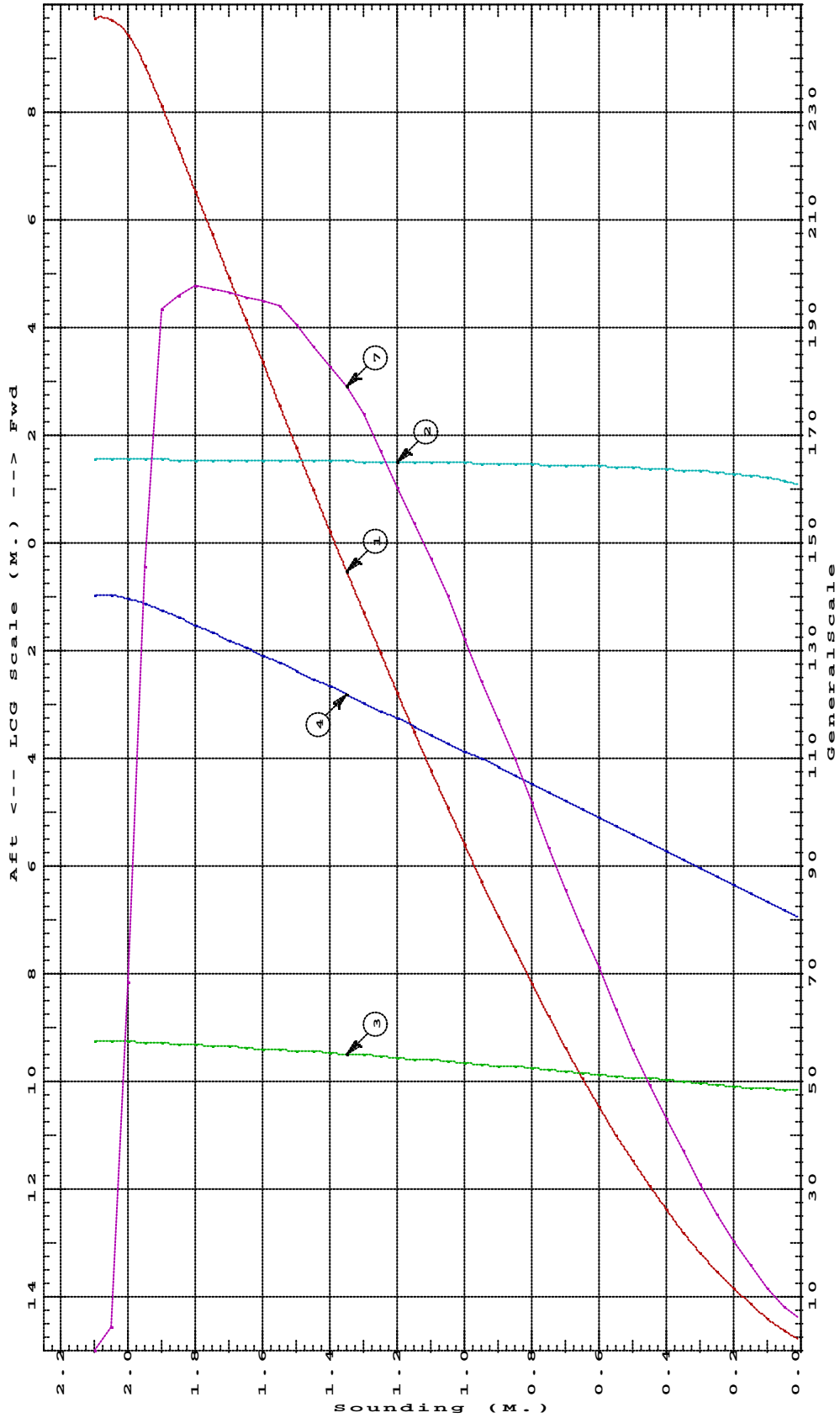
No Trim, No Heel

Tank: BROSBFOR.S, Contents: FUELOIL at 0.840 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.018	0.02	1.096f	1.941s	1.613	0.00
50	0.031	0.03	1.153f	1.939s	1.639	0.00
100	0.050	0.04	1.210f	1.945s	1.670	0.00
150	0.072	0.06	1.265f	1.952s	1.701	0.00
200	0.096	0.08	1.292f	1.963s	1.731	0.00
250	0.122	0.10	1.315f	1.974s	1.762	0.01
300	0.152	0.13	1.336f	1.985s	1.794	0.01
350	0.183	0.15	1.355f	1.996s	1.825	0.01
400	0.218	0.18	1.372f	2.008s	1.857	0.01
450	0.255	0.21	1.388f	2.019s	1.888	0.01
500	0.293	0.25	1.401f	2.031s	1.919	0.01
550	0.335	0.28	1.414f	2.042s	1.951	0.01
600	0.378	0.32	1.425f	2.053s	1.982	0.01
650	0.423	0.36	1.435f	2.065s	2.013	0.02
700	0.469	0.39	1.444f	2.075s	2.044	0.02
750	0.518	0.43	1.453f	2.086s	2.074	0.02
800	0.568	0.48	1.460f	2.097s	2.105	0.02
850	0.620	0.52	1.467f	2.107s	2.136	0.02
900	0.673	0.57	1.474f	2.118s	2.167	0.02
950	0.727	0.61	1.480f	2.128s	2.197	0.02
1000	0.783	0.66	1.486f	2.138s	2.227	0.03
1050	0.841	0.71	1.491f	2.148s	2.258	0.03
1100	0.899	0.76	1.496f	2.157s	2.288	0.03
1150	0.958	0.81	1.501f	2.167s	2.318	0.03
1200	1.019	0.86	1.505f	2.176s	2.348	0.03
1250	1.080	0.91	1.509f	2.185s	2.378	0.03
1300	1.142	0.96	1.513f	2.194s	2.407	0.03
1350	1.206	1.01	1.517f	2.203s	2.437	0.04
1400	1.269	1.07	1.520f	2.211s	2.466	0.04
1450	1.334	1.12	1.524f	2.220s	2.496	0.04
1500	1.399	1.17	1.527f	2.228s	2.525	0.04
1550	1.464	1.23	1.530f	2.236s	2.554	0.04
1600	1.530	1.29	1.533f	2.243s	2.582	0.04
1650	1.596	1.34	1.536f	2.251s	2.611	0.04
1700	1.662	1.40	1.538f	2.258s	2.639	0.04
1750	1.728	1.45	1.541f	2.265s	2.667	0.04
1800	1.795	1.51	1.543f	2.272s	2.695	0.04
1850	1.861	1.56	1.545f	2.279s	2.723	0.04
1900	1.927	1.62	1.547f	2.286s	2.750	0.04
1950	1.990	1.67	1.550f	2.292s	2.776	0.03
2000	2.038	1.71	1.556f	2.298s	2.796	0.01
2050	2.060	1.73	1.560f	2.301s	2.805	0.00
2100	2.063	1.73	1.561f	2.302s	2.807	

Soundings in mm.---Other distances in METERS.-----  
 BROSBFOR.S Reference Point: Long.= 0.600f Trans.= 1.820s Vert.= 1.645  
 (Zero Sounding is at the Reference Point.)

BROSBFOR.S  
TANK CHARACTERISTICS at LEVEL TRIM



- ① Weight 1=.007 MT
- ② LCG (see top scale)
- ③ TCG 1=.04 M.
- ④ VCG 1=.02 M.
- ⑤ FSMT 1=.0002 M.MT
- ⑦

FUELOIL Specific Gravity = 0.840

TANK CHARACTERISTICS

No Trim, No Heel

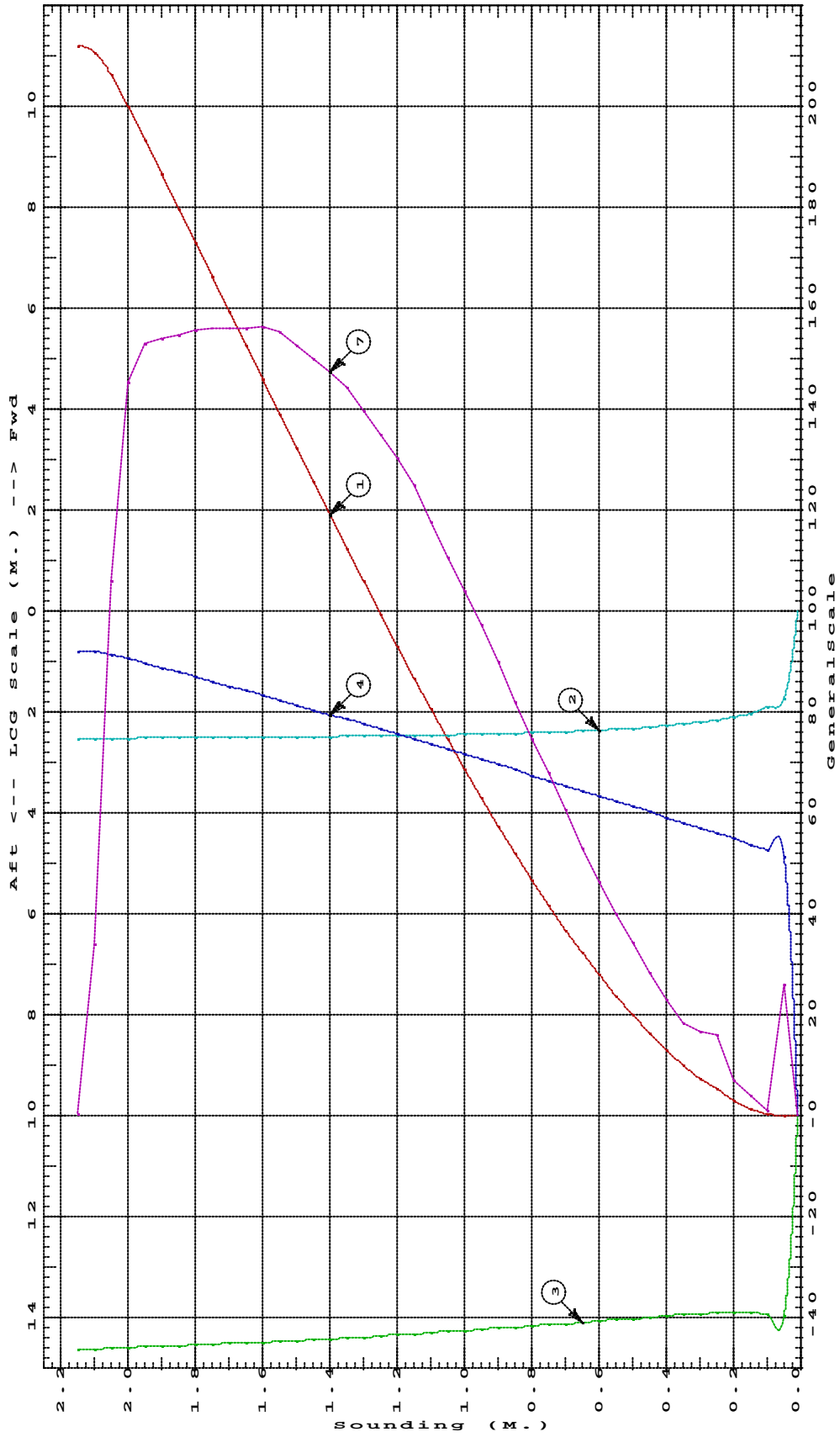
Tank: BROBBAKT.P, Contents: FUELOIL at 0.840 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.000	0.00				
50	0.001	0.00	1.733a	1.985p	1.538	0.01
100	0.005	0.00	1.910a	1.964p	1.578	0.00
150	0.016	0.01	2.020a	1.951p	1.614	0.00
200	0.033	0.03	2.107a	1.945p	1.648	0.00
250	0.055	0.05	2.178a	1.951p	1.680	0.00
300	0.080	0.07	2.211a	1.961p	1.711	0.00
350	0.108	0.09	2.244a	1.972p	1.743	0.01
400	0.140	0.12	2.274a	1.984p	1.774	0.01
450	0.175	0.15	2.299a	1.996p	1.806	0.01
500	0.213	0.18	2.322a	2.009p	1.837	0.01
550	0.254	0.21	2.342a	2.022p	1.869	0.01
600	0.299	0.25	2.359a	2.035p	1.900	0.01
650	0.345	0.29	2.375a	2.047p	1.931	0.02
700	0.395	0.33	2.388a	2.060p	1.962	0.02
750	0.447	0.38	2.401a	2.072p	1.993	0.02
800	0.501	0.42	2.412a	2.084p	2.024	0.02
850	0.557	0.47	2.421a	2.096p	2.055	0.02
900	0.615	0.52	2.430a	2.108p	2.086	0.03
950	0.675	0.57	2.438a	2.119p	2.116	0.03
1000	0.736	0.62	2.445a	2.130p	2.147	0.03
1050	0.799	0.67	2.452a	2.141p	2.177	0.03
1100	0.864	0.73	2.458a	2.152p	2.207	0.04
1150	0.930	0.78	2.464a	2.162p	2.237	0.04
1200	0.997	0.84	2.469a	2.172p	2.267	0.04
1250	1.066	0.90	2.474a	2.182p	2.296	0.04
1300	1.135	0.95	2.478a	2.192p	2.326	0.04
1350	1.205	1.01	2.482a	2.201p	2.355	0.04
1400	1.275	1.07	2.486a	2.210p	2.384	0.04
1450	1.347	1.13	2.490a	2.219p	2.413	0.04
1500	1.418	1.19	2.493a	2.227p	2.442	0.05
1550	1.490	1.25	2.496a	2.235p	2.470	0.05
1600	1.563	1.31	2.499a	2.243p	2.498	0.05
1650	1.636	1.37	2.502a	2.251p	2.526	0.05
1700	1.708	1.43	2.504a	2.258p	2.554	0.05
1750	1.781	1.50	2.507a	2.265p	2.582	0.05
1800	1.854	1.56	2.509a	2.272p	2.609	0.05
1850	1.926	1.62	2.511a	2.278p	2.636	0.05
1900	1.999	1.68	2.513a	2.285p	2.663	0.05
1950	2.071	1.74	2.515a	2.291p	2.690	0.05
2000	2.143	1.80	2.517a	2.297p	2.716	0.04
2050	2.210	1.86	2.520a	2.303p	2.741	0.03
2100	2.255	1.89	2.526a	2.308p	2.758	0.01
2150	2.271	1.91	2.530a	2.311p	2.764	0.00

Soundings in mm.---Other distances in METERS.-----

BROBBAKT.P Reference Point: Long.= 1.500a Trans.= 1.992p Vert.= 1.503  
(Zero Sounding is at the Reference Point.)

BROBBAKT.P  
TANK CHARACTERISTICS at LEVEL TRIM



- ① Weight 1=.009 MT
- ② LCG (see top scale)
- ③ TCG 1=.05 M.
- ④ VCG 1=.03 M.
- ⑤ VCG
- ⑦ FSMT 1=.0003 M.MT

FUELOIL Specific Gravity = 0.840

TANK CHARACTERISTICS

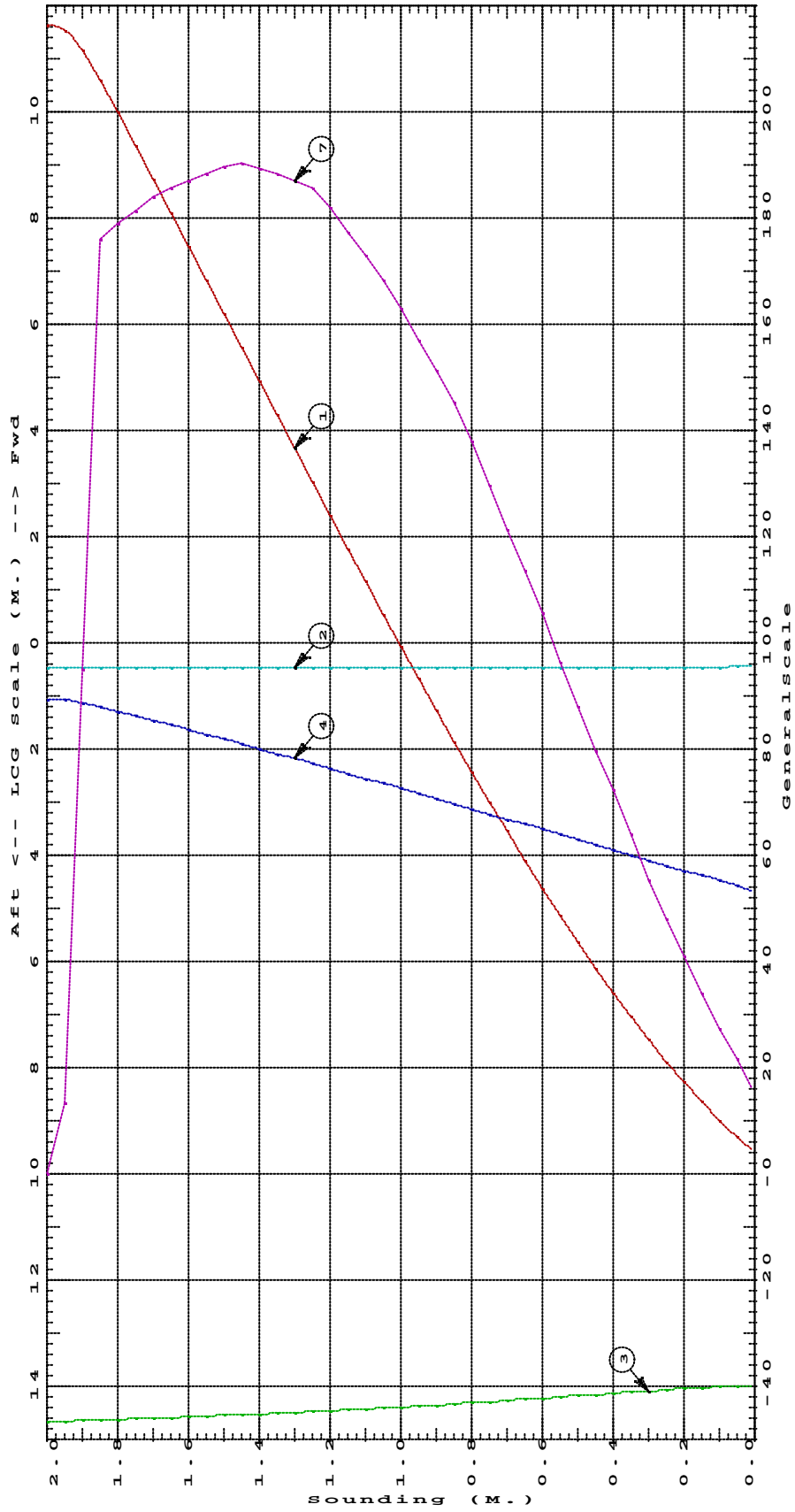
No Trim, No Heel

Tank: BROBBMITT.P, Contents: FUELOIL at 0.840 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.054	0.05	0.447a	1.997p	1.603	0.00
50	0.082	0.07	0.449a	1.996p	1.628	0.01
100	0.120	0.10	0.452a	2.003p	1.657	0.01
150	0.161	0.14	0.453a	2.012p	1.686	0.01
200	0.205	0.17	0.455a	2.023p	1.715	0.01
250	0.252	0.21	0.456a	2.034p	1.744	0.01
300	0.301	0.25	0.456a	2.045p	1.772	0.02
350	0.352	0.30	0.457a	2.057p	1.801	0.02
400	0.406	0.34	0.457a	2.068p	1.830	0.02
450	0.462	0.39	0.458a	2.080p	1.859	0.02
500	0.520	0.44	0.458a	2.091p	1.888	0.03
550	0.579	0.49	0.458a	2.102p	1.917	0.03
600	0.640	0.54	0.458a	2.113p	1.946	0.03
650	0.703	0.59	0.458a	2.124p	1.975	0.03
700	0.768	0.65	0.458a	2.135p	2.004	0.04
750	0.834	0.70	0.459a	2.145p	2.033	0.04
800	0.901	0.76	0.459a	2.155p	2.062	0.04
850	0.970	0.81	0.459a	2.165p	2.091	0.04
900	1.040	0.87	0.459a	2.175p	2.120	0.05
950	1.110	0.93	0.459a	2.185p	2.148	0.05
1000	1.182	0.99	0.459a	2.194p	2.177	0.05
1050	1.254	1.05	0.459a	2.203p	2.205	0.05
1100	1.328	1.12	0.458a	2.212p	2.234	0.05
1150	1.401	1.18	0.458a	2.220p	2.262	0.05
1200	1.476	1.24	0.458a	2.229p	2.290	0.05
1250	1.551	1.30	0.458a	2.237p	2.318	0.06
1300	1.626	1.37	0.458a	2.245p	2.346	0.06
1350	1.701	1.43	0.458a	2.253p	2.374	0.06
1400	1.777	1.49	0.458a	2.260p	2.401	0.06
1450	1.853	1.56	0.458a	2.267p	2.429	0.06
1500	1.929	1.62	0.457a	2.274p	2.456	0.06
1550	2.004	1.68	0.457a	2.281p	2.483	0.06
1600	2.080	1.75	0.457a	2.288p	2.510	0.06
1650	2.155	1.81	0.457a	2.294p	2.536	0.06
1700	2.230	1.87	0.457a	2.301p	2.563	0.06
1750	2.305	1.94	0.457a	2.307p	2.589	0.05
1800	2.379	2.00	0.456a	2.313p	2.615	0.05
1850	2.453	2.06	0.456a	2.318p	2.641	0.05
1900	2.521	2.12	0.455a	2.324p	2.664	0.03
1950	2.563	2.15	0.452a	2.329p	2.679	0.00
2000	2.575	2.16	0.451a	2.331p	2.683	0.00

Soundings in mm.---Other distances in METERS.-----  
 BROBBMITT.P Reference Point: Long.= 0.600f Trans.= 1.820p Vert.= 1.645  
 (Zero Sounding is at the Reference Point.)

BROBBMITT.P  
TANK CHARACTERISTICS at LEVEL TRIM



- ① Weight 1 = .01 MT
- ② LCG (see top scale)
- ③ TCG 1 = .05 M.
- ④ VCG 1 = .03 M.
- ⑦ FSMT 1 = .0003 M.MT

FUELOIL Specific Gravity = 0.840

TANK CHARACTERISTICS

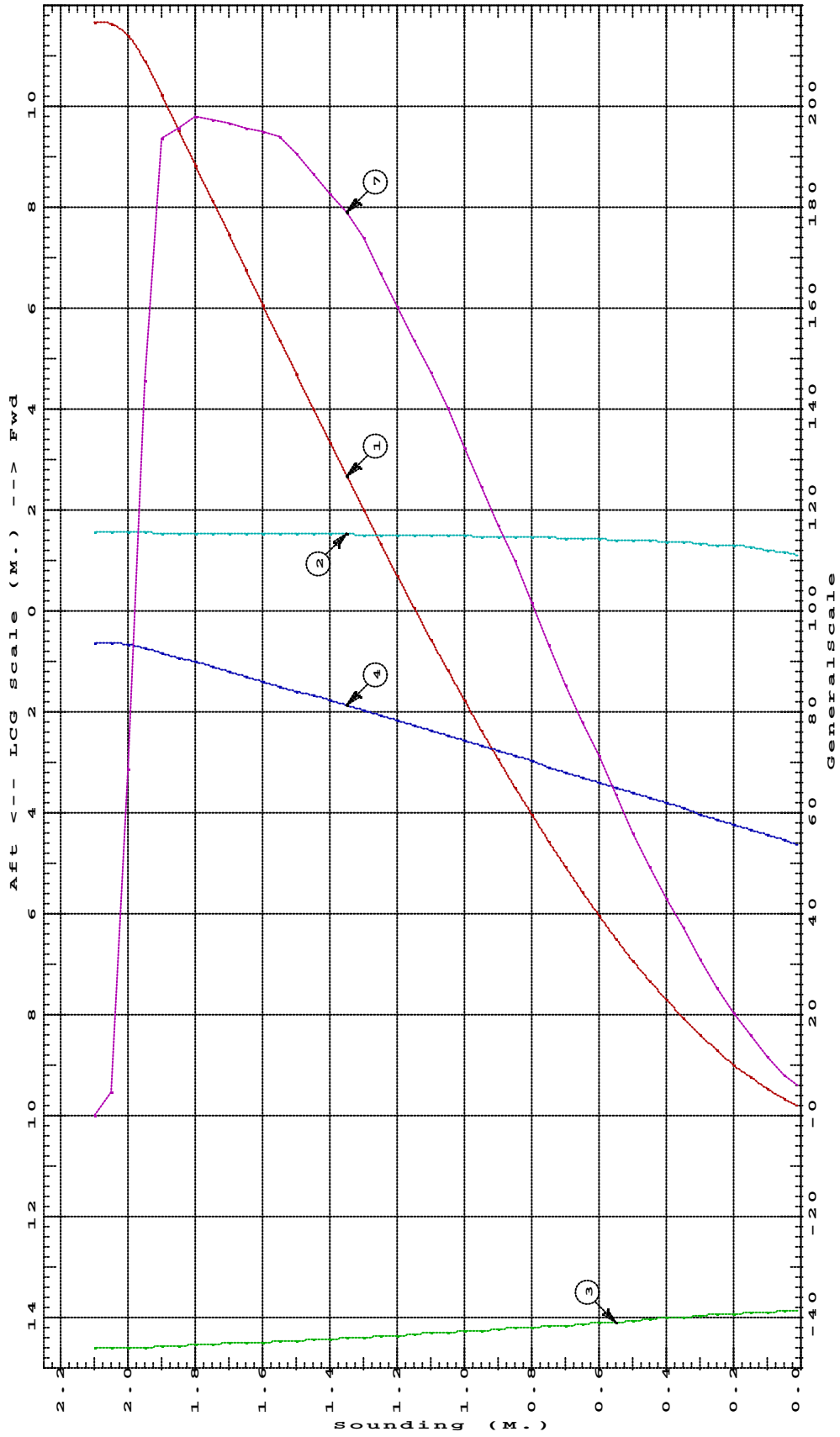
No Trim, No Heel

Tank: BROBBFOR.P, Contents: FUELOIL at 0.840 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.018	0.02	1.096f	1.941p	1.613	0.00
50	0.031	0.03	1.153f	1.939p	1.639	0.00
100	0.050	0.04	1.210f	1.945p	1.670	0.00
150	0.072	0.06	1.265f	1.952p	1.701	0.00
200	0.096	0.08	1.292f	1.963p	1.731	0.00
250	0.122	0.10	1.315f	1.974p	1.762	0.01
300	0.152	0.13	1.336f	1.985p	1.794	0.01
350	0.183	0.15	1.355f	1.996p	1.825	0.01
400	0.218	0.18	1.372f	2.008p	1.857	0.01
450	0.255	0.21	1.388f	2.019p	1.888	0.01
500	0.293	0.25	1.401f	2.031p	1.919	0.01
550	0.335	0.28	1.414f	2.042p	1.951	0.01
600	0.378	0.32	1.425f	2.053p	1.982	0.01
650	0.423	0.36	1.435f	2.065p	2.013	0.02
700	0.469	0.39	1.444f	2.075p	2.044	0.02
750	0.518	0.43	1.453f	2.086p	2.074	0.02
800	0.568	0.48	1.460f	2.097p	2.105	0.02
850	0.620	0.52	1.467f	2.107p	2.136	0.02
900	0.673	0.57	1.474f	2.118p	2.167	0.02
950	0.727	0.61	1.480f	2.128p	2.197	0.02
1000	0.783	0.66	1.486f	2.138p	2.227	0.03
1050	0.841	0.71	1.491f	2.148p	2.258	0.03
1100	0.899	0.76	1.496f	2.157p	2.288	0.03
1150	0.958	0.81	1.501f	2.167p	2.318	0.03
1200	1.019	0.86	1.505f	2.176p	2.348	0.03
1250	1.080	0.91	1.509f	2.185p	2.378	0.03
1300	1.142	0.96	1.513f	2.194p	2.407	0.03
1350	1.206	1.01	1.517f	2.203p	2.437	0.04
1400	1.269	1.07	1.520f	2.211p	2.466	0.04
1450	1.334	1.12	1.524f	2.220p	2.496	0.04
1500	1.399	1.17	1.527f	2.228p	2.525	0.04
1550	1.464	1.23	1.530f	2.236p	2.554	0.04
1600	1.530	1.29	1.533f	2.243p	2.582	0.04
1650	1.596	1.34	1.536f	2.251p	2.611	0.04
1700	1.662	1.40	1.538f	2.258p	2.639	0.04
1750	1.728	1.45	1.541f	2.265p	2.667	0.04
1800	1.795	1.51	1.543f	2.272p	2.695	0.04
1850	1.861	1.56	1.545f	2.279p	2.723	0.04
1900	1.927	1.62	1.547f	2.286p	2.750	0.04
1950	1.990	1.67	1.550f	2.292p	2.776	0.03
2000	2.038	1.71	1.556f	2.298p	2.796	0.01
2050	2.060	1.73	1.560f	2.301p	2.805	0.00
2100	2.063	1.73	1.561f	2.302p	2.807	

Soundings in mm.---Other distances in METERS.-----  
 BROBBFOR.P Reference Point: Long.= 0.600f Trans.= 1.820p Vert.= 1.645  
 (Zero Sounding is at the Reference Point.)

BROBBFOR.P  
TANK CHARACTERISTICS at LEVEL TRIM



- ① Weight 1=.008 MT
- ② LCG (see top scale)
- ③ TCG 1=.05 M.
- ④ VCG 1=.03 M.
- ⑦ FSMT 1=.0002 M.MT

FUELOIL Specific Gravity = 0.840



TANK CHARACTERISTICS

No Trim, No Heel

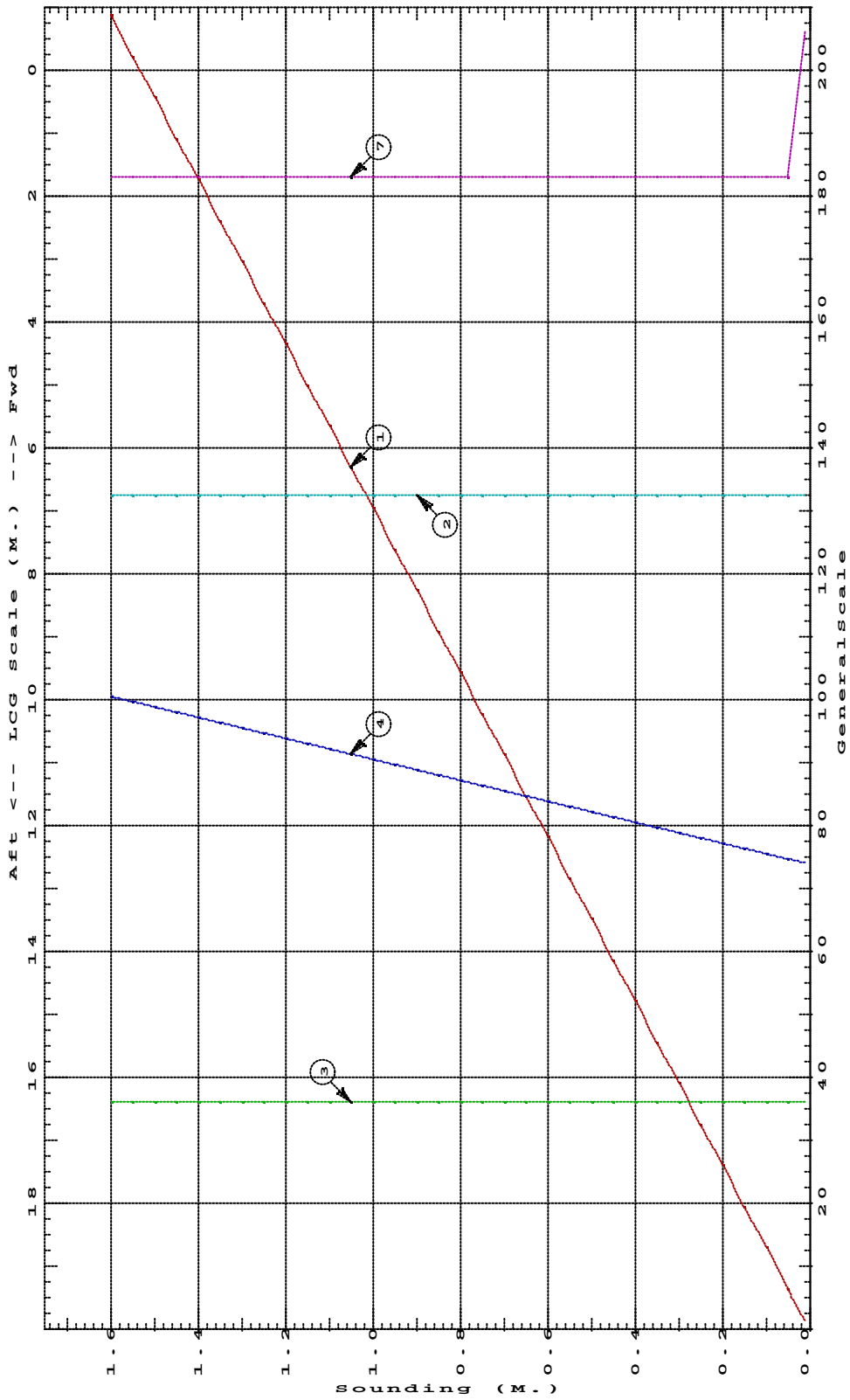
Tank: FWTANK.S, Contents: FRESH WATER at 1.000 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.003	0.00	6.750a	0.725s	2.225	0.01
50	0.013	0.01	6.750a	0.725s	2.245	0.01
100	0.026	0.03	6.750a	0.725s	2.270	0.01
150	0.039	0.04	6.750a	0.725s	2.295	0.01
200	0.052	0.05	6.750a	0.725s	2.320	0.01
250	0.065	0.07	6.750a	0.725s	2.345	0.01
300	0.078	0.08	6.750a	0.725s	2.370	0.01
350	0.091	0.09	6.750a	0.725s	2.395	0.01
400	0.104	0.10	6.750a	0.725s	2.420	0.01
450	0.117	0.12	6.750a	0.725s	2.445	0.01
500	0.130	0.13	6.750a	0.725s	2.470	0.01
550	0.144	0.14	6.750a	0.725s	2.495	0.01
600	0.157	0.16	6.750a	0.725s	2.520	0.01
650	0.170	0.17	6.750a	0.725s	2.545	0.01
700	0.183	0.18	6.750a	0.725s	2.570	0.01
750	0.196	0.20	6.750a	0.725s	2.595	0.01
800	0.209	0.21	6.750a	0.725s	2.620	0.01
850	0.222	0.22	6.750a	0.725s	2.645	0.01
900	0.235	0.23	6.750a	0.725s	2.670	0.01
950	0.248	0.25	6.750a	0.725s	2.695	0.01
1000	0.261	0.26	6.750a	0.725s	2.720	0.01
1050	0.274	0.27	6.750a	0.725s	2.745	0.01
1100	0.287	0.29	6.750a	0.725s	2.770	0.01
1150	0.300	0.30	6.750a	0.725s	2.795	0.01
1200	0.313	0.31	6.750a	0.725s	2.820	0.01
1250	0.326	0.33	6.750a	0.725s	2.845	0.01
1300	0.339	0.34	6.750a	0.725s	2.870	0.01
1350	0.352	0.35	6.750a	0.725s	2.895	0.01
1400	0.365	0.37	6.750a	0.725s	2.920	0.01
1450	0.379	0.38	6.750a	0.725s	2.945	0.01
1500	0.392	0.39	6.750a	0.725s	2.970	0.01
1550	0.405	0.40	6.750a	0.725s	2.995	0.01
1600	0.418	0.42	6.750a	0.725s	3.020	0.01

Soundings in mm.---Other distances in METERS.-----

FWTANK.S Reference Point: Long.= 6.750a Trans.= 0.725s Vert.= 2.220  
(Zero Sounding is at the Reference Point.)

FWTANK.S  
TANK CHARACTERISTICS at LEVEL TRIM



FRESH WATER Specific Gravity = 1.000

TANK CHARACTERISTICS

No Trim, No Heel

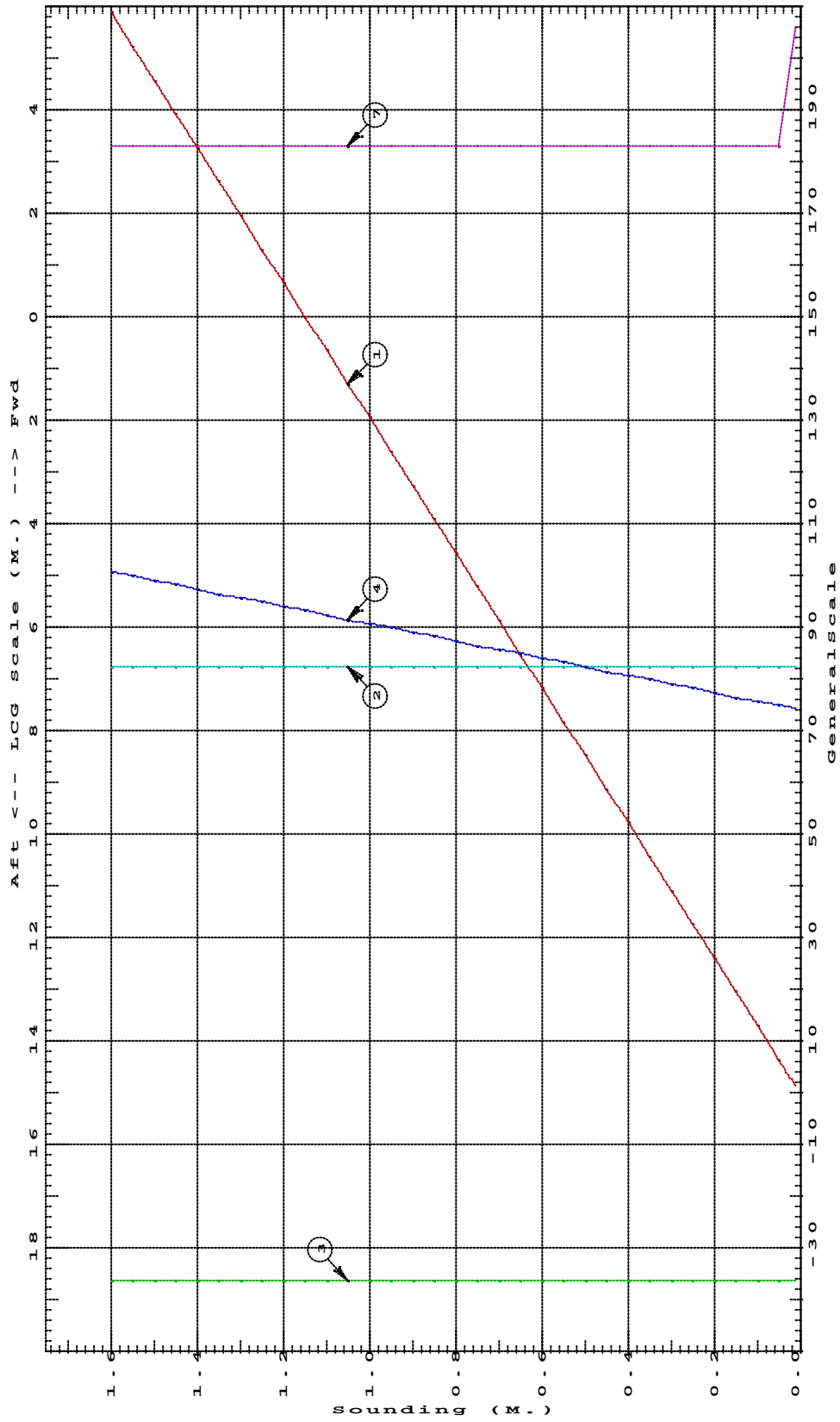
Tank: FWTANK.P, Contents: FRESH WATER at 1.000 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.003	0.00	6.750a	0.725p	2.225	0.01
50	0.013	0.01	6.750a	0.725p	2.245	0.01
100	0.026	0.03	6.750a	0.725p	2.270	0.01
150	0.039	0.04	6.750a	0.725p	2.295	0.01
200	0.052	0.05	6.750a	0.725p	2.320	0.01
250	0.065	0.07	6.750a	0.725p	2.345	0.01
300	0.078	0.08	6.750a	0.725p	2.370	0.01
350	0.091	0.09	6.750a	0.725p	2.395	0.01
400	0.104	0.10	6.750a	0.725p	2.420	0.01
450	0.117	0.12	6.750a	0.725p	2.445	0.01
500	0.130	0.13	6.750a	0.725p	2.470	0.01
550	0.144	0.14	6.750a	0.725p	2.495	0.01
600	0.157	0.16	6.750a	0.725p	2.520	0.01
650	0.170	0.17	6.750a	0.725p	2.545	0.01
700	0.183	0.18	6.750a	0.725p	2.570	0.01
750	0.196	0.20	6.750a	0.725p	2.595	0.01
800	0.209	0.21	6.750a	0.725p	2.620	0.01
850	0.222	0.22	6.750a	0.725p	2.645	0.01
900	0.235	0.23	6.750a	0.725p	2.670	0.01
950	0.248	0.25	6.750a	0.725p	2.695	0.01
1000	0.261	0.26	6.750a	0.725p	2.720	0.01
1050	0.274	0.27	6.750a	0.725p	2.745	0.01
1100	0.287	0.29	6.750a	0.725p	2.770	0.01
1150	0.300	0.30	6.750a	0.725p	2.795	0.01
1200	0.313	0.31	6.750a	0.725p	2.820	0.01
1250	0.326	0.33	6.750a	0.725p	2.845	0.01
1300	0.339	0.34	6.750a	0.725p	2.870	0.01
1350	0.352	0.35	6.750a	0.725p	2.895	0.01
1400	0.365	0.37	6.750a	0.725p	2.920	0.01
1450	0.379	0.38	6.750a	0.725p	2.945	0.01
1500	0.392	0.39	6.750a	0.725p	2.970	0.01
1550	0.405	0.40	6.750a	0.725p	2.995	0.01
1600	0.418	0.42	6.750a	0.725p	3.020	0.01

Soundings in mm.---Other distances in METERS.-----

FWTANK.P Reference Point: Long.= 6.750a Trans.= 0.725s Vert.= 2.220  
(Zero Sounding is at the Reference Point.)

FWTANK.P  
 TANK CHARACTERISTICS at LEVEL TRIM



- ① Weight 1=.002 MT
- ② LCG (see top scale)
- ③ TCG 1=.02 M.
- ④ VCG 1=.03 M.

⑦ FSMT 1=.00003 M.MT

FRESH WATER Specific Gravity = 1.000

TANK CHARACTERISTICS

No Trim, No Heel

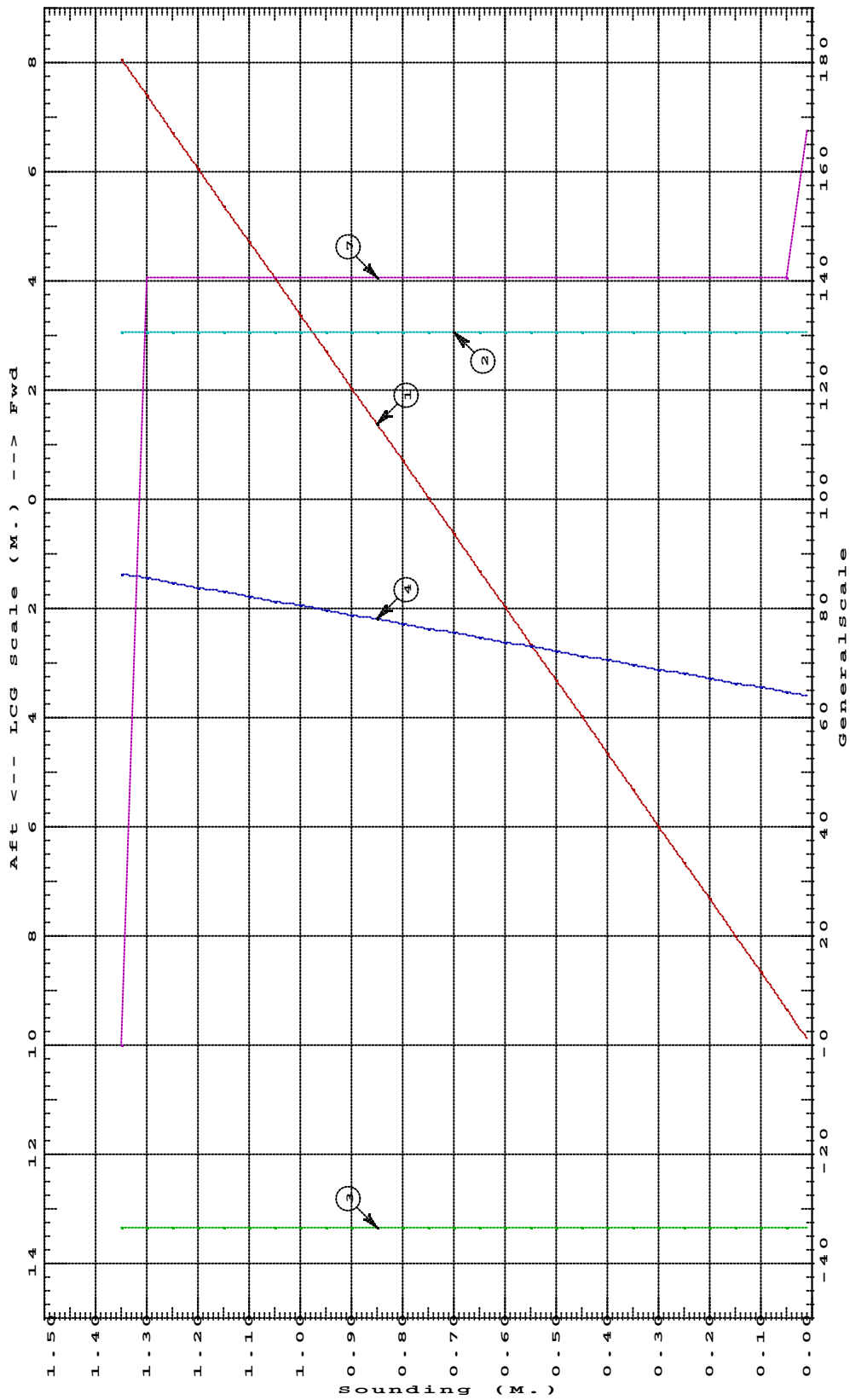
Tank: SEPTICTANK.P, Contents: SALT WATER at 1.025 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.003	0.00	3.050f	1.000p	1.920	0.01
50	0.013	0.01	3.050f	1.000p	1.940	0.01
100	0.026	0.03	3.050f	1.000p	1.965	0.01
150	0.039	0.04	3.050f	1.000p	1.990	0.01
200	0.052	0.05	3.050f	1.000p	2.015	0.01
250	0.065	0.07	3.050f	1.000p	2.040	0.01
300	0.078	0.08	3.050f	1.000p	2.065	0.01
350	0.091	0.09	3.050f	1.000p	2.090	0.01
400	0.104	0.11	3.050f	1.000p	2.115	0.01
450	0.117	0.12	3.050f	1.000p	2.140	0.01
500	0.131	0.13	3.050f	1.000p	2.165	0.01
550	0.144	0.15	3.050f	1.000p	2.190	0.01
600	0.157	0.16	3.050f	1.000p	2.215	0.01
650	0.170	0.17	3.050f	1.000p	2.240	0.01
700	0.183	0.19	3.050f	1.000p	2.265	0.01
750	0.196	0.20	3.050f	1.000p	2.290	0.01
800	0.209	0.21	3.050f	1.000p	2.315	0.01
850	0.222	0.23	3.050f	1.000p	2.340	0.01
900	0.235	0.24	3.050f	1.000p	2.365	0.01
950	0.248	0.25	3.050f	1.000p	2.390	0.01
1000	0.261	0.27	3.050f	1.000p	2.415	0.01
1050	0.274	0.28	3.050f	1.000p	2.440	0.01
1100	0.287	0.29	3.050f	1.000p	2.465	0.01
1150	0.300	0.31	3.050f	1.000p	2.490	0.01
1200	0.313	0.32	3.050f	1.000p	2.515	0.01
1250	0.326	0.33	3.050f	1.000p	2.540	0.01
1300	0.339	0.35	3.050f	1.000p	2.565	0.01
1350	0.352	0.36	3.050f	1.000p	2.590	0.01

Soundings in mm.---Other distances in METERS.-----

SEPTICTANK.P Reference Point: Long.= 3.050f Trans.= 1.000p Vert.= 1.915  
(Zero Sounding is at the Reference Point.)

SEPTICTANK.P  
TANK CHARACTERISTICS at LEVEL TRIM



- 1 Weight 1=.002 MT
- 2 LCG (see top scale)
- 3 TCG 1=.03 M.
- 4 VCG 1=.03 M.
- 7 FSMT 1=.00004 M.MT

SALT WATER Specific Gravity = 1.025

TANK CHARACTERISTICS

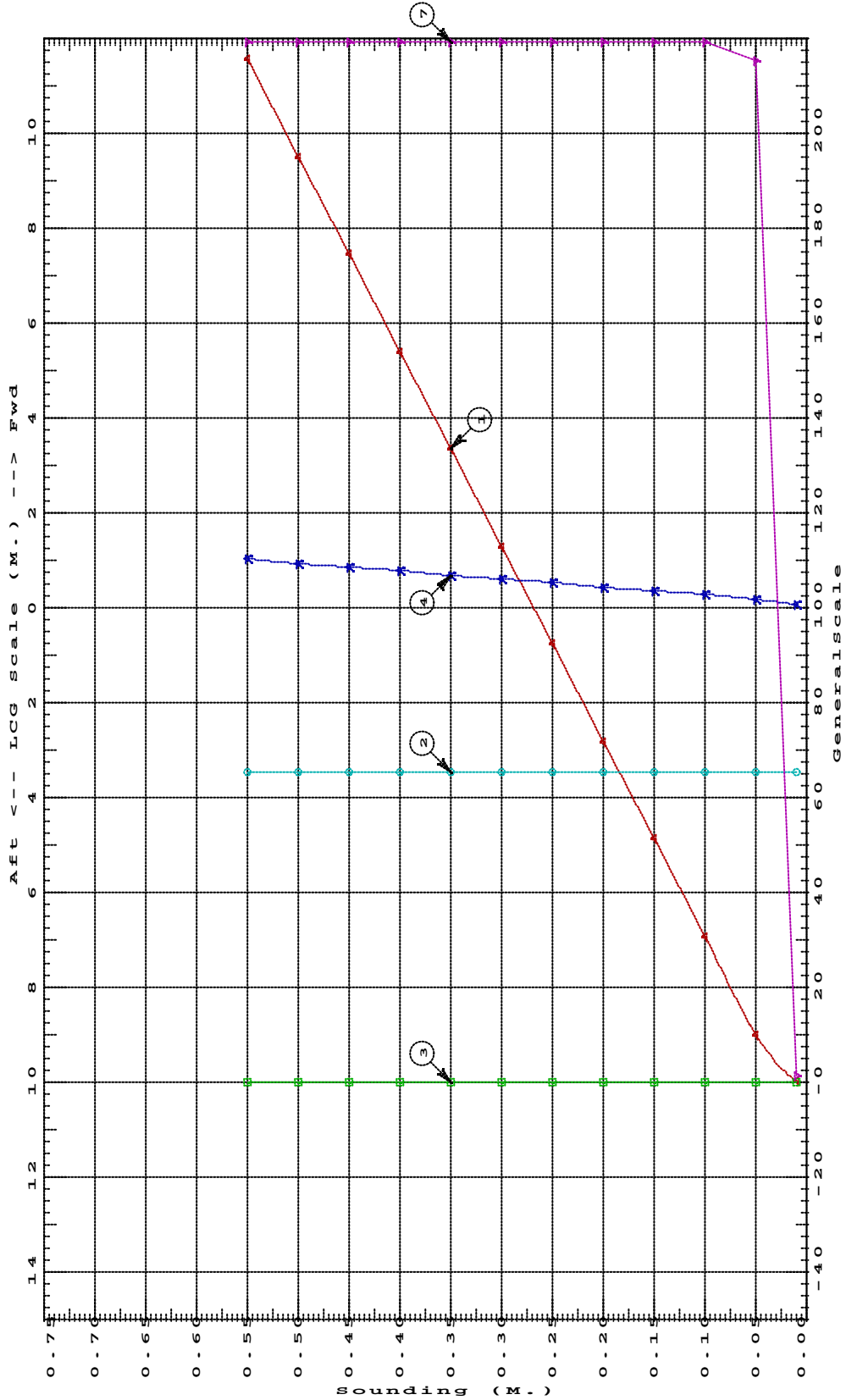
No Trim, No Heel

Tank: FODAGTANK.C, Contents: FUEL OIL at 0.870 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.000	0.00	3.450a	0.000	3.027	0.00
50	0.006	0.01	3.450a	0.000	3.053	0.01
100	0.018	0.02	3.450a	0.000	3.081	0.01
150	0.029	0.03	3.450a	0.000	3.107	0.01
200	0.041	0.04	3.450a	0.000	3.132	0.01
250	0.053	0.05	3.450a	0.000	3.157	0.01
300	0.065	0.06	3.450a	0.000	3.182	0.01
350	0.077	0.07	3.450a	0.000	3.207	0.01
400	0.089	0.08	3.450a	0.000	3.232	0.01
450	0.100	0.09	3.450a	0.000	3.257	0.01
500	0.112	0.10	3.450a	0.000	3.282	0.01
550	0.124	0.11	3.450a	0.000	3.307	0.01

Soundings in mm.---Other distances in METERS.-----  
 FODAGTANK.C Reference Point: Long.= 3.300a Trans.= 0.000 Vert.= 3.020  
 (Zero Sounding is at the Reference Point.)

FODAGTANK.C  
TANK CHARACTERISTICS at LEVEL TRIM



- 1 Weight 1=.0005 MT
- 2 LCG (see top scale)
- 3 TCG 1=.1 M.
- 4 VCG 1=.03 M.
- 7 FSMT 1=.00005 M.MT

FUEL OIL Specific Gravity = 0.870



TANK CHARACTERISTICS

No Trim, No Heel

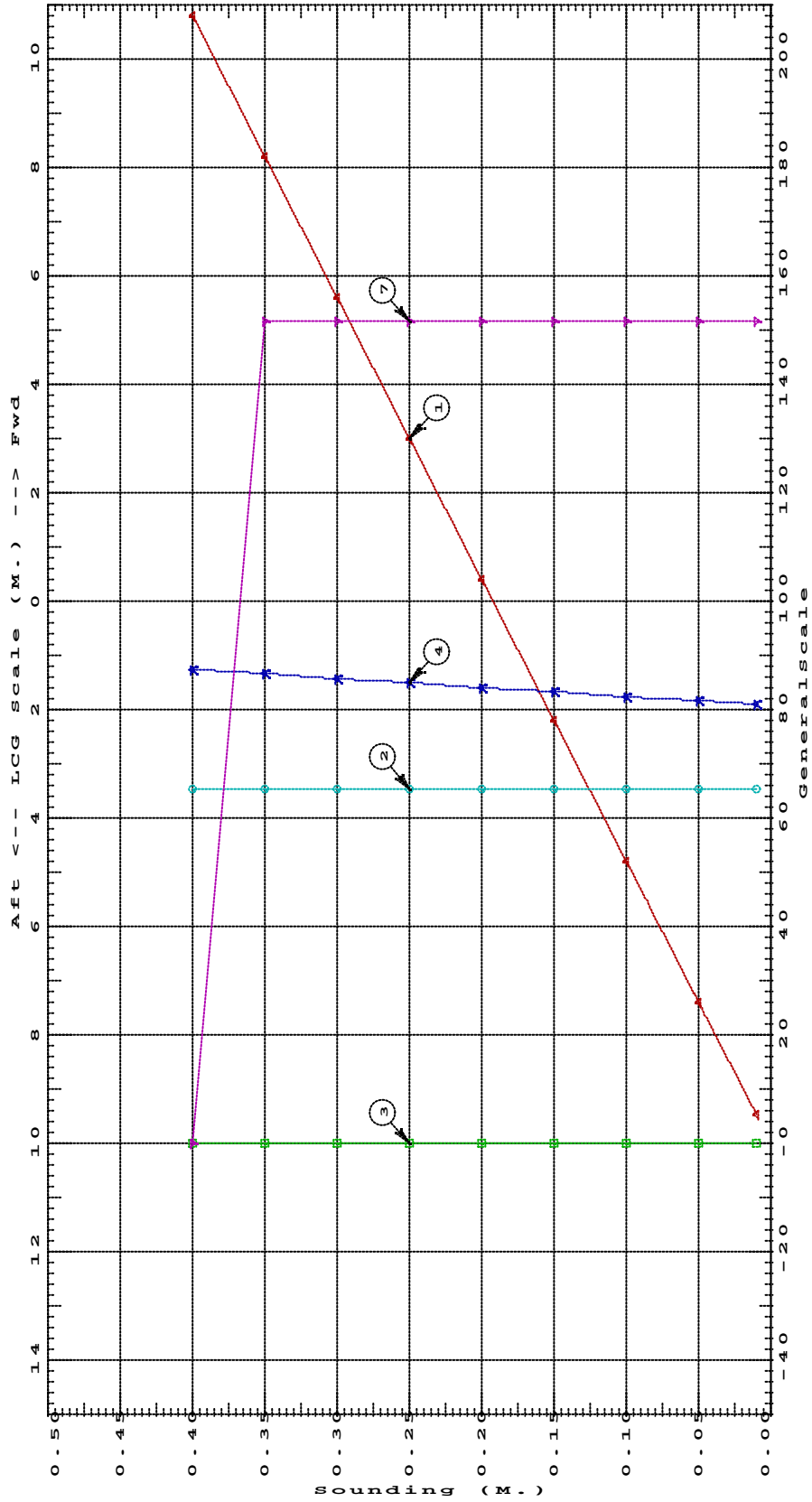
Tank: LOTANK.C, Contents: LUBE OIL at 0.924 Specific Gravity

Snding	Volume	Weight	Center of Gravity			FSM
	CU. METERS	METRIC TON	LCG	TCG	VCG	M.-MT
10	0.004	0.00	3.450a	0.000	2.425	0.03
50	0.020	0.02	3.450a	0.000	2.445	0.03
100	0.039	0.04	3.450a	0.000	2.470	0.03
150	0.059	0.05	3.450a	0.000	2.495	0.03
200	0.079	0.07	3.450a	0.000	2.520	0.03
250	0.099	0.09	3.450a	0.000	2.545	0.03
300	0.118	0.11	3.450a	0.000	2.570	0.03
350	0.138	0.13	3.450a	0.000	2.595	0.03
400	0.158	0.15	3.450a	0.000	2.620	

Soundings in mm.---Other distances in METERS.-----

LOTANK.C Reference Point: Long.= 3.250a Trans.= 0.000 Vert.= 2.420  
(Zero Sounding is at the Reference Point.)

LOTANK.C  
TANK CHARACTERISTICS at LEVEL TRIM



- ① Weight 1=.0007 MT
- ② LCG (see top scale)
- ③ TCG 1=.1 M.
- ④ VCG 1=.03 M.

⑦ FSMT 1=.0002 M.MT

LUBE OIL Specific Gravity = 0.924

## RAPPORT FRÅN KRÄNGNINGSPROV FÖR "Lotsbåt Tjb 30"

Fartygets egenviktstygndpunkt bestämdes genom krängningsprov

Datum: 2002-12-18

Plats: Anytec Marine AB, Öregrund

Vind: 2-3 m/s

Vatten:

Spec. vikt: 1,002 ton/m<sup>3</sup>

Temp: 0,5 grader Celsius

Ström: 0 knop

Vågor: Lätt krusning

Närvarande:

Leif Hedman (IOS)

Lars-Georg Larsson Light Craft Design Group

Krängningsvikter:

2 st vikter, placerad på fördäck på var sida om lastluckan, med vikter enligt följande:

No	Vikt	No	Vikt	No	Vikt
1	470kg	2	495kg	3	-
4	-	5	-	6	-

Pendel:

Längd 3143 mm, placerad på huvuddäck i trappan till styrhytten.

Fartygets kondition:

Djupgående aktra åmning: 3261 mm

Djupgående förlig åmning: 2515 mm

Djupgående till BL Fpp: 2402 mm

Djupgående till BL App: 2816 mm

Fribord vid akterkant dörr: 1150 mm

(Beräkning av djupgående, se ritningsbilaga)

Medeldjupgående vid L/2: 2609 mm

Trim: 414 mm/18020 mm akterligt trim

**Beräkning av displacement, KM och LCB vid krängningsprovet.**

Bifogade beräkningar i GHS ger följande resultat:

**Depl.= 81,49 ton**

**KM = 3,183 meter**

**LCB = 0,669 meter akter om L/2**

### Beräkning av KG

Metacentrums höjd över köl vid krängningsprovet;  $KM_T=3,183$  meter

Metacenterhöjden vid krängningsprovet;  $GM_T=0,612$  meter

Tyngdpunktens höjd över köl vid krängningsprovet;  $KG=2,571$  meter

Korrektion för fria vätskeytor: FSM/Depl.  $0,17/81,49=0,002$  meter

Korrigerad tyngdpunktshöjd över köl:  $KG_{kor} = 2,569$  meter

### Beräkning av LCG

LCG= 0,669 meter. (Akter om L/2).

Vikter	Vikt	LCG L/2	VCG Köl
	Ton	Meter	Meter
Vägningsdeplacement	81,49	-0,669	2,569
Avgående vikter	-5,84	-0,684	2,951
Tillkommande vikter	0,00	0	0
Lätt fartygs egenvikt	75,65	-0,668	2,539

HYDROSTATIC PROPERTIES

Trim: Aft 0.414/18.020, No Heel, VCG = 0.000

Draft@	Displacement	Buoyancy-Ctr.	Weight/	Moment/				
Origin----	Weight(MT)----	LCB-----	VCB-----	CM-----	LCF----	CM trim----	GML-----	GMT
2.610	81.49	0.669a	1.776	0.64	0.954a	0.61	13.46	3.183

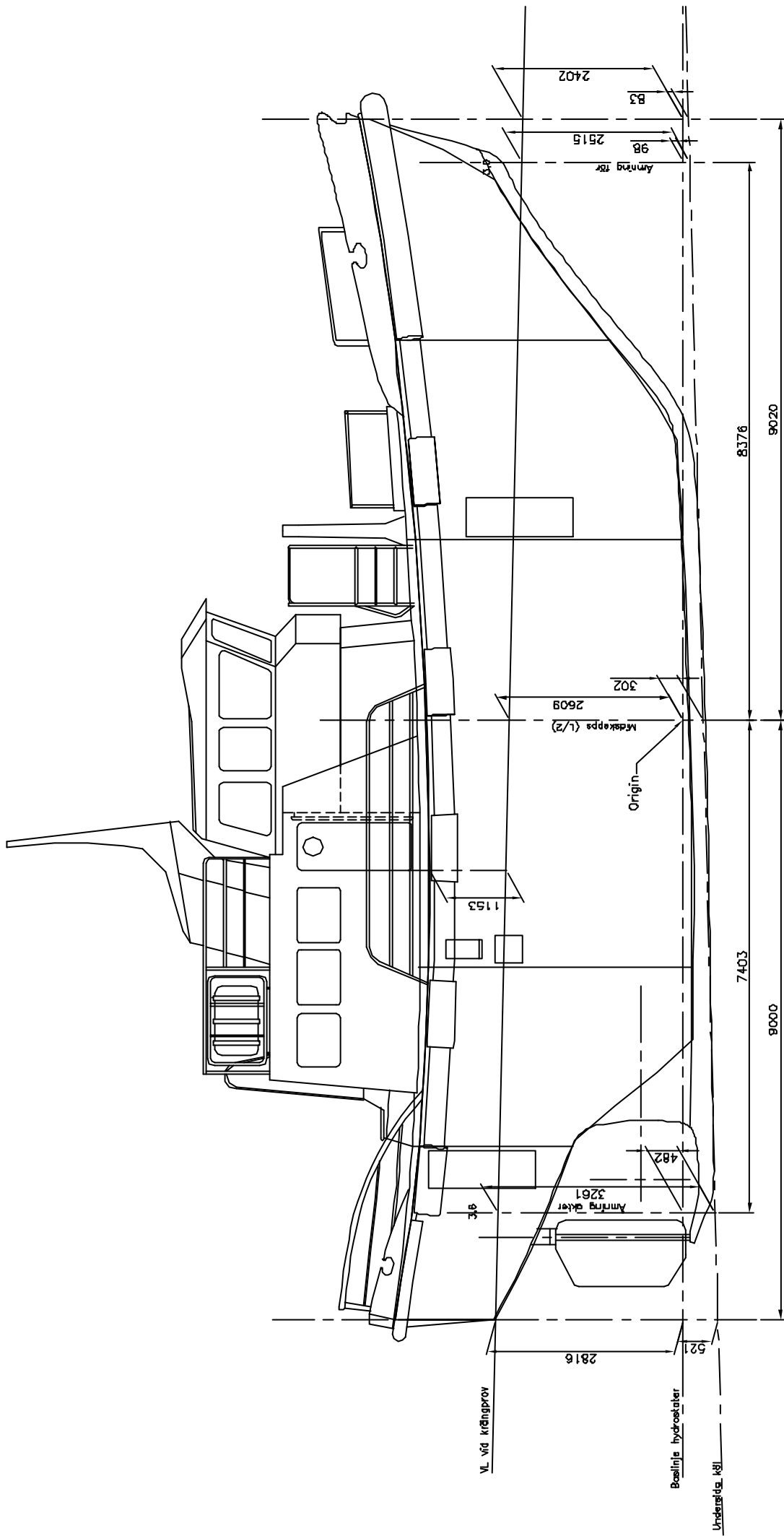
Distances in METERS.-----Specific Gravity = 1.002.-----Moment in M.-MT.  
Trim is per 18.02M.

Draft is from BASELINE.

WEIGHT STATUS

Trim: Aft 0.414/18.020, Heel: zero

Part-----	Weight(MT)-----	LCG-----	TCG-----	VCG-----	FSM-----		
INCLIN. WEIGHT+CREW WITH	1.12	3.800f	0.000	4.600			
Total Fixed----->	1.12	3.800f	0.000	4.600			
	Load-----	SpGr-----	Weight(MT)-----	LCG-----	TCG-----	VCG-----	FSM-----
BROSBAKT.S	0.149	0.840	0.28	2.397a	2.044s	1.927	0.02
BROSBMITT.S	0.834	0.840	1.80	0.463a	2.294s	2.533	0.06
BROSBFOR.S	0.007	0.840	0.01	1.016f	1.950s	1.599	0.00
BROBBMITT.P	0.775	0.840	1.68	0.464a	2.281p	2.480	0.06
BROBBFOR.P	0.007	0.840	0.01	1.016f	1.950p	1.599	0.00
FWTANK.S	1.000	1.000	0.42	6.750a	0.725s	3.020	0.00
FWTANK.P	1.000	1.000	0.42	6.750a	0.725p	3.020	0.00
LOTANK.C	0.674	0.924	0.10	3.451a	0.000	2.555	0.03
Total Tanks----->			4.72	1.748a	0.189s	2.560	0.17
Total Weight----->			5.83	0.687a	0.153s	2.950	
Free Surface Adjustment----->						0.028	
Adjusted CG----->				0.688a	0.153s	2.978	
Distances in METERS.-----				Moments in M.-MT.			





		Tjb 30			2002-12-18	
Resultat från krängningsprov.		81,49			Datum	3143
Displacement under provet (tonnes)				Pendellängd (mm)		
Förflyttning Nr.	Krängn.vikt (kg.)	Arm (m)	Moment (tonm)	Summa moment	Pendelutslag (mm)	GM (m)
1	495	2,052	1,01574	1,01574	65	0,6027112
2	495	2,052	1,01574	1,01574	63	0,621844889
3	495	2,052	1,01574	1,01574	65	0,6027112
4	495	2,052	1,01574	1,01574	63	0,621844889
					GM(medel)=	0,612

Avgående vikter	Vikt	LCG	VCG	TCG	LCGmom	VCGmom	TCGmom
Tankar, Fuel oil	4,72	-1,748	2,56	0,189	-8,25056	12,0832	0,89208
Krängvikter+personer	1,12	3,8	4,6	0	4,256	5,152	0

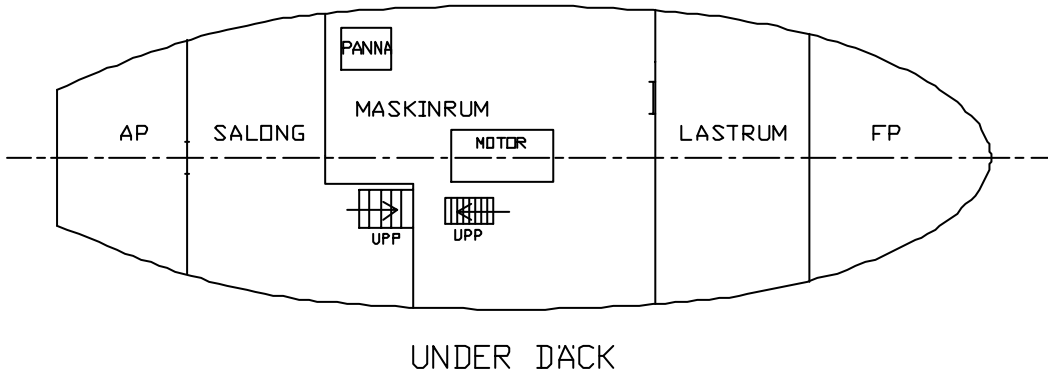
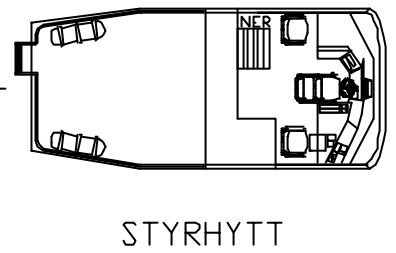
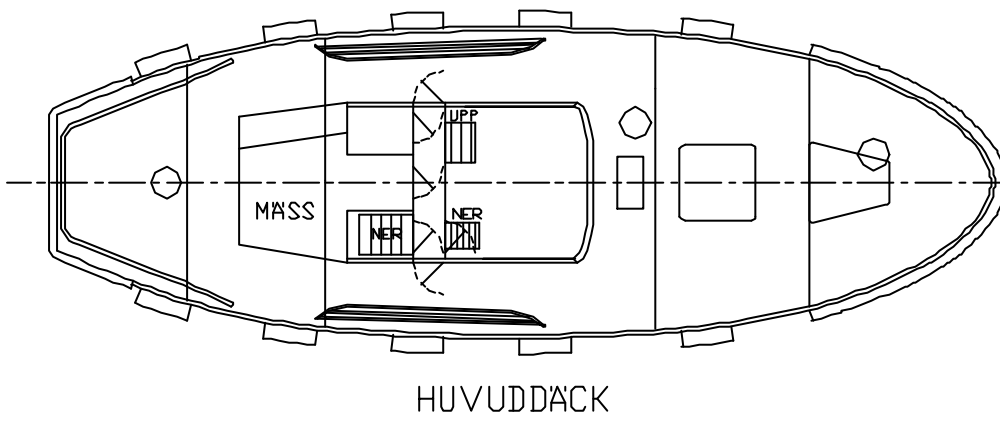
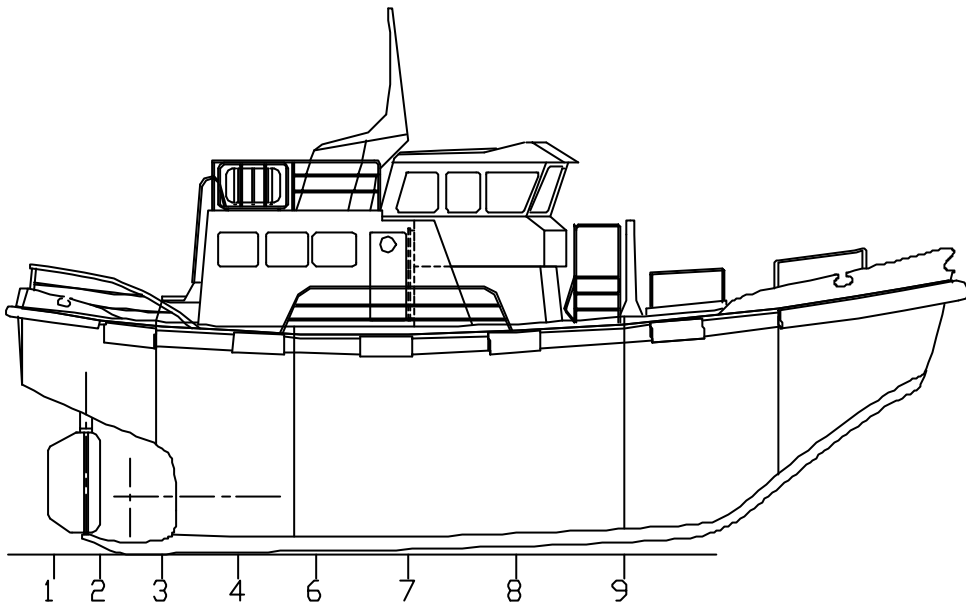
**Summa avgående vikter**      **5,84**    **-0,684**    **2,951233**    **0,153**    **-3,99456**    **17,2352**    **0,89208**

Tillkommande vikter	Vikt	LCG	VCG	TCG	LCGmom	VCGmom	TCGmom
	0,000			0	0	0	0

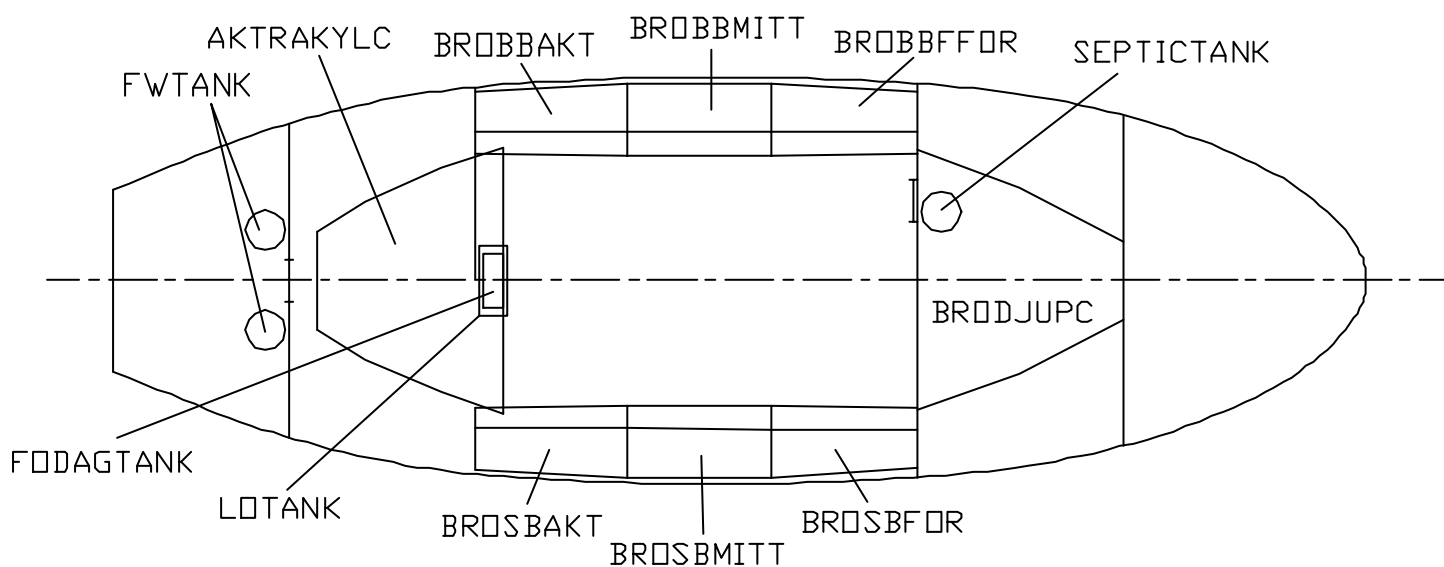
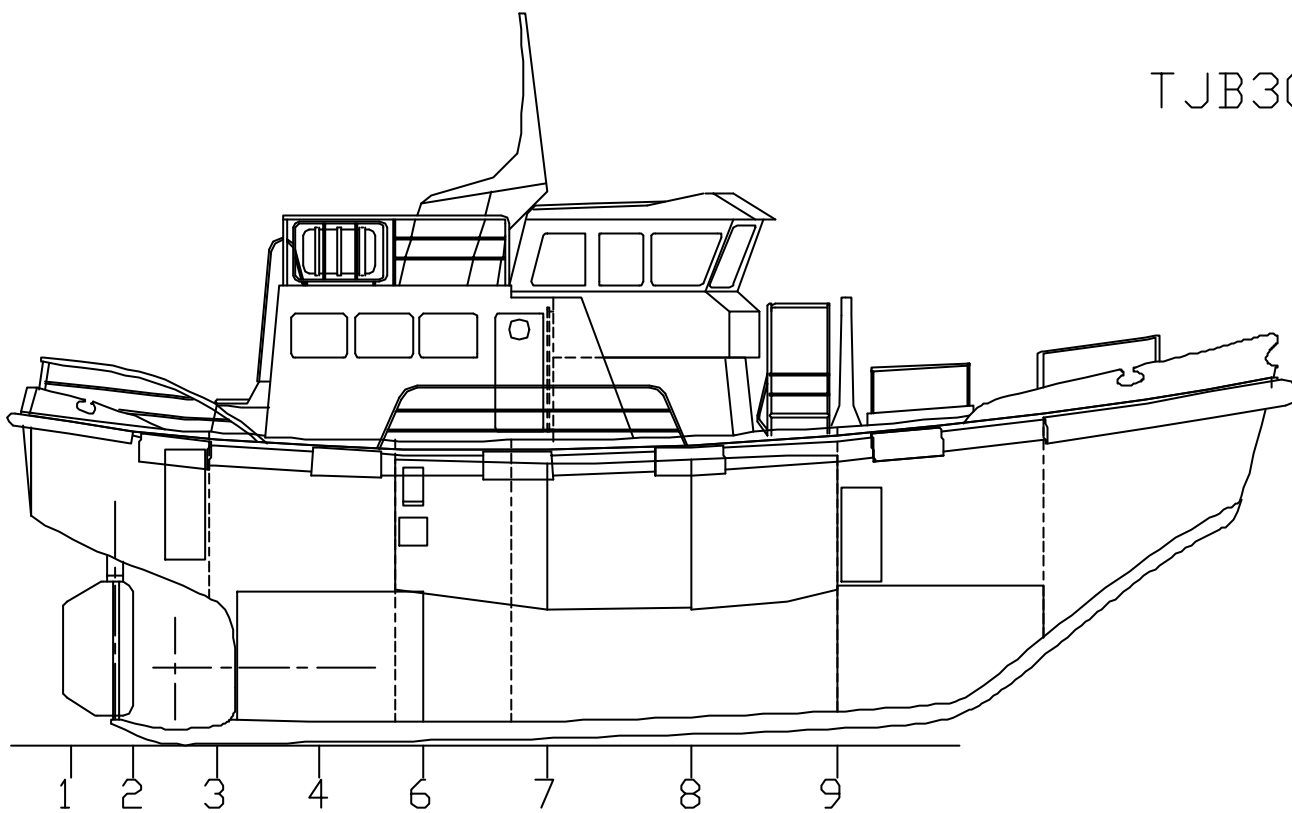
**Summa tillkommande vikter**      **0,000**    **0**    **0**    **0**    **0**    **0**    **0**

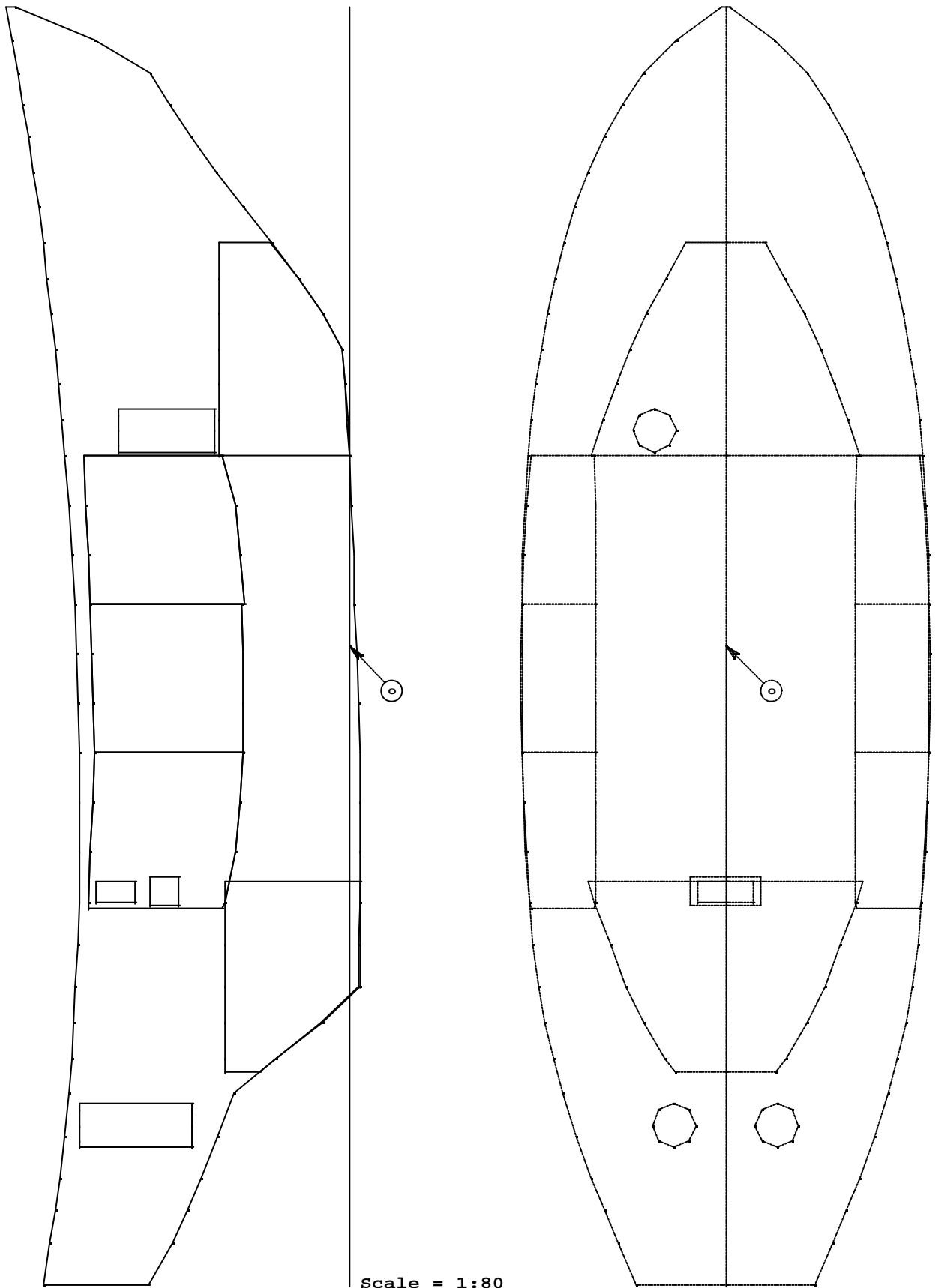
Beräkning av Light Ship	Vikt	LCG	VCG	TCG	LCGmom	VCGmom	TCGmom
Kondition vid krängningsförsök	81,49	-0,669	2,569	0,011	-54,51681	209,3478	0,89639
Avgående vikter	-5,84	-0,684	2,951233	0,153	3,99456	-17,2352	-0,89208
Tillkommande vikter	0,000	0	0	0	0	0	0

**Lätt fartyg**      **75,650**    **-0,668**    **2,539**    **0,000**    **-50,52225**    **192,1126**    **0,00431**



TJB30





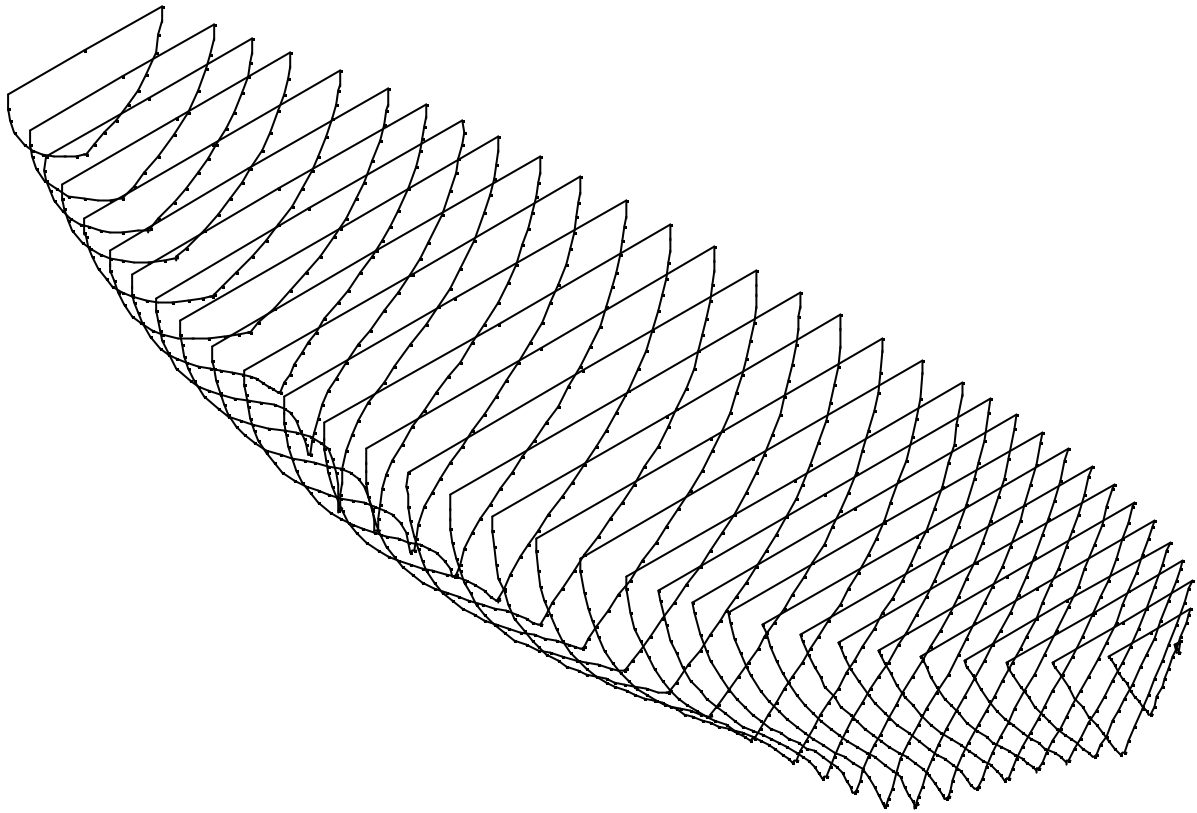
Origin Definition

-----  
Longitudinal: L/2  
Transverse: MIDSHIP  
Vertical: BASELINE

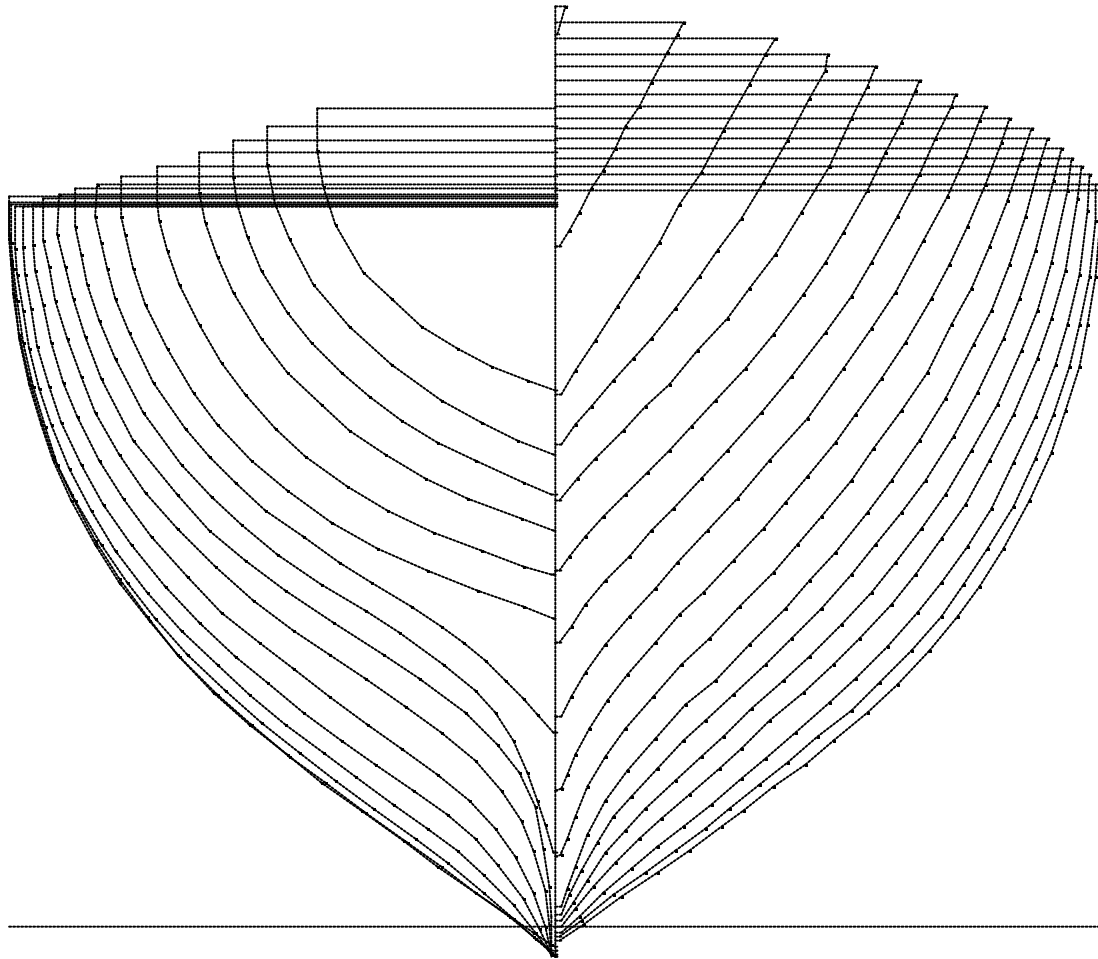
Note: The origin is marked with the symbol "(0)" on plan and profile views.

Part Name	Class	Description	Location	Volume
HULL	HULL		9.020f to 9.000a	
AKTRAKYL.C	TANK		3.300a to 6.000a	4.488
BRODJUP.C	TANK		5.700f to 2.700f	5.709
BROSBAKT.S	TANK		1.500a to 3.700a	2.271
BROSBMITT.S	TANK		0.600f to 1.500a	2.575
BROSBFOR.S	TANK		2.700f to 0.600f	2.063
BROBBAKT.P	TANK		1.500a to 3.700a	2.271
BROBBMITT.P	TANK		0.600f to 1.500a	2.575
BROBBFOR.P	TANK		2.700f to 0.600f	2.063
FWTANK.S	TANK		6.444a to 7.056a	0.418
FWTANK.P	TANK		6.444a to 7.056a	0.418
SEPTICTANK.P	TANK		3.356f to 2.744f	0.352
FODAGTANK.C	TANK		3.300a to 3.600a	0.124
LOTANK.C	TANK		3.250a to 3.650a	0.158

-----  
Locations in Meters fwd/aft of the origin.      Volumes in cubic Meters.



HULL Isometric Projection



Stbd

Stbd

HULL Body Plan (1 component)  
 Scale = 1:40

Component 1: HULL.C

Offsets in Meters. Read across --->

Section at 9.020 fwd  
 trans: 0.000 0.009 0.059 0.000  
 vert: 4.717 4.717 4.860 4.860

Section at 8.560 fwd  
 trans: 0.000 0.000 0.022 0.069 0.125 0.195 0.249 0.313 0.375 0.440 0.508 0.593 0.646 0.678  
 vert: 3.596 3.596 3.596 3.677 3.776 3.897 3.989 4.105 4.228 4.333 4.462 4.618 4.717 4.773

trans: 0.000  
 vert: 4.773

Section at 8.100 fwd  
 trans: 0.000 0.030 0.109 0.213 0.333 0.433 0.549 0.658 0.769 0.892 1.026 1.109 1.157 0.000  
 vert: 2.815 2.815 2.939 3.098 3.280 3.429 3.615 3.809 3.980 4.203 4.449 4.605 4.690 4.690

Section at 7.650 fwd  
 trans: 0.000 0.030 0.110 0.189 0.312 0.407 0.506 0.631 0.761 0.859 0.979 1.098 1.230 1.347  
 vert: 2.544 2.544 2.648 2.746 2.887 2.998 3.110 3.267 3.433 3.574 3.742 3.933 4.156 4.376

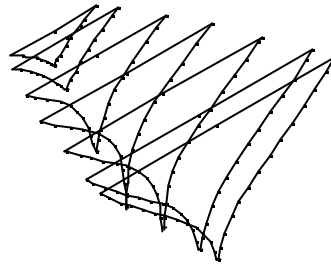
trans: 1.426 1.440 0.000  
 vert: 4.523 4.613 4.613



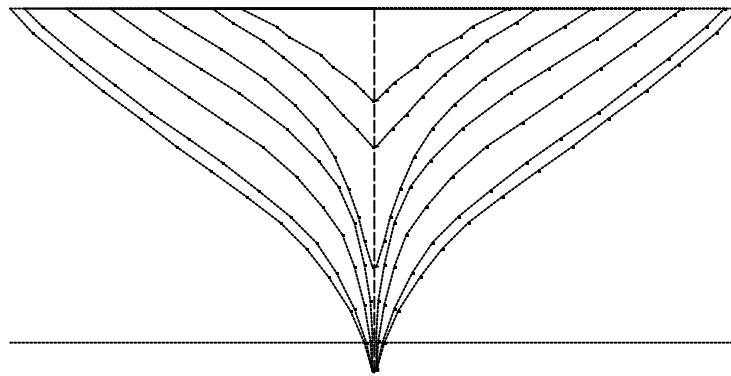
Section at	7.200	fwd													
trans:	0.000	0.025	0.118	0.213	0.362	0.477	0.598	0.752	0.908	1.027	1.162	1.299	1.444	1.564	
vert:	2.250	2.250	2.364	2.473	2.623	2.743	2.863	3.038	3.214	3.369	3.554	3.771	4.020	4.266	
trans:	1.649	1.696	0.000												
vert:	4.441	4.540	4.540												
Section at	6.700	fwd													
trans:	0.000	0.001	0.024	0.078	0.156	0.250	0.375	0.485	0.599	0.720	0.846	1.004	1.149	1.306	
vert:	1.881	1.881	1.883	1.952	2.053	2.162	2.286	2.398	2.516	2.640	2.776	2.951	3.123	3.336	
trans:	1.426	1.523	1.648	1.749	1.830	1.904	1.928	0.000							
vert:	3.511	3.668	3.885	4.085	4.253	4.413	4.465	4.465							
Section at	6.200	fwd													
trans:	0.000	0.002	0.025	0.088	0.160	0.258	0.386	0.513	0.621	0.768	0.914	1.086	1.250	1.424	
vert:	1.494	1.494	1.498	1.588	1.696	1.822	1.956	2.091	2.210	2.363	2.519	2.712	2.903	3.140	
trans:	1.562	1.671	1.810	1.924	2.013	2.089	2.119	0.000							
vert:	3.332	3.505	3.752	3.969	4.160	4.331	4.395	4.395							
Section at	5.700	fwd													
trans:	0.000	0.002	0.027	0.089	0.158	0.258	0.395	0.528	0.643	0.802	0.963	1.135	1.328	1.518	
vert:	1.105	1.105	1.112	1.216	1.340	1.484	1.640	1.789	1.924	2.093	2.264	2.464	2.689	2.949	
trans:	1.673	1.793	1.944	2.069	2.164	2.245	2.276	0.000							
vert:	3.159	3.350	3.621	3.861	4.070	4.262	4.330	4.330							
Section at	5.200	fwd													
trans:	0.000	0.002	0.028	0.030	0.064	0.111	0.183	0.275	0.386	0.534	0.655	0.784	0.937	1.097	
vert:	0.717	0.717	0.722	0.729	0.803	0.903	1.045	1.193	1.330	1.502	1.642	1.769	1.934	2.104	
trans:	1.215	1.331	1.479	1.588	1.726	1.854	1.987	2.080	2.177	2.271	2.358	2.406	0.000		
vert:	2.240	2.377	2.559	2.708	2.897	3.089	3.322	3.494	3.698	3.918	4.145	4.269	4.269		
Section at	4.700	fwd													
trans:	0.000	0.001	0.028	0.031	0.060	0.105	0.174	0.263	0.376	0.518	0.667	0.810	0.974	1.151	
vert:	0.372	0.372	0.375	0.385	0.464	0.576	0.736	0.899	1.049	1.216	1.384	1.516	1.692	1.871	
trans:	1.277	1.403	1.563	1.687	1.826	1.963	2.097	2.198	2.292	2.387	2.463	2.512	0.000		
vert:	2.014	2.163	2.358	2.526	2.721	2.930	3.179	3.367	3.591	3.831	4.064	4.213	4.213		
Section at	4.200	fwd													
trans:	0.000	0.027	0.059	0.104	0.174	0.264	0.383	0.533	0.692	0.847	1.023	1.213	1.347	1.479	
vert:	0.100	0.100	0.197	0.316	0.486	0.660	0.819	0.994	1.168	1.303	1.489	1.674	1.823	1.980	
trans:	1.648	1.777	1.924	2.064	2.214	2.304	2.395	2.484	2.561	2.598	0.000				
vert:	2.184	2.358	2.570	2.790	3.079	3.256	3.498	3.751	4.022	4.160	4.160				
Section at	3.700	fwd													
trans:	0.000	0.028	0.077	0.138	0.219	0.308	0.404	0.540	0.679	0.792	0.945	1.111	1.245	1.404	
vert:	0.060	0.060	0.167	0.290	0.440	0.576	0.688	0.835	0.979	1.087	1.228	1.387	1.515	1.675	
trans:	1.564	1.695	1.833	1.955	2.100	2.233	2.370	2.456	2.537	2.636	2.671	0.000			
vert:	1.853	2.010	2.189	2.359	2.586	2.825	3.110	3.319	3.566	3.942	4.110	4.110			
Section at	3.200	fwd													
trans:	0.000	0.029	0.094	0.167	0.263	0.370	0.475	0.632	0.768	0.885	1.036	1.208	1.344	1.507	
vert:	0.025	0.025	0.129	0.241	0.383	0.510	0.617	0.768	0.899	1.006	1.149	1.301	1.430	1.590	
trans:	1.670	1.802	1.939	2.061	2.202	2.332	2.462	2.546	2.619	2.704	2.730	0.000			
vert:	1.766	1.924	2.106	2.280	2.512	2.754	3.046	3.259	3.510	3.893	4.063	4.063			
Section at	2.700	fwd													
trans:	0.000	0.030	0.108	0.203	0.318	0.440	0.558	0.709	0.864	0.982	1.132	1.311	1.465	1.611	
vert:	-0.005	-0.005	0.089	0.204	0.338	0.456	0.564	0.694	0.835	0.938	1.083	1.232	1.381	1.522	
trans:	1.778	1.907	2.044	2.163	2.299	2.424	2.544	2.625	2.690	2.760	2.776	0.000			
vert:	1.699	1.858	2.045	2.225	2.460	2.706	2.995	3.212	3.467	3.849	4.020	4.020			

Section at	2.000 fwd													
trans:	0.000	0.028	0.124	0.257	0.399	0.543	0.677	0.819	0.978	1.113	1.264	1.447	1.588	1.755
vert:	-0.034	-0.035	0.052	0.174	0.302	0.418	0.527	0.643	0.776	0.885	1.027	1.175	1.310	1.477
trans:	1.917	2.043	2.176	2.300	2.427	2.538	2.642	2.711	2.766	2.817	2.825	0.000		
vert:	1.654	1.815	2.005	2.207	2.450	2.692	2.965	3.185	3.443	3.787	3.968	3.968		
Section at	1.300 fwd													
trans:	0.000	0.026	0.140	0.310	0.476	0.631	0.791	0.918	1.080	1.229	1.383	1.565	1.714	1.879
vert:	-0.056	-0.057	0.028	0.162	0.283	0.397	0.518	0.619	0.747	0.859	0.996	1.145	1.285	1.460
trans:	2.035	2.156	2.287	2.416	2.537	2.632	2.718	2.774	2.821	2.854	2.858	0.000		
vert:	1.638	1.801	1.993	2.220	2.472	2.705	2.955	3.177	3.438	3.732	3.922	3.922		
Section at	0.600 fwd													
trans:	0.000	0.023	0.145	0.350	0.535	0.707	0.875	0.990	1.155	1.316	1.471	1.652	1.807	1.973
vert:	-0.075	-0.075	0.006	0.156	0.276	0.398	0.521	0.611	0.736	0.852	0.982	1.133	1.277	1.459
trans:	2.123	2.238	2.369	2.504	2.619	2.700	2.769	2.815	2.855	2.875	2.875	0.000		
vert:	1.639	1.799	1.995	2.245	2.501	2.728	2.952	3.178	3.439	3.685	3.885	3.885		
Section at	0.100 aft													
trans:	0.000	0.002	0.022	0.120	0.251	0.425	0.627	0.809	1.024	1.234	1.420	1.620	1.804	1.996
vert:	-0.105	-0.105	-0.101	-0.036	0.059	0.179	0.318	0.448	0.607	0.762	0.903	1.068	1.236	1.437
trans:	2.160	2.305	2.435	2.558	2.648	2.715	2.782	2.829	2.861	2.878	2.886	2.885	0.000	
vert:	1.635	1.833	2.041	2.276	2.479	2.672	2.890	3.127	3.344	3.519	3.656	3.852	3.852	
Section at	0.800 aft													
trans:	0.000	0.004	0.022	0.115	0.241	0.423	0.608	0.786	1.005	1.212	1.403	1.602	1.787	1.983
vert:	-0.132	-0.132	-0.124	-0.055	0.045	0.180	0.316	0.444	0.602	0.757	0.899	1.061	1.228	1.425
trans:	2.149	2.301	2.431	2.558	2.650	2.718	2.783	2.830	2.860	2.879	2.884	2.883	0.000	
vert:	1.618	1.816	2.018	2.253	2.456	2.649	2.865	3.102	3.320	3.494	3.631	3.827	3.827	
Section at	1.500 aft													
trans:	0.000	0.006	0.021	0.108	0.222	0.381	0.566	0.745	0.959	1.165	1.355	1.558	1.740	1.943
vert:	-0.153	-0.153	-0.143	-0.067	0.043	0.177	0.332	0.466	0.621	0.776	0.917	1.079	1.241	1.433
trans:	2.112	2.268	2.403	2.534	2.629	2.699	2.765	2.815	2.845	2.865	2.870	2.870	0.000	
vert:	1.623	1.814	2.014	2.246	2.446	2.637	2.852	3.089	3.303	3.480	3.615	3.810	3.810	
Section at	2.200 aft													
trans:	0.000	0.004	0.022	0.024	0.108	0.226	0.379	0.516	0.673	0.857	1.057	1.231	1.429	1.618
vert:	-0.160	-0.160	-0.152	-0.148	-0.034	0.113	0.271	0.397	0.518	0.647	0.793	0.918	1.069	1.229
trans:	1.786	1.973	2.152	2.322	2.457	2.569	2.668	2.729	2.780	2.813	2.839	2.850	2.851	0.000
vert:	1.379	1.560	1.761	1.986	2.201	2.417	2.652	2.843	3.055	3.258	3.443	3.585	3.803	3.803
Section at	2.900 aft													
trans:	0.000	0.002	0.023	0.025	0.081	0.170	0.301	0.425	0.576	0.755	0.949	1.130	1.328	1.525
vert:	-0.160	-0.160	-0.155	-0.149	-0.019	0.145	0.322	0.457	0.585	0.714	0.855	0.982	1.130	1.291
trans:	1.691	1.883	2.068	2.244	2.386	2.503	2.611	2.675	2.733	2.771	2.802	2.816	2.817	0.000
vert:	1.430	1.603	1.798	2.017	2.224	2.436	2.667	2.855	3.064	3.265	3.448	3.591	3.806	3.806
Section at	3.600 aft													
trans:	0.000	0.023	0.055	0.114	0.214	0.318	0.452	0.622	0.812	0.992	1.191	1.386	1.562	1.761
vert:	-0.155	-0.155	-0.003	0.176	0.370	0.518	0.658	0.798	0.943	1.068	1.213	1.362	1.498	1.662
trans:	1.952	2.138	2.288	2.413	2.529	2.599	2.665	2.710	2.745	2.765	2.765	0.000		
vert:	1.848	2.059	2.259	2.465	2.691	2.877	3.082	3.284	3.463	3.604	3.820	3.820		
Section at	4.200 aft													
trans:	0.000	0.022	0.033	0.059	0.114	0.180	0.280	0.425	0.604	0.788	1.003	1.197	1.380	1.594
vert:	-0.151	-0.152	0.007	0.193	0.399	0.561	0.717	0.874	1.028	1.158	1.305	1.439	1.567	1.725
trans:	1.800	2.001	2.165	2.307	2.429	2.509	2.584	2.640	2.680	2.708	2.706	0.000		
vert:	1.900	2.102	2.296	2.495	2.719	2.902	3.106	3.303	3.490	3.624	3.842	3.842		

Section at	4.800 aft													
trans:	0.000	0.005	0.020	0.025	0.035	0.060	0.109	0.194	0.303	0.472	0.721	0.910	1.177	1.431
vert:	-0.145	-0.145	-0.145	0.054	0.214	0.408	0.627	0.815	0.959	1.127	1.312	1.431	1.602	1.772
trans:	1.641	1.827	2.002	2.234	2.394	2.484	2.549	2.590	2.630	2.625	0.000			
vert:	1.932	2.093	2.278	2.570	2.891	3.117	3.317	3.491	3.659	3.870	3.870			
Section at	5.300 aft													
trans:	0.000	0.004	0.016	0.058	0.095	0.148	0.223	0.319	0.428	0.591	0.824	1.010	1.240	1.468
vert:	0.388	0.388	0.388	0.541	0.663	0.812	0.983	1.131	1.248	1.388	1.548	1.663	1.811	1.968
trans:	1.656	1.822	1.979	2.183	2.328	2.409	2.468	2.507	2.540	2.535	0.000			
vert:	2.119	2.268	2.439	2.709	3.001	3.207	3.389	3.552	3.701	3.894	3.894			
Section at	5.800 aft													
trans:	0.000	0.003	0.010	0.098	0.169	0.263	0.375	0.490	0.603	0.761	0.971	1.136	1.335	1.531
vert:	1.027	1.027	1.027	1.122	1.198	1.295	1.406	1.504	1.587	1.690	1.820	1.921	2.053	2.199
trans:	1.690	1.828	1.961	2.128	2.254	2.322	2.371	2.406	2.428	2.426	0.000			
vert:	2.340	2.477	2.633	2.877	3.136	3.317	3.478	3.619	3.753	3.923	3.923			
Section at	6.300 aft													
trans:	0.000	0.005	0.017	0.173	0.409	0.679	0.940	1.180	1.416	1.602	1.783	1.918	2.053	2.164
vert:	1.630	1.630	1.630	1.690	1.776	1.881	2.001	2.136	2.302	2.458	2.649	2.825	3.050	3.287
trans:	2.229	2.275	2.295	2.295	0.000									
vert:	3.477	3.652	3.749	3.960	3.960									
Section at	6.900 aft													
trans:	0.000	0.006	0.016	0.018	0.170	0.395	0.650	0.887	1.103	1.316	1.480	1.642	1.763	1.887
vert:	1.853	1.853	1.854	1.854	1.904	1.981	2.081	2.199	2.330	2.486	2.633	2.810	2.975	3.179
trans:	1.988	2.049	2.089	2.104	2.103	0.000								
vert:	3.396	3.571	3.733	3.822	4.018	4.018								
Section at	7.500 aft													
trans:	0.000	0.016	0.184	0.469	0.690	0.896	1.086	1.242	1.418	1.554	1.704	1.790	1.855	1.885
vert:	2.095	2.095	2.151	2.261	2.366	2.492	2.622	2.753	2.928	3.104	3.345	3.537	3.722	3.874
trans:	1.885	0.000												
vert:	4.090	4.090												
Section at	7.950 aft													
trans:	0.000	0.018	0.169	0.427	0.626	0.812	0.987	1.127	1.287	1.418	1.551	1.627	1.682	1.708
vert:	2.283	2.280	2.340	2.455	2.559	2.678	2.800	2.923	3.086	3.244	3.470	3.646	3.819	3.959
trans:	1.707	0.000												
vert:	4.159	4.159												
Section at	8.400 aft													
trans:	0.000	0.016	0.198	0.390	0.600	0.871	1.092	1.283	1.409	1.480	1.520	1.520	0.000	
vert:	2.494	2.489	2.571	2.666	2.782	2.967	3.168	3.394	3.631	3.817	4.024	4.230	4.230	
Section at	9.000 aft													
trans:	0.000	0.003	0.154	0.334	0.515	0.711	0.872	1.013	1.159	1.225	1.260	1.260	0.000	
vert:	2.831	2.831	2.881	2.956	3.051	3.172	3.313	3.459	3.711	3.912	4.104	4.320	4.320	



AKTRAKYL.C Isometric Projection



AKTRAKYL.C Body Plan (1 component)  
 Scale = 1:40

Component 1: AKTRAKYL.C 98.50% permeability

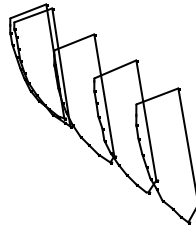
Offsets in Meters. Read across --->

Section at 3.300 aft														
trans:	0.000	0.015	0.016	0.056	0.129	0.243	0.356	0.498	0.673	0.865	1.045	1.244	1.437	1.610
vert:	-0.147	-0.146	-0.145	-0.006	0.167	0.355	0.499	0.634	0.770	0.913	1.039	1.185	1.338	1.476
trans:	1.807	1.927	0.000											
vert:	1.645	1.765	1.765											
Section at 3.600 aft														
trans:	0.000	0.015	0.045	0.105	0.205	0.310	0.445	0.615	0.805	0.985	1.185	1.380	1.555	1.755
vert:	-0.145	-0.145	-0.000	0.180	0.375	0.525	0.665	0.805	0.950	1.075	1.220	1.370	1.505	1.670
trans:	1.853	0.000												
vert:	1.765	1.765												
Section at 4.200 aft														
trans:	0.000	0.013	0.023	0.049	0.105	0.171	0.272	0.418	0.598	0.779	0.985	1.191	1.375	1.588
vert:	-0.141	-0.141	0.008	0.195	0.402	0.566	0.723	0.881	1.036	1.163	1.305	1.448	1.576	1.732
trans:	1.626	0.000												
vert:	1.765	1.765												

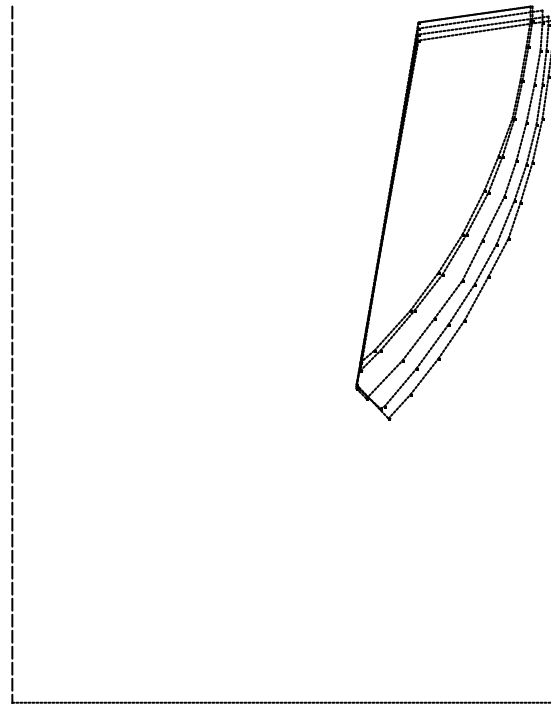
Section at	4.800	aft												
trans:	0.000	0.005	0.010	0.015	0.025	0.050	0.100	0.185	0.295	0.465	0.715	0.920	1.170	1.403
vert:	-0.135	-0.135	-0.135	0.055	0.215	0.410	0.630	0.820	0.965	1.135	1.320	1.450	1.610	1.765
trans:	0.000													
vert:	1.765													
Section at	5.300	aft												
trans:	0.000	0.004	0.008	0.048	0.086	0.139	0.214	0.311	0.421	0.586	0.818	1.006	1.150	0.000
vert:	0.398	0.398	0.398	0.543	0.666	0.816	0.988	1.138	1.255	1.396	1.556	1.672	1.765	1.765
Section at	5.800	aft												
trans:	0.000	0.003	0.006	0.091	0.163	0.256	0.368	0.484	0.597	0.756	0.864	0.000		
vert:	1.037	1.037	1.037	1.128	1.207	1.302	1.413	1.512	1.595	1.698	1.765	1.765		
Section at	6.000	aft												
trans:	0.000	0.004	0.005	0.060	0.104	0.222	0.289	0.453	0.521	0.704	0.000			
vert:	1.278	1.278	1.278	1.333	1.380	1.461	1.528	1.621	1.671	1.765	1.765			







BROSBAKT.S Isometric Projection



stbd

BROSBAKT.S Body Plan (1 component)  
 Scale = 1:40

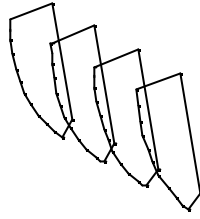
Component 1: BROSBAKT.S 98.50% permeability

Offsets in Meters. Read across --->

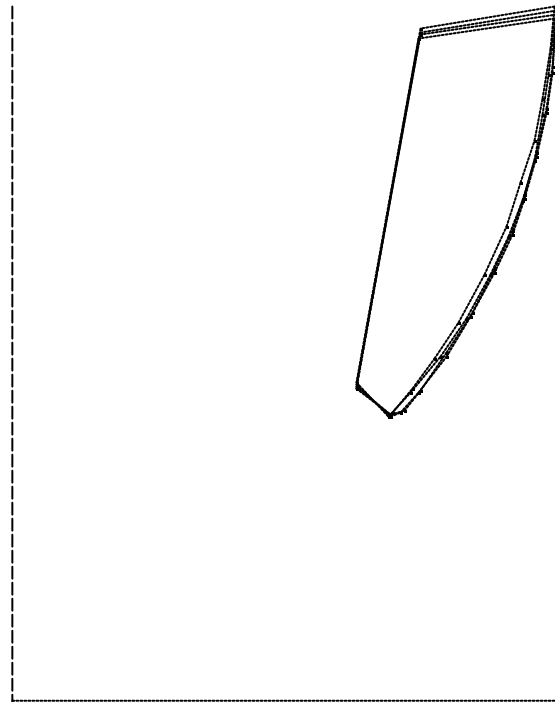
Section at	1.500	aft												
trans:	1.992	2.105	2.260	2.395	2.525	2.620	2.690	2.755	2.805	2.835	2.855	2.860	2.150	1.820
vert:	1.503	1.630	1.820	2.020	2.250	2.450	2.640	2.855	3.090	3.305	3.480	3.604	3.495	1.675
trans:	1.992													
vert:	1.503													
Section at	2.200	aft												
trans:	1.820	1.945	1.966	2.144	2.314	2.448	2.560	2.659	2.719	2.770	2.804	2.829	2.839	2.840
vert:	1.666	1.547	1.567	1.767	1.992	2.206	2.421	2.656	2.846	3.057	3.261	3.444	3.586	3.629
trans:	2.150	1.820												
vert:	3.527	1.666												



Section at	2.900 aft													
trans:	1.820	1.874	1.877	2.060	2.236	2.378	2.494	2.602	2.666	2.723	2.761	2.792	2.806	2.806
vert:	1.656	1.608	1.611	1.804	2.023	2.230	2.441	2.670	2.858	3.066	3.268	3.449	3.591	3.653
trans:	2.150	1.820												
vert:	3.559	1.656												
Section at	3.600 aft													
trans:	1.838	1.945	2.130	2.280	2.405	2.520	2.590	2.655	2.700	2.735	2.755	2.755	2.150	1.838
vert:	1.750	1.855	2.065	2.265	2.470	2.695	2.880	3.085	3.285	3.465	3.605	3.675	3.591	1.750
Section at	3.700 aft													
trans:	1.845	1.920	2.107	2.259	2.387	2.503	2.575	2.642	2.688	2.724	2.746	2.745	2.150	1.845
vert:	1.793	1.864	2.072	2.271	2.475	2.700	2.884	3.089	3.289	3.469	3.608	3.678	3.595	1.793



BROSBMITT.S Isometric Projection



stbd

BROSBMITT.S Body Plan (1 component)  
 Scale = 1:40

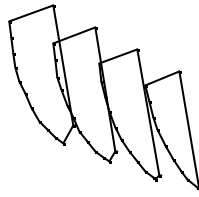
Component 1: BROSBMITT.S 98.50% permeability

Offsets in Meters. Read across --->

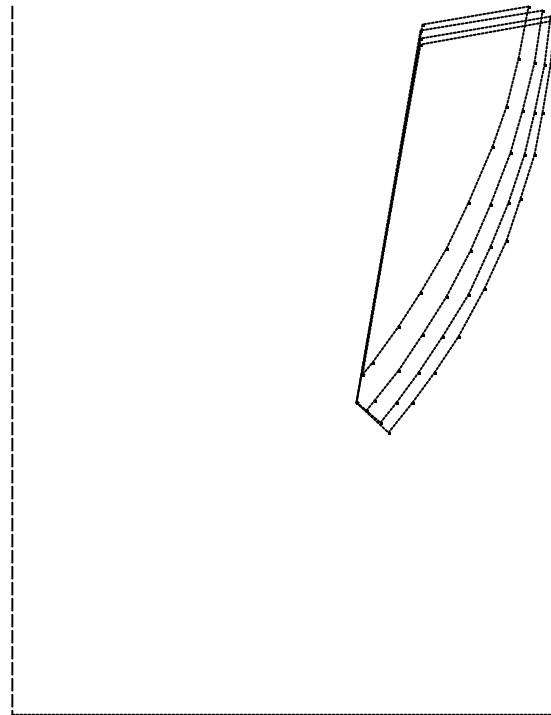
Section at	0.600 fwd													
trans:	1.820	2.000	2.011	2.115	2.230	2.360	2.495	2.610	2.690	2.760	2.805	2.845	2.864	2.155
vert:	1.645	1.515	1.519	1.645	1.805	2.000	2.250	2.505	2.730	2.955	3.180	3.440	3.664	3.545
trans:	1.820													
vert:	1.645													
Section at	0.100 aft													
trans:	1.820	2.000	2.065	2.152	2.298	2.426	2.549	2.639	2.706	2.772	2.820	2.851	2.869	2.875
vert:	1.655	1.508	1.536	1.640	1.839	2.045	2.280	2.484	2.676	2.892	3.129	3.345	3.520	3.639
trans:	2.870	2.153	1.820											
vert:	3.645	3.528	1.655											

Section at 0.800 aft  
trans: 1.820 2.000 2.056 2.142 2.292 2.423 2.549 2.641 2.708 2.773 2.821 2.850 2.868 2.874  
vert: 1.665 1.502 1.525 1.626 1.821 2.024 2.258 2.460 2.651 2.868 3.104 3.320 3.495 3.621  
  
trans: 2.870 2.152 1.820  
vert: 3.625 3.512 1.665

Section at 1.500 aft  
trans: 1.992 2.105 2.260 2.395 2.525 2.620 2.690 2.755 2.805 2.835 2.855 2.860 2.150 1.820  
vert: 1.503 1.630 1.820 2.020 2.250 2.450 2.640 2.855 3.090 3.305 3.480 3.604 3.495 1.675  
  
trans: 1.992  
vert: 1.503



BROSBFOR.S Isometric Projection



Stbd

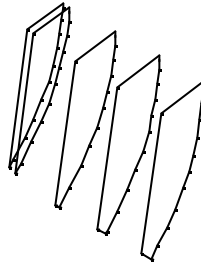
BROSBFOR.S Body Plan (1 component)  
 Scale = 1:40

Component 1: BROSBFOR.S 98.50% permeability

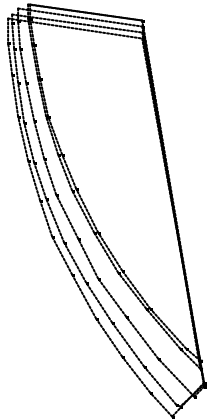
Offsets in Meters. Read across --->

Section at	2.700 fwd													
trans:	1.847	1.900	2.035	2.155	2.290	2.415	2.535	2.615	2.680	2.730	2.165	1.847		
vert:	1.799	1.865	2.050	2.230	2.465	2.710	3.000	3.215	3.470	3.741	3.645	1.799		
Section at	2.000 fwd													
trans:	1.820	1.866	1.909	2.035	2.167	2.291	2.418	2.529	2.632	2.701	2.757	2.797	2.162	1.820
vert:	1.645	1.613	1.660	1.821	2.010	2.212	2.455	2.696	2.968	3.187	3.445	3.719	3.612	1.645
Section at	1.300 fwd													
trans:	1.820	1.942	2.028	2.147	2.278	2.408	2.528	2.622	2.708	2.764	2.811	2.840	2.158	1.820
vert:	1.645	1.546	1.644	1.806	1.998	2.225	2.475	2.708	2.957	3.180	3.439	3.694	3.578	1.645

Section at	0.600	fwd												
trans:	1.820	1.985	2.115	2.230	2.360	2.495	2.610	2.690	2.760	2.805	2.845	2.864	2.155	1.820
vert:	1.645	1.489	1.645	1.805	2.000	2.250	2.505	2.730	2.955	3.180	3.440	3.664	3.545	1.645



BROBBAKT.P Isometric Projection



Port

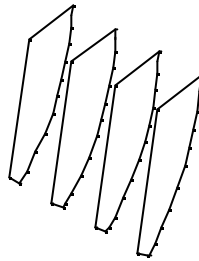
BROBBAKT.P Body Plan (1 component)  
 Scale = 1:40

Component 1: BROBBAKT.P 98.50% permeability

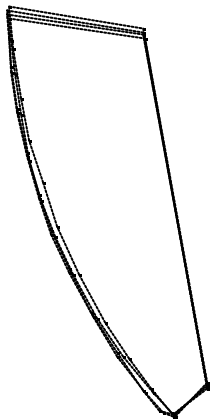
Offsets in Meters. Read across --->

Section at	1.500	aft												
trans:	1.992	2.105	2.260	2.395	2.525	2.620	2.690	2.755	2.805	2.835	2.855	2.860	2.150	1.820
vert:	1.503	1.630	1.820	2.020	2.250	2.450	2.640	2.855	3.090	3.305	3.480	3.604	3.495	1.675
trans:	1.992													
vert:	1.503													
Section at	2.200	aft												
trans:	1.820	1.945	1.966	2.144	2.314	2.448	2.560	2.659	2.719	2.770	2.804	2.829	2.839	2.840
vert:	1.666	1.547	1.567	1.767	1.992	2.206	2.421	2.656	2.846	3.057	3.261	3.444	3.586	3.629
trans:	2.150	1.820												
vert:	3.527	1.666												

Section at	2.900 aft													
trans:	1.820	1.874	1.877	2.060	2.236	2.378	2.494	2.602	2.666	2.723	2.761	2.792	2.806	2.806
vert:	1.656	1.608	1.611	1.804	2.023	2.230	2.441	2.670	2.858	3.066	3.268	3.449	3.591	3.653
trans:	2.150	1.820												
vert:	3.559	1.656												
Section at	3.600 aft													
trans:	1.838	1.945	2.130	2.280	2.405	2.520	2.590	2.655	2.700	2.735	2.755	2.755	2.150	1.838
vert:	1.750	1.855	2.065	2.265	2.470	2.695	2.880	3.085	3.285	3.465	3.605	3.675	3.591	1.750
Section at	3.700 aft													
trans:	1.845	1.920	2.107	2.259	2.387	2.503	2.575	2.642	2.688	2.724	2.746	2.745	2.150	1.845
vert:	1.793	1.864	2.072	2.271	2.475	2.700	2.884	3.089	3.289	3.469	3.608	3.678	3.595	1.793



BROBBMITT.P Isometric Projection



Port

BROBBMITT.P Body Plan (1 component)  
 Scale = 1:40

Component 1: BROBBMITT.P 98.50% permeability

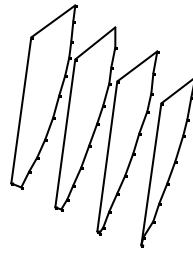
Offsets in Meters. Read across --->

Section at	0.600 fwd													
trans:	1.820	2.000	2.011	2.115	2.230	2.360	2.495	2.610	2.690	2.760	2.805	2.845	2.864	2.155
vert:	1.645	1.515	1.519	1.645	1.805	2.000	2.250	2.505	2.730	2.955	3.180	3.440	3.664	3.545
trans:	1.820													
vert:	1.645													
Section at	0.100 aft													
trans:	1.820	2.000	2.065	2.152	2.298	2.426	2.549	2.639	2.706	2.772	2.820	2.851	2.869	2.875
vert:	1.655	1.508	1.536	1.640	1.839	2.045	2.280	2.484	2.676	2.892	3.129	3.345	3.520	3.639
trans:	2.870	2.153	1.820											
vert:	3.645	3.528	1.655											

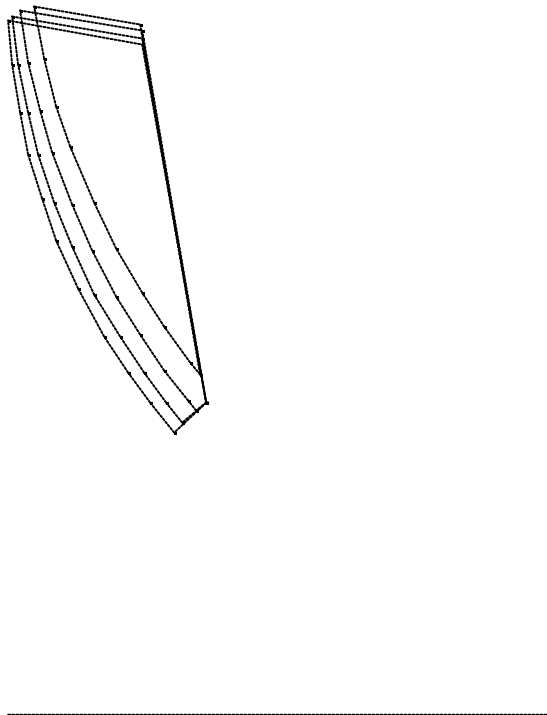


Section at 0.800 aft  
trans: 1.820 2.000 2.056 2.142 2.292 2.423 2.549 2.641 2.708 2.773 2.821 2.850 2.868 2.874  
vert: 1.665 1.502 1.525 1.626 1.821 2.024 2.258 2.460 2.651 2.868 3.104 3.320 3.495 3.621  
  
trans: 2.870 2.152 1.820  
vert: 3.625 3.512 1.665

Section at 1.500 aft  
trans: 1.992 2.105 2.260 2.395 2.525 2.620 2.690 2.755 2.805 2.835 2.855 2.860 2.150 1.820  
vert: 1.503 1.630 1.820 2.020 2.250 2.450 2.640 2.855 3.090 3.305 3.480 3.604 3.495 1.675  
  
trans: 1.992  
vert: 1.503



BROBBFOR.P Isometric Projection



Port

BROBBFOR.P Body Plan (1 component)  
 Scale = 1:40

Component 1: BROBBFOR.P 98.50% permeability

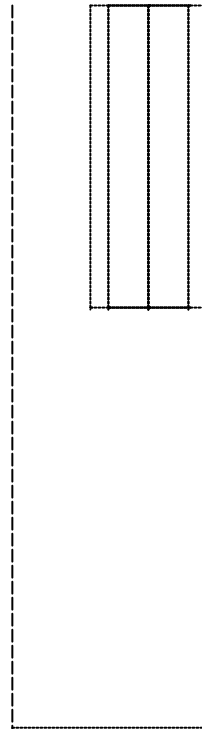
Offsets in Meters. Read across --->

Section at	2.700 fwd													
trans:	1.847	1.900	2.035	2.155	2.290	2.415	2.535	2.615	2.680	2.730	2.165	1.847		
vert:	1.799	1.865	2.050	2.230	2.465	2.710	3.000	3.215	3.470	3.741	3.645	1.799		
Section at	2.000 fwd													
trans:	1.820	1.866	1.909	2.035	2.167	2.291	2.418	2.529	2.632	2.701	2.757	2.797	2.162	1.820
vert:	1.645	1.613	1.660	1.821	2.010	2.212	2.455	2.696	2.968	3.187	3.445	3.719	3.612	1.645
Section at	1.300 fwd													
trans:	1.820	1.942	2.028	2.147	2.278	2.408	2.528	2.622	2.708	2.764	2.811	2.840	2.158	1.820
vert:	1.645	1.546	1.644	1.806	1.998	2.225	2.475	2.708	2.957	3.180	3.439	3.694	3.578	1.645

Section at	0.600	fwd												
trans:	1.820	1.985	2.115	2.230	2.360	2.495	2.610	2.690	2.760	2.805	2.845	2.864	2.155	1.820
vert:	1.645	1.489	1.645	1.805	2.000	2.250	2.505	2.730	2.955	3.180	3.440	3.664	3.545	1.645



FWTANK.S Isometric Projection



FWTANK.S Body Plan (1 component)  
Scale = 1:40

std

Component 1: FWTANK.S 98.50% permeability

Offsets in Meters. Read across --->

Section at	6.444	aft							
trans:	0.721	0.729	0.729	0.721	0.721				
vert:	2.220	2.220	3.820	3.820	2.220				
Section at	6.534	aft							
trans:	0.509	0.941	0.941	0.509	0.509				
vert:	2.220	2.220	3.820	3.820	2.220				
Section at	6.750	aft							
trans:	0.419	1.031	1.031	0.419	0.419				
vert:	2.220	2.220	3.820	3.820	2.220				
Section at	6.966	aft							
trans:	0.509	0.941	0.941	0.509	0.509				
vert:	2.220	2.220	3.820	3.820	2.220				

03-01-21 11:32  
GHS-GHS/PM 2.70

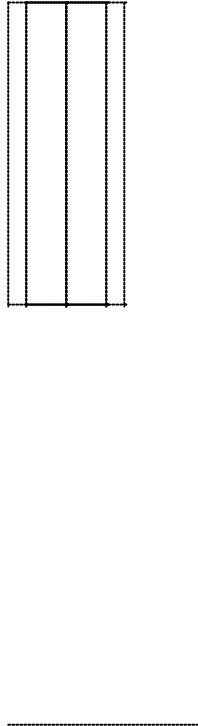
TJB 30

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Section at 7.056 aft  
trans: 0.721 0.729 0.729 0.721 0.721  
vert: 2.220 2.220 3.820 3.820 2.220



FWTANK.P Isometric Projection



Port

FWTANK.P Body Plan (1 component)  
Scale = 1:40

Component 1: FWTANK.P 98.50% permeability

Offsets in Meters. Read across --->

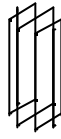
Section at	trans:	vert:
6.444 aft	0.721 0.729 0.729 0.721 0.721	2.220 2.220 3.820 3.820 2.220
6.534 aft	0.509 0.941 0.941 0.509 0.509	2.220 2.220 3.820 3.820 2.220
6.750 aft	0.419 1.031 1.031 0.419 0.419	2.220 2.220 3.820 3.820 2.220
6.966 aft	0.509 0.941 0.941 0.509 0.509	2.220 2.220 3.820 3.820 2.220

03-01-21 11:32  
GHS-GHS/PM 2.70

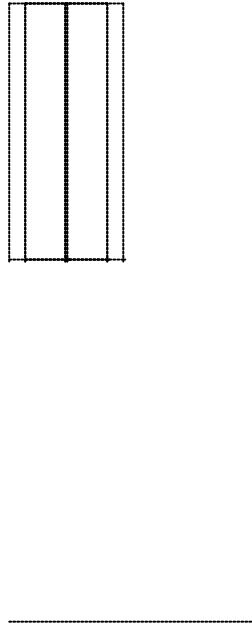
TJB 30

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Section at 7.056 aft  
trans: 0.721 0.729 0.729 0.721 0.721  
vert: 2.220 2.220 3.820 3.820 2.220



SEPTICTANK.P Isometric Projection



Port

SEPTICTANK.P Body Plan (1 component)  
Scale = 1:40

Component 1: SEPTICTANK.P 98.50% permeability

Offsets in Meters. Read across --->

Section at 3.356 fwd  
trans: 0.996 1.004 1.004 0.996 0.996  
vert: 1.915 1.915 3.265 3.265 1.915

Section at 3.266 fwd  
trans: 0.784 1.216 1.216 0.784 0.784  
vert: 1.915 1.915 3.265 3.265 1.915

Section at 3.050 fwd  
trans: 0.694 1.306 1.306 0.694 0.694  
vert: 1.915 1.915 3.265 3.265 1.915

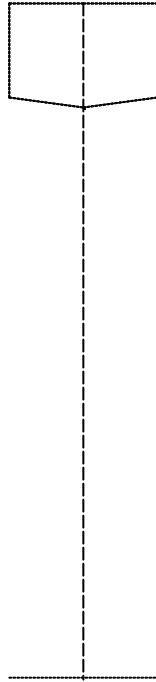
Section at 2.834 fwd  
trans: 0.784 1.216 1.216 0.784 0.784  
vert: 1.915 1.915 3.265 3.265 1.915

Section at 2.744 fwd  
trans: 0.996 1.004 1.004 0.996 0.996  
vert: 1.915 1.915 3.265 3.265 1.915





FODAGTANK.C Isometric Projection



FODAGTANK.C Body Plan (1 component)  
Scale = 1:40

Component 1: FODAGTANK.C 98.50% permeability

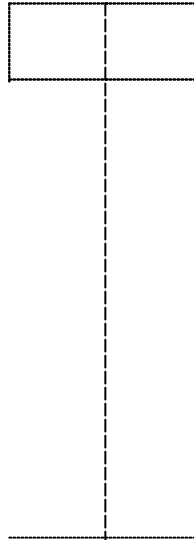
Offsets in Meters. Read across --->

Section at 3.300 aft  
trans: 0.000 0.400 0.400 0.000  
vert: 3.020 3.070 3.570 3.570

Section at 3.600 aft  
trans: 0.000 0.400 0.400 0.000  
vert: 3.020 3.070 3.570 3.570



LOTANK.C Isometric Projection



LOTANK.C Body Plan (1 component)  
Scale = 1:40

Component 1: LOTANK.C 98.50% permeability

Offsets in Meters. Read across --->

Section at 3.250 aft  
trans: 0.000 0.500 0.500 0.000  
vert: 2.420 2.420 2.820 2.820

Section at 3.650 aft  
trans: 0.000 0.500 0.500 0.000  
vert: 2.420 2.420 2.820 2.820