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APPROVED - APPROUVÉ

ON THE AUTHORITY OF THE CANADA SHIPPING ACT / EN VERTU DE LA LOI SUR LE NAVIÈRE CANADIEN

*John Tully*

ON BEHALF OF THE MINISTER OF TRANSPORTATION / À L'ÉCHÉANCE DU MINISTRE DES TRANSPORTS

FEB 20 2009

DATE

SEE LETTER DATED

VOIR LA LETRE DU

FEB 20 2009

# CCGS John P. Tully

## Trim and Stability Booklet

<p>“SUBJECT TO THE OWNER, THE SUPERIOR DESIGN, WORKMANSHIP, APPROVALS AND THE ACCURACY OF THE ORIGINAL DRAWINGS, THE DESIGNER SHALL BE RESPONSIBLE FOR THE STABILITY OF THE VESSEL UNDER ALL CONDITIONS OF SERVICE AND BALLASTING.”</p>	<p>“L'ÉTAT DÉPENDANT DE LA CONCEPTION SUPÉRIEURE, DE LA QUALITÉ DE TRAVAIL, DES APPROUVÉS ET DE LA PRÉCISION DES Dessins ORIGINAUX, LE CONCEPTEUR SERA RESPONSABLE DE LA STABILITÉ DU BÂTIMENT DANS TOUTES LES CONDITIONS DE SERVICE ET DE BALLASTAGE.”</p>
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<p>ALL DEPENDENCIES THAT PERTAIN TO THE SUPERSTRUCTURE, THE VOLUME OF STORAGE, THE CHOICE OF MATERIALS, THE WEATHERIGHT EQUIPMENT AND APPLIANCES.</p>	<p>ÉVALUÉ LES DÉPENDANCES DE LA SUPERSTRUCTURE, DU VOLUME DE STOCKAGE, DU CHOIX DES MATÉRIELS, DES ÉQUIPEMENTS MÉTÉOROLOGIQUE ET DES APPAREILS.</p>
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Revision 0



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*Your file / Votre référence*

*Our file / Notre référence*

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STX Canada Marine Inc.  
1818 Cornwall Ave, 3<sup>rd</sup> Floor  
Vancouver, BC  
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February 20, 2009

Attention: Mr. Dan Vyselaar

Dear Dan,

re: m.v. "John P. Tully" - Stability Approval.

We refer to your letter of submission of four (4) copies of the Trim and Stability Booklet Rev. 0, dated Feb 2009. The intact conditions and ice conditions have been examined and are approved. The damage conditions are not required by, regulation for, non-Arctic class ships and have been stamped noted.

Please find enclosed two (2) copies of the approved report, one copy is to be placed onboard the vessel for the use of the Master. Our fee will be invoice under separate cover.

Yours truly,

John Haswell

for:

Sultan Virani,  
Manager, Marine, Transport Canada,  
Nanaimo District Office

cc: AMSB

Canada



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**CCGS John P. Tully**  
**GENERAL PARTICULARS**

SHIP'S NAME	CCGS John P. Tully
OFFICIAL NUMBER	804457
PORT OF REGISTRY	Ottawa
CLASS OF VOYAGE	Foreign Going
ICE CLASS	A1 (Lloyd's)
MARPOL	0
IMO	8320420
BUILDER	Bel-Air Shipyard Ltd.
DATE BUILT	1985
MOULDED DIMENSIONS	LOA: 68.9 m Depth: 4.9 m Breadth: 14.0 m
SUMMER LOADLINE DRAFT	4.514 m
DISPLACEMENT AT LOADLINE DRAFT	2123.3 tonnes
LIGHTSHIP WEIGHT	1624.6 tonnes
DEADWEIGHT	498.7 tonnes
COMPLEMENT	Crew: 20 Science: 20
GROSS TONNAGE	2021 grt
NET TONNAGE	606 nrt

*Note:* Vessel was computer modeled using GHS computer software (File Name 930.gr2). The model includes the hull, shell plating, tanks and compartments.  
 Drafts given in hydrostatic and stability data are referenced from the underside of keel at midships.  
 All other vertical positions (VCB, VCG, KM-L, KM-T) are referenced from top side of keel at midships.

### **General Notes Regarding Stability and Loading of the Ship**

(a) Compliance with the stability criteria indicated does not ensure immunity against capsizing regardless of the circumstances, or absolve the master from his responsibilities. Masters should therefore exercise prudence and good seamanship having regard to the season of the year, weather forecasts and the navigational zone and should take the appropriate action as to speed and course warranted by the prevailing circumstances.

(b) Care should be taken to ensure that the cargo allocated to the ship is capable of being stowed so that compliance with the criteria can be achieved. If necessary the amount should be limited to the extent that ballast weight may be required.

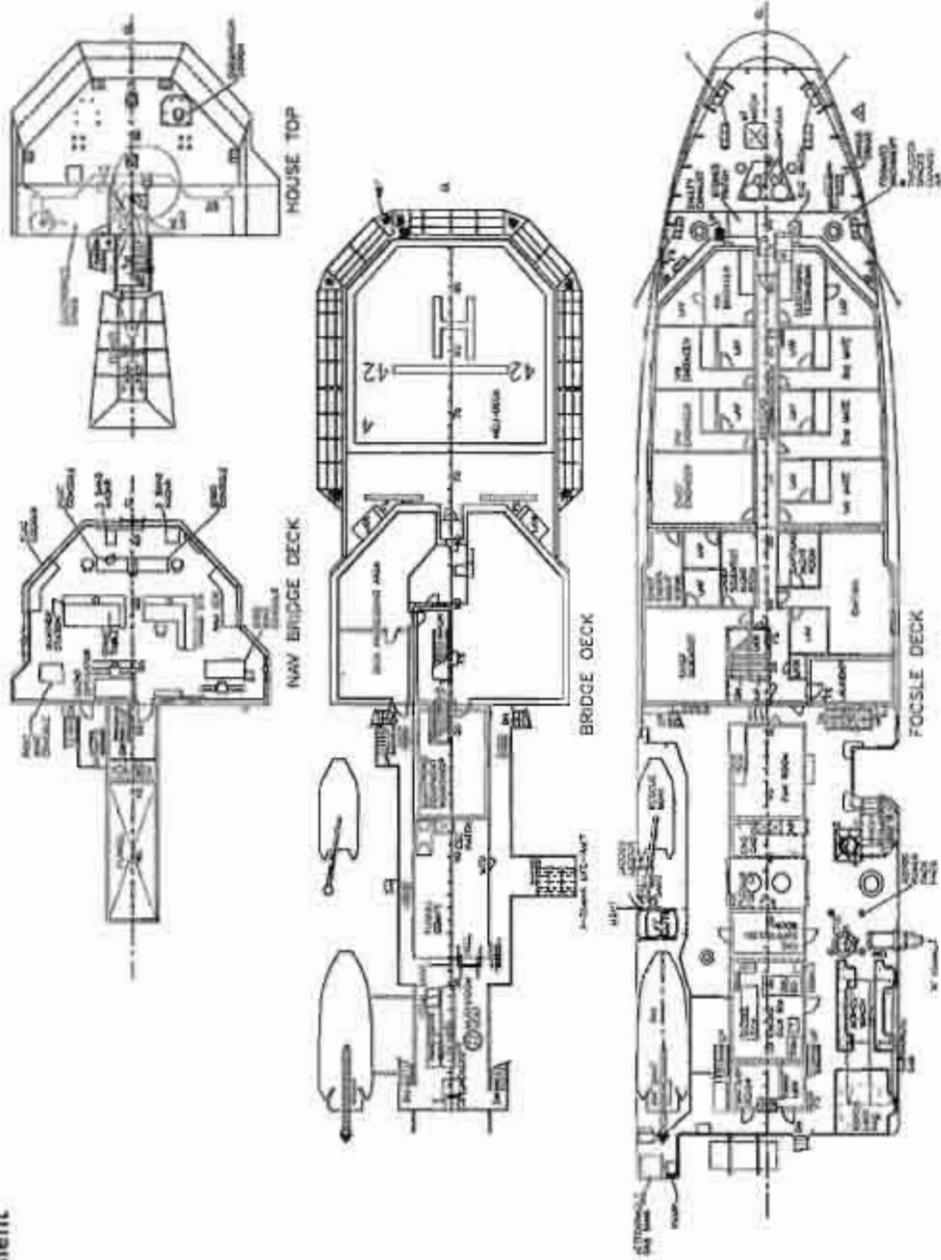
(c) Before a voyage commences care should be taken to ensure that the cargo and pieces of equipment have been properly stowed or lashed so as to minimize the possibility of both longitudinal and lateral shifting while at sea under the effect of acceleration caused by rolling and pitching.

(d) Current draught markings are referenced to the underside of the keel.

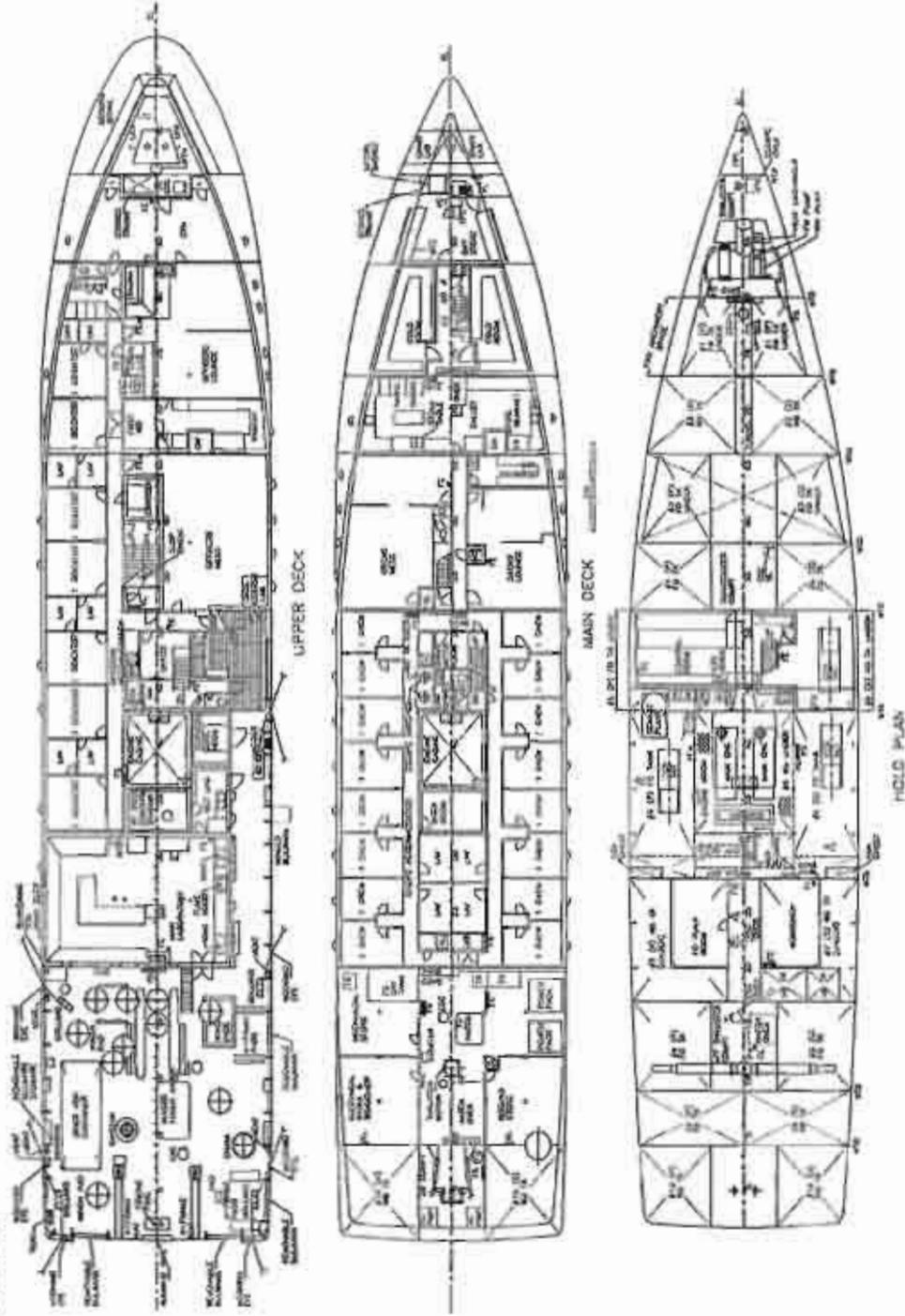
(e) The flume tank is fitted on this vessel to maintain sea kindness, i.e.: lengthening the roll period and reduce its amplitude. Fuel oil is employed to fill this tank and direct dumping valves are provided from flume to No.5 fuel oil tank, port and starboard in the event of an emergency. Therefore, No.5 fuel oil tanks must be kept empty when the flume tank carries liquid. It is of the utmost importance for the master to remember: "THE FLUME TANK MUST BE EMPTIED WHEN DAMAGE OCCURS"



General Arrangement



**General Arrangement**

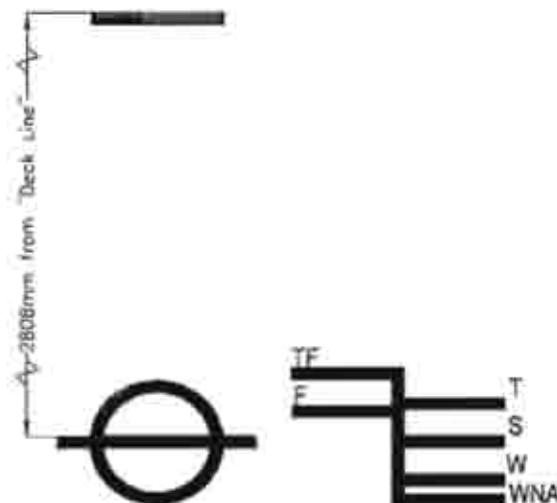


DEADWEIGHT SCALE				
MCT-1cm (MT-M/cm)	TPC (MT/cm)	MEAN DRAFT (M)	DISPL (MT-SW)	DEAD- WEIGHT (MT)
32.00	7.10	4.80	2200	
		4.50	2150	
31.00	7.00	4.40	2050	490
		4.30	2000	400
30.00	6.90	4.20	1950	300
		4.10	1900	200
29.00	6.80	4.00	1800	100
		3.90	1750	50
28.00	6.70	3.80	1650	
		3.70	1600	
27.00	6.60	3.60	1550	
		3.50	1500	

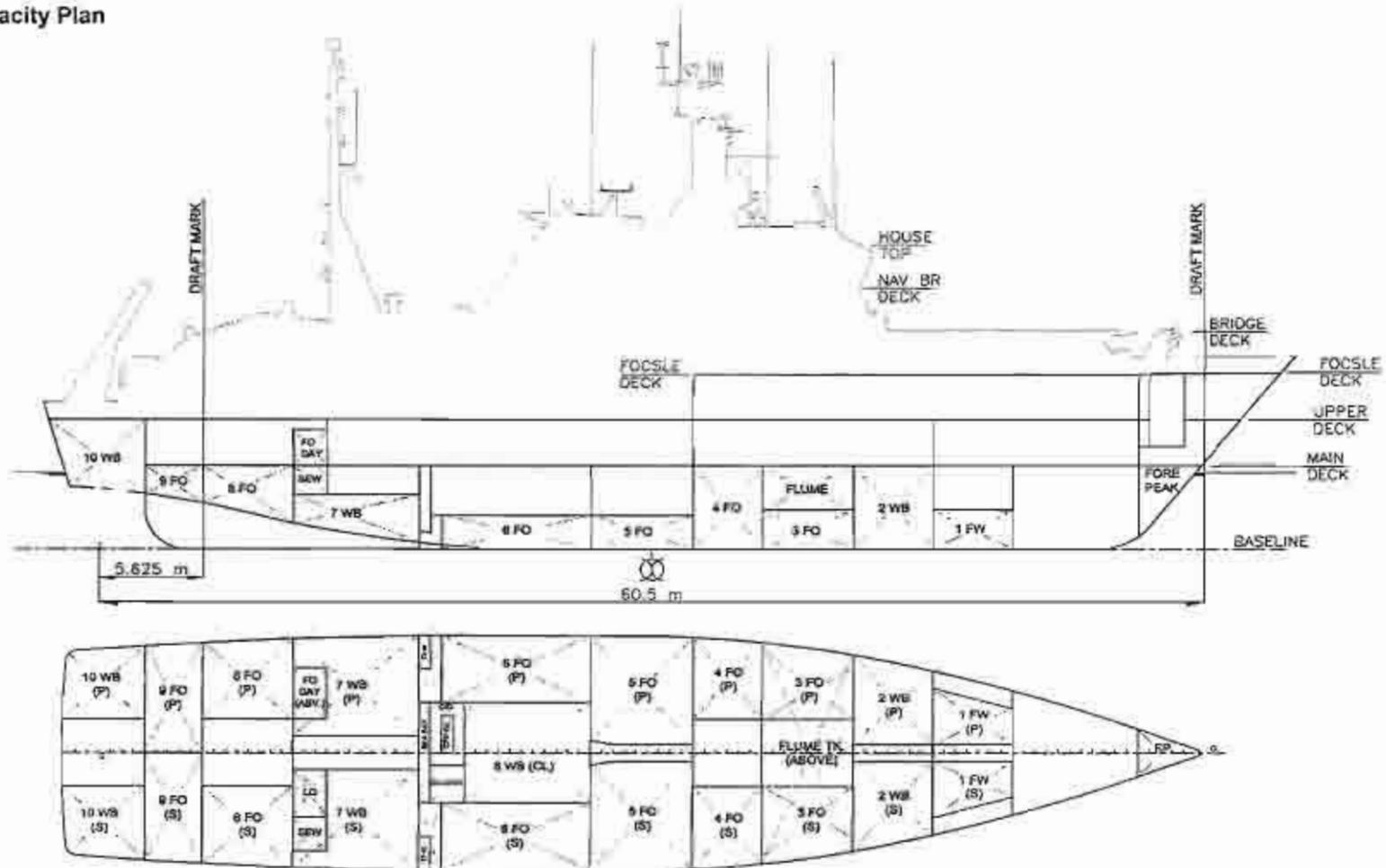
LOADLINE (2123.3 MT) - 4.514 m ABV USK  
DEADWEIGHT - 498.7 MT

LIGHTSHIP (1824.6 MT) - 3.788 m ABV USK  
DEADWEIGHT - 0.0 MT

NOTE: SHIP ON EVEN KEEL WITH DRAFT MARKS REFERENCED FROM UNDER SIDE OF KEEL (USK), i.e. 0.014 m (14 mm) BELOW TOP SIDE OF KEEL



Capacity Plan



### Tank Capacities and Free Surface Corrections

Tank Name	% Used	Specific Gravity	Volume in T	Weight (Tonnes)	LCG (ft from Midline)	TCG (ft from Midline)	DC (ft from Midline)	Max FSB (ft)	
<b>Fuel Oil Tanks</b>									
Tank 3 - Fuel Oil (P)	100	0.850	21,700	18,445	8,348f	3,466p	1,338	17,410	
Tank 3 - Fuel Oil (S)	100	0.850	21,700	18,445	8,348f	3,466s	1,538	17,410	
Tank 4 - Fuel Oil (P)	100	0.850	66,400	56,440	4,091f	4,149p	2,904	27,570	
Tank 4 - Fuel Oil (S)	100	0.850	66,400	56,440	4,091f	4,149s	2,924	27,570	
Tank 5 - Fuel Oil (P)	100	0.850	41,300	35,105	0,465a	3,066p	1,248	85,190	
Tank 5 - Fuel Oil (S)	100	0.850	41,300	35,105	0,465a	3,066s	1,248	85,190	
Tank 6 - Fuel Oil (P)	100	0.850	29,300	24,905	7,318a	4,598p	1,471	34,190	
Tank 6 - Fuel Oil (S)	100	0.850	29,300	24,905	7,318a	4,598s	1,471	34,190	
Tank 8 - Fuel Oil (P)	100	0.850	45,800	38,930	21,905a	4,117p	3,890	36,060	
Tank 8 - Fuel Oil (S)	100	0.850	45,800	38,930	21,905a	4,117s	3,890	36,060	
Tank 9 - Fuel Oil (P)	100	0.850	29,000	24,650	20,093a	2,773p	4,111	58,190	
Tank 9 - Fuel Oil (S)	100	0.850	29,000	24,650	20,093a	2,773s	4,111	58,190	
FO Day Tank (P)	100	0.850	11,800	9,960	19,667a	3,500p	5,950	3,550	
			<b>Total:</b>	<b>478,900</b>	<b>406,810</b>	<b>6,891a</b>	<b>6,683p</b>	<b>2,728</b>	<b>520,750</b>
<b>Flume Tank</b>									
Flume Tank	100	0.850	152,900	129,965	8,437f	0,000	3,597	678,980	
			<b>Total:</b>	<b>152,900</b>	<b>129,965</b>	<b>8,437f</b>	<b>0,000</b>	<b>3,597</b>	<b>678,980</b>
<b>Lube Oil Tanks</b>									
LO Storage Tx (S)	100	0.830	10,600	8,796	18,687a	2,850a	4,050	5,20	
CPP Oil (P)	100	0.830	1,400	1,162	11,188a	1,015p	0,712	0,47	
			<b>Total:</b>	<b>12,000</b>	<b>9,960</b>	<b>17,816a</b>	<b>2,224a</b>	<b>3,662</b>	<b>5,700</b>

#### GHS Tank Names

Tank 3 - Fuel Oil (P)	=	TK3_FO.P	Tank 8 - Fuel Oil (P)	=	TK8_FO.P
Tank 3 - Fuel Oil (S)	=	TK3_FO.S	Tank 8 - Fuel Oil (S)	=	TK8_FO.S
Tank 4 - Fuel Oil (P)	=	TK4_FO.P	Tank 9 - Fuel Oil (P)	=	TK9_FO.P
Tank 4 - Fuel Oil (S)	=	TK4_FO.S	Tank 9 - Fuel Oil (S)	=	TK9_FO.S
Tank 5 - Fuel Oil (P)	=	TK5_FO.P	FO Day Tank (P)	=	PODAY.P
Tank 5 - Fuel Oil (S)	=	TK5_FO.S	Flume Tank	=	FLUME.C
Tank 6 - Fuel Oil (P)	=	TK6_FO.P	Lube Oil Storage Tx (S)	=	ME_LO.S
Tank 6 - Fuel Oil (S)	=	TK6_FO.S	CPP Oil (P)	=	CPP_OIL.P

### Effect of Free Surfaces on Stability

The free surface of fluid carried in partially filled tanks has the effect of reducing stability. This can be regarded as an effective rise in the position of the vertical center of gravity (KG) and as a reduction in the metacentric height (loss of GM). This effect shall be taken into account when calculating KG using the following equation:

$$\text{Free Surface Correction} = \frac{\text{Free surface moment}}{\text{Vessel Displacement}}$$

The calculated KG shall be corrected as follows:  $KG(f) = KG + \text{Free Surface Correction}$ , and subsequently used in the formula for the calculation of GM.

Also,  $KM - KG(f) = GM(f)$ , i.e. the corrected GM.

Tank Name	% Used	Specific Gravity	Volume in T	Weight (Tonnes)	LCG (ft from Midline)	TCG (ft from Midline)	DC (ft from Midline)	Max FSB (ft)	
<b>Fresh Water Tanks</b>									
Tank 1 - Fresh Water (P)	100	1.000	16,900	16,900	17,374f	1,524p	1,340	6,84	
Tank 1 - Fresh Water (S)	100	1.000	16,900	16,900	17,374f	1,524s	1,340	6,84	
			<b>Total:</b>	<b>33,800</b>	<b>33,800</b>	<b>17,374f</b>	<b>0,000</b>	<b>1,340</b>	<b>13,680</b>
<b>Sundry Tanks</b>									
Sludge Tank (S)	100	0.900	3,400	3,060	11,158a	1,715a	0,806	1,6	
Sewage Tank (S)	100	1.000	5,500	5,500	18,687a	5,306a	4,050	0,67	
			<b>Total:</b>	<b>8,900</b>	<b>8,560</b>	<b>15,962a</b>	<b>4,002a</b>	<b>2,875</b>	<b>2,470</b>
<b>Water Ballast Tanks</b>									
Tank 2 - Water Ballast (P)	100	1.025	81,000	83,025	13,094f	2,351p	2,913	69,24	
Tank 2 - Water Ballast (S)	100	1.025	81,000	83,025	13,094f	2,351s	2,913	69,24	
Tank 6 - Water Ballast (C)	100	1.025	41,200	42,230	6,781a	0,000	0,706	119,61	
Tank 7 - Water Ballast (P)	100	1.025	52,100	53,403	15,823a	3,552p	2,204	107,84	
Tank 7 - Water Ballast (S)	100	1.025	52,100	53,403	15,823a	3,552s	2,204	107,84	
Tank 10 - Water Ballast (P)	100	1.025	67,300	68,983	29,675a	4,147p	5,879	41,63	
Tank 10 - Water Ballast (S)	100	1.025	67,300	68,983	29,675a	4,147s	5,879	41,630	
			<b>Total:</b>	<b>442,000</b>	<b>453,050</b>	<b>8,661a</b>	<b>0,000</b>	<b>3,444</b>	<b>536,830</b>

#### GHS Tank Names

Tank 1 - Fresh Water (P)	=	TK1_FW.P	Tank 7 - Water Ballast (S)	=	TK7_WB.S
Tank 1 - Fresh Water (S)	=	TK1_FW.S	Tank 10 - Water Ballast (P)	=	TK10_WB.P
Sludge Tank (S)	=	SLUDGE.S	Tank 10 - Water Ballast (S)	=	TK10_WB.S
Sewage Tank (S)	=	SEWAGE.S			
Tank 2 - Water Ballast (P)	=	TK2_WB.P			
Tank 2 - Water Ballast (S)	=	TK2_WB.S			
Tank 6 - Water Ballast (C)	=	TK6_WB.C			
Tank 7 - Water Ballast (P)	=	TK7_WB.P			

**TABLE OF HYDROSTATIC PROPERTIES**

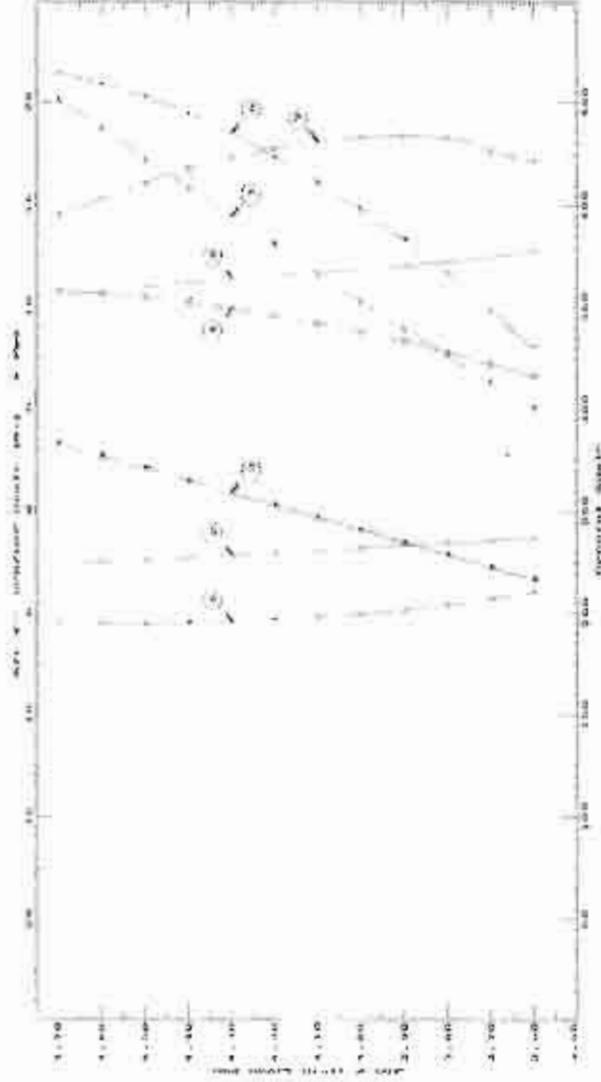
VCG = 0.00 ft Above Baseline

LCP Draft (ft/USK)	Displacement (MT)	LCB (ft Forward of Mid L)	VCB (ft ABL)	TPC (MT/cm)	LCP (ft Forward of Mid L)	MCT-1cm (MT/m/cm)	NM-Long (m ABL)	KM-Trans (ft ABL)
3.600	1903.470	1.326a	2.166	6.330	3.955a	23.120	84.390	7.563
3.700	1567.370	1.440a	2.226	6.450	4.269a	24.390	85.380	7.604
3.800	1632.470	1.560a	2.286	6.570	4.589a	25.720	86.460	7.452
3.900	1698.670	1.682a	2.346	6.670	4.830a	26.830	86.680	7.411
4.000	1765.850	1.805a	2.407	6.760	5.035a	27.860	86.670	7.374
4.100	1833.820	1.928a	2.467	6.840	5.198a	28.790	86.140	7.342
4.200	1902.770	2.049a	2.528	6.920	5.337a	29.660	85.540	7.312
4.300	1972.370	2.166a	2.588	6.990	5.447a	30.460	84.730	7.281
4.400	2042.590	2.280a	2.648	7.050	5.509a	31.120	83.620	7.245
4.600	2113.350	2.389a	2.708	7.100	5.536a	31.680	82.270	7.202
4.800	2184.510	2.491a	2.768	7.130	5.515a	32.120	80.670	7.156
4.700	2256.000	2.586a	2.827	7.160	5.480a	32.520	79.090	7.109

Note: Drafts given in hydrostatic and stability data are referenced from the underside of keel, 14 mm below topside of keel (Moulded baseline).

All other vertical positions (VCB, VCG, KM-L, KM-T) are referenced from top side of keel (Moulded baseline).

HYDRAULIC PROPERTIES IN LABORATORY



- ① Displacement 2-6 MPa
- ② Solution 1-4, 02 MPa/0.06
- ③ Material/Region 3-0.7 M. -MP/0.06
- ④ 1-2M (1000) 2-0.2 MPa/0.02
- ⑤ MVA 3-1-10 MPa/M.
- ⑥ MVA 3-1-10 MPa/M.
- ⑦ MVA 3-1-10 MPa/M.
- ⑧ MVA 3-1-10 MPa/M.
- ⑨ MVA 3-1-10 MPa/M.
- ⑩ MVA 3-1-10 MPa/M.

Material density = 1.025 Assumed all = 0.00 M.  
 Scale in page 0.075 M. MP = atmosphere

CROSS CURVES OF STABILITY

Displacement (MT)	Righting Arm in Meter (GZ) (CG = 7.75)								
	Heel = 5°	Heel = 10°	Heel = 15°	Heel = 20°	Heel = 25°	Heel = 30°	Heel = 35°	Heel = 40°	Heel = 45°
1512.34	0.660s	1.319s	1.968s	2.580s	3.631s	4.540s	5.308s	6.854s	
1576.41	0.654s	1.308s	1.954s	2.569s	3.634s	4.545s	5.298s	6.824s	
1641.68	0.650s	1.299s	1.941s	2.557s	3.637s	4.549s	5.287s	6.793s	
1708.02	0.646s	1.290s	1.928s	2.546s	3.641s	4.551s	5.276s	6.760s	
1775.33	0.643s	1.282s	1.917s	2.535s	3.645s	4.551s	5.261s	6.725s	
1.843.51	0.640s	1.275s	1.905s	2.524s	3.648s	4.548s	5.246s	6.690s	
1.912.47	0.637s	1.268s	1.895s	2.513s	3.650s	4.543s	5.229s	6.655s	
1.982.17	0.633s	1.262s	1.885s	2.503s	3.649s	4.535s	5.211s	6.621s	
2.052.47	0.630s	1.256s	1.876s	2.494s	3.646s	4.526s	5.192s	6.589s	
2.123.29	0.627s	1.249s	1.868s	2.484s	3.640s	4.514s	5.171s	6.558s	
2.194.50	0.623s	1.244s	1.861s	2.476s	3.630s	4.501s	5.149s	6.527s	
2.266.04	0.620s	1.238s	1.854s	2.468s	3.618s	4.485s	5.125s	6.497s	

CROSS CURVES OF STABILITY - 21.00 HOURS  
 -S. LLOYD'S SHEEP (SHEEP-21.00)



DISPLACEMENT GRAVITY = 8,000 TONNES, ACCUMULATED KG = 0,00 KG.

**Example Showing the Use of Cross Curves**

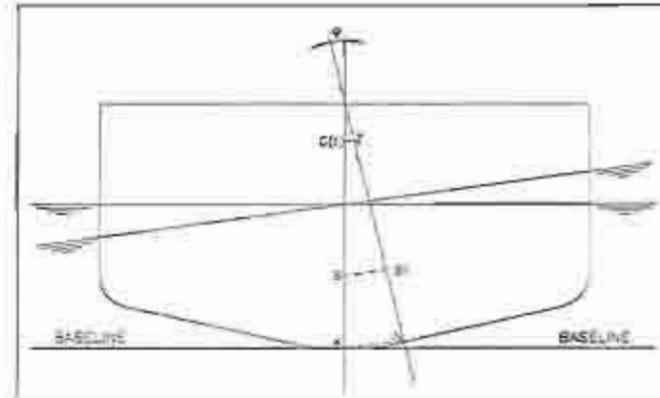
The righting lever (GZ) at any particular angle of heel ( $\phi$ ) is calculated using the following equation:

$$GZ = KN - KG(f) \sin(\phi)$$

Where:  $KN$  = Ordinate taken from Cross Curves of Stability for actual displacement and angle of heel;  
 $\phi$  = Angle of Heel (Deg)  
 $KG(f)$  = Vertical center of gravity above baseline, corrected for free surface effect

Example: For displacement of 1912 MT and  $KG(f) = 6.071$  m, the following data is derived:

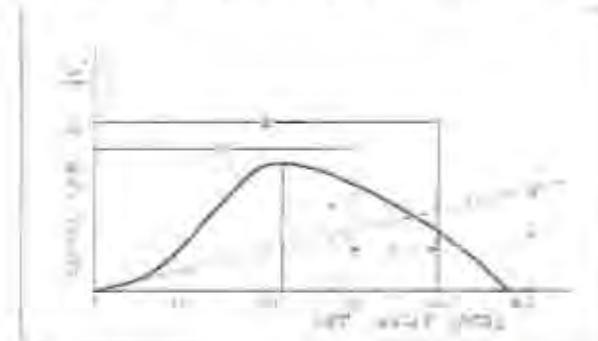
Angle (Deg)	0	15	30	45	60	75	90
$KN(m)$	0.64	1.27	1.90	2.51	3.05	4.54	5.68
$KG(f) \sin(\phi)(m)$	0.528	1.054	1.571	2.076	3.035	3.902	4.651
$GZ(m)$	0.108	0.214	0.324	0.437	0.815	0.641	0.397



**Notes Regarding Intact Stability**

As this ship is required to comply with STAB 6 of Transport Canada Publication TP 7301 E, "Standard for the Intact Stability of Iron-Passenger Ships and Passenger Ships Carrying Not More Than 12 Passengers", it is important to ensure that in any sailing condition the stability complies with at least the following criteria:

- A. The initial GM to be not less than 0.15 [m];
- B. Area under GZ curve from 0° to 40°, or 0° to downflooding point, or 0° to point of zero righting arm (whichever is less), to be not less than 0.05 [m-rad];
- C. Area under GZ curve from 0° to 30° to be not less than 0.056 [m-rad];
- D. Area under GZ curve from 30° to 40°, or 30° to downflooding point, or 30° to point of zero righting arm (whichever is less), to be not less than 0.03 [m-rad];
- E. Maximum GZ to occur at an angle (exceeding 30°, but not less than 25°);
- F. GZ at 30° or greater to be not less than 0.20 [m];



Note: The breakdown of consolidated weights has been included in Appendix D

**Flume Tank**

The flume tank is fitted on this vessel to maintain sea kindness, i.e.: lengthening the roll period and reduce its amplitude. Fuel oil is employed to fill the tank and direct dumping valves are provided from No.5 fuel oil tank, port and starboard in the event of an emergency. Therefore, No.5 fuel oil tanks must be kept empty when the flume tank carries liquid, it is of the utmost importance for the master to remember: **"THE FLUME TANK MUST BE EMPTIED WHEN DAMAGE OCCURS"**

**Summary of Intact Stability Conditions**

The following conditions have been analyzed. All cases are in compliance/equivalence with the requirements of STAB 6.

Condition #1 - Lightship Condition	1624.6	3.723	0.863a	1.222	0.2105	0.1410	0.0694	0.415	30.85	0.415	Pass
Condition #2 - Ballast Departure Condition	2064.4	4.450	0.234a	0.998	0.2256	0.1425	0.0931	0.542	32.88	0.534	Pass
Condition #3 - Ballast Arrival Condition	1769.4	3.973	0.345a	1.221	0.2661	0.1652	0.1010	0.565	35.00	0.584	Pass
Condition #4 - Load Line Departure Condition	2115.5	4.475	0.258a	0.916	0.2180	0.1330	0.0600	0.504	32.50	0.499	Pass
Condition #5 - Fully Loaded Intermediate Condition	1924.5	4.212	0.186a	0.864	0.1881	0.1168	0.0715	0.423	30.02	0.418	Pass
Condition #6 - Fully Loaded Arrival Condition	1826.2	4.058	0.348a	1.205	0.2554	0.1582	0.0882	0.588	34.28	0.552	Pass
Condition #7 - ROV Departure Condition - ROPOS on Fore Deck	2092.3	4.456	0.148a	0.820	0.1936	0.1160	0.0756	0.448	31.77	0.444	Pass
Condition #8 - ROV Operating Condition - ROPOS on Fore Deck	2094.9	4.463	0.108a	0.833	0.1936	0.1228	0.0711	0.431	30.00	0.431	Pass
Condition #9 - ROV Departure Condition 2 - ROPOS on Upper Deck	2122.8	4.479	0.333a	0.858	0.2081	0.1360	0.0791	0.470	31.32	0.468	Pass
Condition #10 - ROV Operating Condition 2 - ROPOS on Upper Deck	2122.8	4.479	0.315a	0.950	0.2123	0.1371	0.0752	0.460	26.62	0.458	Pass
Condition #11 - Worst Operating Condition	2042.5	4.395	0.652a	0.881	0.1971	0.1218	0.0758	0.447	31.45	0.445	Pass
Condition #12 - load Ballast Departure Condition (STAB 7)	2114.4	4.481	0.110a	0.654	0.1657	0.0965	0.0602	0.367	30.67	0.367	Pass
Condition #13 - load Ballast Arrival Condition (STAB 7)	1685.4	4.075	0.538a	0.967	0.1981	0.1254	0.0727	0.435	31.49	0.432	Pass
Condition #14 - load Load Line Departure Condition (STAB 7)	2120.9	4.504	0.065a	0.673	0.1368	0.0880	0.0510	0.323	30.00	0.323	Pass
Condition #15 - load Fully Loaded Intermediate Condition (STAB 7)	1971.6	4.288	0.101a	0.507	0.1102	0.0700	0.0394	0.257	30.00	0.257	Pass
Condition #16 - load Fully Loaded Arrival Condition (STAB 7)	1917.8	4.192	0.304a	0.876	0.1679	0.1173	0.0706	0.421	31.68	0.416	Pass

01/30/09 09:23:29 STX Canada Marine, Inc.  
 CGCS JOHN P. Tully  
 NO.1 LIGHTSHIP CONDITION

HEIGHT and DISPLACEMENT STATUS  
 USN DRAFT draft: 3.346 @ 30.752, 4.012 @ 24.634  
 Trim: Aft 0.683/34.875, Heel: Starb 2.24 deg.

Fast	Weight (MT)	LCR	CCB	VCG	FBM
HEIGHT	1.874.60	2.555e	0.041e	6.457	
Load	SpGr	Displ (MT)	LCR <td>VCG <td>VCD </td></td>	VCG <td>VCD </td>	VCD
Total Tanks		0.00			0.00
		Displ (MT)	LCR <td>CCB <td>VCG </td></td>	CCB <td>VCG </td>	VCG
BULL	1.025	1,624.58	2.644e	0.311e	2.290
					-2.100

Righting Arms: 0.000 2.000e  
 Distances in METERS: -----Distances in m. -KT.

DECKBOARD STATUS  
 USN DRAFT draft: 3.346 @ 30.252, 4.330 @ 24.634  
 Trim: Aft 0.683/34.875, Heel: Starb 2.24 deg.  
 USN Deckboard is 3.283 - located at 32.130e  
 Least void freeboard (to margin line) is 3.101 & located at 32.130e

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.683/34.875, Heel: Starb 2.24 deg., VCD = 6.457

Draft	Displacement	Buoyancy-Ctr.	Weight	Remarks
Origin	Weight (MT)	LCR	VCG	CCB
3.723	1,624.58	2.644e	2.290	6.73 2.551e 25.52 86.15 1.222

Distances in METERS: -----Specific Gravity = 1.025 -----Notes in m. -KT.  
 VCG is per 14.60m.  
 Draft is from USN DRAFT.

01/29/09 08:54:22 STX Canada Marine, Inc.  
 CGCS JOHN P. Tully  
 NO.1 LIGHTSHIP CONDITION

RIGHTING ARMS vs REEL ANGLE  
 LCG = 2.555e VCG = 0.041e VCD = 6.457

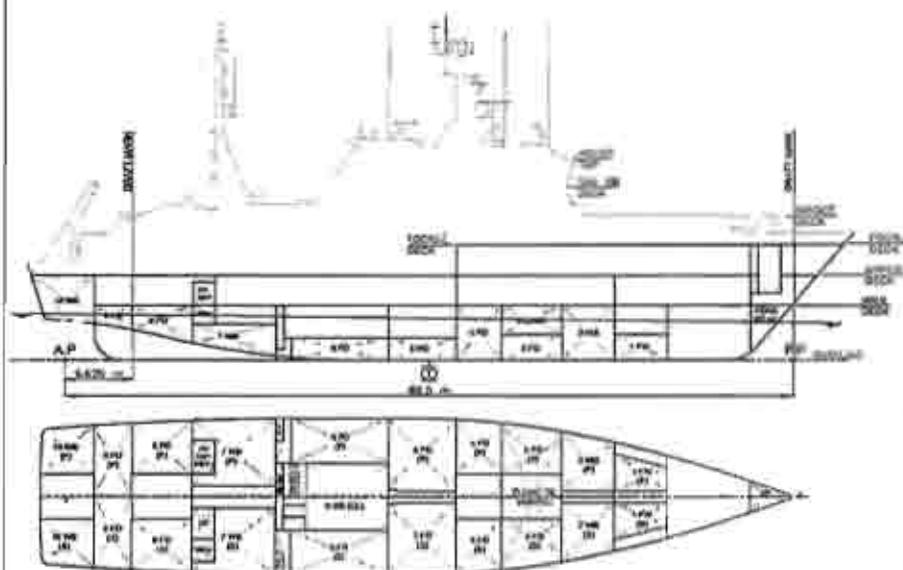
Origin	Degrees of	Displacement	Righting Arms	Flood Ft
Depth	Trim	Heel	Weight (MT)	Area
3.704	0.712	2.24e	1,624.53	0.000
3.692	0.588	4.74e	1,624.60	0.002
3.689	0.654	7.24e	1,624.60	0.003
3.638	0.588	9.74e	1,624.60	0.000
3.592	0.512	12.24e	1,624.60	0.000
3.535	0.432	14.74e	1,624.60	0.000
3.473	0.348	17.24e	1,624.59	0.000
3.393	0.264	19.74e	1,624.59	0.000
3.298	0.180	22.24e	1,624.60	0.000
3.187	0.096	24.74e	1,624.60	0.000
3.060	0.105	27.24e	1,624.60	0.000
2.917	0.215	29.74e	1,624.60	0.000
2.843	0.275	30.55e	1,624.60	0.000
2.760	0.332	32.24e	1,624.60	0.000
2.703	0.372	33.09e	1,624.60	0.000
2.590	0.442	34.74e	1,624.60	0.000
2.410	0.532	37.24e	1,624.22	0.000
2.222	0.592	39.74e	1,624.40	0.000
2.026	0.632	42.20e	1,624.54	0.000
1.822	0.652	44.70e	1,624.33	0.000
1.611	0.642	47.24e	1,624.63	0.000
1.394	0.612	49.70e	1,624.80	0.000
1.173	0.562	52.20e	1,624.61	0.000
1.001	0.522	54.20e	1,624.62	0.000

Distances in METERS: -----Specific Gravity = 1.025 -----Area in m. -Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes.

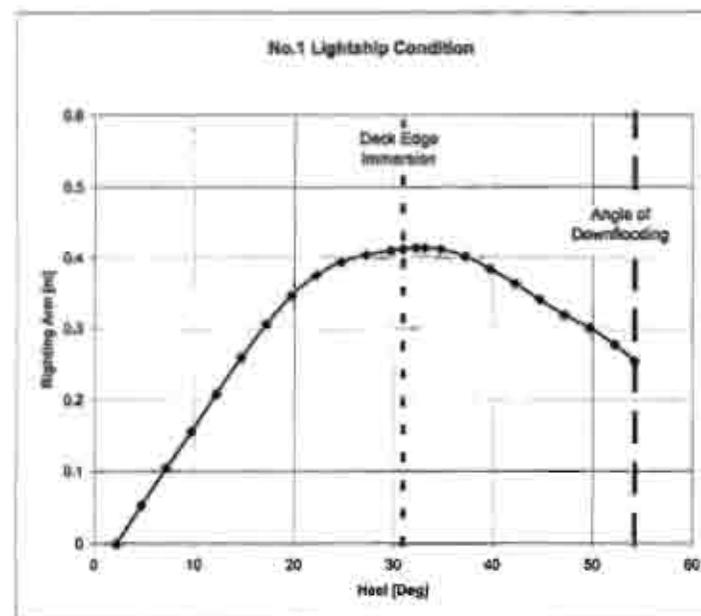
Critical Point: -----LCR-----CCB-----VCG  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.610e 7.000 11.300

No.1 Lightship Condition



NOTE: All cases shown with boom positioned forward.

No.1 Lightship Condition



Item	STAB & IMPACT STABILITY CRITERIA	Min/Max	Attained
(1)	Area from 0 deg to 40 or Flood	> 0.0900 m.-Rad	0.2105 P
(2)	Area from 0 deg to 30	> 0.0550 m.-Rad	0.1410 P
(3)	Absolute Angle at Flood	> 0.00 deg	54.20 P
(4)	Righting Arm at 30 deg	> 0.200 m.	0.415 P
(5)	GM at Equilibrium	> 0.150 m.	1.222 P
(6)	Angle from 0 deg to MAXRA	> 25.00 deg	30.85 P

-----Relative angles measured from 2.242s-----

21/03/08 06:33:28 STX Canada Marine, Inc.  
 OGDJ JOHN P. Tully  
 NO.2 BALLAST DEPARTURE CONDITION

RIGHTING AND DISPLACEMENT STATUS  
 USK DRAFT draft: 4.521 @ 30.25t, 4.552 @ 24.63t  
 Trim: Aft 0.234/54.875, Heel: Port 0.99 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,424.60	2.350a	0.040a	4.437
AFT STORES	0.00	22.350a	1.330p	6.954
FPD STORES	2.00	30.000t	0.500	6.500
Galley Stores	24.00	20.250t	0.200	6.000
Gas In Jacketable TN	0.88	24.200a	4.100p	11.000
45 Crew and Effects @ 127	0.50	0.200	0.200	11.000
<b>Total Flood</b>	<b>2,602.28</b>	<b>0.401a</b>	<b>0.941a</b>	<b>6.473</b>

Item	Load	SpGr	Height (MT)	LCG	TCG	VCG	PSM
TN1 WB.F	0.300	1.025	14.08	14.890a	2.560p	1.498	39.53
TN2 FO.F	0.950	0.840	17.32	8.340t	2.637p	1.500	17.26
TN3 FO.S	0.800	0.840	17.32	8.340t	1.644a	1.502	17.60
TN4 FO.F	0.950	0.840	22.56	4.391f	4.139p	1.828	27.02
TN4 FO.S	2.200	0.840	24.39	4.351f	4.137a	1.825	17.05
TN5 FO.F	0.950	0.840	23.29	7.338a	4.560p	1.444	51.07
TN5 FO.S	0.950	0.840	23.29	7.338a	4.579a	1.444	39.51
TN6 FO.F	0.950	0.840	24.96	21.900a	4.308p	1.797	23.82
TN6 FO.S	0.950	0.840	24.96	21.900a	4.308a	1.797	35.51
TN7 FO.F	0.950	0.840	21.11	24.051a	2.732p	4.271	27.21
TN7 FO.S	0.950	0.840	23.11	24.051a	2.745a	4.071	27.29
TN1 FW.F	0.980	1.000	14.84	17.370t	1.818a	1.322	4.84
FLUME.C	0.080	1.025	16.31	8.420t	0.914p	2.908	109.78
CPP OIL.F	0.500	0.880	0.42	11.185a	0.405p	2.488	0.50
SLUDGE.S	0.225	1.000	0.77	11.288a	1.987a	0.400	0.90
BAHNS.S	0.100	0.880	0.19	18.895a	0.388a	2.225	0.77
FOOT.F	0.250	0.800	0.20	16.448a	0.501p	2.899	1.19
<b>Total Tanks</b>			<b>402.25</b>	<b>2.748a</b>	<b>0.161p</b>	<b>2.777</b>	<b>1128.88</b>
<b>Total Weight</b>			<b>2,004.49</b>	<b>0.866a</b>	<b>0.002p</b>	<b>3.693</b>	

Item	Height (MT)	LCG	TCG	VCG	RefM
HULL	1.603	2.074a	2.658a	0.907p	2.591

Righting Arms: 2.000 0.300  
 Distances in METERS: 2.000 0.300

FREEBOARD STATUS  
 USK DRAFT draft: 4.521 @ 30.25t, 4.552 @ 24.63t  
 Trim: Aft 0.234/54.875, Heel: Port 0.99 deg.  
 Least freeboard is 3.020 m. inboard at 22.120a  
 Least extra freeboard to margin line is 0.254 m. located at 22.130a

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.234/54.875, Heel: Port 0.99 deg., VCG = 2.499

Item	Weight (MT)	LCG	TCG	VCG	RefM
DRIFT Displacement	2,004.49	2.658a	0.002p	3.693	
Origin	4.050	2.074a	2.658a	2.493	7.09
Distances in METERS					24.15 76.41 0.99

Trim in per 10.00m. True from Surface Inclined.

21/03/08 10:54:02 STX Canada Marine, Inc.  
 OGDJ JOHN P. Tully  
 NO.2 BALLAST DEPARTURE CONDITION

RIGHTING ARM vs HEEL ANGLE  
 Total CU: LCG = 2.498a TCG = 0.002p VCG = 3.693  
 Free Surface Adjustment: 0.519  
 Adjusted CG: LCG = 2.488a TCG = 0.002p VCG = 3.231

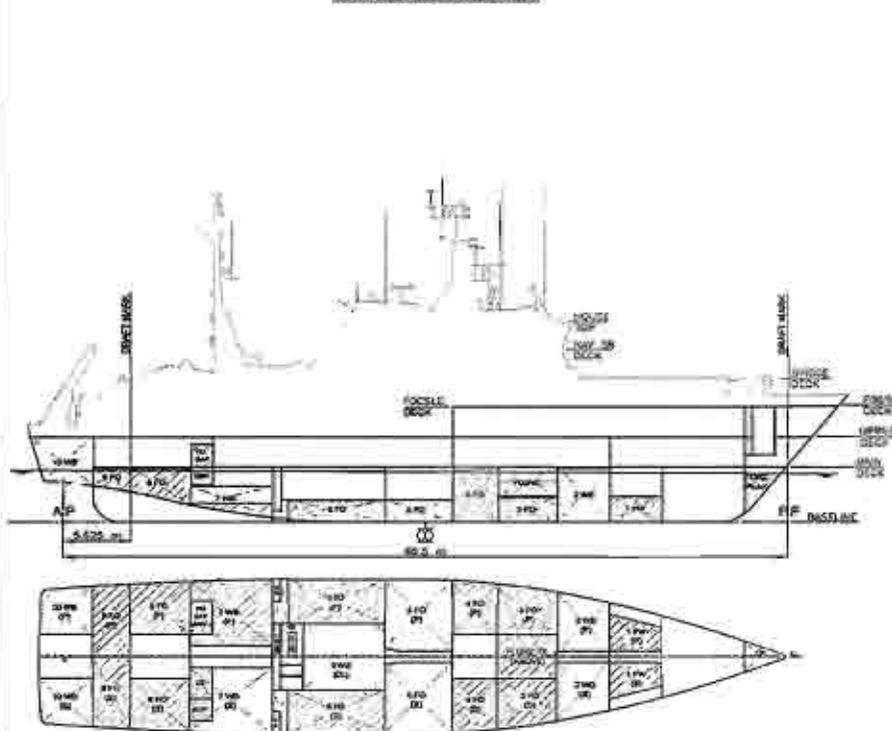
Origin	Degree of Trim	Degree of Heel	Displacement	Righting Arm	Area	Flow Pt
Depth	Trim	Heel	Height (MT)	in	in	Height
4.430	0.25a	0.00p	2,004.49	0.000	0.000	6.800(1)
4.430	0.25a	2.41a	2,004.49	0.000	0.044	6.521(1)
4.415	0.24a	4.83a	2,004.49	0.000	0.087	6.242(1)
4.399	0.23a	7.41a	2,004.49	0.000	0.131	5.963(1)
4.382	0.22a	9.91a	2,004.49	0.000	0.175	5.684(1)
4.362	0.16a	12.41a	2,004.49	0.000	0.219	5.206(1)
4.344	0.12a	14.91a	2,004.49	0.000	0.264	4.800(1)
4.272	0.07a	17.41a	2,004.49	0.000	0.314	4.400(1)
4.009	0.01a	19.91a	2,004.49	0.000	0.365	4.100(1)
3.993	0.00t	22.41a	2,004.49	0.000	0.417	3.792(1)
3.885	0.00t	24.91a	2,004.49	0.000	0.466	3.497(1)
3.891	0.13a	24.91a	2,004.49	0.000	0.468	3.436(1)
3.794	0.20t	27.41a	2,004.49	0.000	0.511	3.091(1)
3.614	0.26t	29.91a	2,004.49	0.000	0.534	2.722(1)
3.487	0.29a	32.41a	2,004.49	-0.208	0.542	2.358(1)
3.410	0.29t	32.91a	2,004.49	0.000	0.543	2.301(1)
3.208	0.23a	34.91a	2,004.49	0.000	0.529	1.960(1)
3.130	0.20t	37.41a	2,004.49	0.000	0.509	1.620(1)
2.941	0.14t	39.91a	2,004.49	0.000	0.512	1.235(1)
2.775	0.10a	42.41a	2,004.49	0.000	0.493	0.873(1)
2.576	0.10a	44.91a	2,004.49	0.000	0.473	0.500(1)
2.378	0.05t	47.41a	2,004.49	0.000	0.441	0.204(1)
2.240	0.01t	49.91a	2,004.49	0.000	0.420	-0.001(1)

Distances in METERS: Specific Gravity = 1.025 Area in m. Rad.

Notes: The Weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 122.6 m.-MT was applied to artificially modify the CG.

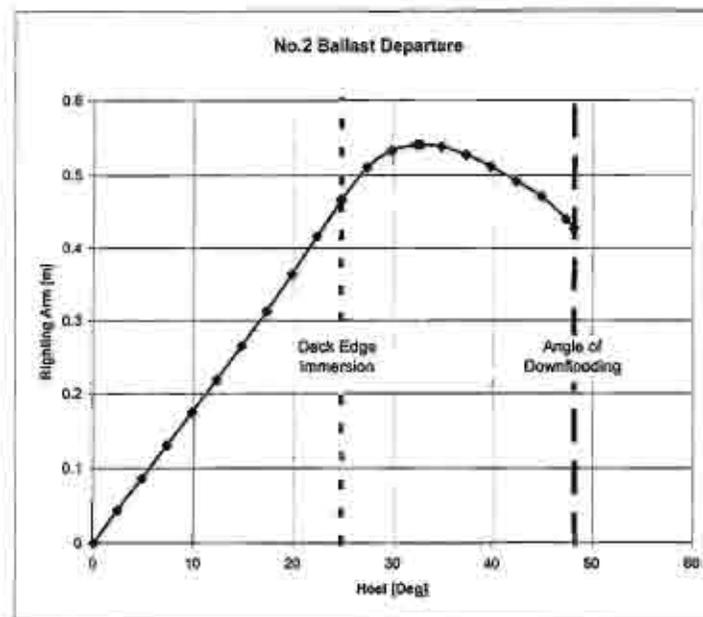
Critical Point: LCG = 2.488a TCG = 0.002p VCG = 3.231  
 1) CAPTAIN'S ROOM: HULLCOV FLOOD 7.430a 7.000 11.200

No.2 Ballast Departure



Note: Aft cranes stowed with boom positioned forward.

No.2 Ballast Departure



LIM-----STAR 5 INTACT STABILITY CRITERIA-----		Min/Max-----	Attained
(1) Area from 0 deg to 40 or Flood	>	0.0900 m.-Rad	0.2356 P
(2) Area from 0 deg to 30	>	0.0550 m.-Rad	0.1425 P
(3) Absolute Angle at Flood	>	0.00 deg	48.23 P
(4) Righting Arm at 30 deg	>	0.200 m.	0.534 P
(5) GM at Equilibrium	>	0.150 m.	0.999 P
(6) Angle from 0 deg to MaxRA	>	25.00 deg	32.89 P

-----Relative angles measured from 0.08T-----

01/30/09 09:25:35 STX Canada Marine, Inc.  
 CGCS JOHN P. Tully  
 NO.3 BALLAST ARRIVAL CONDITION

WEIGHT and DISPLACEMENT STATE  
 USK DRAFT draft: 3.783 @ 30.024, 4.137 @ 24.83a  
 Trim: Aft 0.345/54.875, Heel: Stbd 0.11 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.89	2.595a	0.018a	4.437
AFT STORES	5.00	23.350a	1.310p	4.554
FWD STORES	3.00	20.000a	0.000	4.500
Galley Stores	7.00	20.250a	0.000	6.000
Gas in Jettisonable Tk	0.69	20.750a	6.100p	11.000
60 Cow and Effects @ 125	5.00	0.00a	0.000	11.000
Total Fixed	1,645.28	2.498a	0.041a	4.475

Load	Spdz	Weight (MT)	LCG	TCG	VCG	PSW
TK2_WB.P	0.400	1.025	33.23	13.472a	2.082p	1.589
TK6_WB.C	1.200	1.025	42.22	6.781a	0.000	0.700
TK5_FO.P	0.900	0.840	17.33	0.570a	2.392p	0.837
TK5_FO.S	0.900	0.840	17.33	0.373a	2.405a	0.838
TK1_FW.F	0.100	1.000	1.69	17.350a	0.974p	3.277
TK1_FW.S	0.100	1.000	1.69	17.349a	0.975a	0.277
CFP_OIL.P	0.500	0.990	0.62	11.385a	0.903p	0.435
SLUDGE.S	0.223	1.000	0.77	11.890a	1.251a	0.404
SEWAGE.S	0.900	0.890	4.37	18.489a	5.300a	3.965
FOOD.F	0.500	0.840	4.89	18.489a	3.499a	5.425
Total Tanks			124.14	0.011a	0.503p	1.266
Total Weight			1,769.42	2.523a	0.002a	6.109

HULL	Weight (MT)	LCG	TCG	VCG	PSW
	1,769.42	2.347a	0.010a	2.412	-3.858

Righting Arms: 0.000 0.000  
 Distances in METERS: Moments in m.-MT.

FREESBOARD STATUS  
 USK DRAFT draft: 3.783 @ 30.024, 4.137 @ 24.83a  
 Trim: Aft 0.345/54.875, Heel: Stbd 0.11 deg.  
 Least freeboard is 3.439 m. located at 22.130a  
 Least extra freeboard (to margin line) is 3.366 m. located at 33.130a

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.345/54.875, Heel: Stbd 0.11 deg., VCG = 4.109

Draft	Displacement	Buoyancy-Ctr.	Weight	Moment
Origin	Weight (MT)	LCG	VCG	CG
3.978	1,769.42	2.347a	2.412	6.84

Distances in METERS: Specific Gravity = 1.025. Moment in m.-MT.  
 Draft is from USK DRAFT. True Free Surface Included.

01/20/09 15:54:22 STX Canada Marine, Inc.  
 CGCS JOHN P. Tully  
 NO.3 BALLAST ARRIVAL CONDITION

RIGHTING ARMS vs HEEL CURVE  
 Total CG: LCG = 2.323a TCG = 0.003a VCG = 6.109  
 Free Surface Adjustment: 0.089  
 Adjusted CG: LCG = 2.324a TCG = 0.002a VCG = 4.199

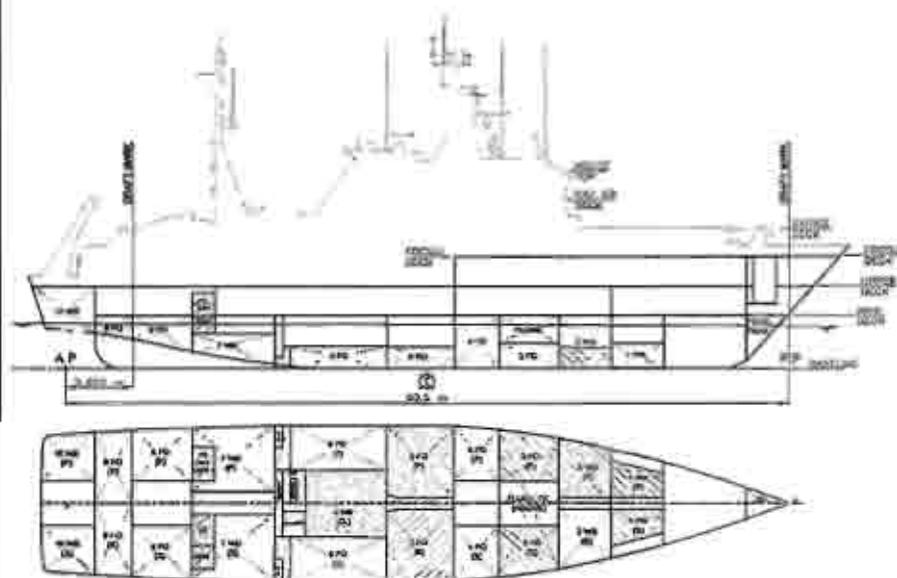
Origin	Depth	Trim	Heel	Displacement	Righting Arms	Flood Pt
				Weight (MT)	in Trim	in Heel
					Area	Height
3.859	7.36a	0.11a	0.00a	1,769.42	0.000	0.000
3.952	8.35a	0.11a	0.00a	1,769.41	0.000	0.056
3.937	8.22a	0.11a	0.00a	1,769.41	0.000	0.111
3.911	8.28a	0.11a	0.00a	1,769.41	0.000	0.165
3.875	8.23a	0.11a	0.00a	1,769.41	0.000	0.219
3.829	8.17a	0.11a	0.00a	1,769.41	0.000	0.274
3.770	8.10a	0.11a	0.00a	1,769.41	0.000	0.329
3.701	8.01a	0.11a	0.00a	1,769.41	0.000	0.383
3.619	8.07a	0.11a	0.00a	1,769.41	0.000	0.434
3.522	8.16a	0.11a	0.00a	1,769.41	0.000	0.478
3.408	8.26a	0.11a	0.00a	1,769.41	0.000	0.513
3.278	8.37a	0.11a	0.00a	1,769.41	0.000	0.541
3.110	8.41a	0.11a	0.00a	1,769.41	0.000	0.562
2.911	8.47a	0.11a	0.00a	1,769.42	0.000	0.564
2.671	8.58a	0.11a	0.00a	1,769.42	0.000	0.580
2.400	8.64a	0.11a	0.00a	1,759.11	0.000	0.585
2.197	8.66a	0.11a	0.00a	1,769.42	0.000	0.594
1.952	8.70a	0.11a	0.00a	1,769.42	0.000	0.581
1.682	8.73a	0.11a	0.00a	1,769.99	0.000	0.570
1.436	8.74a	0.11a	0.00a	1,769.69	0.000	0.556
1.238	8.72a	0.11a	0.00a	1,769.11	0.000	0.540
1.018	8.69a	0.11a	0.00a	1,769.00	0.000	0.525
0.802	8.64a	0.11a	0.00a	1,768.25	0.000	0.503
0.589	8.59a	0.11a	0.00a	1,769.42	0.000	0.474

Distances in METERS: Specific Gravity = 1.025. Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 158.1 m.-MT was applied to artificially modify the CG.

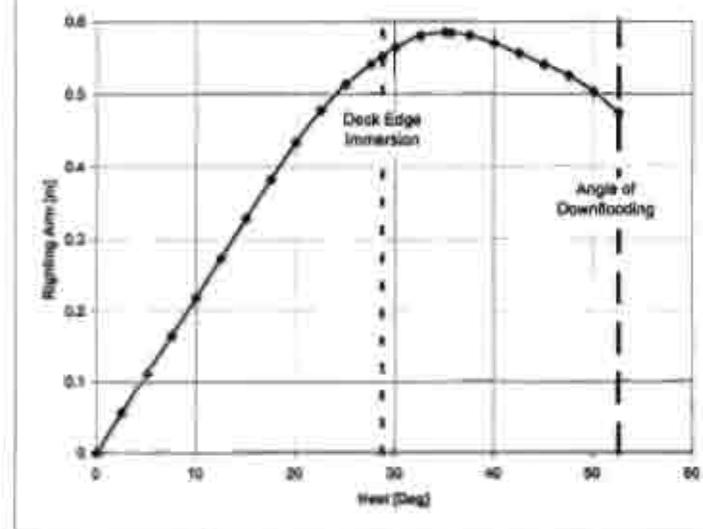
Original Point	LCG	TCG	VCG
(1) CAPTAIN'S ROOM WINDOW FLOOD	7.638a	7.402a	11.309

No.3 Ballast Arrival



Note: Aft crane stowed with boom positioned forward.

No.3 Ballast Arrival



Item	STAR & INTACT STABILITY CRITERIA	min/max	Attained
(1)	Area from 0 deg to 40 or Flood	> 0.0300 m.-Rad	0.2641 F
(2)	Area from 0 deg to 30	> 0.0500 m.-Rad	0.1652 F
(3)	Absolute Angle at Flood	> 0.00 deg	52.57 F
(4)	Righting Arm at 30 deg	> 1.200 m.	0.564 F
(5)	Gn at Equilibrium	> 0.150 m.	1.271 F
(6)	Angle from 0 deg to MaxRA	> 15.00 deg	35.30 F

-----Relative angles measured from 0.111-----

01/20/09 09:22:33  
088 11.50

STX Canada Marine, Inc.  
COGS JOHN P. Tully  
NO.4 LOAD LINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
USK DRAFT draft: 4.329 @ 30.25t, 4.596 @ 24.63t  
Trim: Aft 0.246/34.875, Heel: Port 0.11 deg.

Fast	Weight (MT)	LCG	TCG	VCG			
LIGHT SHIP	1,404.09	2,495a	2,948a	8.457			
AFT STORES	5.00	22.350a	1.510p	6.554			
FWD STORES	3.00	30.000f	0.000	4.500			
Galley Stores	14.00	20.250f	0.000	6.000			
Gas in Jettisonable TK	0.68	20.390a	6.100p	11.000			
4W Crew and Effects @ 122	5.00	8.000	0.000	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.050a	8.120			
UPPER DECK CONTAINER	4.35	26.100a	4.450p	8.600			
FOODLE DECK MACHINERY	8.84	9.320a	4.470a	11.000			
FOODLE DECK CONTAINER	3.88	14.350a	5.440a	11.200			
MEGACRANE	2.50	21.000f	0.000	14.300			
ROCKET EQUIPMENT	0.99	0.700a	5.600a	9.000			
<b>Total Fixed</b>	<b>1,489.97</b>	<b>2,653a</b>	<b>0,069a</b>	<b>6,543</b>			
<b>Lead</b>	<b>Seg</b>	<b>Weight (MT)</b>	<b>LCG</b>	<b>TCG</b>	<b>VCG</b>		
TK2_WB.F	0.200	1.025	16.57	13.078f	1.857p	1.019	16.77
TK3_WB.F	0.950	0.840	17.32	8.338f	3.440p	1.502	17.04
TK4_PO.F	0.950	0.840	52.98	4.092f	4.139p	2.825	27.05
TK4_PO.S	0.950	0.840	52.98	4.092f	4.137a	2.825	27.05
TK6_PO.F	0.950	0.840	23.39	7.343a	4.380p	1.444	33.58
TK6_PO.S	0.950	0.840	23.39	7.343a	4.375a	1.444	33.51
TK8_PO.F	0.950	0.840	36.56	21.900a	4.103p	3.797	35.02
TK8_PO.S	0.950	0.840	36.56	21.900a	4.103a	3.797	35.00
TK9_PO.F	0.950	0.840	33.11	24.295a	2.793p	4.071	37.34
TK9_PO.S	0.950	0.840	33.11	24.293a	2.744a	4.072	37.38
TK1_FW.F	0.950	1.000	14.55	17.968f	1.519p	1.322	4.86
TK1_FW.S	0.950	1.000	14.56	17.969f	1.519a	1.322	4.85
FLNG.C	0.480	1.025	73.21	4.419f	0.017p	2.804	708.76
OPR_OIL.F	0.900	0.890	0.68	11.188a	0.866p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.057a	1.257a	0.404	0.40
SCRAPS.S	0.100	0.890	0.49	18.896a	3.297p	2.285	0.77
FOGAT.F	0.950	0.840	9.22	18.688a	2.501p	2.898	3.69
<b>Total Tanks</b>			<b>825.50</b>	<b>3,161a</b>	<b>0,296p</b>	<b>2,809</b>	<b>1064.82</b>
<b>Total Weight</b>			<b>3,315.47</b>	<b>2,760a</b>	<b>0,003p</b>	<b>4,792</b>	
<b>Displ (MT)</b>				<b>LCB</b>	<b>TCB</b>	<b>VCB</b>	<b>Surf</b>
<b>RULC</b>	<b>7.020</b>		<b>2,115.48</b>	<b>2,775a</b>	<b>0,008p</b>	<b>2,711</b>	<b>-4.462</b>

Righting Arms: 4.300 2.900  
Distances in METERS: ----- Moments in m.-MT

FOREWARD STATUS  
USK DRAFT draft: 4.329 @ 30.25t, 4.596 @ 24.63t  
Trim: Aft 0.246/34.875, Heel: Port 0.11 deg.  
Least foreward is 2.882 m. located at 32.130a  
Least extra foreward (to deck line) is 2.007 m. located at 32.130a

HYDROSTATIC PROPERTIES  
Trim: Aft 0.246/34.875, Heel: Port 0.11 deg., VCG = 5.792

01/20/09 13:54:22  
088 11.50

STX Canada Marine, Inc.  
COGS JOHN P. Tully  
NO.4 LOAD LINE DEPARTURE CONDITION

Displ Displacement Buoyancy-Ctr. Weight Moment  
Origin Weight (MT) LCB VCB LCF on trim VCG GVT GVT  
4.476 2,115.48 2,775a 2,711 7.99 5.667a 29.22 75.60 0.918  
Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT.  
Trim is per 34.88a.

Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARMS vs HEEL ANGLE  
Total CG: LCG = 2,760a TCG = 0.003p VCG = 5.792  
Free Surface Adjustment: 0.505  
Adjusted CG: LCG = 2,762a TCG = 0.002p VCG = 6.297

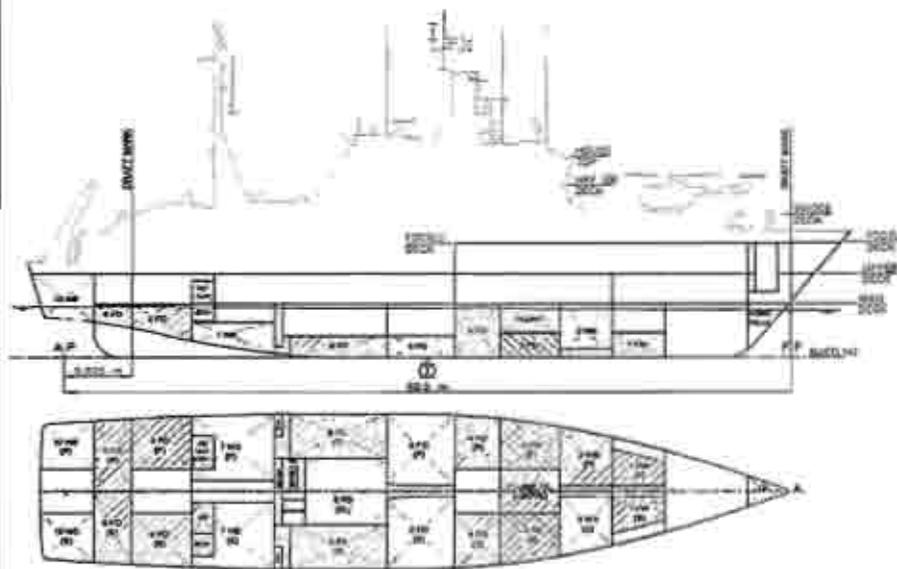
Origin	Degrees of	Displacement	Righting Arm	Flood Pt
Depth	Trim	Heel	Weight (MT)	Area
4.442	0.28a	3.11p	2,115.78	0.000
4.457	0.29a	2.58p	2,115.29	0.000
4.441	0.27a	4.89a	2,115.01	0.000
4.413	0.26a	7.39a	2,115.47	0.000
4.378	0.24a	9.89a	2,115.47	0.000
4.330	0.21a	12.39a	2,115.47	0.000
4.270	0.16a	14.89a	2,115.47	0.000
4.199	0.11a	17.39a	2,115.47	0.000
4.118	0.06a	19.89a	2,115.47	0.000
4.020	0.01a	22.39a	2,115.47	0.000
3.911	0.07f	24.89a	2,115.82	0.000
3.806	0.00f	24.89a	2,115.10	0.000
3.782	0.15f	27.39a	2,115.47	0.000
3.645	0.28f	29.89a	2,115.47	0.000
3.498	0.22f	32.39a	2,115.59	0.000
3.460	0.20f	33.02a	2,115.95	0.000
3.340	0.22f	34.89a	2,115.47	0.000
3.172	0.20f	37.39a	2,115.59	0.000
2.995	0.18f	39.89a	2,115.53	0.000
2.808	0.10f	42.39a	2,115.65	0.000
2.612	0.03f	44.89a	2,115.17	0.000
2.413	0.05a	47.39a	2,114.96	0.000
2.272	0.07a	47.91a	2,115.89	0.000

Distances in METERS. Specific Gravity = 1.025. Area in m.-sqm.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 1068.8 m.-MT was applied to artificially modify the CG.

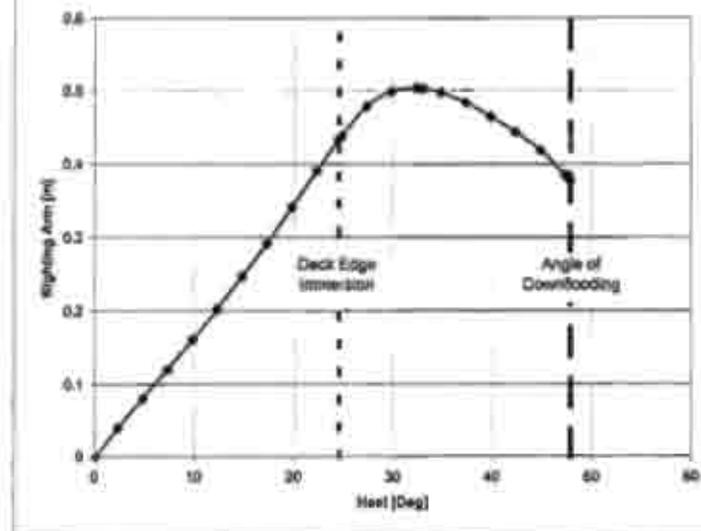
Critical Point: LCB VCB VCG  
(1) CAPTAIN'S ROOM WINDOW FLOOD 7,630a 7,500 21,300

No.4 Load Line Departure



Note: Aft grade stowed with boom positioned forward.

No.4 Load Line Departure



Item	STAB + INTACT STABILITY CRITERIA	Min/Max	Attained
(1)	Area from 0 deg to 40 or Flood	> 0.0900 m.-Rad	0.2189 P
(2)	Area from 0 deg to 30	> 0.0550 m.-Rad	0.1330 P
(3)	Absolute Angle at Flood	> 0.60 deg	47.91 P
(4)	Righting Arm at 30 deg	> 0.200 m.	0.498 P
(5)	GM at Equilibrium	> 0.150 m.	0.918 P
(6)	Angle from 0 deg to HeelH	> 25.00 deg	32.50 P

-----Relative angles measured from 0.106-----

01/30/28 09:14:39 STX Canada Marine, Inc.  
 0203 JOHN F. TULLY  
 NO. 3 FULLY LOADED INTERMEDIATE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 NEB DRAFT (static) 8.102 @ 30.252, 4.301 @ 24.434  
 TRIM Aft 3.196/34.875. Heel: Port 2.08 deg.

Item	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,424.80	2.595w	4.048w	4.457
AFT STORES	3.00	27.350w	1.320p	4.564
TRM STORES	3.00	28.000p	0.000	4.300
Galley Stores	7.00	24.250p	0.000	4.000
Gas In Jetty/Suitable TX	0.88	25.283w	4.199p	11.600
29 Crew and Effects @ 125	3.00	0.000	0.000	11.900
UPPER DECK MACHINERY	17.10	19.400w	0.050w	8.120
UPPER DECK CONTAINER	4.15	24.100w	4.450p	8.900
FOODLE DECK MACHINERY	9.88	4.300w	4.670w	11.000
FOODLE DECK CONTAINER	3.86	14.350w	5.488w	11.300
HELICOPTER	2.50	21.400p	0.000	14.300
ROSETTE EQUIPMENT	0.90	0.700w	1.400w	9.000
<b>Total Fixed</b>	<b>1,662.97</b>	<b>2.754w</b>	<b>0.099w</b>	<b>6.545</b>

Item	Load	Height (MT)	LCG	TCG	VCG	TRM
TK1 W.S.P	0.700	1.025	27.35	15.468w	3.950p	1.924
TK2 W.S.P	0.500	0.800	27.88	4.083E	3.978p	1.903
TK3 W.S.P	0.500	0.800	27.88	4.261E	3.977p	1.913
TK4 W.S.P	0.850	0.840	23.09	7.334w	4.077p	1.404
TK5 W.S.P	0.950	0.840	23.09	7.354w	4.074w	1.404
TK1 F.W.P	0.500	1.000	8.45	17.968E	1.320p	0.830
TK2 F.W.P	0.500	1.000	8.45	17.968E	1.320p	0.830
FLASK.C	0.400	1.025	75.31	1.421E	0.210p	2.305
APP. SILL.P	0.300	0.890	0.62	11.165w	0.980p	0.425
SLDGR.S	0.500	1.500	1.72	11.134w	1.970w	0.873
SIMAGE.S	0.070	0.090	2.43	20.488w	0.300w	1.625
FOODAY.P	0.500	0.340	4.99	14.480w	2.903p	2.425
<b>Total Tanks</b>			<b>241.65</b>	<b>1.754E</b>	<b>0.493p</b>	<b>2.134</b>
<b>Total Weight</b>			<b>1,924.62</b>	<b>2.271w</b>	<b>0.201p</b>	<b>4.591</b>

HULL 1.305 1,924.33 2.344w 0.005p 2.248 -4.199

Righting Arms 0.600 0.004  
 Distances in METERS, Moments in m-MT.

FORWARD STATUS  
 NEB DRAFT (static) 8.102 @ 30.252, 4.301 @ 24.434  
 TRIM Aft 3.196/34.875. Heel: Port 2.08 deg.  
 Smallest freeboard is 3.203 m. Located at 30.130m  
 Least extra freeboard (to margin line) is 3.217 m. Located at 30.120m

HYDROSTATIC PROPERTIES  
 Trim: Aft 3.196/34.875. Heel: Port 2.08 deg., VCG = 1.991

Draft	Displacement	Buoyancy-CG	Weight	Moment
0.000	1,424.80	2.595w	4.048w	17.05
4.212	1,924.62	2.271w	0.201p	17.69

Distances in METERS, Specific Gravity = 1.025, Moment in m-MT.  
 Trim is per 54.82m.  
 Draft is from NEB DRAFT. True Free Surface included.

01/30/28 15:04:30 STX Canada Marine, Inc.  
 0203 JOHN F. TULLY  
 NO. 3 FULLY LOADED INTERMEDIATE CONDITION

RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 2.271w TCG = 0.001p VCG = 1.991  
 Free Surface Adjustment: 0.490  
 Adjusted CG: LCG = 2.273w TCG = 0.001 VCG = 4.482

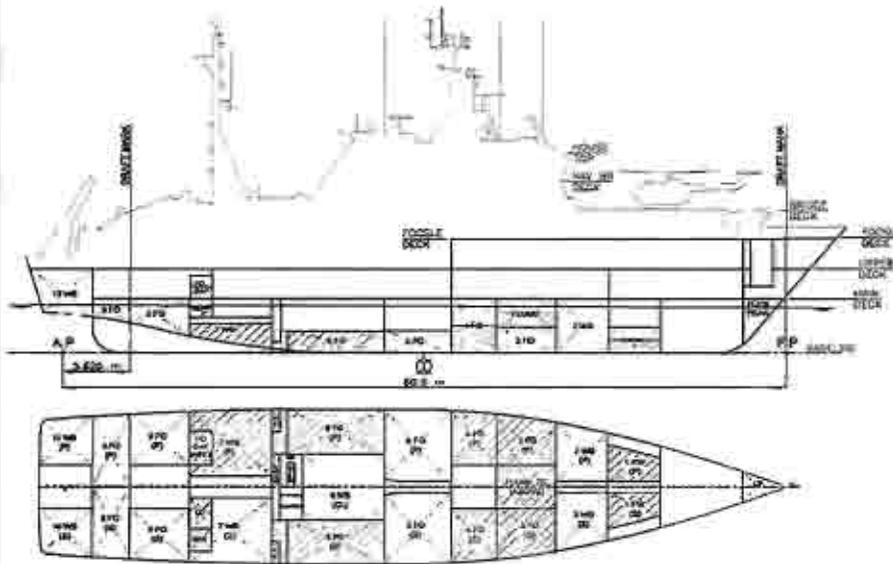
Origin	Degree of Heel	Displacement	Righting Arms	Flood Pt
Deck	0.000	1,924.62	0.000	0.000
Deck	0.250	1,924.62	0.000	0.000
Deck	0.500	1,924.62	0.000	0.000
Deck	0.750	1,924.62	0.000	0.000
Deck	1.000	1,924.62	0.000	0.000
Deck	1.250	1,924.62	0.000	0.000
Deck	1.500	1,924.62	0.000	0.000
Deck	1.750	1,924.62	0.000	0.000
Deck	2.000	1,924.62	0.000	0.000
Deck	2.250	1,924.62	0.000	0.000
Deck	2.500	1,924.62	0.000	0.000
Deck	2.750	1,924.62	0.000	0.000
Deck	3.000	1,924.62	0.000	0.000
Deck	3.250	1,924.62	0.000	0.000
Deck	3.500	1,924.62	0.000	0.000
Deck	3.750	1,924.62	0.000	0.000
Deck	4.000	1,924.62	0.000	0.000
Deck	4.250	1,924.62	0.000	0.000
Deck	4.500	1,924.62	0.000	0.000
Deck	4.750	1,924.62	0.000	0.000
Deck	5.000	1,924.62	0.000	0.000
Deck	5.250	1,924.62	0.000	0.000
Deck	5.500	1,924.62	0.000	0.000
Deck	5.750	1,924.62	0.000	0.000
Deck	6.000	1,924.62	0.000	0.000
Deck	6.250	1,924.62	0.000	0.000
Deck	6.500	1,924.62	0.000	0.000
Deck	6.750	1,924.62	0.000	0.000
Deck	7.000	1,924.62	0.000	0.000
Deck	7.250	1,924.62	0.000	0.000
Deck	7.500	1,924.62	0.000	0.000
Deck	7.750	1,924.62	0.000	0.000
Deck	8.000	1,924.62	0.000	0.000
Deck	8.250	1,924.62	0.000	0.000
Deck	8.500	1,924.62	0.000	0.000
Deck	8.750	1,924.62	0.000	0.000
Deck	9.000	1,924.62	0.000	0.000
Deck	9.250	1,924.62	0.000	0.000
Deck	9.500	1,924.62	0.000	0.000
Deck	9.750	1,924.62	0.000	0.000
Deck	10.000	1,924.62	0.000	0.000

Distances in METERS, Specific Gravity = 1.025, Area in m-Sqm.

Note: The Height and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 940.5 m-MT was applied to artificially modify the CG.

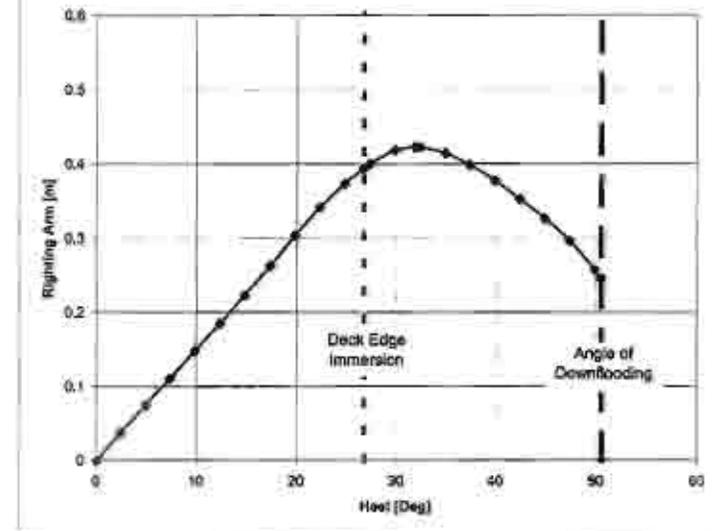
Triaxial Point: LCG = 2.273w TCG = 0.001p VCG = 4.482  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 0.830w 0.000 11.500

No.5 Full Load Intermediate



Note: All trans stowed with boom positioned forward.

No.5 Full Load intermediate



STAB 6 INTACT STABILITY CRITERIA	Min/Max	Attained
(1) Area from 0 deg to 40 at Flood	> 0.0900 m.-Rad	0.1881 P
(2) Area from 0 deg to 30	> 0.0550 m.-Rad	0.1166 P
(3) Absolute Angle at Flood	> 0.00 deg	59.59 P
(4) Righting Arm at 30 deg	> 0.300 m.	0.419 P
(5) Sk at Equilibrium	> 0.150 m.	0.864 P
(6) Angle from 0 deg to MaxRA	> 25.00 deg	32.02 P

-----Relative Angles measured from 0.058-----

01/30/09 06:25:19 STX Canada Marine, Inc.  
 CGS JOHN F. Tully  
 NO. 6 FULLY LOADED ARRIVAL CONDITION

REPORT and DISPLACEMENT STATUS  
 MSL DRAFT draft: 3.867 @ 30.25t, 4.213 @ 24.83t  
 Trim: Aft 0.346/54.975, Heel: Stbd 0.02 deg.

Part	Height(MT)	LCG	TCG	VCG
LIGHT SHIP	1,524.60	2.985a	0.048a	8.427
AFT STORES	5.00	22.350a	1.330p	8.556
MD STORES	3.00	30.000r	0.000	8.500
Galley Stores	1.40	20.250r	2.000	6.000
Gas in Jeptoomba TX	0.35	20.250a	6.100p	11.900
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490a	0.050a	8.130
UPPER DECK CONTAINER	4.35	26.100a	4.650p	8.600
POCSLE DECK MACHINERY	8.98	8.320a	4.670a	11.000
POCSLE DECK CONTAINER	3.86	14.350a	3.480a	12.300
HELICOPTER	2.50	21.000r	0.000	14.300
ROSETTE EQUIPMENT	0.90	0.700a	5.600a	8.500
Total Flood	1,676.79	2.625a	0.271a	8.546

Part	Lead	SpGr	Weight(MT)	LCG	TCG	VCG	PS
TK6_WB.P	0.700	1.025	59.15	13.082r	2.308p	2.291	47.50
TK6_WB.C	1.000	1.025	42.22	6.781d	0.000	0.704	0.00
TK6_FO.P	0.900	0.840	17.33	0.271a	2.399p	2.838	87.29
TK6_FO.S	0.900	0.810	17.33	0.572a	2.399p	2.838	87.29
TK1_WB.P	0.100	1.000	1.69	17.350r	0.975p	0.277	0.75
TK1_FW.S	0.100	1.000	1.69	17.350r	0.975a	0.277	0.75
OPP_OIL.P	0.900	0.890	0.62	11.185a	0.909p	0.435	0.30
SLUDGE.S	0.900	1.000	3.09	11.139a	1.499a	0.740	1.71
SEWAGE.S	0.900	0.890	4.37	18.459a	5.300a	3.485	0.77
TODAY.P	0.900	0.940	4.85	18.683a	3.500p	3.425	3.49
Total Tanks			131.38	1.975r	0.745p	1.582	170.47
Total Weight			1,828.17	2.427a	0.000	6.135	

MULL 1.325 1,828.18 2.450a 0.001a 2.494 =4.044

Righting Arms: 0.000 0.000

Distances in METERS ----- Moments in m.-MT

FREEBOARD STATUS  
 MSL DRAFT draft: 3.887 @ 30.25t, 4.213 @ 24.83t  
 Trim: Aft 0.346/54.975, Heel: Stbd 0.02 deg.  
 Least freeboard is 3.365 m. located at 27.130a  
 Least extra freeboard (to margin line) is 3.269 m. located at 34.120a

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.346/54.975, Heel: Stbd 0.02 deg., VCG = 8.113

Draft	Displacement	Buoyancy-Ctr.	Weight	Moment
Origin	Height(MT)	LCG	VCG	LCF
0.000	1,828.18	2.450a	2.444	21.22
				21.75
				2.206

Distances in METERS ----- Specific Gravity = 1.025 ----- Moment in m.-MT

Trim is per 54.98m. True Free Surface Included.

01/30/09 15:44:22 STX Canada Marine, Inc.  
 CGS JOHN F. Tully  
 NO. 6 FULLY LOADED ARRIVAL CONDITION

RIGHTING ARM vs HEEL ANGLE  
 Total CG: LCG = 2.427a TCG = 0.000 VCG = 8.135  
 Free Surface Adjustment: 0.083  
 Adjusted CG: LCG = 2.428a TCG = 0.000 VCG = 8.128

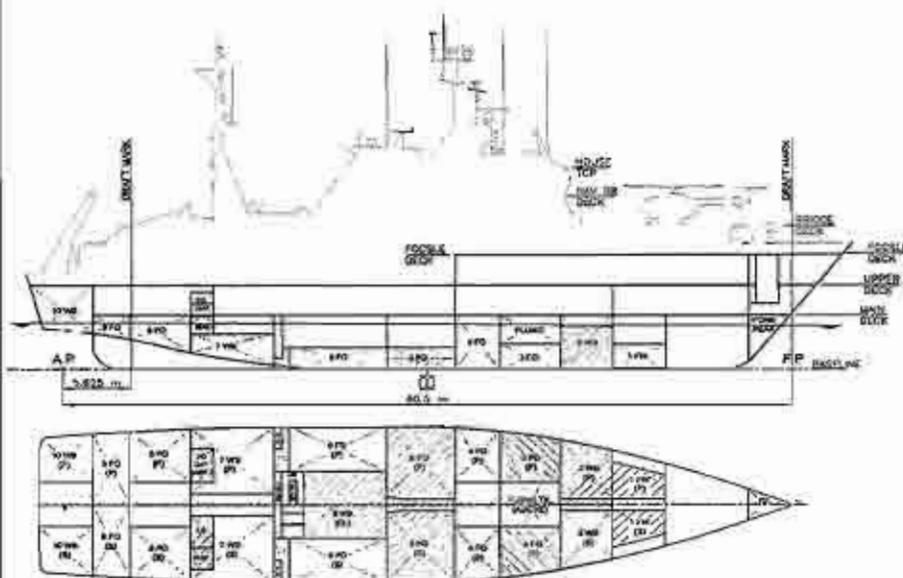
Origin	Degree of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight(MT)	Area
4.044	0.36a	0.02a	1,828.17	0.000
4.039	0.35a	2.52a	1,828.17	0.000
4.023	0.33a	5.07a	1,828.17	0.000
3.998	0.30a	7.52a	1,828.17	0.000
3.961	0.25a	10.02a	1,828.17	0.000
3.915	0.19a	12.52a	1,828.17	0.000
3.857	0.13a	15.02a	1,828.17	0.000
3.788	0.05a	17.52a	1,828.17	0.000
3.707	0.03r	20.02a	1,828.17	0.000
3.610	0.12a	22.52a	1,828.17	0.000
3.496	0.21a	25.02a	1,828.17	0.000
3.368	0.31a	27.52a	1,828.17	0.000
3.236	0.42a	29.02a	1,828.17	0.000
3.223	0.41a	30.02a	1,828.18	0.000
3.055	0.50a	31.52a	1,828.18	0.000
2.946	0.59a	33.02a	1,828.18	0.000
2.896	0.56a	35.02a	1,827.93	0.000
2.718	0.61a	37.52a	1,828.20	0.000
2.531	0.69a	40.02a	1,828.19	0.000
2.338	0.62a	42.52a	1,828.47	0.000
2.133	0.60a	45.02a	1,827.96	0.000
1.923	0.60a	47.52a	1,826.11	0.000
1.706	0.51a	50.02a	1,827.95	0.000
1.559	0.46a	52.75a	1,828.45	0.000

Distances in METERS ----- Specific Gravity = 1.025 ----- Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 170.5 m.-MT was applied to artificially modify the CG.

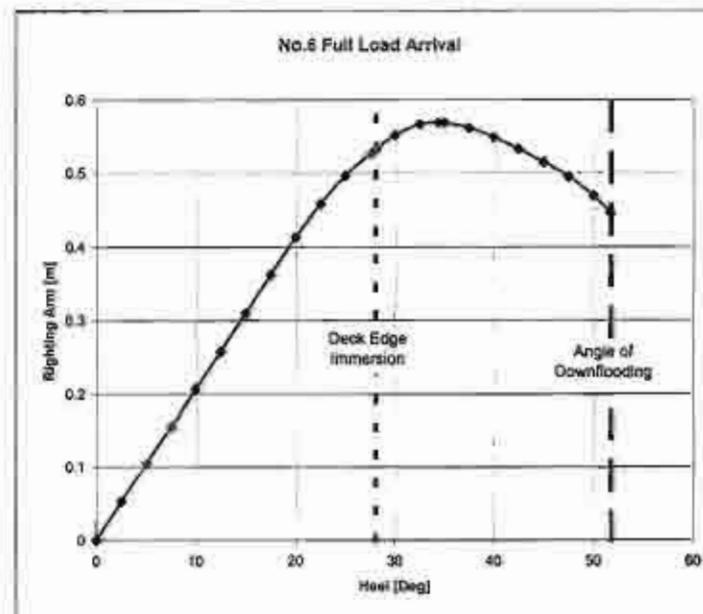
Critical Point: LCG = 2.428a TCG = 0.000 VCG = 8.128  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.635a 7.000 11.300

No.6 Full Load Arrival



Note: Aft crane stowed with boom positioned forward.

No.6 Full Load Arrival



LIM	STAB & INTACT STABILITY CRITERIA	Min/Max	Attained
(1)	Area from 0 deg to 40 or Flood	> 0.0900 m.-Rad	0.2564 P
(2)	Area from 0 deg to 30	> 0.0550 m.-Rad	0.1582 P
(3)	Absolute Angle at Flood	> 0.00 deg	51.75 P
(4)	Righting Arm at 30 deg	> 0.200 m.	0.552 P
(5)	GM at Equilibrium	> 0.150 m.	1.207 P
(6)	Angle from 0 deg to MaxRA	> 25.00 deg	34.28 P

-----Relative angles measured from 0.015-----

01/30/09 09:25:39 STX Canada Marine, Inc.  
 GNS 11.50 COGS JOHN P. Tully  
 NO.7 ROV DEPARTURE CONDITION - ROPOS ON FOCSSLE DECK

**WEIGHT and DISPLACEMENT STATUS**  
 USK DRAFT draft: 4.433 @ 30.25f, 4.519 @ 24.634  
 Trim: Aft 0.085/54.875, Heel: Port 0.23 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	2.595a	0.548s	6.457
ATT STORES	5.00	22.350a	1.330p	6.556
FWD STORES	3.00	20.000f	0.000	6.500
Galley Stores	14.00	20.030f	0.000	6.000
Gas in Jettisonable Tk	0.68	20.250a	6.100p	11.000
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490a	0.050s	8.130
UPPER DECK CONTAINER	4.35	26.100a	4.650p	8.600
ROPOS STOKED - FOCSSLE	40.04	15.600a	4.910s	11.460
ROSETTE EQUIPMENT	0.90	0.700a	5.600s	9.000
AFT CR.-MAIN BOOM-OFF	-7.24	22.400a	5.290s	11.160
AFT CR.-JIB BOOM-OFF	-2.59	20.630a	2.290s	9.800
AFT CR.-JIB CYL-OFF	-1.31	20.000a	5.290s	10.600
AFT CR.-MAIN BOOM-ON	7.24	27.750a	0.062p	11.160
AFT CR.-JIB BOOM-ON	2.59	27.750a	1.825s	9.800
AFT CR.-JIB CYL-ON	1.31	27.750a	2.540p	10.600
<b>Total Fixed</b>	<b>1,714.68</b>	<b>2.979a</b>	<b>0.106s</b>	<b>6.612</b>

Load	SpGr	Weight (MT)	LCG	TCG	VCG	FSM
TK2_WB.S	0.100	1.025	8.32	13.101f	1.532a	6.656
TK7_WB.S	0.300	1.025	16.00	14.963a	2.544a	1.499
TK3_PO.P	0.950	0.840	17.32	8.344f	3.449p	1.502
TK3_PO.S	0.950	0.840	17.32	8.345f	3.441a	1.502
TK4_PO.P	0.950	0.840	52.98	4.092f	6.140p	2.825
TK4_PO.S	0.950	0.840	52.98	4.092f	6.136a	2.825
TK6_PO.P	0.950	0.840	23.39	7.322a	4.583p	1.446
TK6_PO.S	0.950	0.840	23.39	7.322a	4.572s	1.446
TK8_PO.P	0.950	0.840	36.56	21.387a	4.109p	3.737
TK9_PO.P	0.950	0.840	23.11	26.089a	2.759p	4.071
TK1_FW.S	0.980	1.000	16.56	17.371f	1.520p	1.322
TK1_FW.S	0.980	1.000	16.56	17.373f	1.516a	1.322
FLUME.C	0.480	1.025	75.21	6.425f	0.038p	2.908
CPP_OIL.P	0.500	0.850	0.82	11.184a	0.909p	0.435
SLUDGE.S	0.223	1.000	0.77	11.094a	1.384s	0.404
SEWAGE.S	0.100	0.890	0.49	18.690a	5.294s	3.285
FOHAY.P	0.950	0.840	8.28	18.688a	3.502p	5.898
<b>Total Tanks</b>		<b>390.85</b>	<b>0.366a</b>	<b>0.495p</b>	<b>2.960</b>	<b>1043.06</b>
<b>Total Weight</b>		<b>2,105.52</b>	<b>2.494a</b>	<b>0.005p</b>	<b>5.860</b>	

BUILL	Displ (MT)	LCB	TCL	VCL	RefHt
	2,105.37	2.498a	0.018p	2.702	-4.466

Righting Arms: 0.300 0.000p  
 Distances in METERS ----- Moments in m.-MT.

**FREEBOARD STATUS**  
 USK DRAFT draft: 4.433 @ 30.25f, 4.519 @ 24.634  
 Trim: Aft 0.085/54.875, Heel: Port 0.23 deg.  
 Least freeboard is 3.029 m. located at 32.130s  
 Least extra freeboard (to margin line) is 2.993 m. located at 32.130s

01/30/09 08:26:08 STX Canada Marine, Inc.  
 GNS 11.50 COGS JOHN P. Tully  
 NO.7 ROV DEPARTURE CONDITION - ROPOS ON FOCSSLE DECK

**HYDROSTATIC PROPERTIES**  
 Trim: Aft 0.085/54.875, Heel: Port 0.23 deg., VCG = 5.860

Draft	Displacement	Buoyancy-Ctr.	Weight/	Moment/
Origin	Weight (MT)	LCB	VCL	cm
4.480	2,105.37	2.498a	2.702	7.05
		5.578a	29.23	76.17
		0.859		

Distances in METERS ----- Specific Gravity = 1.025 ----- Moment in m.-MT.  
 Trim as per 54.88m.  
 Draft is from USK DRAFT. True Free Surface included.

**RIGHTING ARMS vs HEEL ANGLE**  
 Total CG: LCG = 2.494a TCG = 0.005p VCG = 5.860  
 Free Surface Adjustment: 0.495  
 Adjusted CG: LCG = 2.494a TCG = 0.003p VCG = 6.356

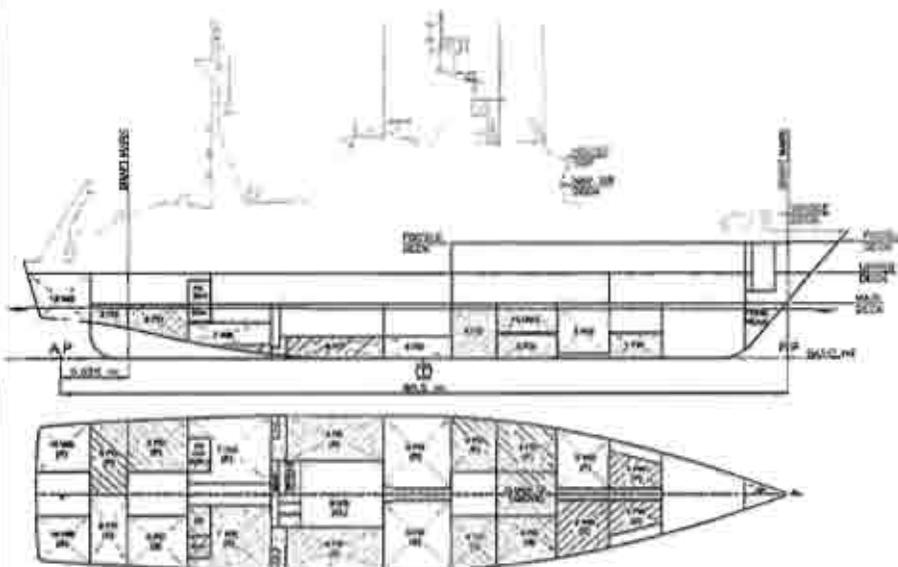
Origin	Degree of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight (MT)	in Trim
4.467	0.09a	0.23p	2,105.83	0.000
4.462	0.09a	2.27a	2,105.36	0.000
4.447	0.08a	4.77a	2,105.52	0.000
4.421	0.06a	7.27a	2,105.52	0.000
4.384	0.04a	9.77a	2,105.52	0.000
4.336	0.00a	12.27a	2,105.52	0.000
4.276	0.04f	14.77a	2,105.52	0.000
4.205	0.09f	17.27a	2,105.52	0.000
4.122	0.15f	19.77a	2,105.52	0.000
4.025	0.21f	22.27a	2,105.52	0.000
3.921	0.27f	24.61a	2,105.52	0.000
3.813	0.28f	24.77a	2,105.52	0.000
3.786	0.35f	27.27a	2,105.53	0.000
3.648	0.40f	29.77a	2,105.53	0.000
3.498	0.43f	32.27a	2,105.53	0.000
3.360	0.44f	32.89a	2,105.58	0.000
3.339	0.44f	34.77a	2,105.53	0.000
3.189	0.43f	37.27a	2,105.64	0.000
2.993	0.40f	39.77a	2,105.57	0.000
2.802	0.34f	42.27a	2,105.94	0.000
2.604	0.27f	44.77a	2,105.22	0.000
2.403	0.19f	47.27a	2,105.01	0.000
2.325	0.16f	48.25a	2,105.89	0.000

Distances in METERS ----- Specific Gravity = 1.025 ----- Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 1043.1 m.-MT was Applied to artificially modify the CG.

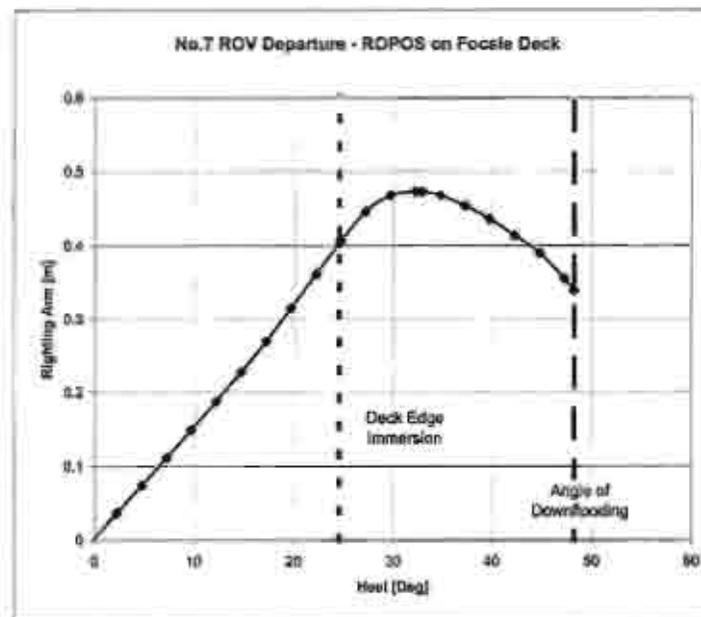
Critical Point: LCP --- TCP --- VCP  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

No.7 ROV Departure - ROPOS on Foredeck



Note: All cranes stowed with boom positioned as/shown in the depicted above.

No.7 ROV Departure - ROPOS on Foredeck



LTN	STAB & INTACT STABILITY CRITERIA	Min/Max	Attained
(1)	Area from 0 deg to 45 or Flood	> 0.0900 m.-Rad	0.2042 P
(2)	Area from 0 deg to 30	> 0.0550 m.-Rad	0.1234 P
(3)	Area from 30 deg to 45 or Flood	> 0.0300 m.-Rad	0.0808 P
(4)	Righting Arm at 30 deg	> 0.200 m.	0.445 P
(5)	St at Equilibrium	> 0.150 m.	0.959 P
(6)	Angle from 0 deg to Heels	> 23.00 deg	32.53 P

-----Relative angles measured from 0.771p-----

01/30/09 09:23:38  
 GNS 11:30  
 SIX Canada Marine, Inc.  
 CODE JOHN P. Tully  
 NO. 8 ROV OPERATING CONDITION - ROPOS ON FOCSLE DECK

WEIGHT and DISPLACEMENT STATUS  
 USK DRIFT draft: 4.463 @ 30.25d, 4.507 @ 24.63d  
 Trim: Aft 0.045/54.875, Heel: Stbd 2.34 deg.

Part	Weight (MT)	LCG	TCC	VCG
LIGHT SHIP	1,424.00	2.556e	0.046e	6.457
AFT STORES	5.00	22.300e	1.730p	6.356
FWD STORES	3.00	36.000e	0.000	8.500
Sally Stores	14.00	20.200e	0.000	6.000
Gas in Jettisonable T8	0.60	20.250e	6.100p	11.000
40 Crew and Effects @ 120	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.400e	0.000e	8.130
UPPER DECK CONTAINER	4.35	26.100e	4.600p	8.400
HELICOPTER	2.50	21.000e	0.000	14.300
ROPOS OPERATING - FOCSLE	40.04	14.470e	6.840e	11.720
ROSETTE EQUIPMENT	0.30	0.700e	5.600e	8.000
AFT CR.-MAIN ROOM-OFF	-7.24	21.300e	3.290e	11.150
AFT CR.-JIB ROOM-OFF	-2.59	20.400e	3.290e	9.800
AFT CR.-JIB CYL-OFF	-1.31	20.000e	3.290e	10.500
AFT CR.-MAIN ROOM-ON	7.24	27.750e	0.000p	11.100
AFT CR.-JIB ROOM-ON	2.59	27.750e	1.825p	8.800
AFT CR.-JIB CYL-ON	1.31	27.350e	2.540p	10.500
<b>Total Fixed</b>	<b>1,717.18</b>	<b>2.917e</b>	<b>0.151e</b>	<b>8.830</b>

Load	SpGr	Weight (MT)	LCG	TCC	VCG	TKM
TK2_WB.S	0.100	1.025	8.31	13.952e	1.577e	0.657
TK7_WB.S	0.100	1.025	16.01	14.900e	3.719e	1.502
TK3_PO.P	0.950	0.840	17.23	8.953e	1.400p	1.509
TK3_PO.S	0.950	0.840	17.32	8.359e	1.488e	1.503
TK4_PO.P	0.950	0.840	22.89	4.093e	4.128p	2.922
TK4_PO.S	0.950	0.840	22.98	4.092e	4.158e	2.826
TK6_PO.P	0.950	0.840	23.23	7.317e	4.529p	1.445
TK6_PO.S	0.950	0.840	23.32	7.314e	4.527e	1.445
TK8_PO.P	0.950	0.840	26.50	21.897e	0.087p	3.730
TK9_PO.P	0.950	0.840	23.11	26.090e	2.665p	4.073
TK2_FK.P	0.980	1.000	16.54	17.379e	1.506p	1.322
TK2_FK.S	0.980	1.000	16.54	17.368e	1.535e	1.322
FLUME.C	0.430	1.030	79.01	8.426e	0.369e	2.919
DPP_GIL.P	0.860	0.890	0.63	11.184e	0.973p	0.434
SLUDGE.S	0.223	1.000	0.71	11.080e	1.143e	0.405
SENSE.S	0.100	0.890	0.48	18.689e	0.393e	0.204
PODGY.P	0.950	0.840	0.21	18.468e	1.435p	0.380
<b>Total Tanks</b>			<b>390.85</b>	<b>0.302e</b>	<b>0.181p</b>	<b>2.562</b>
<b>Total Weight</b>			<b>2,108.03</b>	<b>0.464e</b>	<b>0.032e</b>	<b>8.876</b>
<b>BUCL</b>	<b>1.028</b>		<b>2,108.03</b>	<b>0.464e</b>	<b>0.032e</b>	<b>8.876</b>

Righting Arms: 0.000 0.000e  
 Distances in METERS: ----- Moments in M.-MT.

FREEBOARD STATUS

USK DRIFT draft: 4.463 @ 30.25d, 4.507 @ 24.63d  
 Trim: Aft 0.045/54.875, Heel: Stbd 2.34 deg.  
 Least Freeboard is 2.844 m. located at 32.130m  
 Least extra freeboard (to margin line) is 2.768 m. located at 32.130m

01/30/09 06:26:08  
 GNS 11:30  
 SIX Canada Marine, Inc.  
 CODE JOHN P. Tully  
 NO. 8 ROV OPERATING CONDITION - ROPOS ON FOCSLE DECK

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.045/54.875, Heel: Stbd 2.26 deg., VCG = 8.876

Depth	Displacement	Buoyancy-Ctr.	Weight	Moment
Origin	Weight (MT)	LCG	VCG	CG
4.467	2,108.03	2.416e	2.707	7.09
Distance in METERS: ----- Specific Gravity = 1.025 ----- Moment in M.-MT.				

Dead wt from USK DRIFT: True Free Surface included.

RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 2.444e TCC = 0.002e VCG = 8.876  
 Free Surface Adjustment: 0.462  
 Adjusted CG: LCG = 2.444e TCC = 0.002e VCG = 8.337

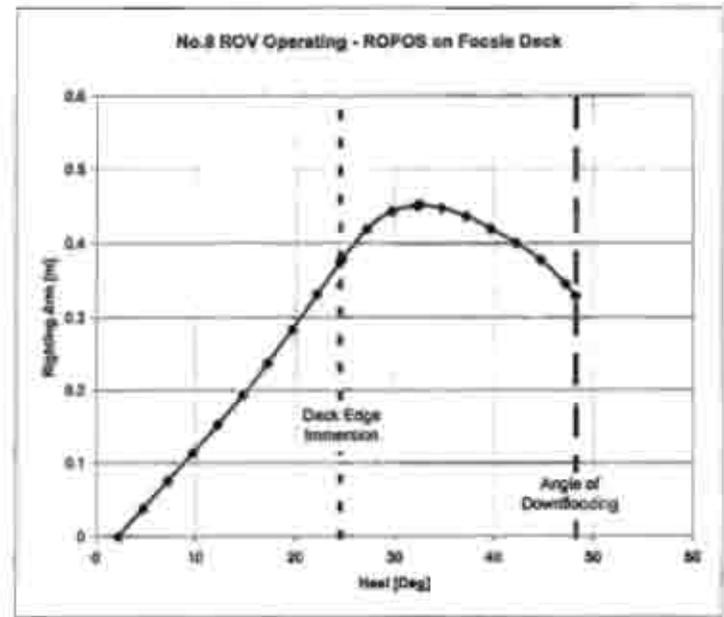
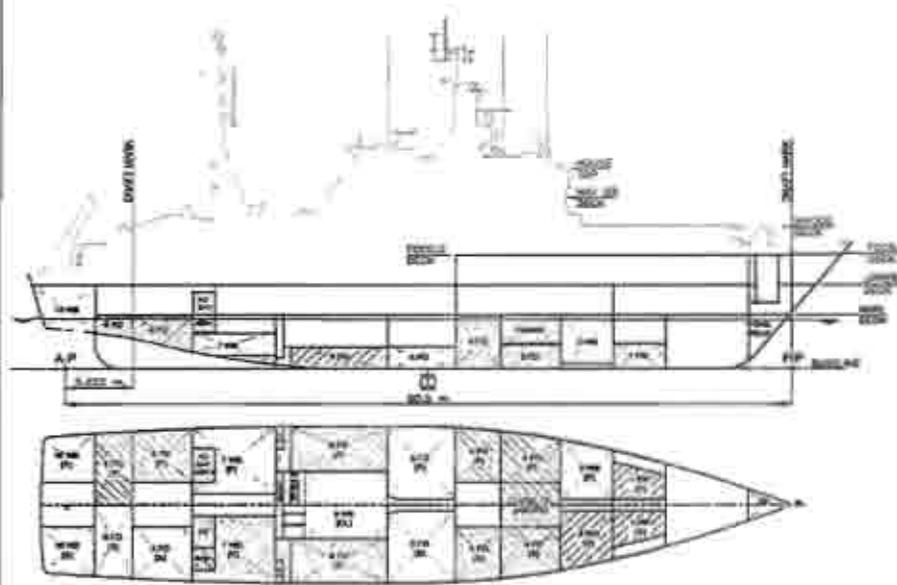
Origin	Degrees of	Displacement	Righting Arm	Flood Pt
Depth	Trim	Heel	Weight (MT)	Area
4.470	0.00e	2.26e	2,108.55	0.000
4.455	0.00e	4.75e	2,108.03	0.000
4.428	0.00e	7.24e	2,108.03	0.000
4.392	0.00e	9.74e	2,108.03	0.000
4.344	0.04e	12.24e	2,108.03	0.000
4.284	0.08e	14.74e	2,108.03	0.000
4.212	0.13e	17.24e	2,108.03	0.000
4.128	0.19e	19.74e	2,108.83	0.000
4.032	0.25e	22.24e	2,108.03	0.000
3.930	0.31e	24.74e	2,108.03	0.000
3.820	0.37e	27.24e	2,107.79	0.000
3.704	0.43e	29.74e	2,108.03	0.000
3.635	0.48e	32.24e	2,108.03	0.000
3.508	0.47e	34.74e	2,108.04	0.000
3.408	0.46e	37.24e	2,108.03	0.000
3.340	0.46e	39.74e	2,107.93	0.000
3.276	0.47e	42.24e	2,108.18	0.000
3.207	0.48e	44.74e	2,108.10	0.000
3.108	0.49e	47.24e	2,107.98	0.000
2.910	0.51e	49.74e	2,107.71	0.000
2.708	0.54e	52.24e	2,107.51	0.000
2.509	0.58e	54.74e	2,108.39	0.000

Distances in METERS: ----- Specific Gravity = 1.025 ----- Area in M.-Rad.

Notes: The Weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALIGNED TO SHIFT with heel and trim changes. Rather, a moment from Free Surface Moment of 974.0 M.-MT was applied to artificially modify the CG.

Critical Point: ----- LCP ----- TCC ----- VCG  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 1.630e 7.060 11.300

No.8 ROV Operating - ROPOS on Foc'sle Deck



Line	STAB 3 INTACT STABILITY CRITERIA	min/max	Attained
(1)	Area from 0 deg to 40 or Flood	> 0.0900 m.-Rad	0.2321 P
(2)	Area from 0 deg to 30	> 0.0550 m.-Rad	0.1265 P
(3)	Area from 30 deg to 40 or Flood	> 0.0300 m.-Rad	0.0756 P
(4)	Righting Arm at 30 deg	> 0.200 m.	0.451 P
(5)	GM at Equilibrium	> 0.150 m.	0.865 P
(6)	Angle from 0 deg to 90/DA	> 25.00 deg	35.32 P

-----Relative angles measured from 2.879g-----

Note: All cranes stowed with boom positioned seaward (not depicted above).

01/30/09 09:23:28 STX Canada Marine, Inc.  
 GMS 11.50 CGCS JOHN P. Tully  
 NO.9 NOV DEPARTURE CONDITION 2 - ROPOS ON UPPER DECK

WEIGHT and DISPLACEMENT STATUS  
 DSK DRAFT draft: 4.355 @ 30.352, 4.628 @ 24.93a  
 Trim: Aft 0.271/34.875, Heel: Stbd 0.02 deg.

Pasc	Weight(MT)	LCB	TCG	VCG
LIGHT SHIP	1,624.40	2.595a	0.018a	6.427
AFT STORES	3.00	22.310a	1.130p	6.56a
FW STORES	3.00	30.000T	0.000	6.50a
Galley Stores	14.00	29.250T	0.200	6.000
Gas in Jettisonable TX	3.60	20.250a	3.100p	11.000
40 Crew and Effects @ 125	5.00	8.000	0.200	11.000
PODSIE DECK MACHINERY	8.50	8.320a	4.570p	11.000
PODSIE DECK CONTAINER	3.6a	14.350a	5.480p	11.300
HELICOPTER	2.50	21.000T	0.200	14.300
ROPOS STORED - UPPER DEK	40.04	22.710a	0.360p	9.110
ROCKETE EQUIPMENT	6.90	0.700a	3.600a	5.000
AFT CR.-MAIN BOOK-OFF	-7.24	22.400a	5.290a	11.100
AFT CR.-JIB BOOK-OFF	-2.59	20.630a	5.090a	9.900
AFT CR.-JIB CIL-OFF	-1.31	20.000a	5.290a	10.800
AFT CR.-MAIN SCOW-ON	7.24	27.750a	0.060p	11.100
AFT CR.-JIB SCOW-ON	2.59	27.750a	1.823p	9.900
AFT CR.-JIB CIL-ON	1.31	27.750a	3.540p	10.600
Total Fixed	1,708.56	3.910a	0.023a	8.583

Dead	SpGr	Weight(MT)	LCB	TCG	VCG	FBM	
TK2_WB.S	0.100	1.025	4.32	13.032E	1.537a	0.855	6.45
TK7_WB.S	0.100	1.025	14.01	14.950a	2.555a	1.200	50.22
TK3_FO.P	0.950	0.840	17.32	8.339E	3.446p	1.502	17.07
TK3_FO.S	0.950	0.840	17.32	8.339E	3.446a	1.502	17.08
TK4_FO.P	0.950	0.840	52.98	4.051E	4.138p	2.823	27.05
TK4_FO.S	0.950	0.840	52.98	4.051E	4.138a	2.823	27.06
TK6_FO.P	0.950	0.840	23.39	7.342a	4.578a	1.444	33.8a
TK6_FO.S	0.950	0.840	23.39	7.342a	4.578a	1.444	33.55
TK8_FO.P	0.950	0.840	36.56	21.900a	4.104a	3.797	35.51
TK8_FO.S	0.950	0.840	36.56	21.900a	4.105a	3.797	35.51
TK9_FO.P	0.950	0.840	23.11	24.092a	2.749a	4.071	57.30
TK1_FW.S	0.980	1.300	16.56	17.169E	1.518p	1.322	6.85
TK1_FW.S	0.980	1.300	16.56	17.169E	1.519a	1.322	6.85
FLUME.C	0.480	1.013	75.21	8.419E	0.003a	2.908	708.76
CPP_DIL.P	0.900	0.800	0.62	11.125a	0.905p	0.439	0.50
BLUDGE.S	0.223	1.000	0.77	11.097a	1.288a	0.404	0.42
SERAGE.S	0.100	0.890	0.49	18.896a	3.101a	1.700	0.77
POOPY.P	0.950	0.840	9.25	18.488a	3.503p	0.899	3.48
Total Tanks			437.43	2.213a	0.095p	2.664	1879.21
Total Weight			2,135.99	2.794a	0.000	3.788	

Righting Arm	LCB	VCG	VCB	Permt		
RULE	1.328	2,135.99	2.810a	5.003a	2.720	-4.440

Distances in METERS. Specific Gravity = 1.025. Area in m.-Rad.

FREEBOARD STATUS  
 DSK DRAFT draft: 4.355 @ 30.352, 4.628 @ 24.93a  
 Trim: Aft 0.271/34.875, Heel: Stbd 0.02 deg.  
 Least freeboard is 0.961 m. located at 32.120a  
 Least extra freeboard (to margin line) is 2.886 m. located at 32.120a

01/30/09 09:23:08 STX Canada Marine, Inc.  
 GMS 11.50 CGCS JOHN P. Tully  
 NO.9 NOV DEPARTURE CONDITION 2 - ROPOS ON UPPER DECK

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.271/34.875, Heel: Stbd 0.02 deg., VCG = 3.795

Draft	Displacement	Buoyancy-Ctr.	Weight/	Moment/				
Origin	Weight(MT)	LCB	VCG	LCF	cm trim	GMS	DMT	
4.505	2,135.99	2.810a	2.720	7.10	5.660a	24.29	75.25	0.594

Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT.  
 This is per 34.88m.  
 Draft is from DSK DRAFT. True Free Surface included.

RIGHTING ARM vs HEEL ANGLE  
 Total CG: LCB = 2.794a TCG = 0.000 VCG = 3.795  
 Free Surface Adjustment: 0.505  
 Adjusted CG: LCB = 2.797a TCG = 0.000 VCG = 3.204

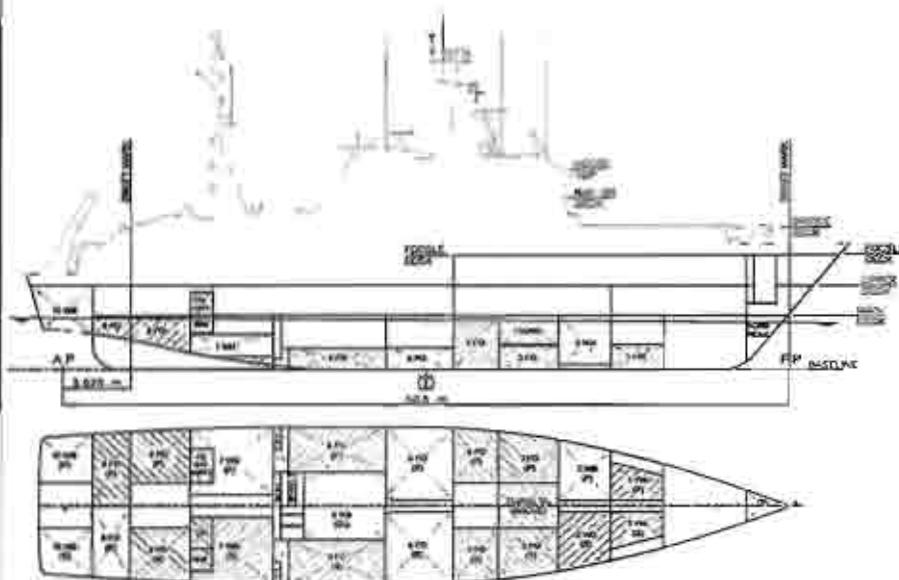
Origin	Degree of	Displacement	Righting Arm	Flood Pt			
Depth	Trim	Heel	Height(MT)	Area			
4.431	1.23a	0.02a	2,136.58	0.000	0.000	0.000	8.789(1)
4.485	0.22a	2.52a	2,136.79	0.000	0.035	0.009	6.459(1)
4.448	0.22a	5.02a	2,135.55	0.000	0.079	0.018	6.139(1)
4.442	0.27a	7.52a	2,135.88	0.000	0.119	0.0077	5.809(1)
4.404	1.23a	10.02a	2,135.88	0.000	0.159	0.0139	5.473(1)
4.355	0.21a	12.52a	2,135.98	0.000	0.200	0.0216	5.150(1)
4.295	0.17a	15.02a	2,136.58	0.000	0.243	0.0313	4.782(1)
4.227	0.13a	17.52a	2,135.97	0.000	0.288	0.0429	4.429(1)
4.159	0.07a	20.02a	2,135.98	0.000	0.337	0.0565	4.072(1)
4.042	0.01a	22.52a	2,136.98	0.000	0.387	0.0723	3.718(1)
3.958	0.00E	24.11a	2,135.98	0.000	0.424	0.0834	3.400(1)
3.829	0.00E	25.02a	2,135.98	0.000	0.436	0.0902	3.158(1)
3.803	0.13E	27.52a	2,135.98	0.000	0.474	0.1100	3.000(1)
3.667	0.17E	30.02a	2,135.90	0.000	0.492	0.1312	2.837(1)
3.550	0.18E	32.02a	2,135.98	0.000	0.496	0.1485	2.743(1)
3.520	0.19E	32.52a	2,136.05	0.000	0.495	0.1528	2.770(1)
3.362	0.18E	35.02a	2,136.05	0.000	0.488	0.1742	1.899(1)
3.199	0.18E	37.52a	2,136.11	0.000	0.473	0.1952	1.525(1)
3.019	0.11E	40.02a	2,136.21	0.000	0.454	0.2154	1.249(1)
2.831	0.05E	42.50a	2,136.00	0.000	0.432	0.2347	0.973(1)
2.636	0.03E	45.02a	2,135.84	0.000	0.406	0.2538	0.686(1)
2.437	0.11a	47.52a	2,135.99	0.000	0.371	0.2708	0.416(1)
2.430	0.10a	47.62a	2,136.50	0.000	0.369	0.2707	-0.001(1)

Distances in METERS. Specific Gravity = 1.025. Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 1879.3 m.-MT was applied to artificially modify the CG.

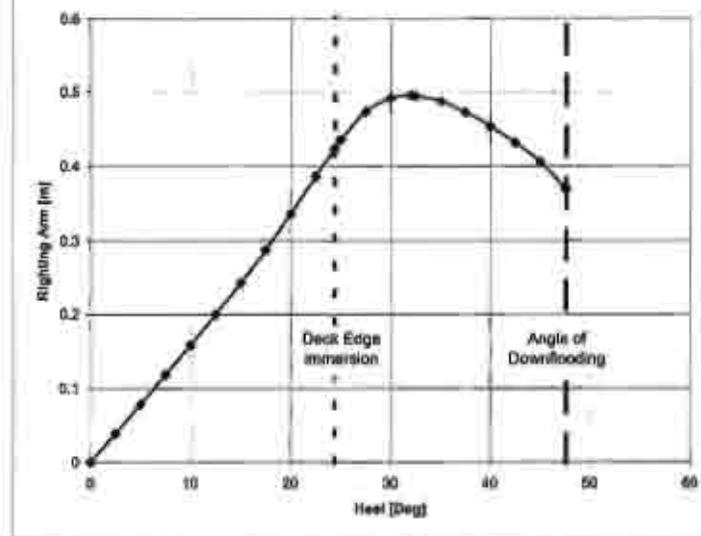
Critical Point: LCB = 2.810a TCG = 0.000 VCG = 3.795  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.530a 7.600 11.300

No.9 ROV Departure 2 - ROPOS on Upper Deck



Note: Aft crane stowed with boom positioned athwartships (not depicted above).

No.9 ROV Departure 2 - ROPOS on Upper Deck



Item	Stip	Min/Max	Attained
(1) Area from 0 deg to 40 or Flood	>	0.0900 m.-Rad	0.2154 F
(2) Area from 0 deg to 30	>	0.0550 m.-Rad	0.1312 F
(3) Area from 30 deg to 40 or Flood	>	0.0300 m.-Rad	0.0842 F
(4) Righting Arm at 30 deg	>	0.200 m.	0.492 F
(5) GM at Equilibrium	>	0.150 m.	0.896 F
(6) Angle from 0 deg to MaxRA	>	25.00 deg	32.00 F

-----Relative angles measured from 0.029-----

01/30/09 08:25:19 STX Canada Marine, Inc.  
CGS JOHN F. Tully  
NO.10 ROV OPERATING CONDITION 2 - ROPOS ON UPPER DECK

WEIGHT and DISPLACEMENT STATUS  
USK DRAFT draft: 4.365 @ 30.25t, 4.618 @ 14.83t  
Trim: Aft 0.252/94.875, Heel: Stbd 3.52 deg.

Part	Weight (MT)	LCG	TCG	VCG			
LIGHT SHIP	1,824.60	2.525a	0.018s	8.497			
APT STORES	5.00	22.350a	1.330p	6.584			
PWD STORES	3.00	30.000c	0.000	8.500			
Galley Stores	14.00	20.250c	0.000	8.000			
Gas in Jettisonable Tx	0.62	20.250a	6.100p	11.000			
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000			
FOODLE DECK MACHINERY	8.98	8.320a	4.670s	12.000			
FOODLE DECK CONTAINER	3.86	14.320a	5.480p	11.300			
HELICOPTER	2.50	21.900c	0.000	16.300			
ROPOS OPERATING - UPPER D	40.04	21.520a	3.380s	9.000			
ROSETTE EQUIPMENT	0.90	0.700a	5.600s	9.000			
AFT CR.-MAIN BOOM-OFF	-7.24	22.400a	5.290s	11.160			
AFT CR.-JIB BOOM-OFF	-2.58	20.830a	5.280s	9.800			
AFT CR.-JIB CYL-OFF	-1.31	22.000a	5.290s	10.800			
AFT CR.-MAIN BOOM-ON	7.34	27.750a	0.060p	11.160			
AFT CR.-JIB BOOM-ON	2.58	27.750a	1.820p	9.800			
AFT CR.-JIB CYL-ON	1.31	27.750a	2.540p	10.800			
Total Fixed	1,708.96	2.912a	0.094s	8.880			
Load	SpGr	Weight (MT)	LCG	TCG	VCG	TRM	
TK2_Wd.S	0.100	0.025	8.31	13.077a	1.604a	0.858	9.94
TK7_Wd.S	0.100	1.028	16.01	14.880a	2.808a	1.507	13.36
TK3_PO.S	0.950	0.840	17.32	8.281a	3.355p	1.003	8.10
TK4_PO.S	0.950	0.840	17.32	8.314a	2.494a	1.503	8.82
TK4_PO.7	0.950	0.840	52.98	4.092f	4.107p	2.828	26.88
TK4_PO.8	0.950	0.840	52.98	4.200f	4.163a	2.824	27.45
TK4_PO.9	0.950	0.840	23.39	7.321a	4.513p	1.444	8.11
TK6_PO.S	0.950	0.840	23.39	1.329a	4.638a	1.444	8.45
TK8_PO.P	0.950	0.840	36.56	21.801a	4.050p	3.739	20.31
TK8_PO.S	0.950	0.840	36.56	21.898a	4.160a	3.759	20.87
TK9_PO.P	0.950	0.840	23.12	26.057a	2.649p	4.074	13.74
TK1_Wd.P	0.980	1.000	16.56	17.379a	1.501p	1.322	1.79
TK1_Wd.S	0.980	1.000	16.56	17.367f	1.534a	1.322	1.51
FLONE.C	0.480	1.028	75.21	3.420f	0.581a	2.324	713.08
CPP_OIL.7	0.100	0.890	0.62	11.185a	0.853p	0.437	0.50
SLUDGE.S	0.223	1.000	0.77	11.082a	1.378a	0.407	1.07
SEWAGE.S	0.100	0.890	3.49	18.895a	5.399a	3.289	0.77
FOGAY.P	0.950	0.840	9.28	18.899a	1.477p	5.899	3.82
Total Tanks			427.42	2.208a	0.064a	2.871	944.02
Total Weight			2,135.98	2.771a	0.087a	5.798	
HULL	1.028		2,135.97	2.786a	0.279a	2.737	-0.882
Righting Arms			0.021	0.000a			
Distances in METERS							Moments in m.-MT

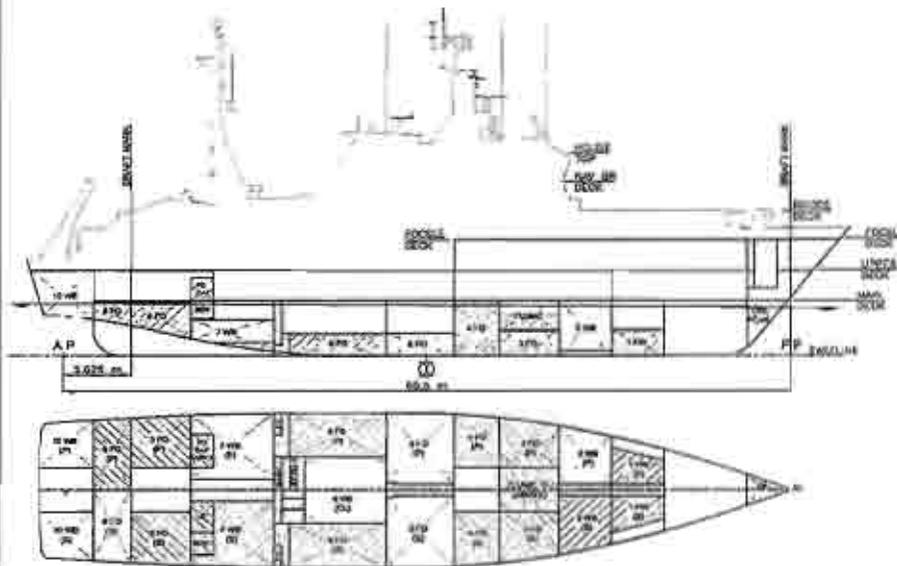
FREELBOARD STATUS  
USK DRAFT draft: 4.365 @ 30.25t, 4.618 @ 14.83t  
Trim: Aft 0.252/94.875, Heel: Stbd 3.52 deg.  
Least freeboard @ 2.549 m. located at 33.130a  
Least extra freeboard (to margin line) @ 2.473 m. located at 33.120a

01/30/09 08:25:19 STX Canada Marine, Inc.  
CGS JOHN F. Tully  
NO.10 ROV OPERATING CONDITION 2 - ROPOS ON UPPER DECK

HYDROSTATIC PROPERTIES  
Trim: Aft 0.252/94.875, Heel: Stbd 3.52 deg., VCG = 5.798

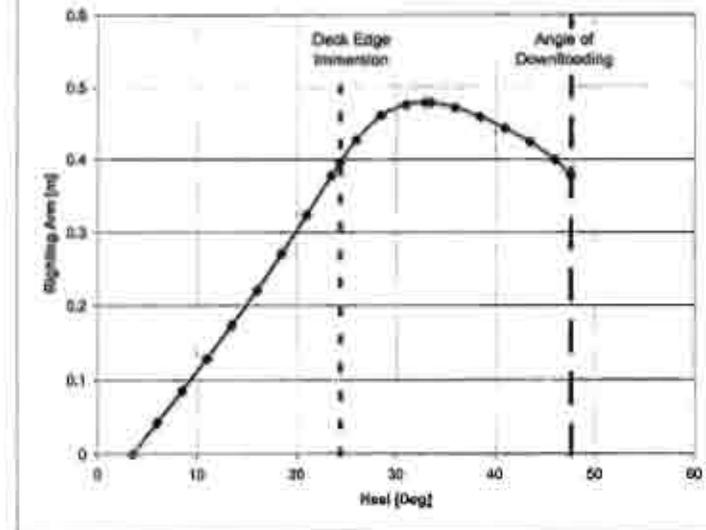
Origin	Displacement	buoyancy-Ctr.	Weight/	Moment/				
Origin	Weight (MT)	LCG	VCG	LCF	on trim	GC	GWT	
4.364	2,135.97	2.786a	2.737	7.11	5.594a	25.18	74.97	0.973
Distances in METERS-----Specific Gravity = 1.025-----Moment in m.-MT								
Trim is per 54.88m								
Draft is from USK DRAFT. True Free Surface Included.								
RIGHTING ARMS vs HEEL ANGLE								
Total CG: LCG = 2.771a, TCG = 0.087a, VCG = 5.798								
Free Surface Adjustment: 0.462								
Adjusted CG: LCG = 2.773a, TCG = 0.089a, VCG = 6.264								
Origin	Degree of	Displacement	Righting Arms	Flood Pt				
Depth	Trim	Heel	Weight (MT)	Area	Height			
4.482	0.27a	3.50a	2,135.98	0.000	0.000	0.000	6.231(1)	
4.461	0.25a	5.02a	2,135.98	0.000	0.043	0.009	6.203(1)	
4.430	0.24a	8.57a	2,135.98	0.000	0.085	0.007	6.176(1)	
4.388	0.21a	11.02a	2,135.97	0.000	0.129	0.004	6.137(1)	
4.334	0.18a	13.52a	2,135.97	0.000	0.174	0.015	6.091(1)	
4.289	0.14a	16.02a	2,135.97	0.000	0.221	0.027	6.041(1)	
4.192	0.09a	18.52a	2,135.97	0.000	0.271	0.044	5.987(1)	
4.103	0.03a	21.02a	2,135.97	0.000	0.329	0.074	5.930(1)	
4.000	0.04f	23.52a	2,135.97	0.000	0.378	0.067	5.872(1)	
3.960	0.06f	24.00a	2,135.97	0.000	0.396	0.068	Stack Inm.	
3.881	0.11f	26.02a	2,135.98	0.000	0.428	0.080	3.216(1)	
3.751	0.18f	28.52a	2,135.98	0.000	0.462	0.099	2.857(1)	
3.610	0.30f	31.02a	2,135.97	0.000	0.477	0.107	2.492(1)	
3.497	0.21f	32.00a	2,136.73	0.000	0.480	0.135	2.218(1)	
3.459	0.21f	33.52a	2,136.08	0.000	0.480	0.141	2.133(1)	
3.297	0.19f	36.02a	2,136.04	0.000	0.473	0.149	1.761(1)	
3.123	0.16f	38.52a	2,136.11	0.000	0.460	0.163	1.377(1)	
2.949	0.11f	41.02a	2,136.04	0.000	0.440	0.202	1.001(1)	
2.753	0.04f	43.52a	2,136.00	0.000	0.425	0.221	0.629(1)	
2.556	0.04f	46.02a	2,135.55	0.000	0.400	0.239	0.247(1)	
2.428	0.10a	47.44a	2,136.41	0.000	0.378	0.250	-0.001(1)	
Distances in METERS-----Specific Gravity = 1.025-----Area in m.-Rad.								
Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 944.0 m.-MT was applied to artificially modify the CG.								
Critical Point-----LCF-----ICP-----VCF								
(1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.500 11.300								

No.10 ROV Operating 2 - ROPOS on Upper Deck



Note: Aft crane stowed with boom positioned athwartships (not depicted above).

No.10 ROV Operating 2 - ROPOS on Upper Deck



STAB 6 INTACT STABILITY CRITERIA		Min/Max	Attained
(1) Area from 0 deg to 40 or Flood	>	0.0900 m.-Rad	0.2210 P
(2) Area from 0 deg to 30	>	0.0550 m.-Rad	0.1411 P
(3) Area from 30 deg to 40 or Flood	>	0.0300 m.-Rad	0.0799 P
(4) Righting Arm at 30 deg	>	0.200 m.	0.480 P
(5) $\Delta$ at Equilibrium	>	0.150 m.	0.974 P
(6) Angle from 0 deg to MaxRA	>	25.00 deg	29.38 P

-----Relative angles measured from 3.525g-----

01/30/09 08:28:58 STX Canada Marine, Inc.  
 GRS 11.50 CGCS JOHN P. Tully  
 NO.11 WORST OPERATING CONDITION - AFT CRANE, ROSETTE AND ROPS IN OPERATION  
 ALL CRANES OPERATING AT MAXIMUM DISTANCE OVER STARGOARD SIDE AND FLOVE OPERATIONAL  
 BALLAST IS REQUIRED TO COMPENSATE

WEIGHT AND DISPLACEMENT STATUS  
 USK DRAFT draft: 3.322 @ 30.354, 4.418 @ 34.63a  
 Trim: Aft 0.034/54.875, Heel: Sbd 5.23 deg.

Part	Weight (MT)	LCG	TCG	VCG			
LIGHT SHIP	2,024.00	2.599a	0.048a	6.457			
AFT STORES	5.00	22.350a	1.330p	6.554			
FRD STORES	3.00	30.300a	0.000	8.500			
Galley Stores	14.00	20.350a	0.000	6.500			
Gas in Jettisonable Tx	0.63	20.200a	4.100p	11.000			
GO Crse and Effects @ 120	5.00	0.000	0.000	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.059a	8.130			
UPPER DECK CONTAINERS	4.35	24.100a	0.450p	8.800			
HELICOPTER	2.50	21.000p	0.000	14.300			
ROPS OPERATING - FOCLES	40.04	14.970a	8.890a	11.720			
ROSETTE OPERATING	3.50	8.170a	14.600a	11.800			
AFT CR.-MAIN BOOM-OFF	-7.24	22.400a	3.290a	11.160			
AFT CR.-JIB BOOM-OFF	-2.59	20.430a	3.790a	9.800			
AFT CR.-JIB CYL-OFF	-1.31	20.800a	5.200a	16.600			
AFT CR.-MAIN BOOM-ON	7.24	27.700a	11.130a	10.450			
AFT CR.-JIB BOOM-ON	2.59	27.750a	16.170a	9.200			
AFT CR.-JIB CYL-ON	1.31	27.700a	13.900a	18.450			
ST HEIGHT EXTENDED	8.00	29.740a	21.340a	7.760			
<b>Total Fixed</b>	<b>2,725.78</b>	<b>3.013a</b>	<b>0.340a</b>	<b>8.633</b>			
Load	SpC	Weight (MT)	LCG	TCG	VCG	FSM	
TK1_WB.S	1.000	1.025	63.04	13.381a	2.301p	2.813	0.00
TK2_WB.S	1.000	1.025	53.20	15.802a	2.552p	2.204	0.00
TK3_WB.S	0.850	0.860	17.32	9.301P	3.384p	1.504	1.84
TK4_WB.S	0.950	0.840	17.32	9.339P	3.503a	1.504	1.70
TK5_WB.S	0.500	0.840	12.17	20.326a	2.010p	3.708	41.78
TK6_WB.S	0.500	0.840	12.17	20.307a	2.760a	5.711	52.39
TK1_WB.S	0.500	1.000	8.45	17.307P	1.280p	0.841	2.80
TK1_WB.S	0.500	1.000	8.45	17.349P	1.207a	0.841	4.37
FLARE.C	0.480	1.025	75.22	0.424a	0.874a	2.940	-718.31
CPD OIL.P	0.600	1.800	0.43	14.188a	0.800a	0.659	0.53
FLARE.S	0.500	1.800	1.70	11.133a	1.807a	0.579	1.80
WEDGE.S	0.500	0.890	0.63	18.842a	3.329a	3.624	0.78
FOCAL.P	0.500	0.847	4.89	10.488a	2.434p	1.428	3.53
TK10_WB.S	0.200	1.025	13.83	29.497a	3.043p	4.408	24.13
<b>Total Tanks</b>			<b>310.96</b>	<b>0.618P</b>	<b>1.130p</b>	<b>2.488</b>	<b>441.83</b>
<b>Total Weight</b>			<b>2,036.76</b>	<b>2.423a</b>	<b>0.113a</b>	<b>8.034</b>	
Displ (MT)	LCG	TCG	VCG	Heel			
HULL	1.025	2,036.70	2.454a	0.429a	2.843	+4.343	
Righting Arms	LCG	TCG					
Distances in METERS	0.501	0.050a					

FREBOARD STATUS  
 USK DRAFT draft: 4.322 @ 30.354, 4.418 @ 34.63a  
 Trim: Aft 0.034/54.875, Heel: Sbd 5.23 deg.  
 Least freeboard is 2.352 m. Located at 73.170a  
 Least extra freeboard (no margin line) is 2.479 m. Located at 72.170a

01/30/09 04:26:08 STX Canada Marine, Inc.  
 GRS 11.50 CGCS JOHN P. Tully  
 NO.11 WORST OPERATING CONDITION - AFT CRANE, ROSETTE AND ROPS IN OPERATION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.034/54.875, Heel: Sbd 5.23 deg., VCG = 8.233

Draft	Displacement	Surge	Ctr. Height	Moment	GM	GM1	GM2
4.376	2,036.70	2.431a	2.663	7.00	3.330a	22.24	74.08

Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT.  
 Trim is per 54.875.  
 Staff is from USK DRAFT. True Free Surface included.

RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 2.429a TCG = 0.113a VCG = 8.034  
 Free Surface Adjustment: 0.423  
 Adjusted CG: LCG = 2.429a TCG = 0.074a VCG = 8.457

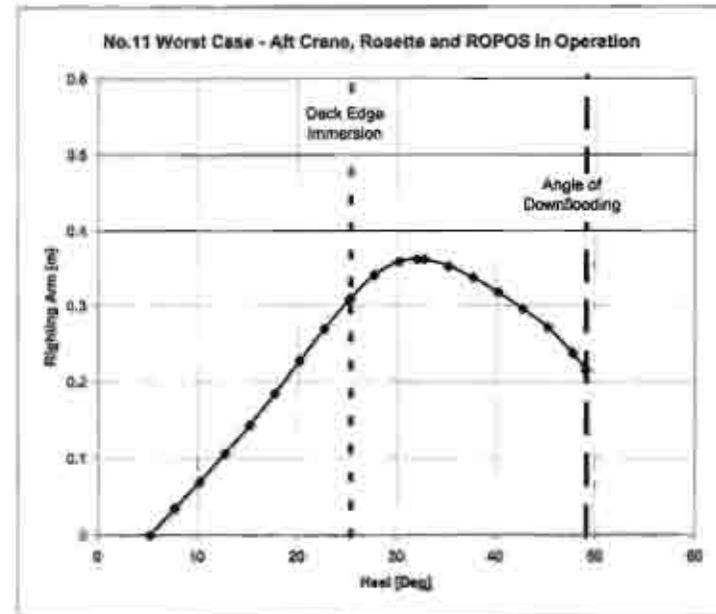
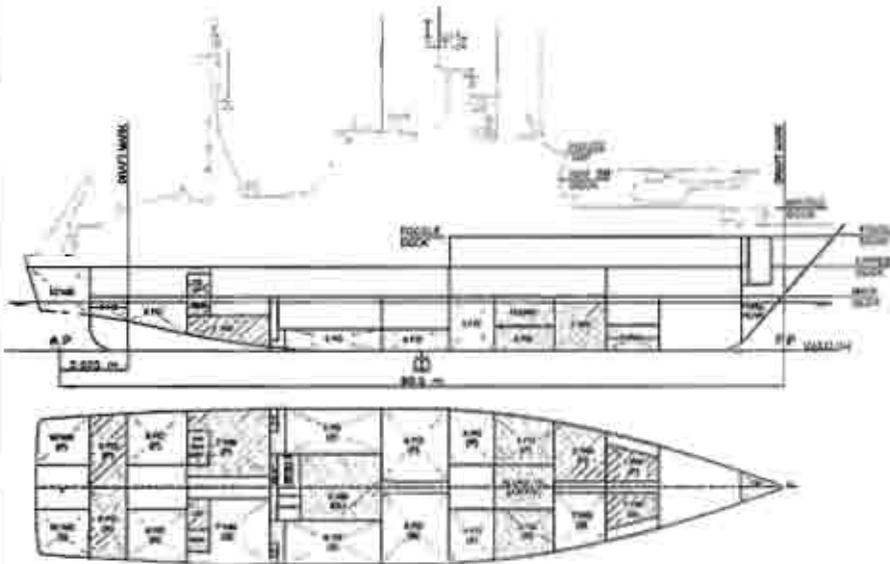
Origin	Degree of Trim	Displacement	Righting Arms	Flood Ft
Depth	Trim	Heel	Weight (MT)	in Trim-In Heel
0.346	0.10a	5.29a	2,037.13	0.300
0.315	0.00a	7.70a	2,036.76	0.000
0.378	0.44a	10.59a	2,036.76	0.600
0.226	0.00	12.73a	2,036.76	0.000
0.244	0.05a	15.23a	2,036.76	0.000
0.092	0.10a	17.70a	2,036.76	0.000
0.008	0.17a	20.10a	2,036.76	0.000
0.927	0.24a	22.79a	2,036.76	0.000
0.793	0.31a	25.09a	2,036.76	0.000
0.767	0.32a	25.40a	2,036.76	0.000
0.460	0.38a	27.70a	2,036.76	0.000
0.330	0.44a	30.10a	2,036.76	0.000
0.430	0.49a	32.07a	2,036.76	0.000
0.346	0.50a	32.79a	2,036.69	0.000
0.200	0.55a	35.20a	2,036.84	0.000
0.027	0.62a	37.78a	2,036.81	0.000
0.843	0.69a	40.29a	2,036.70	0.000
0.401	0.69a	42.70a	2,036.55	0.000
0.450	0.69a	45.29a	2,036.85	0.000
0.245	0.72a	47.79a	2,036.81	0.000
0.133	0.88a	49.15a	2,036.78	0.000

Distances in METERS. Specific Gravity = 1.025. Heel in a.-96d.

Note: The Height and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 881.8 m.-MT was applied to artificially modify the CG.

Critical Point: LCG = 2.430a TCG = 0.000 VCG = 8.300  
 (1) CAPTAIN'S ROOM WINDOW FLOOD

**No.11 Worst Case - Aft Crane, Rosette and ROPOS in Operation**  
 ALL CRANES OPERATING AT MAXIMUM DISTANCE OVER STARBOARD SIDE AND FULL OPERATIONAL BALLAST IS REQUIRED TO COMPENSATE.



STAB 6 INTACT STABILITY CRITERIA		Min/Max	Estimated
(1) Area from 0 deg to 40 or Flood	>	0.8950 m.-Rad	0.1485 P
(2) Area from 0 deg to 20	>	0.8550 m.-Rad	0.1131 P
(3) Area from 20 deg to 40 or Flood	>	0.0200 m.-Rad	0.0554 P
(4) Righting Arm at 30 deg	>	0.200 m.	0.354 P
(5) GZ at Equilibrium	>	0.130 m.	0.798 P
(6) Angle from 0 deg to MaxRA	>	23.00 deg	38.78 P

-----Relative angles measured from 5.2%L-----

Note: Ballast required to compensate for cranes operating on starboard side.

01/20/09 19:22:57 STX Canada Marine, Inc.  
 CCS JOHN P. Tully  
 GRS 11.50 NO.12 ICED BALLAST DEPARTURE CONDITION

**WEIGHT and DISPLACEMENT STATUS**  
 USK DRAFT draft: 4.430 @ 30.25F, 4.540 @ 24.63a  
 Trim: Aft 0.110/54.875, Heel: Port 0.10 deg.

Fact	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	2,424.90	2.595a	0.048a	6.457
AFT STORES	5.86	22.390a	1.330p	6.956
FWD STORES	1.06	38.000a	0.000	8.500
Galley Stores	14.80	20.250a	0.000	8.000
Gas in Jettisonable T <sub>2</sub>	0.42	30.250a	6.230p	11.000
40 Crew and Effects # 125	5.80	0.000	0.000	11.000
ICC ACCRETION	83.30	3.500a	0.000	11.300
Total Fixed	1,745.32	2.400a	0.030a	6.731

Load	SpGr	Weight (MT)	LCG	TCG	VCG	FSK	
TN2_WB.F	0.250	1.025	20.77	13.077a	1.830p	1.176	20.31
TN4_FD.F	0.950	0.840	54.65	4.092a	4.145p	2.885	27.25
TN4_FD.S	0.980	0.840	54.65	4.092a	4.144a	2.885	27.24
TN8_FD.F	0.950	0.840	34.56	21.897a	4.106p	3.797	35.52
TN8_FD.S	0.950	0.840	34.56	21.897a	4.103a	3.797	35.50
TN9_FD.F	0.950	0.840	23.11	26.080a	3.753p	4.071	57.33
TN9_FD.S	0.950	0.840	23.11	26.080a	3.744a	4.071	57.28
TN1_FW.F	0.980	1.000	16.56	17.371a	3.519p	1.322	4.85
TN1_FW.S	0.980	1.000	16.56	17.372a	3.517a	1.322	4.84
WDRS.C	0.480	1.025	79.21	8.474a	5.036p	2.908	798.83
DFP_OIL.F	0.560	0.890	6.62	11.184a	0.986p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.094a	1.287a	0.004	0.90
SEWAGE.S	0.100	0.890	0.49	19.691a	5.297a	3.288	0.77
PODGY.F	0.950	0.840	9.18	18.488a	3.501p	0.897	3.49
Total Tanks			368.90	2.520a	0.192p	3.050	988.41
Total Weight			2,114.38	2.540a	0.002p	6.688	
HULL	1.025		2,114.38	2.548a	0.008p	2.708	4.47

DISPLACEMENT EXCESS: 0.01  
 Distances in METERS, Moments in m.-MT

**FREEBOARD STATUS**  
 USK DRAFT draft: 4.430 @ 30.25F, 4.540 @ 24.63a  
 Trim: Aft 0.110/54.875, Heel: Port 0.10 deg.  
 Least freeboard is 3.061 m. located at 22.130a  
 Least extra freeboard (to margin limit) is 2.965 m. located at 22.130a

**HYDROSTATIC PROPERTIES**  
 Trim: Aft 0.110/54.875, Heel: port 0.10 deg., VCG = 6.288

Bottle	Displacement	Buoyancy-Ctr	Weight/	Moment/
Origin	Weight (MT)	LCG	VCG	on trim
4.491	2,114.38	2.548a	2.708	7.10 5.890a 29.24 78.59 0.65a

Distances in METERS, Specific Gravity = 1.025, Moment in m.-MT.  
 Trim is per 14.88m.  
 Draft is from USK DRAFT. True Free Surface Included.

01/20/09 19:22:57 STX Canada Marine, Inc.  
 CCS JOHN P. Tully  
 GRS 11.50 NO.12 ICED BALLAST DEPARTURE CONDITION

**RIGHTING ARMS vs HEEL ANGLES**  
 Total CG: LCG = 2.540a TCG = 0.001p VCG = 6.088  
 Free Surface Adjustment: 0.468  
 Adjusted CG: LCG = 2.540a TCG = 0.001p VCG = 6.556

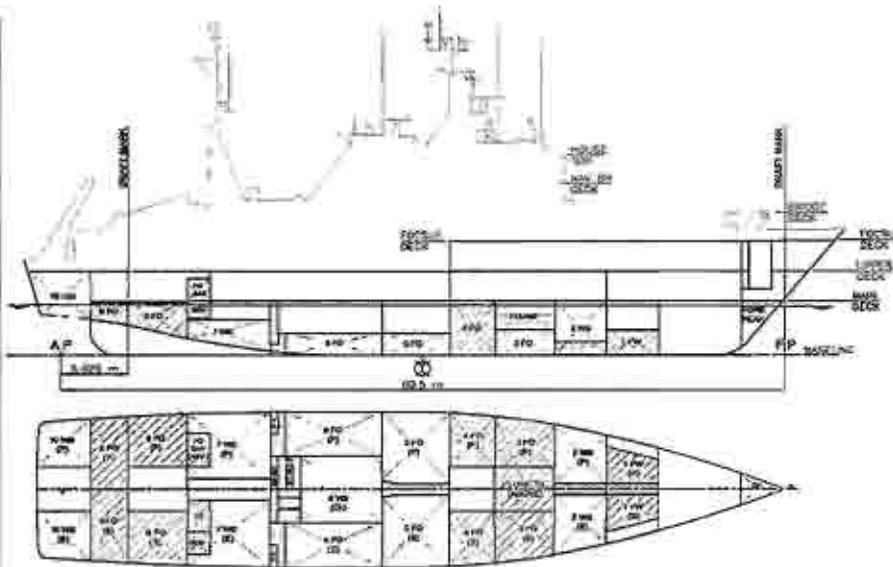
Origin	Degree of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight (MT)	Area
4.476	0.12a	0.10p	2,114.20	0.000
4.472	0.11a	2.40a	2,114.21	0.000
4.456	0.10a	4.90a	2,114.25	0.000
4.429	0.08a	7.40a	2,114.38	0.000
4.392	0.06a	9.90a	2,114.38	0.000
4.343	0.03a	12.40a	2,114.38	0.000
4.282	0.01a	14.90a	2,114.38	0.000
4.211	0.00a	17.40a	2,114.38	0.000
4.127	0.12a	18.90a	2,114.38	0.000
4.030	0.10a	21.40a	2,114.37	0.000
3.925	0.24a	24.30a	2,114.94	0.000
3.817	0.25a	24.90a	2,113.87	0.000
3.700	0.32a	27.40a	2,114.38	0.000
3.651	0.37a	29.90a	2,114.25	0.000
3.611	0.38a	30.50a	2,114.38	0.000
3.591	0.40a	32.40a	2,113.87	0.000
3.343	0.40a	34.90a	2,114.47	0.000
3.173	0.39a	37.40a	2,114.90	0.000
2.994	0.35a	39.90a	2,114.43	0.000
2.865	0.29a	42.40a	2,114.82	0.000
2.688	0.22a	44.90a	2,114.25	0.000
2.407	0.14a	47.40a	2,113.84	0.000
2.352	0.12a	48.10a	2,114.80	0.000

Distances in METERS, Specific Gravity = 1.025, Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank losses. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 885.3 m.-MT was applied to artificially modify the CG.

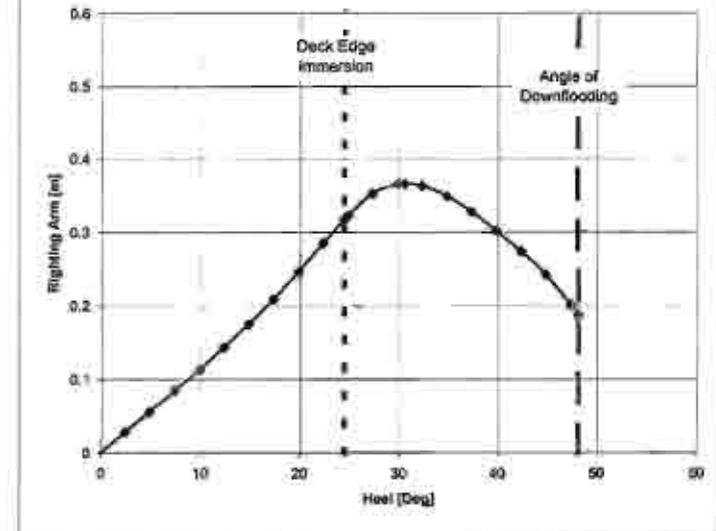
Critical Point: LCG = 2.540a TCG = 0.001p VCG = 6.556  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

No.12 Ballast Departure with Ice



Note: Aft crane stowed with boom positioned forward.

No.12 Ballast Departure with Ice



STAB 7 INTACT STABILITY CRITERIA		Req/Max:	Attained
(1)	Area from 0 deg to 40 or Flood	> 0.0900 m.-Rad	0.1567 P
(2)	Area from 0 deg to 30	> 0.0550 m.-Rad	0.0965 P
(3)	Area from 30 deg to 40 or Flood	> 0.0300 m.-Rad	0.0602 P
(4)	Righting Arm at 30 deg	> 0.200 m.	0.367 P
(5)	GM at Equilibrium	> 0.150 m.	0.654 P
(6)	Angle from 0 deg to MaxRA	> 25.00 deg	30.67 P

Relative angles measured from 0.096

01/20/09 09:28:39 STX Canada Marine, Inc.  
 OBS 11.50 COGS JOHN P. Tully  
 NO.13 ICEB BALLAST ARRIVAL CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USH DRAFT draft: 4.152 @ 30.25t, 4.212 @ 24.6t  
 Trim: Aft 0.068/34.875, Heel: Stbd 0.07 deg.

Part	Weight (MT)	LCB	OCB	VCG
LIGHT SHIP	1,474.80	2.956	0.249	8.457
AFT STORES	5.00	22.390	1.310	6.500
TRIM STORES	3.00	30.300	0.300	8.500
Galley Stores	7.00	20.350	0.000	0.500
Sat in Jettisonable Tr	9.69	20.250	0.500	11.000
NO Drive and Effects @ 125	5.00	0.000	0.000	11.000
ICE ACCRETION	23.20	2.500	0.000	10.500
Total Fixed	1,728.48	2.552	0.559	6.733

Item	Lead	Spd	Weight (MT)	LCB	OCB	VCG	TRM
TK2_WB.F	0.600	1.025	49.84	13.585	2.183	2.070	43.52
TK2_WB.B	0.500	1.025	41.53	13.078	2.137	1.635	38.75
TK2_WB.C	1.000	1.025	42.22	6.761	0.000	0.706	0.00
TK1_WB.F	0.100	1.000	1.69	17.374	0.973	0.277	0.74
TK1_WB.S	0.100	1.000	1.69	17.374	0.974	0.277	0.79
CFR_OIL.F	0.500	0.890	0.62	11.184	0.804	0.425	0.50
SLUDGE.S	0.223	1.000	0.77	11.982	1.291	0.404	0.51
SEMAN.S	0.900	0.890	4.37	18.682	1.300	1.865	0.77
FOGAY.F	0.900	0.840	4.69	18.682	1.493	1.425	1.44
TK10_WB.F	0.500	1.025	11.80	29.685	1.703	1.399	25.81
Total Tanks			141.42	2.230	0.401	1.954	116.24
Total Weight			1,899.90	2.140	0.201	0.327	

Item	Weight (MT)	LCB	OCB	VCG	Height
HULL	1.829	1,899.90	2.039	0.000	0.328

DISPLACEMENT EXCESS: 0.00  
 Distances in METERS ----- Moments in G.-MT.

FACEBOARD STATUS  
 USH DRAFT draft: 4.152 @ 30.25t, 4.212 @ 24.6t  
 Trim: Aft 0.068/34.875, Heel: Stbd 0.07 deg.  
 Lowest faceboard is 3.358 m. located at X2.130  
 Least extra faceboard (to margin line) is 1.313 m. located at X4.130

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.068/34.875, Heel: Stbd 0.07 deg., VCG = 6.321

Draft	Displacement	buoyancy-Cor. Weight/	Percent/
Origin	Weight (MT)	LCB	VCG
4.100	1,899.90	2.140	2.526
		6.50	5.400
		27.50	75.47
		0.940	

Distances in METERS ----- Specific Gravity = 1.025 ----- Moment in G.-MT.  
 Trim is per 54.84m.  
 Draft is from USH DRAFT. Trim Free Surface included.

01/20/09 09:28:39 STX Canada Marine, Inc.  
 OBS 11.50 COGS JOHN P. Tully  
 NO.13 ICEB BALLAST ARRIVAL CONDITION

RIGHTING ARM vs HEEL ANGLE  
 Total CG: LCG = 2.140; TCG = 0.001; VCG = 6.321  
 Free Surface Adjustment: 0.041  
 Adjusted CG: LCG = 2.140; TCG = 0.001; VCG = 6.369

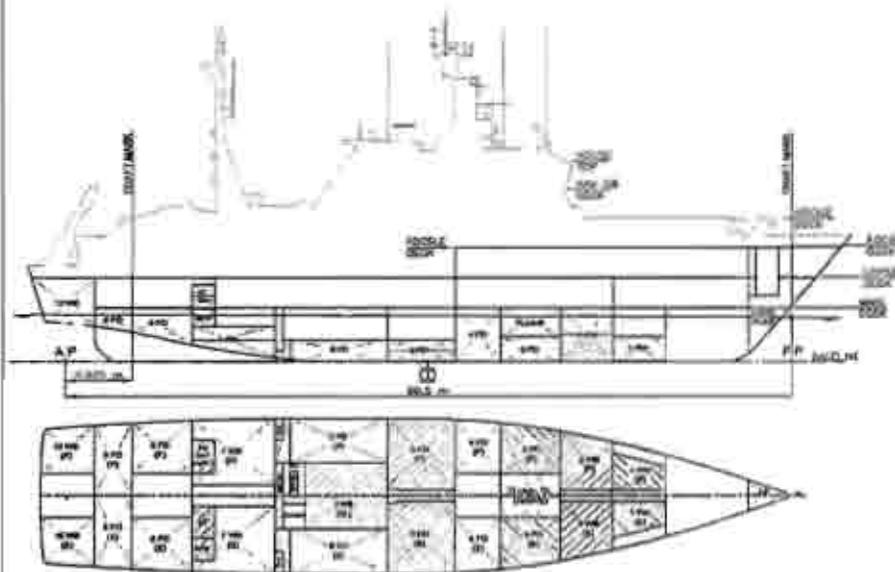
Origin	Degree of	Heel	Displacement	Righting Arm	Area	Flwd Pt.
Depth	Trim	Heel	Weight (MT)	in Trim	in Heel	Area
4.176	0.074	0.074	1,899.90	0.000	0.000	0.0000
4.170	0.066	0.074	1,899.90	0.000	0.041	0.0009
4.154	0.048	0.074	1,899.90	0.000	0.082	0.0024
4.127	0.018	0.074	1,899.90	0.000	0.122	0.0041
4.099	0.040	10.072	1,899.90	0.000	0.163	0.0140
4.061	0.080	12.070	1,899.90	0.000	0.204	0.0223
3.981	0.150	15.070	1,899.90	0.000	0.246	0.0321
3.911	0.220	17.070	1,899.90	0.000	0.290	0.0439
3.827	0.290	20.070	1,899.90	0.000	0.334	0.0574
3.729	0.370	22.070	1,899.90	0.000	0.374	0.0725
3.626	0.440	25.070	1,899.90	0.000	0.409	0.0899
3.517	0.510	26.990	1,899.90	0.000	0.431	0.1039
3.405	0.580	27.570	1,899.90	0.000	0.437	0.1044
3.328	0.640	30.070	1,899.90	0.000	0.428	0.1279
3.178	0.710	30.570	1,899.90	0.000	0.467	0.1481
3.197	0.730	30.070	1,899.90	0.000	0.468	0.1534
3.011	0.770	30.070	1,899.90	0.000	0.440	0.1683
2.833	0.800	37.570	1,899.90	0.000	0.464	0.1866
2.666	0.800	40.070	1,899.90	0.000	0.628	0.2080
2.490	0.790	42.570	1,800.00	0.000	0.618	0.2267
2.348	0.760	45.070	1,800.00	0.000	0.397	0.2445
2.224	0.700	47.570	1,899.90	0.000	0.370	0.2613
2.001	0.640	50.070	1,899.90	0.000	0.337	0.2748
1.738	0.620	51.070	1,800.00	0.000	0.320	0.2925

Distances in METERS ----- Specific Gravity = 1.025 ----- Area in G.-Rad.

Note: The Weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 118.3 m.-MT was applied to artificially modify the CG.

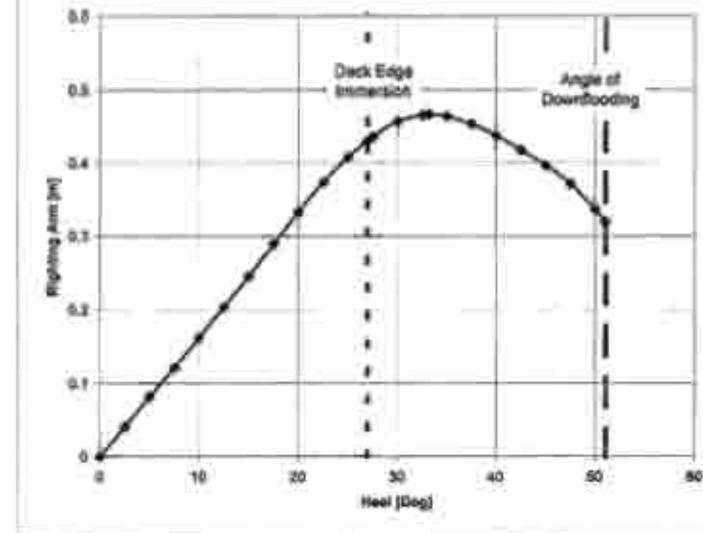
Critical Point	LCB	OCB	VCG
7) CAPTAIN'S ACROSS WINDOW	2.000	7.630	1.000
	1.000	11.700	

No.13 Ballast Arrival with Ice



Note: Aft stern stowage with booms positioned forward.

No.13 Ballast Arrival with Ice



STAB ? IMPACT STABILITY CRITERIA	Min/Max	Attained
(1) Area from 2 deg to 40 or Flood	> 0.0900 m.-Rad	0.2080 P
(2) Area from 0 deg to 10	> 0.0550 m.-Rad	0.1278 P
(3) Area from 10 deg to 40 or Flood	> 0.0300 m.-Rad	0.0801 P
(4) Righting Arm at 30 deg	> 0.200 m.	0.458 P
(5) GM vs Equilibrium	> 0.150 m.	0.942 P
(6) Angle from 0 deg to MAXRA	> 25.00 deg	33.15 P

-----Relative angles measured from 3.07°-----

01/20/03 14:22:37 STX Canada Marine, Inc.  
 GMS 11.53 COGS JOHN F. Tully  
 NO.14 ICCB LOAD LINE DEPARTURE CONDITION

LOADLINE and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.169 @ 30.25t, 4.544 @ 24.62t  
 Trim: Aft 0.043/34.87%, Heel: Stead 0.45 deg.

Part	Weight (MT)	LCG	POC	VCG			
LIGHT SHIP	1,604.00	2.595a	4.848a	4.457			
REY STORES	5.00	22.350a	1.330p	6.504			
FRD STORES	3.00	30.000a	0.400	8.500			
Galley Stores	14.20	20.700a	0.400	6.000			
Sea in Juttsionable Tx	0.68	20.350a	0.100p	11.000			
40 Crew and Effects @ 125	5.00	2.000a	0.000	11.000			
ICE ACCRETION	83.20	2.500a	0.000	11.300			
UPPER DECK MACHINERY	17.10	19.450a	0.050a	8.170			
UPPER DECK CONTAINER	4.33	26.100a	4.450p	3.400			
POODLE DECK MACHINERY	8.99	8.320a	4.970a	11.000			
POODLE DECK CONTAINER	3.04	14.350a	1.480a	11.300			
HELICOPTER	2.00	21.000a	0.000	14.300			
ROSETTE EQUIPMENT	3.90	0.700a	0.600a	9.000			
Total Fixed	1,783.17	2.703a	0.465a	8.790			
Lead							
TEV_WL_F	0.530	1.025	24.48	19.273a	2.821p	1.733	88.18
TKA_PO_T	0.950	0.840	52.98	4.982a	4.170p	2.820	27.00
TKA_PO_S	0.950	0.840	52.98	4.982a	4.170p	2.820	27.00
TKG_PO_F	0.800	0.840	19.89	7.300a	4.490p	1.381	31.58
TKG_PO_S	0.800	0.840	19.89	7.300a	4.490p	1.381	31.58
TKS_PO_S	0.950	0.840	23.11	24.048a	2.729p	4.071	87.19
TKP_PO_S	0.950	0.840	23.11	24.048a	2.729p	4.071	87.19
TKL_PO_F	0.980	1.000	18.24	17.374a	1.910p	1.323	4.81
TKL_PO_S	0.980	1.000	18.24	17.374a	1.910p	1.323	4.81
FLWRK_C	0.480	1.020	74.21	8.420a	0.074a	0.909	718.82
STP_WL_F	0.500	0.890	0.62	12.150a	0.990p	0.420	0.50
SPDRS_S	0.223	1.300	0.77	11.001a	1.209p	0.404	0.99
SKNDRS	0.100	0.890	0.49	12.040a	0.312a	0.283	0.77
PODAY_F	0.950	0.840	9.28	18.880a	1.497p	0.890	1.69
Total Tanks			837.74	1.801a	0.230p	2.440	1046.80
Total Weight			2,120.91	2.487a	0.000a	4.178	
HULL	1.420		2,120.90	2.480a	0.000a	2.710	-4.400

HEIGHT EXCEED: 0.00  
 Distances in METERS:-----Moments in m.-MT.

FREEBOARD STATUS  
 USK DRAFT (115t): 4.169 @ 30.25t, 4.544 @ 24.62t  
 Trim: Aft 0.043/34.87%, Heel: Stead 0.45 deg.  
 Least freeboard to 3.001 m. located at 13.170a  
 Least extra freeboard (to single line) is 2.955 m. located at 13.170a

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.043/34.87%, Heel: Stead 0.45 deg., VCG = 4.138

01/20/03 19:02:37 STX Canada Marine, Inc.  
 GMS 11.50 COGS JOHN F. Tully  
 NO.14 ICCB LOAD LINE DEPARTURE CONDITION

Stability Displacement buoyancy/Displ. Weight/Weight  
 Origin Weight (MT) CGC VCG LCP to trim GNC GWT  
 4.004 2,120.90 2.492a 2.710 7.10 5.563a 29.20 75.80 0.572  
 Distances in METERS:-----Specific Gravity = 1.025-----Moment in m.-MT.  
 Trim is per 54.88m.  
 Draft is from USK DRAFT. True Free Surface included.

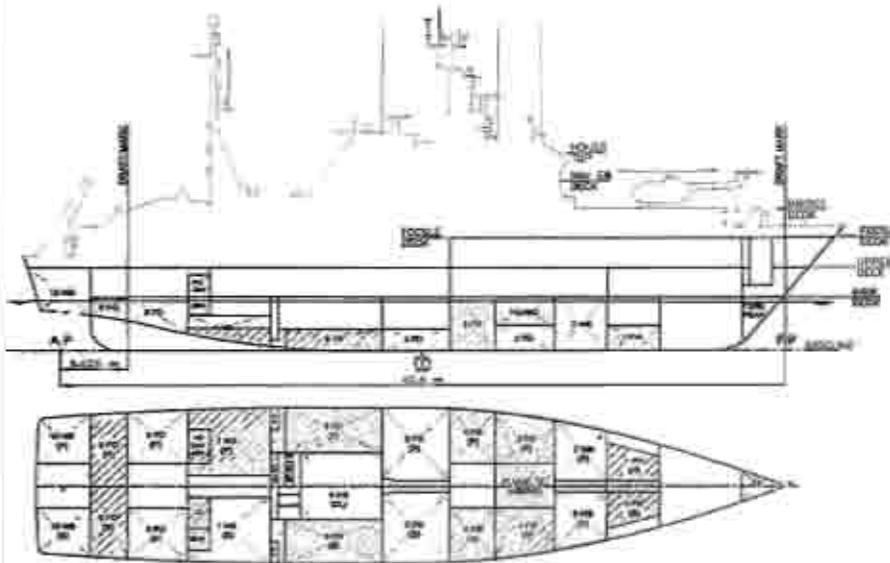
RIGHTING ARM CURVE vs HEEL ANGLE  
 Total CG: LCG = 2.487a, DCG = 0.000a, VCG = 4.138  
 Free Surface Adjustment: 0.494  
 Adjusted CG: LCG = 2.487a, DCG = 0.000a, VCG = 4.631

Heel	Displacement	Righting Arm	Flood %
0.0%	2,120.90	0.000	0.000
1.0%	2,120.90	0.000	0.000
2.0%	2,120.90	0.000	0.000
3.0%	2,120.90	0.000	0.000
4.0%	2,120.90	0.000	0.000
5.0%	2,120.90	0.000	0.000
6.0%	2,120.90	0.000	0.000
7.0%	2,120.90	0.000	0.000
8.0%	2,120.90	0.000	0.000
9.0%	2,120.90	0.000	0.000
10.0%	2,120.90	0.000	0.000
11.0%	2,120.90	0.000	0.000
12.0%	2,120.90	0.000	0.000
13.0%	2,120.90	0.000	0.000
14.0%	2,120.90	0.000	0.000
15.0%	2,120.90	0.000	0.000
16.0%	2,120.90	0.000	0.000
17.0%	2,120.90	0.000	0.000
18.0%	2,120.90	0.000	0.000
19.0%	2,120.90	0.000	0.000
20.0%	2,120.90	0.000	0.000
21.0%	2,120.90	0.000	0.000
22.0%	2,120.90	0.000	0.000
23.0%	2,120.90	0.000	0.000
24.0%	2,120.90	0.000	0.000
25.0%	2,120.90	0.000	0.000
26.0%	2,120.90	0.000	0.000
27.0%	2,120.90	0.000	0.000
28.0%	2,120.90	0.000	0.000
29.0%	2,120.90	0.000	0.000
30.0%	2,120.90	0.000	0.000
31.0%	2,120.90	0.000	0.000
32.0%	2,120.90	0.000	0.000
33.0%	2,120.90	0.000	0.000
34.0%	2,120.90	0.000	0.000
35.0%	2,120.90	0.000	0.000
36.0%	2,120.90	0.000	0.000
37.0%	2,120.90	0.000	0.000
38.0%	2,120.90	0.000	0.000
39.0%	2,120.90	0.000	0.000
40.0%	2,120.90	0.000	0.000
41.0%	2,120.90	0.000	0.000
42.0%	2,120.90	0.000	0.000
43.0%	2,120.90	0.000	0.000
44.0%	2,120.90	0.000	0.000
45.0%	2,120.90	0.000	0.000
46.0%	2,120.90	0.000	0.000
47.0%	2,120.90	0.000	0.000
48.0%	2,120.90	0.000	0.000
49.0%	2,120.90	0.000	0.000
50.0%	2,120.90	0.000	0.000
51.0%	2,120.90	0.000	0.000
52.0%	2,120.90	0.000	0.000
53.0%	2,120.90	0.000	0.000
54.0%	2,120.90	0.000	0.000
55.0%	2,120.90	0.000	0.000
56.0%	2,120.90	0.000	0.000
57.0%	2,120.90	0.000	0.000
58.0%	2,120.90	0.000	0.000
59.0%	2,120.90	0.000	0.000
60.0%	2,120.90	0.000	0.000
61.0%	2,120.90	0.000	0.000
62.0%	2,120.90	0.000	0.000
63.0%	2,120.90	0.000	0.000
64.0%	2,120.90	0.000	0.000
65.0%	2,120.90	0.000	0.000
66.0%	2,120.90	0.000	0.000
67.0%	2,120.90	0.000	0.000
68.0%	2,120.90	0.000	0.000
69.0%	2,120.90	0.000	0.000
70.0%	2,120.90	0.000	0.000
71.0%	2,120.90	0.000	0.000
72.0%	2,120.90	0.000	0.000
73.0%	2,120.90	0.000	0.000
74.0%	2,120.90	0.000	0.000
75.0%	2,120.90	0.000	0.000
76.0%	2,120.90	0.000	0.000
77.0%	2,120.90	0.000	0.000
78.0%	2,120.90	0.000	0.000
79.0%	2,120.90	0.000	0.000
80.0%	2,120.90	0.000	0.000
81.0%	2,120.90	0.000	0.000
82.0%	2,120.90	0.000	0.000
83.0%	2,120.90	0.000	0.000
84.0%	2,120.90	0.000	0.000
85.0%	2,120.90	0.000	0.000
86.0%	2,120.90	0.000	0.000
87.0%	2,120.90	0.000	0.000
88.0%	2,120.90	0.000	0.000
89.0%	2,120.90	0.000	0.000
90.0%	2,120.90	0.000	0.000
91.0%	2,120.90	0.000	0.000
92.0%	2,120.90	0.000	0.000
93.0%	2,120.90	0.000	0.000
94.0%	2,120.90	0.000	0.000
95.0%	2,120.90	0.000	0.000
96.0%	2,120.90	0.000	0.000
97.0%	2,120.90	0.000	0.000
98.0%	2,120.90	0.000	0.000
99.0%	2,120.90	0.000	0.000
100.0%	2,120.90	0.000	0.000

Distances in METERS:-----Specific Gravity = 1.025-----Area in m.-Rad.  
 Notes: The Height and Center of Gravity used for the righting arm curve above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 1047.1 m.-MT was applied to artificially modify the GM.

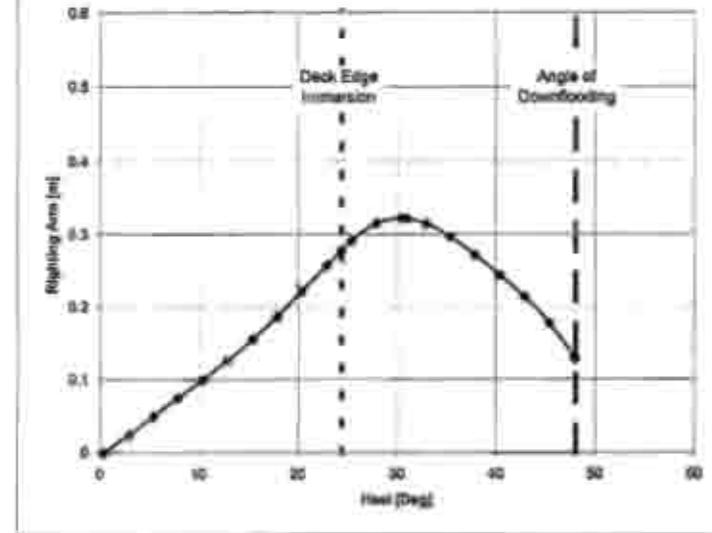
Critical Point:-----LCP-----TCP-----VCP  
 11) CAPTAIN'S BOW WINDOW FLOOD 1.630a 7.000 11.300

No.14 Load Line Departure with Ice



Note: Aft crane stowed with boom positioned forward.

No.14 Load Line Departure with Ice



STAB 7 INTACT STABILITY CRITERIA		Min/Max	Assigned
(1) Area from 0 deg to 30 or Flood	>	0.0900 m.-Rad	0.1345 P
(2) Area from 0 deg to 30	>	0.0550 m.-Rad	0.0800 P
(3) Area from 30 deg to 40 or Flood	>	0.0300 m.-Rad	0.0510 P
(4) Righting Arm at 30 deg	>	0.200 m.	0.323 P
(5) GM at Equilibrium	>	0.150 m.	0.571 P
(6) Angle from 0 deg to 88NRA	>	25.00 deg	30.00 P

-----Relative angles measured from 0.45ic-----

01/20/09 19:22:37 STX Canada Marine, Inc.  
 CGGS JOHN P. Tully  
 NO.15 ICED FULLY LOADED INTERMEDIATE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USM DRAFT draft: 4.233 @ 30.250, 4.338 @ 24.634  
 Trim: Aft 0.101/54.875, Heel: Port 0.10 deg.

Part	Weight (MT)	LCG	TCC	VCG			
LIGHT SHIP	1,624.60	8.545a	0.048a	4.457			
AFT STORES	5.00	22.350a	1.340p	9.555			
SWD STORES	3.00	30.000f	0.000	8.900			
Galley Stoves	7.00	20.250a	0.000	9.000			
Gas in Jettisonable T4	0.68	20.250a	0.100p	11.300			
45 Crew and Officers @ 525	5.20	0.000	0.000	11.000			
ICE ACCRETION	33.20	3.500a	0.000	11.300			
UPPER DECK MACHINERY	17.10	15.480a	0.050a	8.130			
UPPER DECK CONTAINER	4.35	28.100a	4.850p	8.600			
PODS DECK MACHINERY	8.98	8.320a	3.470a	11.000			
PODS DECK CONTAINER	3.84	24.350a	5.490a	11.300			
HELICOPTER	2.50	21.000f	0.500	14.300			
ROSETTE EQUIPMENT	0.90	0.700a	1.400a	9.000			
Total Fixed	1,776.17	2,793a	0.00a	8.795			
Load	SpGr	Weight (MT)	LCG	TCC	VCG	ESG	
TK1 SW.P	0.700	1.025	27.35	15.451a	1.080p	1.924	105.13
TK4 SW.P	0.500	0.800	27.88	4.044f	3.975p	1.913	34.34
TK4 SW.S	0.500	0.800	27.88	8.084f	3.975p	1.915	24.33
TK1 SW.F	0.500	1.000	8.45	17.349f	1.323p	0.828	1.87
TK1 SW.S	0.500	1.000	8.45	17.349f	1.321a	0.838	3.45
PHONE.C	0.480	1.025	75.21	8.424f	0.816p	3.508	708.83
OPP OIL.P	0.500	0.890	0.62	11.184a	0.908p	0.438	0.50
BLUDGE.S	0.300	1.000	1.72	11.133a	1.268a	0.578	1.77
BLUDGE.P	0.500	0.890	2.43	18.888a	3.298a	3.428	0.77
FOOD.P	0.500	0.940	4.88	18.698a	3.501p	5.425	3.48
Total Tanks	894.87	2.188f	0.811p	2.289	878.88		
Total Weight	1,971.03	2.307a	0.002p	8.350			
DISPL	1.025	1,971.07	2.314a	0.008p	2.387	-4.274	

HEIGHT EXCESS: 0.03  
 Distances in METERS: ----- Moments in m.-MT

FREEBOARD STATUS  
 USM DRAFT draft: 4.233 @ 30.250, 4.338 @ 24.634  
 Trim: Aft 0.101/54.875, Heel: Port 0.10 deg.  
 Least freeboard is 4.268 m. Located at 32.130a  
 Least water freeboard (to margin line) is 2.192 m. Located at 32.150a

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.101/54.875, Heel: Port 0.10 deg., VCG = 8.350

Draft	Displacement	Buoyancy-Ctr.	Weight/	Moment/
Origin	Weight (MT)	LCG	TCC	VCG
0.288	1,971.03	2.314a	2.387	7.00
				5.833a
				28.19
				78.49
				0.50f

Distances in METERS: ----- Specific Gravity = 1.025 ----- Moment in m.-MT  
 Trim is per 54.86m.  
 Draft is from ODS DRAFT. True Free Surface included.

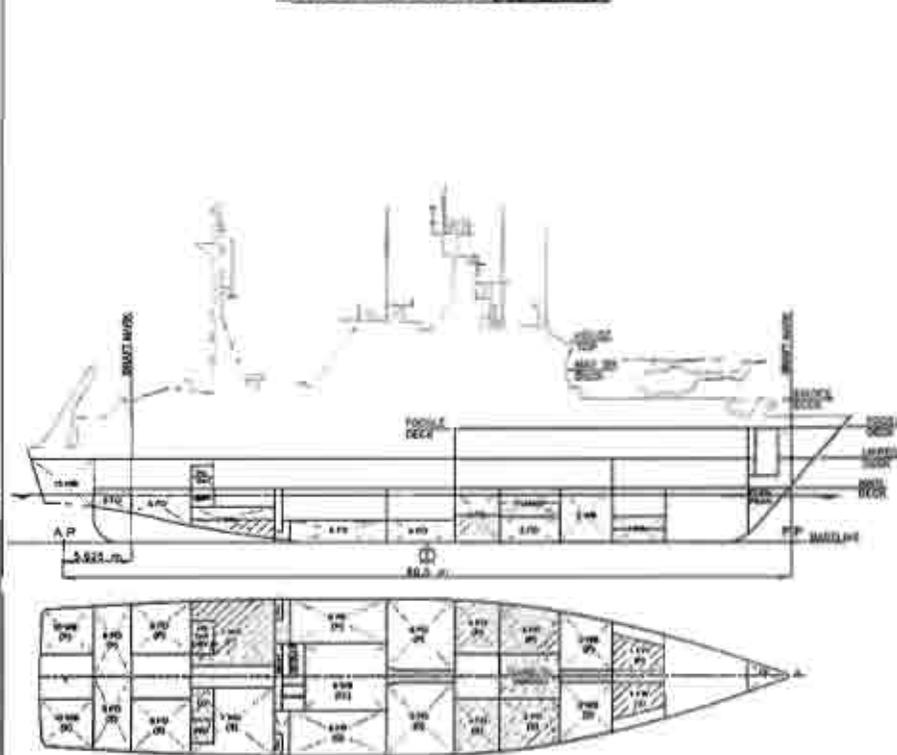
01/20/09 19:22:37 STX Canada Marine, Inc.  
 CGGS JOHN P. Tully  
 NO.15 ICED FULLY LOADED INTERMEDIATE CONDITION

RIGHTING ARM vs HEEL ANGLE  
 total CG: LCG = 2.308a TCC = 0.001 VCG = 8.350  
 Free Surface Adjustment: 0.445  
 Adjusted CG: LCG = 2.308a TCC = 0.001 VCG = 8.795

Origin	Depth	Degree of Trim	Heel	Displacement	Weighting Arm	in Trim	in Heel	Area	Height
4.274	0.11a	0.10p	1,970.97	0.000	0.000	0.0000	1.000(2)		
4.269	0.10a	2.40a	1,970.66	0.000	0.022	0.0005	4.714(1)		
4.254	0.08a	4.90a	1,971.04	0.000	0.044	0.0019	6.395(1)		
4.228	0.06a	7.40a	1,971.04	0.000	0.066	0.0043	6.069(1)		
4.191	0.02a	9.90a	1,971.04	0.000	0.088	0.0076	5.734(1)		
4.143	0.03a	12.40a	1,971.04	0.000	0.108	0.0116	5.394(1)		
4.084	0.08f	14.90a	1,971.04	0.000	0.122	0.0170	5.047(1)		
4.013	0.14f	17.40a	1,971.04	0.000	0.138	0.0234	4.695(1)		
3.931	0.21f	19.90a	1,971.04	0.000	0.155	0.0308	4.340(1)		
3.834	0.29f	22.40a	1,971.04	0.000	0.173	0.0395	3.984(1)		
3.722	0.37f	24.90a	1,971.04	0.000	0.214	0.0493	3.629(1)		
3.599	0.41a	26.18a	1,971.03	0.000	0.243	0.0544	Margin		
3.460	0.45f	27.46a	1,971.04	0.000	0.250	0.0588	3.278(1)		
3.348	0.33f	29.96a	1,970.94	0.000	0.257	0.0709	2.929(1)		
3.411	0.35f	30.03a	1,971.04	0.000	0.257	0.0737	2.840(1)		
3.293	0.39f	32.40a	1,971.04	0.000	0.250	0.0820	2.579(1)		
3.128	0.42f	34.90a	1,971.00	0.000	0.231	0.0925	2.218(1)		
2.958	0.45f	37.40a	1,971.09	0.000	0.204	0.1020	1.857(1)		
2.770	0.44f	39.90a	1,971.98	0.000	0.172	0.1102	1.494(1)		
2.571	0.41f	42.40a	1,971.91	0.000	0.138	0.1170	1.128(1)		
2.374	0.37f	44.90a	1,970.90	0.000	0.103	0.1229	0.763(1)		
2.167	0.31f	47.40a	1,970.78	0.000	0.061	0.1258	0.396(1)		
1.997	0.44f	49.90a	1,970.60	0.000	0.011	0.1274	0.025(1)		
1.944	0.44f	50.07a	1,971.12	0.000	0.007	0.1274	-0.001(1)		

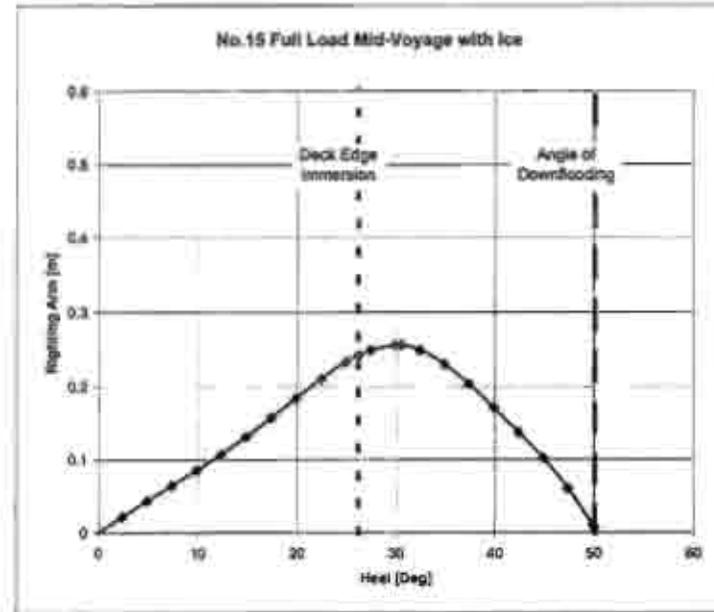
Distances in METERS: ----- Specific Gravity = 1.025 ----- Area in m.-Rad:  
 Note: The Weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 876.1 m.-MT was applied to artificially modify the CG.  
 Critical Point: ----- LCG ----- TCC ----- VCG  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

No.15 Full Load Mid-Voyage with Ice



Note: Aft crane stowed with boom positioned forward.

No.15 Full Load Mid-Voyage with Ice



STAB 7 INTACT STABILITY CRITERIA	Min/Max	Attained
(1) Area from 0 deg to 40 or Flood	> 0.0900 m.-Rad	0.1102 P
(2) Area from 0 deg to 30	> 0.0550 m.-Rad	0.0709 P
(3) Area from 30 deg to 40 or Flood	> 0.0300 m.-Rad	0.0394 P
(4) Righting Arm at 30 deg	> 0.200 m.	0.257 P
(5) GM at Equilibrium	> 0.150 m.	0.507 P
(6) Angle from 0 deg to MaxRA	> 25.00 deg	30.00 P

-----Relative angles measured from 0.097-----

01/20/00 19:22:37 STX Canada Marine, Inc.  
 088 11.50 CGM JOHN P. Tully  
 NO.16 ICED FULLY LOADED ARRIVAL CONDITION

WEIGHT AND DISPLACEMENT STATUS  
 USA SHFT draft: 4.024 @ 30,252, 4.128 @ 24,814  
 Trim: Aft 0.304/34.875, Heel: Starb 0.00 deg.

Fast	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	9,624.60	2.594a	0.948a	4.437
ERT STORES	5.00	22.300a	1.210a	8.556
PRO STORES	3.00	30.000a	0.000	8.500
Galley stores	1.40	20.200a	0.000	6.000
Sea In Juxtaposition TK	0.10	20.250a	4.100a	11.000
DE Crew and Effects @ 100	5.00	0.000	0.000	11.000
ICE ACCRETION	33.20	3.400a	0.000	11.400
UPPER DECK MACHINERY	17.10	19.430a	0.020a	8.130
UPPER DECK CONTAINERS	4.35	24.100a	4.430a	8.600
PODSLE DECK MACHINERY	8.94	8.320a	4.470a	12.000
PODSLE DECK CONTAINERS	3.44	14.250a	5.480a	13.300
HELICOPTER	2.02	11.000a	0.000	14.300
SECURITY EQUIPMENT	0.00	0.700a	5.400a	9.000
Total Fixed	1,749.99	0.860a	0.000a	8.900

TKG No.	Load	Spgr	Weight (MT)	LCG	TCG	VCG	Dist
TKG No. P	3.100	1.025	31.00	13.000a	1.230a	0.791	47.50
TKG No. O	1.000	1.025	10.25	8.700a	0.000	0.704	0.00
TKG No. F	0.000	0.840	0.00	0.000a	0.000	0.000	0.00
TKG No. S	0.000	0.840	0.00	0.000a	0.000	0.000	0.00
CPG Oil P	0.500	0.890	0.50	11.200a	0.960a	0.435	0.00
SLUDGE S	0.900	1.000	0.90	11.150a	1.690a	0.760	1.79
SEWAGE S	0.900	0.840	0.90	18.480a	1.300a	2.069	0.79
JOGAT P	0.500	0.840	0.50	18.480a	2.500a	2.405	1.49
Total Tare			109.00	1.501a	0.403a	1.612	148.91
Total Weight			1,859.99	2.361a	0.400	8.400	

Dist: 1.025  
 Weight: 1,859.99  
 LCG: 2.361a  
 TCG: 0.400a  
 VCG: 8.400

WEIGHT EXCESS: 0.16  
 Distances in METERS: ----- Moments in m.-MT.

FRESHWATER STATUS  
 USA SHFT draft: 4.024 @ 30,252, 4.328 @ 24,814  
 Trim: Aft 0.304/34.875, Heel: Starb 0.00 deg.  
 Least freshward to 3.255 m. located at 10.130a  
 Least aft to freshward (to magyle line) to 3.178 m. located at 03.130a

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.304/34.875, Heel: Starb 0.00 deg., VCG = 4.400

Origin	Weight (MT)	LCG	TCG	VCG	Dist
Origin	1,817.83	2.574a	2.182	8.97	79.89
Distances in METERS		Specific Gravity = 1.025			Moment in m.-MT

Draft is from SEA DRAFT. True Free Surface Included.

01/20/00 19:22:37 STX Canada Marine, Inc.  
 088 11.50 CGM JOHN P. Tully  
 NO.16 ICED FULLY LOADED ARRIVAL CONDITION

RIGHTING ARM vs HEEL ANGLE  
 Total CG: LCG = 2.514a TCG = 3.000 VCG = 4.400  
 Free Surface Adjustment: 0.000  
 Adjusted CG: LCG = 2.514a TCG = 3.000 VCG = 4.400

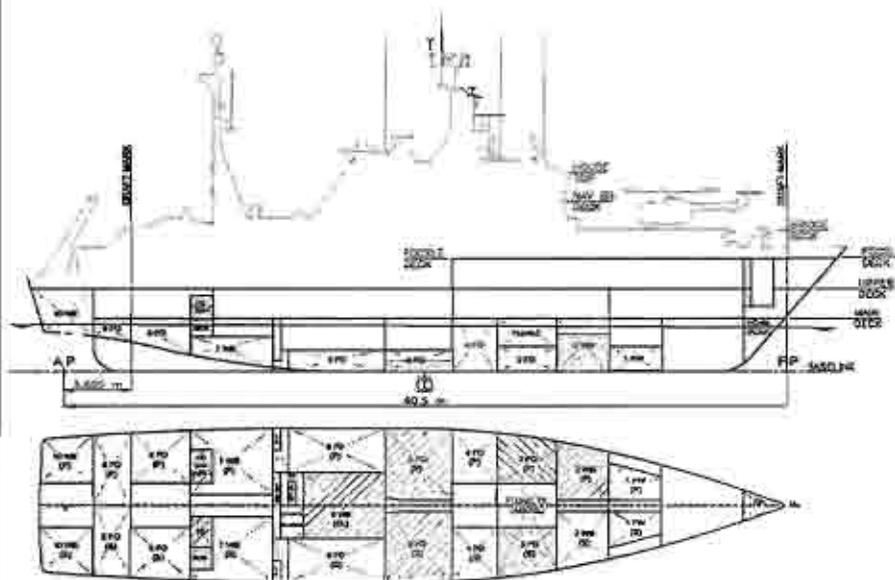
Depth	Trim	Heel	Weight (MT)	in Trim	in Heel	Area	Height
0.178	0.30a	0.02a	1,817.83	0.000	0.000	0.0000	7.077(1)
0.172	0.31a	0.03a	1,817.83	0.000	0.030	0.0000	6.749(1)
0.157	0.29a	0.02a	1,817.83	0.000	0.070	0.0023	6.448(1)
0.131	0.27a	0.02a	1,817.83	0.000	0.112	0.0074	6.120(1)
0.090	0.23a	0.02a	1,817.83	0.000	0.143	0.0131	5.785(1)
0.047	0.19a	0.02a	1,817.83	0.000	0.169	0.0204	5.443(1)
0.008	0.15a	0.02a	1,817.83	0.000	0.225	0.0294	5.098(1)
0.000	0.00a	0.00a	1,817.83	0.000	0.260	0.0401	4.743(1)
0.000	0.00a	0.00a	1,817.83	0.000	0.306	0.0526	4.387(1)
0.000	0.00a	0.00a	1,817.83	0.000	0.344	0.0669	4.031(1)
0.000	0.00a	0.00a	1,817.83	0.000	0.379	0.0824	3.675(1)
0.000	0.00a	0.00a	1,817.83	0.000	0.398	0.0883	3.319(1)
0.000	0.00a	0.00a	1,817.83	0.000	0.401	0.0894	2.963(1)
0.000	0.00a	0.00a	1,818.00	0.000	0.418	0.1173	2.677(1)
0.000	0.00a	0.00a	1,818.10	0.000	0.421	0.1294	2.431(1)
0.000	0.00a	0.00a	1,817.83	0.000	0.420	0.1326	2.273(1)
0.000	0.00a	0.00a	1,817.83	0.000	0.421	0.1328	2.146(1)
0.000	0.00a	0.00a	1,818.04	0.000	0.393	0.1713	1.909(1)
0.000	0.00a	0.00a	1,818.04	0.000	0.368	0.1879	1.645(1)
0.000	0.00a	0.00a	1,818.04	0.000	0.343	0.2029	1.381(1)
0.000	0.00a	0.00a	1,818.43	0.000	0.314	0.2179	0.916(1)
0.000	0.00a	0.00a	1,817.76	0.000	0.285	0.2310	0.451(1)
0.000	0.00a	0.00a	1,817.64	0.000	0.248	0.2426	0.000(1)
0.000	0.00a	0.00a	1,818.10	0.000	0.255	0.2459	-0.001(1)

Distances in METERS. Specific Gravity = 1.025. Area in m.-sq.

Note: The Weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 169.5 m.-MT was applied to artificially modify the CG.

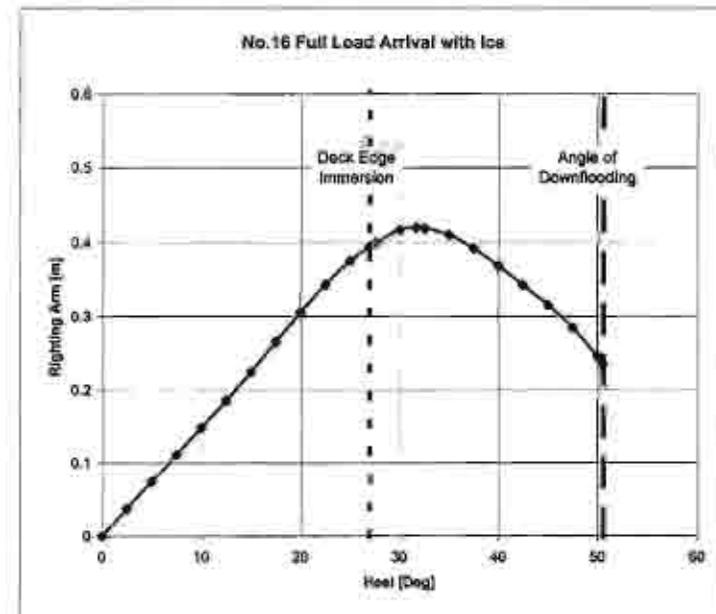
Critical Point: ----- LCG ----- TCG ----- VCG  
 (1) CAPTAIN'S WIDE WINDOW FLOOD 7.630a 7.000 11.300

No.16 Full Load Arrival with ice



Note: A/c crane stowed with boom positioned forward.

No.16 Full Load Arrival with ice



Item	STAR 7 INTACT STABILITY CRITERIA	Min/Max	Attained
(1)	Area from 0 deg to 40 or Flood	> 0.0900 m.-Rad	0.1879 P
(2)	Area from 0 deg to 30	> 0.0550 m.-Rad	0.1173 P
(3)	Area from 30 deg to 40 or Flood	> 0.0300 m.-Rad	0.0766 P
(4)	Righting Arm at 30 deg	> 0.200 m.	0.418 P
(5)	GM at Equilibrium	> 0.150 m.	0.877 P
(6)	Angle from 9 deg to MaxRA	> 25.00 deg	31.66 P

-----Relative angles measured from 0.021-----

Notes Regarding Damage Stability

This ship does not comply with one-compartment or two-compartment damage stability standards as defined by Transport Canada, specifically, the vertical extent of damage, which is required by Transport Canada's one or two compartment damage stability standard to extend from the baseline upwards without limit, has been limited to below the main deck for all damage cases presented in this book. If damage to the vessel causes progressive flooding above Main Deck, particularly within the 400, 500, and 600 level damage cases, the ship will be subject to a high risk of capsizing. The criteria used to assess the damage stability of this vessel are as follows:

- A. Heel at equilibrium is to be less than 15°
- B. GM at equilibrium is to be greater than 0.050 m;
- C. The margin line may not be immersed at equilibrium.

No.	Damage Case	Displacement (t)	GM (m)	Heel (°)	Freeboard (m)	Freeboard (ft)	Result
No. 100	Fore Peak @ 3.0 m	2719.8	4.311	0.603a	0.10p	1.331	Pass
No. 101	Fore Peak @ 4.0 m	2121.8	4.512	0.479a	0.10p	1.319	Pass
No. 102	Fore Peak @ 4.5 m	2123.0	4.516	0.469a	0.10p	1.317	Pass
No. 200	Comp 73-81 @ 1.0 m	2114.8	4.504	0.833a	0.48p	1.329	Pass
No. 201	Comp 73-81 @ 2.0 m	2138.8	4.537	0.321a	0.17p	1.331	Pass
No. 202	Comp 73-81 @ 3.0 m	2180.5	4.567	0.119a	0.07p	1.336	Pass
No. 203	Comp 73-81 @ 4.0 m	2194.0	4.660	0.103f	0.07p	1.328	Pass
No. 204	Comp 73-81 @ 4.9 m	2205.8	4.623	0.306f	0.06p	1.377	Pass
No. 300	Comp 52-66 @ 1.0 m	2070.8	4.438	0.872a	4.18p	1.468	Pass
No. 301	Comp 52-66 @ 2.25 m	2108.5	4.484	0.932a	1.39p	1.410	Pass
No. 302	Comp 52-66 @ 3.0 m	2120.9	4.512	0.479a	0.31p	1.349	Pass
No. 303	Comp 52-66 @ 4.0 m	2138.2	4.536	0.421a	1.15p	1.408	Pass
No. 304	Comp 52-66 @ 4.9 m	2149.7	4.653	0.383a	2.04p	1.337	Pass
No. 400	Comp 43-52 @ 1.5 m	2116.7	4.528	0.522a	0.83p	1.316	Pass
No. 401	Comp 43-52 @ 2.0 m	2133.3	4.530	0.489a	0.39p	1.306	Pass
No. 402	Comp 43-52 @ 2.5 m	2162.0	4.569	0.437a	0.84p	0.966	Pass
No. 403	Comp 43-52 @ 3.0 m	2190.3	4.609	0.383a	1.10p	1.004	Pass
No. 404	Comp 43-52 @ 4.0 m	2247.8	4.688	0.278a	1.50p	1.054	Pass
No. 405	Comp 43-52 @ 4.5 m	2276.0	4.726	0.227a	1.81p	1.080	Pass
No. 406	Comp 43-52 @ 4.75 m	2290.0	4.747	0.201a	1.87p	1.092	Pass
No. 500	Comp 38-43 @ 1.5 m	2121.5	4.313	0.820a	1.12p	1.295	Pass
No. 501	Comp 38-43 @ 2.0 m	2154.8	4.574	0.545a	0.58p	1.082	Pass
No. 502	Comp 38-43 @ 2.5 m	2227.2	4.681	0.585a	0.61p	0.988	Pass
No. 503	Comp 38-43 @ 3.0 m	2289.8	4.749	0.524a	0.09p	0.998	Pass
No. 504	Comp 38-43 @ 3.5 m	2352.1	4.836	0.264a	0.32p	0.870	Pass
No. 505	Comp 38-43 @ 4.0 m	2414.7	4.922	0.704a	0.64p	0.735	Pass
No. 506	Comp 38-43 @ 4.5 m	2530.2	5.062	0.771a	0.80p	1.865	Pass
No. 500	Comp 4-28 @ 1.0 m	2068.1	4.434	0.177a	4.18p	1.457	Pass
No. 501	Comp 4-28 @ 2.0 m	2097.2	4.476	0.278a	3.21a	1.857	Pass
No. 502	Comp 4-28 @ 3.0 m	2150.0	4.553	0.478a	0.29p	1.385	Pass
No. 503	Comp 4-28 @ 4.0 m	2228.9	4.662	0.833a	4.37p	1.453	Pass
No. 504	Comp 4-28 @ 4.5 m	2273.9	4.721	1.043a	5.84p	1.529	Pass
No. 505	Comp 4-28 @ 4.9 m	2329.8	4.770	1.211a	7.96p	1.800	Pass
No. 700	Comp A8-4 @ 4.5 m	2126.3	4.529	0.585a	0.48p	1.322	Pass
No. 701	Comp A8-4 @ 4.9 m	2133.3	4.522	0.638a	1.00p	1.217	Pass

Downflooding Points

Downflooding point is defined as follows:

	LCG	TCG	YCG
Captain's Room Window:	7.93	7	11.3

Permeabilities

The following permeabilities have been used:

Accommodation/Voids - 95%

Machinery spaces - 95%

Extent of Damage

Transverse

SWL/GS measured inboard from side at deepest waterline.

Vertical

Upwards from the baseline to Main Deck (4.9 m).

Longitudinal

As defined in previous damage stability report.

Flume Tests

It is of the utmost importance for the master to remember:

**"THE FLUME TANK MUST BE EMPTIED WHEN DAMAGE OCCURS"**

**STX Canada**

**NOTED - NOTÉ**

By the Authority of the  
CANADA SHIPPING ACT 1988  
REGULATIONS MADE BY THE  
LIEUTENANT GOVERNOR

By the Authority of the  
PROVINCE OF QUEBEC  
REGULATIONS MADE BY THE  
LIEUTENANT GOVERNOR

*John Kasul*

Prepared by STX Canada Marine Inc., Doc No. 530-478-18 Rev 5, February 2009

FEB 2 2009

01/20/09 20:54:20 STX Canada Marine, Inc.  
 SHS 11.00 CGCS JOHN P. Tully  
 NO.100 - FOREPEAK 3.0M - LOADLINE DEPARTURE CONDITION

**HEIGHT and DISPLACEMENT STATUS**  
 USK DRAFT draft: 4.180 & 30.250, 4.483 & 24.43a  
 Trim: Aft 9.023/54.873, Heel: Port 0.10 deg.

Part	Weight (MT)	LCG	TCG	VCG			
LIGHT SHIP	1,424.80	2.595a	1.018a	6.457			
AFT STORES	5.00	22.250a	1.000p	8.50a			
FRD STORES	3.00	30.000a	0.000	8.500			
Galley Stores	14.00	20.200a	0.000	6.000			
Gas in Jettisonable TX	0.88	20.250a	6.100p	11.000			
42 Crib and Effects @ 125	5.00	0.000	0.000	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.000a	6.130			
UPPER DECK CONTAINERS	4.35	24.100a	4.600p	8.500			
POCILE DECK MACHINERY	8.90	0.320a	4.470a	11.000			
POCILE DECK CONTAINERS	3.94	14.250a	5.400a	11.300			
HELICOPTER	2.50	21.000a	0.000	14.300			
ROCKET EQUIPMENT	0.90	0.700a	5.600a	9.000			
<b>Total Fixed</b>	<b>1,689.97</b>	<b>2.438a</b>	<b>0.968a</b>	<b>6.343</b>			
	Load	sgc	Weight (MT)	LCG	TCG	VCG	BM
TK2_HB.P	0.200	1.025	16.41	13.072a	1.802p	1.019	14.80
TK3_PO.P	0.800	0.840	17.32	8.331a	2.499p	1.502	17.00
TK4_PO.P	0.200	0.840	34.45	4.290a	4.144a	2.085	27.25
TK4_PO.S	0.900	0.840	34.85	4.090a	4.144a	2.085	27.23
TK5_PO.P	1.000	0.840	34.66	0.405a	3.066p	1.248	0.00
TK5_PO.S	1.000	0.840	34.66	0.405a	3.066a	1.248	0.00
TK6_PO.P	0.900	0.840	24.33	7.259a	4.991p	1.481	22.82
TK6_PO.S	0.900	0.840	24.33	7.259a	4.988a	1.481	22.76
TK8_PO.P	0.900	0.840	37.71	21.911a	3.110p	3.829	35.45
TK8_PO.S	0.900	0.840	37.71	21.911a	4.110a	3.829	35.53
TK9_PO.P	0.900	0.840	23.84	26.097a	2.767p	4.095	57.34
TK9_PO.S	0.900	0.840	23.84	26.097a	2.759a	4.095	57.49
TK1_FW.P	0.900	1.000	16.56	17.264a	1.520p	1.322	6.87
TK1_FW.S	0.900	1.000	16.56	17.265a	1.518a	1.322	6.85
CPP_OIL.P	0.500	0.800	0.62	11.185a	0.908p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.102a	1.266a	0.404	0.90
SHWAG.S	0.100	0.800	0.49	18.703a	5.297a	1.285	0.77
FOREPEAK.C	0.070	1.025	1.41	27.246a	0.000	2.360	0.12
Permeability override	0.950						
FODAY.P	0.900	0.840	9.58	18.689a	3.501p	5.929	3.49
<b>Total Tanks</b>			<b>629.92</b>	<b>4.805a</b>	<b>0.282p</b>	<b>2.571</b>	<b>338.76</b>
<b>Total Weight</b>			<b>2,119.90</b>	<b>3.094a</b>	<b>0.000p</b>	<b>5.739</b>	
HULL	0.025		2,119.80	3.122a	0.007p	5.717	-4.443
Righting Arm				0.000	0.900		
Distances in METERS							Distance in m.-MT.

**FREEBOARD STATUS**  
 USK DRAFT draft: 4.177 & 30.250, 4.486 & 24.81a  
 Trim: Aft 0.489/54.873, Heel: Port 0.09 deg.  
 Least freeboard is 2.805 m. located at 32.130a  
 Least extra freeboard (no margin line) is 2.805 m. located at 32.130a

01/20/09 20:54:20 STX Canada Marine, Inc.  
 SHS 11.00 CGCS JOHN P. Tully  
 NO.100 - FOREPEAK 3.0M - LOADLINE DEPARTURE CONDITION

**HYDROSTATIC PROPERTIES**  
 Trim: Aft 2.429/54.875, Heel: Port 0.08 deg., VCG = 5.743

LCF Displacement	Buoyancy-Ctr.	Weight/	Moment/
Draft	Height (MT)	LCG	VCG
4.498	2,110.99	3.090a	3.709
		7.08	5.748a
			28.11
			75.47
			1.312

Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT.  
 Trim is per 54.88a.

Draft is from USK DRAFT. Trim Free Surface Included.

**RIGHTING ARM vs HEEL ANGLE**  
 Total CG: LCG = 2.064a TCG = 0.002p VCG = 5.743  
 Free Surface Adjustment: 0.171  
 Adjusted CG: LCG = 2.065a TCG = 1.002p VCG = 5.914

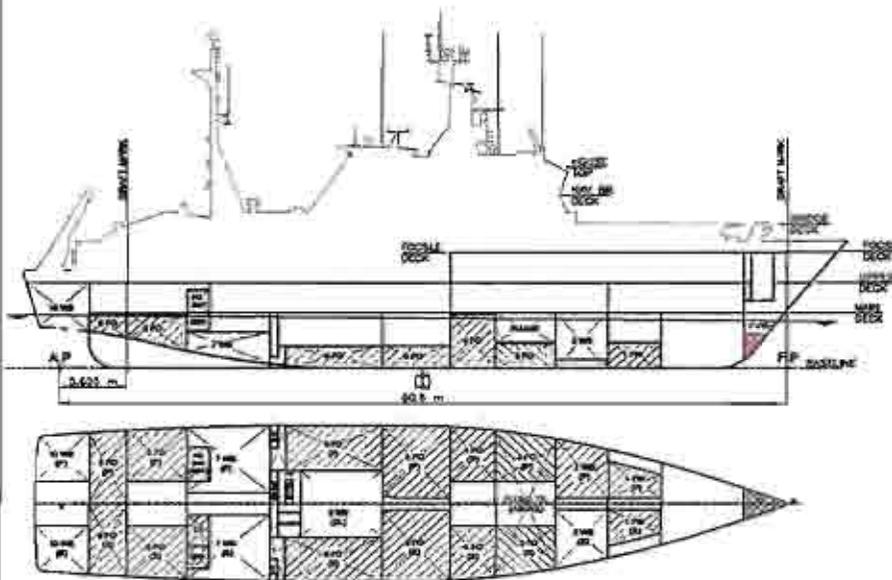
Origin	Degrees of	Displacement	Righting Arm	Flood Pt
Depth	Trim	Heel	Weight (MT)	Area
4.433	0.51a	0.00p	2,111.31	0.000
4.427	0.51a	2.50p	2,110.81	0.000
4.420	0.51a	5.00p	2,110.60	0.000
4.381	0.48a	7.50p	2,110.59	0.000
4.347	0.47a	10.00p	2,110.59	0.000
4.299	0.44a	12.50p	2,110.99	0.000
4.238	0.40a	15.00p	2,110.99	0.000
4.168	0.36a	17.50p	2,110.99	0.000
4.083	0.29a	20.00p	2,110.99	0.000
3.988	0.22a	22.50p	2,110.99	0.000
3.810	0.17a	24.99p	2,110.99	0.000
3.677	0.16a	28.08p	2,110.99	0.000
3.752	0.09a	31.58p	2,111.00	0.000
3.617	0.06a	34.08p	2,110.99	0.000
3.471	0.03a	36.58p	2,111.07	0.000
3.316	0.02a	39.08p	2,111.11	0.000
3.213	0.03a	35.10p	2,111.07	0.000
3.148	0.05a	37.58p	2,111.20	0.000
2.972	0.09a	40.08p	2,111.11	0.000
2.786	0.15a	42.58p	2,111.04	0.000
2.592	0.23a	45.08p	2,111.06	0.000
2.393	0.31a	47.58p	2,110.97	0.000
2.283	0.32a	47.71p	2,111.47	0.000

Distances in METERS. Specific Gravity = 1.025. Area in m.-Rad.

Note: The weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 360.2 m.-MT was applied to artificially modify the CG.

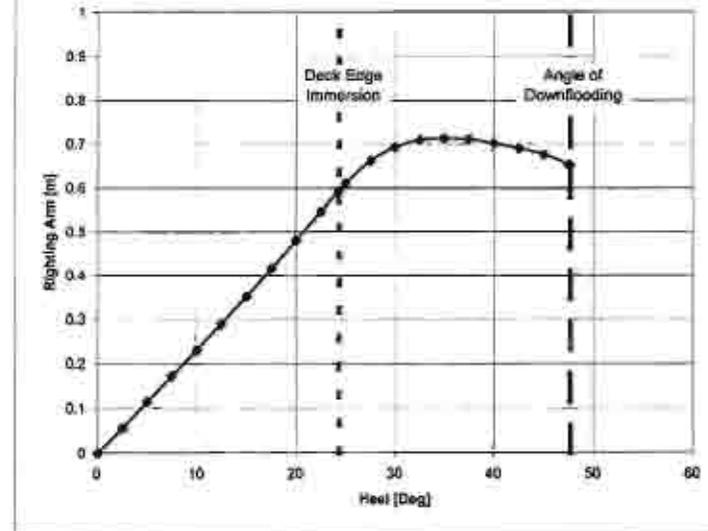
**Critical Point**  
 111 CAPTAIN'S ROOM WINDOW FLOOD 2.430a 7.000 11.300

Damage Case No.100 - Fore Peak @ 3.0 m



NOTE: Helicopters included in case that depicted in diagram above).

Damage Case No.100 - Fore Peak @ 3.0 m



CRITERIA	Min/Max	Attained
(1) GM at Equilibrium	> 0.050 m	1.312 m
(2) Absolute Angle at Equilibrium	< 15.00 deg	0.08 deg
(3) Absolute Angle at Deck/margin Immersion	> 0.00 deg	24.39 deg

01/21/09 08:53:40 STX Canada Marine, Inc.  
 QMS 11.50 COGS JOHN P. Tully  
 NO.101 - FOREPEAK # 4.0M - LOADING DEPARTURE CONDITION

WEIGHTS and DISPLACEMENT STATUS  
 USK DRAFT draft: 3.459 @ 30.25d, 3.47d @ 34.62d  
 Trim: Aft 0.479/54.87d, Heel: Port 0.10 deg.

Part	Weight (MT)	LCG	TCG	VCG
LEGY SHIP	1,628.60	2.595a	0.049a	6.457
AFT STORES	5.00	22.350a	1.330p	6.566
FWD STORES	3.00	30.200a	0.000	6.500
Galley Stores	14.00	20.250a	0.000	6.500
Gas in Petrolizable Tank	0.03	20.250a	0.100p	11.000
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	18.990a	0.000a	8.130
UPPER DECK CONTAINERS	4.33	26.100a	4.630p	8.600
PODSIDE DECK MACHINERY	8.98	8.320a	6.470a	11.000
PODSIDE DECK CONTAINERS	3.48	14.250a	5.180a	11.300
HELICOPTER	2.50	21.000a	0.000	14.300
ROCKET EQUIPMENT	0.90	4.700a	5.600a	9.000
<b>Total Fixed</b>	<b>1,659.97</b>	<b>2.630a</b>	<b>0.069a</b>	<b>6.543</b>

Lead	SpGr	Weight (MT)	LCG	TCG	VCG	FW	
TK0_HB.F	0.200	1.025	16.41	13.672a	1.468a	1.013	14.40
TK1_PO.F	0.350	0.840	17.11	8.312a	3.444p	1.503	17.09
TK2_PO.F	0.340	0.840	34.65	4.580a	4.146p	2.885	27.25
TK3_PO.S	0.380	0.840	54.65	4.290a	5.144a	2.885	27.23
TK5_PO.F	1.000	0.840	34.46	0.463a	3.066p	1.248	0.00
TK5_PO.S	1.000	0.840	34.66	0.465a	3.066a	1.248	0.00
TK4_PO.F	0.980	0.840	24.13	7.330a	4.931p	1.460	24.58
TK6_PO.S	0.980	0.840	24.13	7.330a	4.930a	1.460	24.48
TK8_PO.F	0.980	0.840	37.71	21.911a	4.111p	3.829	34.65
TK8_PO.S	0.980	0.840	37.71	21.911a	4.110a	3.829	34.63
TK9_PO.F	0.980	0.840	23.84	24.096a	2.787p	6.895	57.54
TK9_PO.S	0.980	0.840	23.84	24.096a	2.789a	6.895	57.49
TK1_FW.F	0.950	1.000	14.56	17.340a	1.520p	1.122	4.87
TK1_FW.S	0.950	1.000	14.56	17.340a	1.518a	1.122	4.85
OPP_OIL.F	0.500	0.890	0.62	11.180a	0.909p	0.425	2.30
SLUDGE.S	0.223	1.000	0.77	11.102a	1.286a	0.604	0.90
SWAGE.S	0.100	0.280	3.49	18.702a	5.397a	3.285	0.77
FOREPEAK.C	0.175	1.025	3.22	27.290a	0.00a	3.110	0.48
Permeability override	0.990						
FOOT.P	0.940	1.900	0.28	18.884a	3.025p	5.829	2.49
<b>Total Tanks</b>			<b>433.03</b>	<b>4.643a</b>	<b>0.280p</b>	<b>2.578</b>	<b>143.55</b>
<b>Total Weight</b>			<b>2,122.00</b>	<b>3.069a</b>	<b>0.002p</b>	<b>5.735</b>	

Displ (MT)	LCB	TCB	VCB	Heel		
HULL	1.025	2,121.93	3.069a	0.007p	2.719	+4.460

Righting Arms: 0.000 0.000  
 Distances in METERS: ----- Distances in m.-RT.

FREEBOARD STATUS  
 USK DRAFT draft: 3.198 @ 30.25d, 4.679 @ 34.62d  
 Trim: Aft 0.479/54.87d, Heel: Port 0.10 deg.  
 Least freeboard is 2.872 m. located at 33.130a  
 Least extra freeboard (to margin line) is 2.786 m. located at 33.130a

01/21/09 09:53:40 STX Canada Marine, Inc.  
 QMS 11.50 COGS JOHN P. Tully  
 NO.101 - FOREPEAK # 4.0M - LOADING DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.479/54.87d, Heel: Port 0.10 deg., VCG = 5.735

LCB	Displacement	Buoyancy-Ctr.	Height/	Moment/					
CG	Weight (MT)	LCB	on	LCB	on	TCB	on	GML	DWT
4.513	2,121.93	3.069a	2.719	7.09	3.758a	29.18	75.60	1.319	

Distances in METERS: ----- Specific Gravity = 1.025 ----- Moment in m.-MT.  
 Trim is per 34.48m.  
 Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 3.063a TCG = 0.002p VCG = 5.735  
 Free Surface Adjustment: 0.162  
 Adjusted CG: LCG = 3.065a TCG = 0.003p VCG = 5.897

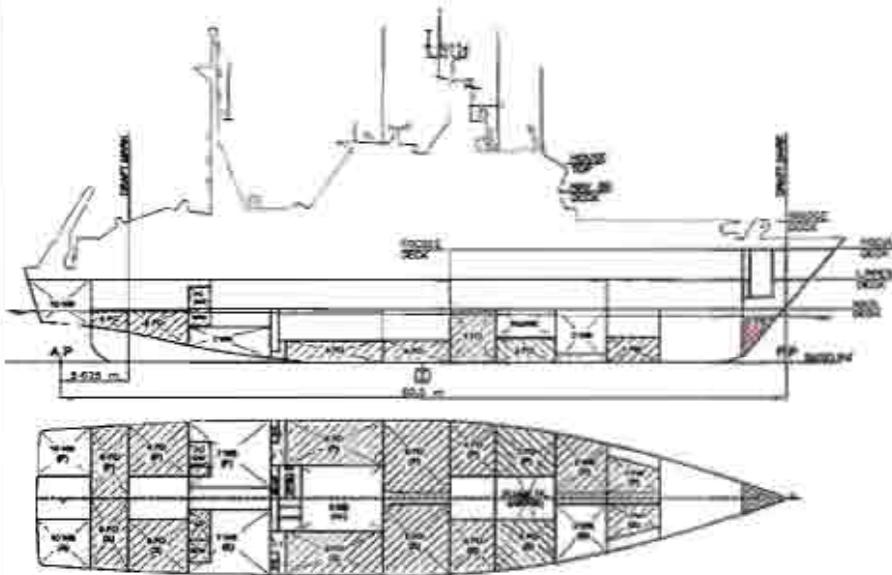
Origin	Surface of	Displacement	Righting Arms	Flood Pt			
Depth	Trim	Heel	Weight (MT)	Area	Height		
6.418	0.00a	0.10p	2,122.33	0.000	0.000	0.0000	6.772(1)
6.443	0.00a	0.40p	2,121.84	0.000	0.008	0.0013	6.441(1)
6.427	0.00a	1.10p	2,121.65	0.000	0.116	0.0051	6.140(1)
6.401	0.40a	7.00p	2,122.00	0.000	0.175	0.0114	5.810(1)
6.343	0.48a	19.10p	2,122.02	0.000	0.234	0.0202	5.473(1)
6.315	0.41a	12.60p	2,122.02	0.000	0.293	0.0318	5.129(1)
6.250	0.38a	15.10p	2,122.02	0.000	0.305	0.0460	4.780(1)
6.189	0.34a	17.60p	2,122.02	0.000	0.319	0.0628	4.425(1)
6.100	0.28a	20.10p	2,122.02	0.000	0.345	0.0829	4.069(1)
6.008	0.22a	22.60p	2,122.02	0.000	0.362	0.1052	3.710(1)
5.921	0.17a	24.70p	2,122.02	0.000	0.594	0.1219	Macg Imm.
5.892	0.18a	25.10p	2,122.02	0.000	0.617	0.1307	3.353(1)
5.787	0.30a	27.60p	2,122.02	0.000	0.649	0.1588	2.993(1)
5.622	0.05a	30.10p	2,122.02	0.000	0.700	0.1887	2.629(1)
5.486	0.01a	32.40p	2,122.09	0.000	0.716	0.2197	2.259(1)
5.330	0.03a	35.10p	2,122.13	0.000	0.721	0.2510	1.866(1)
5.218	0.03a	35.30p	2,122.13	0.000	0.721	0.2528	1.453(1)
5.146	0.04a	37.60p	2,122.32	0.000	0.718	0.2824	1.011(1)
5.088	0.10a	40.10p	2,122.14	0.000	0.710	0.3124	0.534(1)
5.000	0.17a	42.60p	2,122.06	0.000	0.700	0.3444	0.075(1)
4.909	0.24a	45.10p	2,122.07	0.000	0.688	0.3747	0.378(1)
4.818	0.33a	47.60p	2,122.04	0.000	0.668	0.4041	-0.003(1)

Distances in METERS: ----- Specific Gravity = 1.025 ----- Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 343.5 m.-MT was applied to artificially modify the CG.

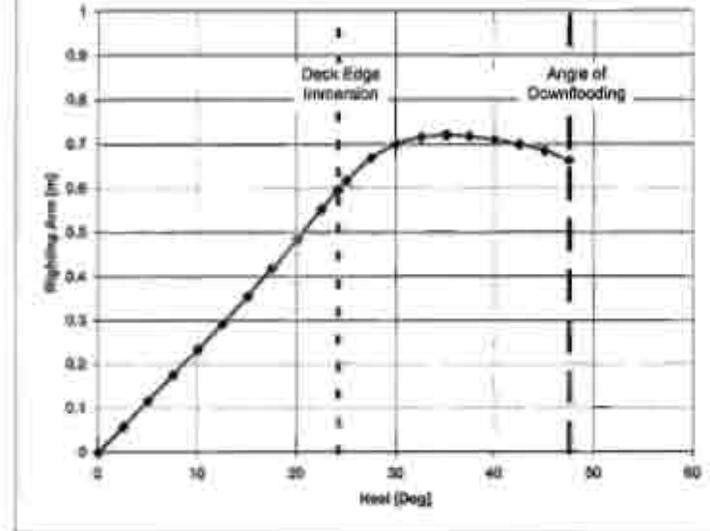
Critical Point: ----- LCB ----- TCB ----- VCB  
 (1) CAPTAIN'S COCKPIT WINDOW FLOOD 7.130a 7.000 11.300

Damage Case No.101 - Fore Peak @ 4.0 m



NOTE: Helicopter included in base (not depicted in diagram above).

Damage Case No.101 - Fore Peak @ 4.0 m



CRITERIA	Min/Max	Attained
(1) GM at Equilibrium	> 0.050 m	1.319 m
(2) Absolute Angle at Equilibrium	< 15.00 deg	0.10 F
(3) Absolute Angle at Deck/margin Immersion	> 0.00 deg	24.26 F

01/21/00 09:53:40 STX Canada Marine, Inc.  
 0000 JOHN F. Tully  
 NO.102 - FOREPEAK @ 4.5m - LOADING DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT drafts: 4.514 @ 30.250, 4.674 @ 24.824  
 Trim: Aft 0.440/54.875, Heel: Port 0.10 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	2.595a	0.049a	6.457
APT STORES	5.00	22.350a	1.930p	4.554
PWD STORES	3.00	30.000f	0.000	4.500
Galley Stores	14.00	20.250f	0.000	4.000
Gas In Jettisonable Tx	0.68	20.250a	6.100p	11.000
40 Crew and Effects @ 125	5.00	0.300	0.000	11.000
UPPER DECK MACHINERY	17.10	19.480a	0.030a	9.130
UPPER DECK CONTAINER	4.55	24.100a	4.650p	4.800
POCCLE DECK MACHINERY	9.98	8.320a	4.670p	11.000
POCCLE DECK CONTAINER	3.86	14.350a	5.480a	11.300
HELICOPTER	2.50	21.000f	0.000	14.300
ROSETTE EQUIPMENT	0.30	0.700a	5.400a	9.000
<b>Total Flare</b>	<b>1,699.97</b>	<b>2.659a</b>	<b>0.069a</b>	<b>6.543</b>

TK#	Load	Spce	Weight (MT)	LCG	TCG	VCG	TRM
TK#_NO.P	0.200	1.025	16.61	17.072f	1.428p	1.019	16.90
TK#_FO.P	0.950	0.840	17.32	9.321a	3.418p	1.503	17.28
TK#_FO.7	0.940	0.840	34.65	4.201f	6.124p	2.465	27.25
TK#_FO.8	0.980	0.840	54.65	4.990f	8.144a	2.805	27.23
TK#_FO.9	1.000	0.840	34.66	0.465a	3.004p	1.289	0.00
TK#_FO.3	1.000	0.840	34.60	0.465a	3.004a	1.268	0.00
TK#_FO.2	0.980	0.840	24.13	7.357a	4.591p	1.440	25.62
TK#_FO.5	0.980	0.840	24.13	7.357a	4.591a	1.469	25.57
TK#_FO.6	0.980	0.840	37.71	21.910a	4.114p	3.829	35.45
TK#_FO.4	0.980	0.840	37.71	21.910a	4.110a	3.829	35.03
TK#_FO.1	0.980	0.840	33.84	26.056a	2.787p	4.035	57.34
TK#_FO.0	0.980	0.840	33.84	26.056a	2.759a	4.080	57.49
TK#_PW.P	0.980	1.000	16.56	17.365f	1.820p	1.322	6.86
TK#_PW.8	0.980	1.000	16.56	17.365f	1.818a	1.322	6.86
OPP OIL.P	0.800	0.800	0.62	11.185a	0.906p	0.453	0.50
SLUDGE.8	0.223	1.000	0.77	11.101a	1.286a	0.404	0.98
SEWAGE.8	0.100	0.800	0.49	18.702a	5.297a	3.285	8.11
FORSMAN.C	0.257	1.025	5.22	27.470f	0.300	3.481	0.46
Permeability overrides:	0.950						
FOGAT.P	0.980	0.840	4.38	19.455a	3.001p	3.929	3.49
<b>Total Tanks</b>			<b>433.73</b>	<b>4.320a</b>	<b>0.379p</b>	<b>2.363</b>	<b>144.14</b>
<b>Total Weight</b>			<b>2,123.69</b>	<b>3.038a</b>	<b>0.002p</b>	<b>5.734</b>	

Displacement: 2,123.69  
 Displ (MT): 2,123.69  
 Righting Arms: 0.500 0.000  
 Distances in METERS: 2,123.60 3.066a 0.007p 2.720 -4.455  
 Moments in m.-MT

FREEBOARD STATUS  
 USK DRAFT drafts: 4.214 @ 30.250, 4.274 @ 24.824  
 Trim: Aft 0.440/54.875, Heel: Port 0.10 deg.  
 Least freeboard is 2.679 m. located at 22.130a  
 Least extra freeboard (no margin line) is 2.903 m. located at 22.130a

01/21/00 09:53:40 STX Canada Marine, Inc.  
 0000 JOHN F. Tully  
 NO.102 - FOREPEAK @ 4.5m - LOADING DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.440/54.875, Heel: Port 0.10 deg., VCG = 5.734

LCF	Displacement	Subyancy-Ctr.	Weight/	Moment/
Draft	Weight (MT)	LCG	VCG	LCF on trim
4.514	2,123.60	3.066a	2.720	7.08 5.749a 29.23 75.48 1.317
Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT.				
Trim is per 34.88m.				

Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LOC = 2.039a TCG = 0.002p VCG = 5.734  
 Free Surface Adjustments: 0.163  
 Adjusted CG: LOC = 1.640a TCG = 0.002p VCG = 5.697

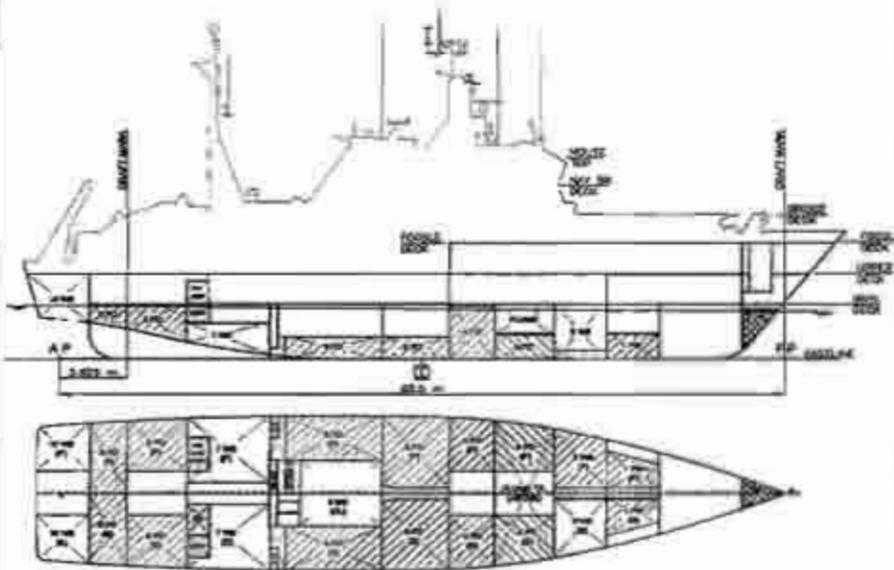
Origin	Degrees of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight (MT)	Area
4.454	0.48a	0.18p	2,124.00	0.000
4.448	0.48a	0.00p	2,122.50	0.000
4.433	0.48a	0.50p	2,123.33	0.000
4.403	0.46a	7.00p	2,123.43	0.000
4.347	0.44a	10.10p	2,123.69	0.000
4.319	0.41a	12.60p	2,123.69	0.000
4.259	0.37a	15.10p	2,123.69	0.000
4.188	0.32a	17.60p	2,123.69	0.000
4.104	0.26a	20.10p	2,123.69	0.000
4.007	0.20a	22.60p	2,123.69	0.000
3.934	0.15a	24.20p	2,123.69	0.000
3.898	0.13a	25.10p	2,123.69	0.000
3.771	0.06a	27.60p	2,123.69	0.000
3.635	0.03a	30.10p	2,123.69	0.000
3.490	0.01a	32.60p	2,123.74	0.000
3.333	0.01a	35.10p	2,123.79	0.000
3.115	0.02a	35.38p	2,123.90	0.000
3.167	0.04a	37.60p	2,123.98	0.000
2.991	0.08a	40.10p	2,123.90	0.000
2.905	0.15a	42.60p	2,123.72	0.000
2.611	0.22a	45.10p	2,123.72	0.000
2.414	0.31a	47.98p	2,123.71	0.000

Distances in METERS. Specific Gravity = 1.025. Area in m.-Rad.

Note: The weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load contours were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant True Surface Moment of 346.1 m.-MT was applied to artificially modify the CG.

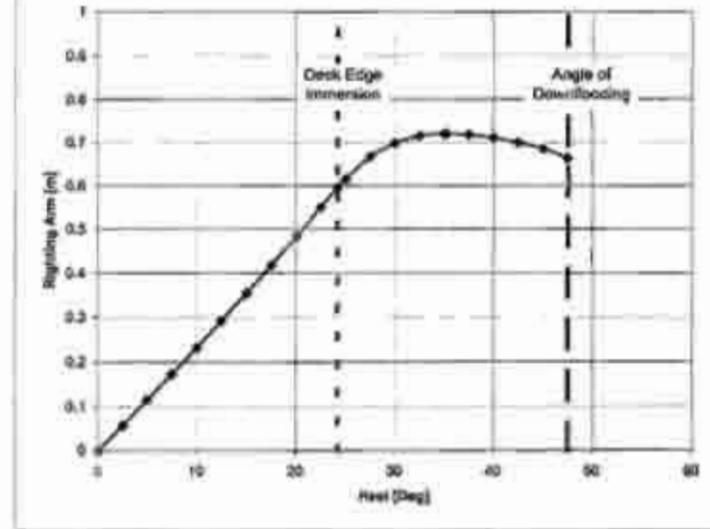
Critical Point: LCG = 2.630a VCG = 7.000 VCB = 11.300  
 (1) CAPTAIN'S AHEAD SCHOOL FLOOD

Damage Case No.102 - Fore Peak @ 4.5 m



NOTE: Helicopter included in case (not detailed in diagram above).

Damage Case No.102 - Fore Peak @ 4.5 m



NO	CRITERIA	Req/Max	Attained
(1)	GM at Equilibrium	> 0.000 m	1.117 m
(2)	Absolute Angle at Equilibrium	< 15.00 deg	0.12 °
(3)	Absolute Angle at Deck/margin Immersion	> 0.00 deg	34.29 °

01/21/09 08:53:40 STX Canada Marine, Inc.  
 SHS 11.50 CGCS JOHN F. Tully  
 NO.200 - COMPT 72-94 @ 1.0M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.152 @ 30.25d, 4.697 @ 24.43a  
 Trim: Aft 0.533/34.875, Heel: Port 0.49 deg.

Post	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	2.595a	0.048a	6.457
APT STORES	5.00	22.350a	1.330p	8.584
FRD STORES	3.00	30.000f	0.000	8.500
Wailey Stores	14.00	20.250f	0.000	6.000
Gas In Jettisonable Tk	0.68	30.250a	6.100p	11.000
49 Gsw and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490a	0.250a	8.130
UPPER DECK CONTAINER	4.35	26.100a	4.650p	4.800
FOCSE DECK MACHINERY	8.98	8.320a	4.670a	11.000
FOCSE DECK CONTAINER	3.86	14.350a	5.480a	11.300
HELICOPTER	2.50	21.000f	0.000	14.300
ROSETTE EQUIPMENT	0.90	0.700a	5.600a	9.000
Total Fixed	1,889.97	2.659a	0.069a	8.943

Loca	SpGr	Weight (MT)	LCG	TCG	VCG	FSM	
TK4_HH.P	0.200	1.025	16.61	13.089f	1.835p	1.019	17.00
TK4_PO.P	0.950	0.840	17.32	8.320f	3.455p	1.502	11.34
TK4_PO.P	0.980	0.840	34.65	4.050f	4.149p	2.865	27.27
TK4_PO.S	0.960	0.840	34.65	4.090f	4.149p	2.865	27.23
TK5_PO.P	1.000	0.840	34.66	0.465a	3.064p	1.268	0.00
TK5_PO.S	1.000	0.840	34.66	0.465a	3.064p	1.268	0.00
TK6_PO.P	0.980	0.840	34.13	7.358a	4.598p	1.400	21.78
TK6_PO.S	0.980	0.840	24.13	7.358a	4.592p	1.461	21.56
TK9_PO.P	0.980	0.840	37.72	21.911a	4.120p	3.829	35.19
TK9_PO.S	0.980	0.840	37.72	21.912a	4.104a	3.829	34.94
TK9_PO.P	0.980	0.840	23.84	26.096a	2.783p	4.095	30.46
TK9_PO.S	0.980	0.840	23.85	26.097a	2.744a	4.095	49.35
TK1_FW.B	0.980	1.000	16.56	17.362f	1.523p	1.302	6.43
TK1_FW.S	0.301	1.025	5.22	17.353f	1.190a	0.595	2.43
CPP_OIL.P	0.500	0.890	0.62	11.185a	0.912p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.106a	1.278a	0.405	0.68
SENAGE.S	0.100	0.890	0.49	18.704a	5.287a	3.295	0.77
BONTRACOMP.C	0.098	1.025	7.97	21.940f	0.007p	0.594	6.77
Permeability override: 0.850							
TODAY.P	0.980	0.840	9.58	18.689a	1.503p	1.829	3.49
Total Tanks			426.34	5.003a	0.305p	2.509	323.17
Total Weight			2,315.11	3.130a	0.012p	5.762	

MOUL	1.025	2,114.92	3.159a	0.038p	2.714	-6.433
Righting Arms			0.000	0.000p		
Distances in METERS						Moments in m.-MT

PREBOARD STATUS  
 USK DRAFT draft: 4.250 @ 30.25d, 4.697 @ 24.43a  
 Trim: Aft 0.533/34.875, Heel: Port 0.49 deg.  
 least freeboard is 2.810 m. located at 32.130a  
 least extra freeboard (to margin line) is 2.734 m. located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 SHS 11.50 CGCS JOHN F. Tully  
 NO.200 - COMPT 72-94 @ 1.0M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.533/34.875, Heel: Port 0.49 deg., VCG = 5.742

LCF	Displacement	Buoyancy-Ctr.	Height/	Moment/
Draft	Weight (MT)	LCB	VCB	cm
4.504	2,114.92	3.159a	2.714	7.08
				5.764a
				29.12
				75.57
				1.329

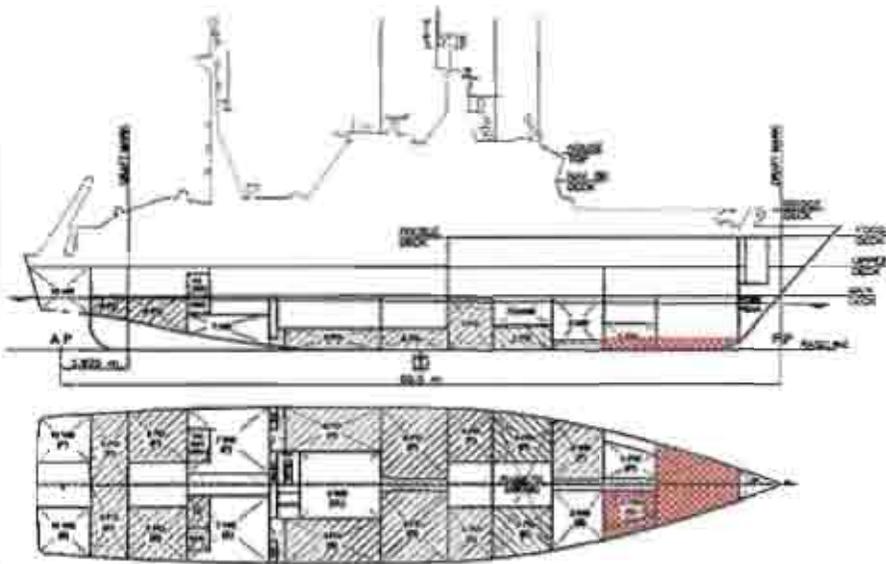
Distance in METERS: Specific Gravity = 1.025, Moment in m.-MT.  
 Trim is per 34.88m.  
 Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCB = 3.130a TCG = 0.012p VCG = 5.742  
 Free Surface Adjustment: 0.153  
 Adjusted CG: LCB = 3.131a TCG = 0.011p VCG = 5.895

Origin	Degrees of	Displacement	Righting Arms	Flood Pt		
Depth	Trim	Heel	Weight (MT)	Area		
4.438	0.56a	0.40p	2,115.40	0.000	0.000	6.732(1)
4.428	0.56a	2.98p	2,114.92	0.000	0.058	6.420(1)
4.408	0.55a	5.68p	2,114.87	0.000	0.117	6.098(1)
4.380	0.54a	7.98p	2,115.11	0.000	0.176	5.764(1)
4.341	0.52a	10.48p	2,115.11	0.000	0.236	5.428(1)
4.291	0.48a	12.98p	2,115.11	0.000	0.297	5.082(1)
4.230	0.44a	15.48p	2,115.10	0.000	0.359	4.732(1)
4.157	0.39a	17.98p	2,115.11	0.000	0.424	4.377(1)
4.072	0.33a	20.48p	2,115.11	0.000	0.491	4.020(1)
3.974	0.26a	22.98p	2,115.11	0.000	0.558	3.661(1)
3.920	0.25a	24.22p	2,115.11	0.000	0.590	0.1187
3.860	0.19a	25.48p	2,115.11	0.000	0.622	0.1321
3.734	0.13a	27.98p	2,115.11	0.000	0.670	0.1603
3.597	0.09a	30.48p	2,115.11	0.000	0.699	0.1903
3.450	0.08a	32.98p	2,115.18	0.000	0.712	0.2211
3.293	0.09a	35.48p	2,115.23	0.000	0.716	0.2523
3.252	0.09a	36.11p	2,115.23	0.000	0.719	0.2601
3.126	0.11a	37.98p	2,115.37	0.000	0.712	0.2834
2.948	0.16a	40.48p	2,115.22	0.000	0.703	0.3143
2.762	0.23a	42.98p	2,115.61	0.000	0.693	0.3448
2.567	0.30a	45.48p	2,115.16	0.000	0.679	0.3747
2.398	0.38a	47.81p	2,115.21	0.000	0.658	0.3995

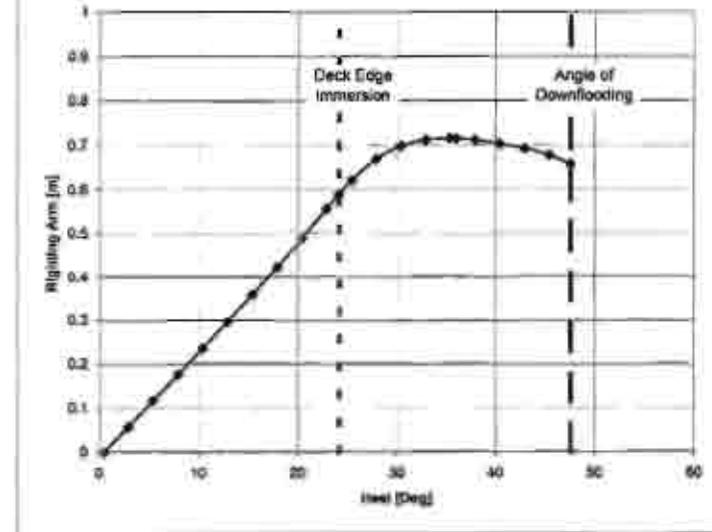
Distances in METERS: Specific Gravity = 1.025, Area in m.-Rad.  
 Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 323.2 m.-MT was applied to artificially modify the CG.  
 Critical Point: LCB VCB VCG  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 5.630a 7.000 11.300

Damage Case No.200 - Comp 73-91 @ 1.0 m



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.200 - Comp 73-91 @ 1.0 m



LT	DAMAGE STABILITY CRITERIA	Min/Max	Attained
(1)	On at Equilibrium	> 0.050 m	1.128 P
(2)	Absolute Angle at Equilibrium	< 15.00 deg	0.68 P
(3)	Absolute Angle at Deck/Burge Immersion	> 0.00 deg	24.22 P

01/21/09 08:58:40 STX Canada Marine, Inc.  
 CGS JOHN P. Tully  
 NO.201 - COMPT T3-91 @ 2.0M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT drafts 4.328 @ 30.25t, 4.617 @ 24.53t  
 Trim: Aft 0.321/54.875, Heel: Port 0.17 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	2.555a	0.048a	6.457
AFT STORES	5.00	22.350a	1.330p	8.556
FOOD STORES	3.00	30.000f	0.100	8.900
Galley Stores	14.00	20.250f	0.300	8.000
Gas in Jettisonable TR	0.68	20.250a	4.100p	11.000
49 Crew and Effects @ 121	5.00	0.900	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490a	0.550a	8.130
UPPER DECK CONTAINER	4.35	26.100a	4.850p	8.600
FOODS DECK MACHINERY	8.98	8.120a	4.570a	11.000
FOODS DECK CONTAINER	3.66	14.350a	5.490a	11.300
HELICOPTER	2.50	11.000f	0.000	14.300
ROCKETRY EQUIPMENT	0.90	0.700a	5.600a	9.000
Total Fixed	1,689.97	2.450a	0.089a	8.543

Part	Load	Spce	Weight (MT)	LCG	TCG	VCG	Free
TK1_WB.P	0.200	1.025	16.61	13.078d	1.823p	1.019	16.81
TK2_PD.P	0.250	0.840	17.32	8.337f	1.449p	1.102	17.18
TK4_PO.P	0.280	0.840	24.65	4.091f	6.144p	2.885	27.25
TK4_PO.S	0.280	0.840	24.65	4.091f	4.142a	2.885	27.23
TK5_PO.P	1.000	0.840	34.66	0.465a	3.066p	1.248	0.00
TK5_PO.S	1.000	0.840	34.66	0.465a	3.066p	1.248	0.00
TK6_PO.P	0.280	0.840	24.13	7.348a	4.593p	1.460	29.60
TK6_PO.S	0.280	0.840	24.13	7.348a	4.586a	1.460	29.27
TK8_PO.P	0.280	0.840	27.71	21.907a	4.115p	3.829	35.85
TK8_PO.S	0.280	0.840	27.71	21.908a	4.109a	3.829	35.62
TK9_PO.P	0.280	0.840	23.84	26.095a	2.770p	4.095	57.56
TK9_PO.S	0.280	0.840	23.84	26.095a	2.758a	4.095	57.47
TK1_PH.P	0.280	1.025	18.56	17.367f	1.520p	1.322	6.87
TK1_PH.S	0.280	1.025	14.59	17.367f	1.471a	1.193	6.19
CPP_OIL.P	0.500	0.890	0.62	11.185a	0.907p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.099a	1.285a	0.404	0.89
SEWAGE.S	0.100	0.890	0.49	18.698a	5.295a	3.205	0.77
BOWTHRUSMP.C	0.249	1.025	22.45	22.180f	0.002p	1.199	16.38
Flammability overrides	0.850						
TODAY.P	0.280	0.840	9.58	18.688a	3.501p	5.026	3.49
Total Tanks			448.57	3.852a	0.279p	2.103	288.85
Total Weight			2,138.54	2.887a	0.012p	5.698	

Displ (MT)-----LCG-----TCG-----VCG-----Weight  
 2,138.62 2.886a 0.012p 5.721 -4.489

Righting Arms: 0.000 0.000  
 Distances in METERS-----Moments in m.-MT-----

FREEBOARD STATUS  
 USK DRAFT drafts 4.125 @ 30.25t, 4.647 @ 24.53t  
 Trim: Aft 0.321/54.875, Heel: Port 0.17 deg.  
 Least freeboard is 7.916 m. located at 32.130a  
 Least extra freeboard (to margin line) is 2.840 m. located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 CGS JOHN P. Tully  
 NO.201 - COMPT T3-91 @ 2.0M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.321/54.875, Heel: Port 0.17 deg., VCG = 5.695

LCF	Displacement	Booyancy-Ctr.	Weight/	Moment/
Draft	Weight (MT)	LCB	VCB	LCF
4.537	2,138.82	2.884a	2.731	7.10
				5.682a
				29.36
				75.32
				1.331

Distance in METERS-----Specific Gravity = 1.025-----Moment in m.-MT.  
 Trim is per 54.68m.  
 Draft is from USK DRAFT. True Free Surface Included.

RIGHTING ARMS vs BEEL ANGLE  
 Total CG: LCG = 3.857a TCG = 0.004p VCG = 5.695  
 Free Surface Adjustment: 0.172  
 Adjusted CG: LCG = 3.868a TCG = 0.004p VCG = 5.868

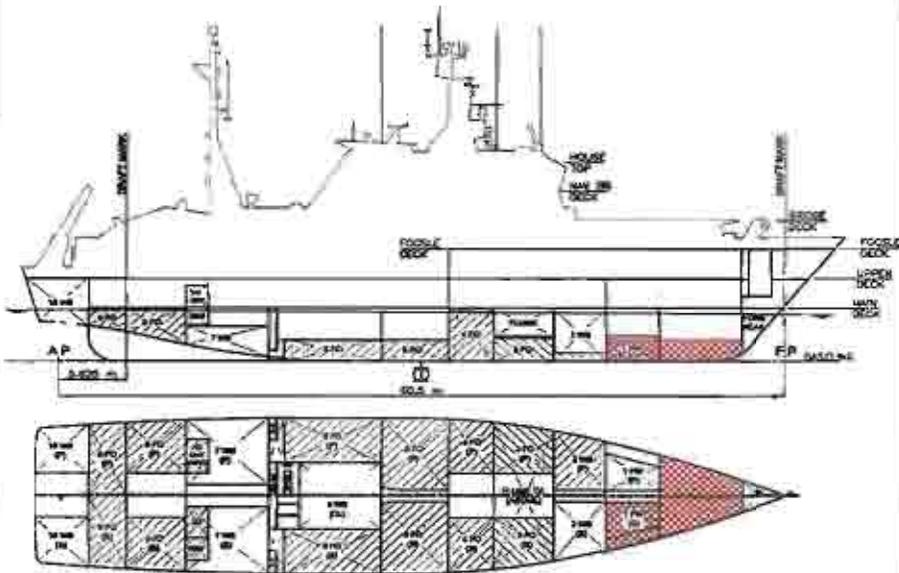
Origin	Depth	Degree of	Displacement	Righting Arms	Flood Pt
Depth	Trim	heel	Weight (MT)	In Trim	In Heel
4.488	0.34a	0.17p	2,138.23	0.000	0.000
4.489	0.34a	2.67p	2,138.78	0.000	0.058
4.488	0.33a	3.17p	2,138.52	0.000	0.117
4.429	0.32a	7.67p	2,138.94	0.000	0.176
4.401	0.29a	10.17p	2,138.94	0.000	0.235
4.352	0.26a	12.67p	2,138.94	0.000	0.295
4.281	0.23a	15.17p	2,138.94	0.000	0.357
4.218	0.18a	17.67p	2,138.94	0.000	0.421
4.154	0.12a	20.17p	2,138.94	0.000	0.488
4.076	0.06a	22.67p	2,138.94	0.000	0.556
3.960	0.01a	24.17p	2,138.94	0.000	0.601
3.923	0.01f	25.17p	2,138.94	0.000	0.622
3.797	0.07f	27.67p	2,138.55	0.000	0.676
3.660	0.11f	30.17p	2,138.95	0.000	0.709
3.513	0.13f	32.67p	2,139.06	0.000	0.727
3.356	0.12f	35.17p	2,139.02	0.000	0.734
3.281	0.11f	36.30p	2,138.94	0.000	0.735
3.189	0.09f	37.67p	2,139.43	0.000	0.734
3.011	0.05f	40.17p	2,138.98	0.000	0.729
2.824	0.01a	42.67p	2,138.96	0.000	0.721
2.630	0.10a	45.17p	2,138.91	0.000	0.708
2.442	0.28a	47.53p	2,138.96	0.000	0.697

Distance in METERS-----Specific Gravity = 1.025-----Area in m.-Rad.  
 Area Height  
 0.0000 6.745(1)  
 0.0013 6.428(1)  
 0.0051 6.113(1)  
 0.0115 5.793(1)  
 0.0204 5.447(1)  
 0.0320 5.103(1)  
 0.0462 4.758(1)  
 0.0632 4.401(1)  
 0.0830 4.044(1)  
 0.1055 3.688(1)  
 0.1230 Marg Imm.  
 0.1315 3.329(1)  
 0.1598 2.971(1)  
 0.1901 2.606(1)  
 0.2215 2.238(1)  
 0.2533 1.866(1)  
 0.2679 1.696(1)  
 0.2854 1.491(1)  
 0.3173 1.155(1)  
 0.3490 0.738(1)  
 0.3802 0.365(1)  
 0.4090 0.000(1)

Note: The Weight and Center of Gravity used for the righting arms shown include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 368.6 m.-MT was applied to artificially modify the CG.

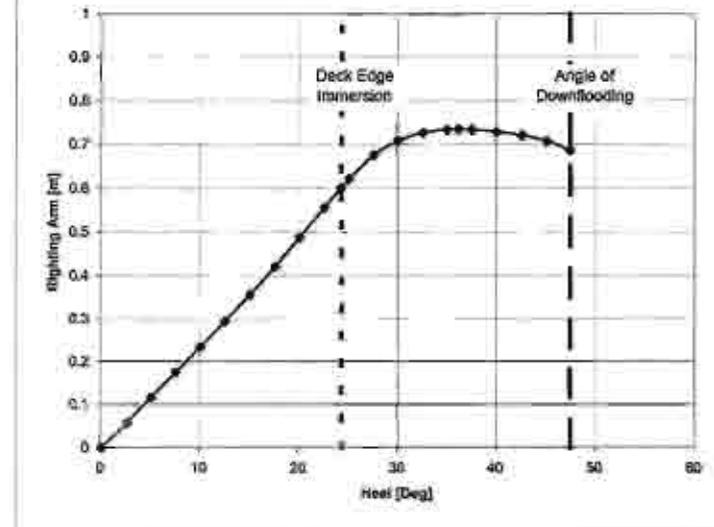
Critical Point-----LCF-----TCP-----VCG  
 (1) CAPTAIN'S ROOM WINDOW FLOOR 7.630a 7.008 11.300

Damage Case No.201 - Comp 73-91 @ 2.0 m



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.201 - Comp 73-91 @ 2.0 m



ITEM	DAMAGE STABILITY CRITERIA	Min/Max	Attained
(1)	G <sub>M</sub> at Equilibrium	> 0.050 m	1.131 ?
(2)	Absolute Angle at Equilibrium	< 15.00 deg	0.17 ?
(3)	Absolute Angle at Deck/Margin Immersion	> 0.00 deg	24.37 ?

01/21/09 08:51:40 STX Canada Marine, Inc.  
 CGM JOHN P. Tully  
 CGM 11.00  
 NO. 202 - COMPT 11-01 @ 3.00 - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USE DRAFT draft: 4.489 @ 30.254, 4.408 @ 24.43a  
 Trim: Aft 0.119/34.875, Heel: Port 0.07 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,494.60	2.595a	0.045a	9.457
AFT STORES	5.00	22.350a	1.350p	8.556
FWO STORES	3.00	30.000a	0.000	8.599
Galley Stores	14.00	30.280a	0.000	6.000
Gas in Jettisonable Tn	0.59	20.250a	2.100p	11.000
40 Crew and Effects @ 120	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490a	0.000a	8.130
UPPER DECK CONTAINER	4.35	26.100a	1.650p	8.801
POCCLE DECK MACHINERY	8.98	8.320a	4.670a	12.000
POCCLE DECK CONTAINER	3.58	14.350a	5.480a	11.300
HELICOPTER	2.50	21.000a	0.000	14.300
ROSETTE EQUIPMENT	0.90	0.700a	0.800a	9.000
Total Fixed	1,489.97	2.439a	0.083a	6.543

Land	UpGr	Weight (MT)	LCG	TCG	VCG	FSM	
TK3_SH.P	0.200	0.025	14.63	12.082a	1.886p	1.019	18.73
TK3_FO.P	0.950	0.860	17.32	8.242a	3.447p	1.502	17.08
TK4_FO.W	0.880	0.840	54.65	4.052a	4.145p	2.884	27.28
TK4_FO.S	0.980	0.840	54.85	4.092a	4.184a	2.889	27.24
TK5_FO.P	1.000	0.840	34.66	0.465a	3.564p	1.288	0.00
TK5_FO.S	1.000	0.840	34.66	0.483a	3.646a	1.243	0.00
TK6_FO.P	0.980	0.840	24.13	7.333a	4.591p	1.460	33.80
TK6_FO.S	0.980	0.840	24.13	7.329a	4.588a	1.460	33.77
TK8_FO.P	0.940	0.840	37.71	21.804a	4.153p	3.829	35.64
TK8_FO.S	0.940	0.840	37.71	21.804a	4.111a	3.829	35.63
TK9_FO.P	0.990	0.840	23.84	26.093a	2.785p	4.095	27.53
TK9_FO.S	0.980	0.840	23.84	26.093a	2.760p	4.095	27.49
TK1_FW.P	0.940	1.040	16.56	17.371a	1.513p	1.324	6.89
TK1_FW.S	1.000	1.025	17.22	17.274a	1.534a	1.340	0.00
CRP_OIL.P	0.500	0.890	0.65	11.184a	0.900p	0.435	0.50
SLUDGE.S	0.221	1.000	0.77	11.094a	1.208a	0.404	0.91
SEWAGE.S	0.100	0.880	0.49	18.891a	5.298a	1.288	0.73
BOWTHRCOMP.C	0.434	1.025	41.40	22.108a	0.101	1.605	28.83
Feasibility override:	0.650						
TODAY.F	0.940	0.840	3.53	18.618a	3.500p	3.929	3.49
Total Taxis			470.66	2.474a	0.229p	2.503	149.32
Total Weight			2,100.63	2.618a	0.202p	2.643	

Heel	Righting Arm	Distances in METERS
1.025	0.900	0.900
2.140.54	2.625a	2.748
-0.541		

Distances in METERS.-----Moments in m.-MT.

FREEBOARD STATUS  
 USE DRAFT draft: 4.189 @ 30.254, 4.408 @ 24.43a  
 Trim: Aft 0.119/34.875, Heel: Port 0.07 deg.  
 Least freeboard is 2.945 m. located at 30.130a  
 Least extra freeboard (to margin line) is 2.919 m. located at 30.130a

01/21/09 08:51:40 STX Canada Marine, Inc.  
 CGM JOHN P. Tully  
 CGM 11.00  
 NO. 202 - COMPT 11-01 @ 3.00 - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.119/34.875, Heel: Port 0.07 deg., VCG = 5.683

LCT	Displacement	Buoyancy-CG	Weight/	Moment/
Draft	Weight (MT)	LCG	VCG	CG
4.567	2,140.54	2.420a	2.748	7.12
29.58	29.58	75.12	1.336	

Distances in METERS.-----Specific Gravity = 1.025.-----Moment in m.-MT.  
 Trim in per 31.60m.

Draft is from USE DRAFT. True Free Surface included.

RIGHTING ARM vs HEEL ANGLE  
 Total CG: LCG = 2.618a TCG = 0.202p VCG = 5.683  
 Free Surface Adjustment: 0.178  
 Adjusted CG: LCG = 2.613a TCG = 0.202p VCG = 5.841

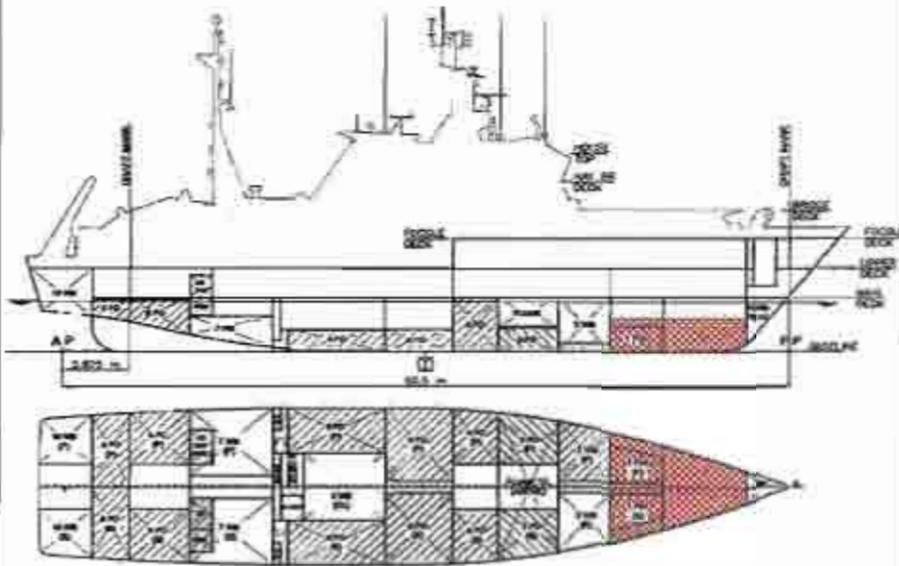
Origin	Depth	Tri	Heel	Displacement	Righting Arm	Flood Ft	
Depth	Tri	Heel	Weight (MT)	in Trim	in Heel	Area	
4.541	0.12a	0.07p	2,140.59	0.000	0.900	0.0000	6.734(1)
4.535	0.12a	2.57p	2,140.40	0.000	0.088	0.0013	6.624(1)
4.518	0.12a	3.07p	2,140.19	0.000	0.117	0.0050	6.104(1)
4.491	0.10a	7.57p	2,140.63	0.000	0.176	0.0119	5.775(1)
4.453	0.08a	10.07p	2,140.63	0.000	0.235	0.0205	5.432(1)
4.403	0.05a	12.57p	2,140.83	0.000	0.295	0.0320	5.097(1)
4.341	0.01a	15.07p	2,140.63	0.000	0.366	0.0462	4.749(1)
4.268	0.02a	17.57p	2,140.63	0.000	0.420	0.0631	4.396(1)
4.183	0.03a	20.07p	2,140.63	0.000	0.467	0.0829	4.041(1)
4.084	0.15a	22.57p	2,140.63	0.000	0.556	0.1057	3.683(1)
4.020	0.18a	24.02p	2,140.63	0.000	0.596	0.1203	mag. 3m.
3.971	0.21a	25.97p	2,140.63	0.000	0.624	0.1316	3.327(1)
3.944	0.21a	27.57p	2,140.64	0.000	0.680	0.1599	2.970(1)
3.707	0.31a	30.07p	2,140.63	0.000	0.717	0.1804	2.607(1)
3.589	0.32a	32.57p	2,140.76	0.000	0.739	0.2323	2.239(1)
3.401	0.31a	35.07p	2,140.79	0.000	0.749	0.2547	1.868(1)
3.252	0.29a	37.57p	2,140.78	0.000	0.750	0.2875	1.495(1)
3.189	0.28a	38.10p	2,140.80	0.000	0.752	0.2957	1.401(1)
3.058	0.24a	40.07p	2,141.89	0.000	0.750	0.3003	1.119(1)
2.847	0.17a	42.57p	2,140.57	0.000	0.745	0.3529	0.744(1)
1.672	0.09a	45.07p	2,140.71	0.000	0.732	0.3850	0.266(1)
2.481	0.01a	47.47p	2,140.64	0.000	0.712	0.4155	0.000(1)

Distances in METERS.-----Specific Gravity = 1.025.-----Area in m.-Met.

Note: The weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 384.5 m.-MT was applied to artificially modify the CG.

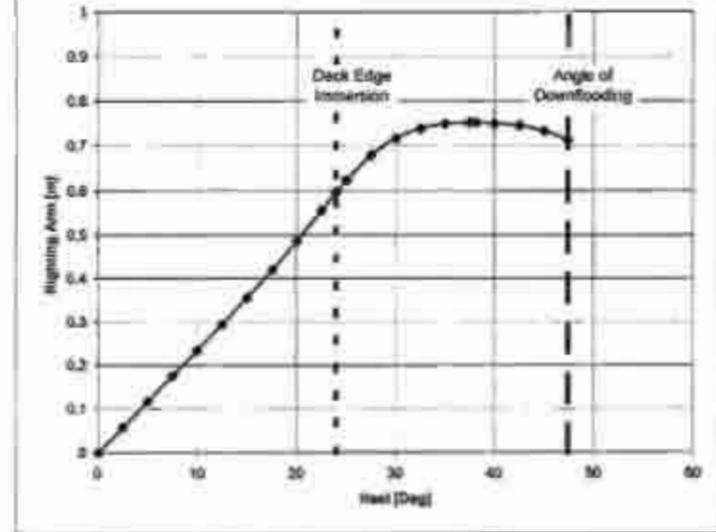
Original Point	LCG	TCG	VCG	
iii CAPTAIN'S ROOM WINDOW	FLOOD	7.830a	7.000	11.300

Damage Case No.202 - Comp 73-91 @ 3.0 m



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.202 - Comp 73-91 @ 3.0 m



DAMAGE STABILITY CRITERIA		Min/Max	Attained
(1)	GM at Equilibrium	> 0.050 m	1.334 F
(2)	Absolute Angle at Equilibrium	< 15.00 deg	0.97 F
(2)	Absolute Angle at Deck/margin Immersion	> 3.00 deg	24.82 F

01/30/09 09:54:44 STX Canada Marine, Inc.  
 GMS 11.50 CCGS JOHN P. Tully  
 NO.203 - COMPT 73-91 @ 4.0M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.667 @ 30.25t, 4.564 @ 24.83a  
 Trim: Fwd 0.103/54.875, Heel: Port 0.07 deg.

Part	Weight (MT)	LCG	TCG	VCG			
LIGHT SHIP	1,624.60	2.395e	0.048s	6.457			
AFT STORES	5.00	22.350a	1.330p	6.556			
FWD STORES	3.00	30.000f	0.000	8.500			
Galley Stores	14.00	20.250f	0.000	6.000			
Gas in Jettisonable TK	0.68	20.250a	8.100p	11.000			
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.050s	8.130			
UPPER DECK CONTAINERS	4.35	26.100a	4.650p	8.600			
POCSLE DECK MACHINERY	8.90	8.320a	4.670s	11.000			
POCSLE DECK CONTAINERS	3.96	14.950a	5.460s	11.300			
HELICOPTER	2.50	21.000f	0.000	14.300			
ROSETTE EQUIPMENT	0.90	0.700a	5.600s	9.000			
<b>Total Fixed</b>	<b>1,699.97</b>	<b>2.659a</b>	<b>0.069s</b>	<b>6.543</b>			
<b>Load</b>	<b>spgs</b>	<b>LCG</b>	<b>TCG</b>	<b>VCG</b>			
TK2_WB.P	0.200	1.025	16.61	13.086f	1.825p	1.019	16.71
TK3_PO.P	0.990	0.840	17.32	8.350f	3.446p	1.502	17.09
TK4_PO.P	0.990	0.840	54.65	4.094f	4.149p	2.885	27.25
TK5_PO.P	0.990	0.840	54.65	4.094f	4.144a	2.885	27.24
TK6_PO.P	1.000	0.840	34.66	0.465a	3.066p	1.248	0.00
TK7_PO.S	1.000	0.840	34.66	0.465a	3.066a	1.248	0.00
TK8_PO.P	0.990	0.840	24.13	7.305a	4.592p	1.460	33.80
TK9_PO.S	0.990	0.840	24.13	7.305a	4.588s	1.460	33.76
TK8_PO.P	0.990	0.840	37.71	21.899a	4.113p	3.829	35.64
TK8_PO.S	0.990	0.840	37.71	21.899a	4.111s	3.829	35.63
TK9_PO.P	0.990	0.840	23.84	26.090a	2.766p	4.095	57.52
TK9_PO.S	0.990	0.840	23.84	26.090a	2.760s	4.095	57.49
TK1_FW.P	0.990	1.000	16.56	17.375f	1.518p	1.322	8.85
TK1_FW.S	1.000	1.025	17.32	17.374f	1.524s	1.340	0.00
CFP_OIL.P	0.500	0.890	0.62	11.184a	0.906p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.089a	1.288s	0.404	0.91
SEWAGE.S	0.100	0.890	0.49	18.684a	5.298s	3.285	0.77
BOWTHRCOMP.C	0.718	1.025	64.83	22.398f	0.001	2.425	51.04
Permeability override:	0.850						
FOGAY.P	0.980	0.840	9.58	18.687a	3.500p	5.929	3.49
<b>Total Tanks</b>	<b>191.10</b>	<b>1.283a</b>	<b>0.242p</b>	<b>2.551</b>	<b>405.66</b>		
<b>Total Weight</b>	<b>2,184.07</b>	<b>2.347a</b>	<b>0.002p</b>	<b>5.610</b>			
<b>HULL</b>	<b>1.025</b>	<b>2,183.96</b>	<b>2.342a</b>	<b>0.005p</b>	<b>2.768</b>	<b>-4.596</b>	

Distances in METERS. Righting Arms: 0.000 3.000  
 Moments in m.-MT.

FREEBOARD STATUS  
 USK DRAFT draft: 4.667 @ 30.25t, 4.564 @ 24.83a  
 Trim: Fwd 0.103/54.875, Heel: Port 0.07 deg.  
 Least freeboard is 3.008 m. located at 1.000f  
 Least extra freeboard (to margin line) is 2.932 m. located at 1.000f

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GMS 11.50 CCGS JOHN P. Tully  
 NO.203 - COMPT 73-91 @ 4.0M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Fwd 0.103/54.875, Heel: Port 0.07 deg., VCG = 5.640

LCF	Displacement	Buoyancy-Ctr.	Weight/	Moment/
Draft	Weight (MT)	LCB	VCB	cm trim
4.600	2,183.96	2.342a	2.768	7.14
Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT. Trim is per 54.88m.				

Draft is from USK DRAFT. True Free Surface included.

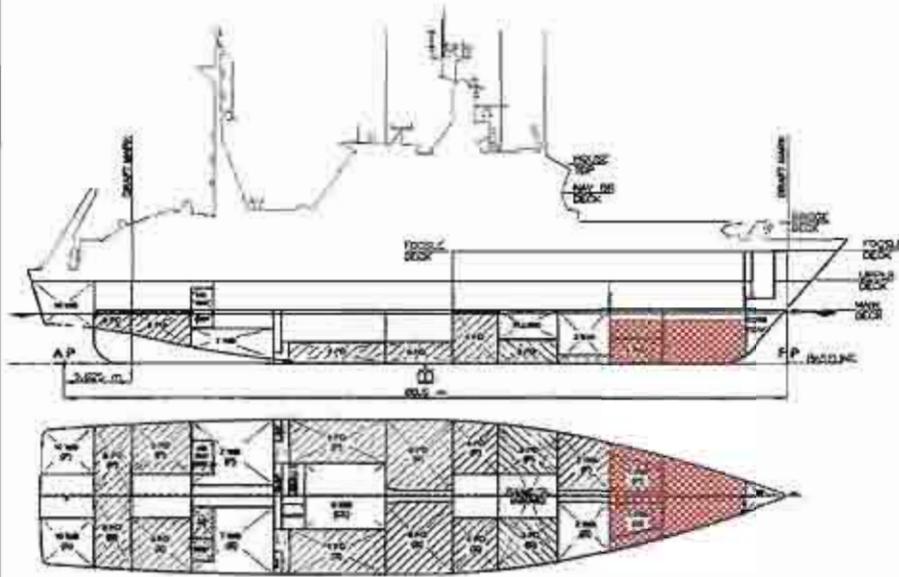
RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 2.347a TCG = 0.002p VCG = 5.640  
 Free Surface Adjustment: 0.188  
 Adjusted CG: LCG = 2.347a TCG = 0.002p VCG = 5.826

Origin	Degrees of	Displacement	Righting Arm	Flood Pt
Depth	Trim	Heel	Weight (MT)	Area
4.596	0.11E	0.07p	2,183.96	0.000
4.590	0.11f	2.57p	2,184.07	0.000
4.573	0.12E	5.07p	2,183.99	0.000
4.545	0.13f	7.57p	2,184.07	0.000
4.506	0.15E	10.07p	2,184.07	0.000
4.455	0.18E	12.57p	2,184.07	0.000
4.393	0.22E	15.07p	2,184.07	0.000
4.318	0.26E	17.57p	2,184.07	0.000
4.232	0.31E	20.07p	2,184.07	0.000
4.132	0.37E	22.57p	2,184.07	0.000
4.086	0.39E	23.60p	2,184.07	0.000
4.017	0.43E	25.07p	2,184.07	0.000
3.889	0.49E	27.57p	2,184.07	0.000
3.750	0.52E	30.07p	2,184.07	0.000
3.601	0.54E	32.57p	2,183.80	0.000
3.442	0.53E	35.07p	2,184.15	0.000
3.272	0.50E	37.57p	2,184.18	0.000
3.163	0.47E	39.10p	2,184.04	0.000
3.092	0.45E	40.07p	2,184.21	0.000
2.903	0.38E	42.57p	2,183.90	0.000
2.708	0.30E	45.07p	2,184.10	0.000
2.522	0.22E	47.41p	2,184.07	0.000

Distances in METERS. Specific Gravity = 1.025. Area in m.-Rad.  
 Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 405.7 m.-MT was applied to artificially modify the CG.

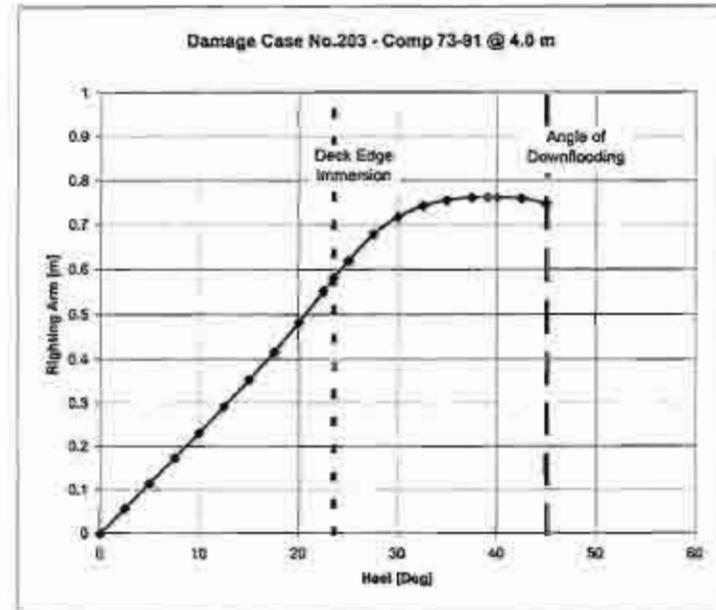
Critical Point: LCP---TCP---VCP  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

Damage Case No.203 - Comp 73-91 @ 4.0 m



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.203 - Comp 73-91 @ 4.0 m



DAMAGE STABILITY CRITERIA		Min/Max	Attained
(1) GM at Equilibrium	>	0.050 m	1.328 F
(2) Absolute Angle at Equilibrium	<	15.00 deg	0.07 F
(3) Absolute Angle at Deck/margin Immersion	>	0.00 deg	23.60 F

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GHS 11.50 CCGS JOHN P. Tully  
 NO.204 - COMPT 73-91 @ 4.9M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.828 @ 30.25t, 4.523 @ 24.63t  
 Trim: Fwd 0.305/54.875, Heel: Port 0.06 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	2.595a	0.048s	6.457
AFT STORES	5.00	22.350a	1.330p	6.556
FWD STORES	3.00	30.000F	0.000	8.500
Galley Stores	14.00	20.250F	0.000	6.000
Gas in Jettisonable TX	0.68	20.250a	6.100p	11.000
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490a	0.050s	8.130
UPPER DECK CONTAINER	4.35	24.100a	4.650p	8.600
POCSLE DECK MACHINERY	8.98	8.320a	4.670a	11.000
POCSLE DECK CONTAINER	3.86	14.350a	5.480s	11.300
HELICOPTER	2.50	21.000F	0.000	14.300
ROSETTE EQUIPMENT	0.80	0.700a	5.600a	9.000
Total Fixed	1,689.97	2.839a	0.069a	6.543

Part	Load	SpGr	Weight (MT)	LCG	TCG	VCG	PSM
TK2_WB.P	0.200	1.025	16.61	13.093F	1.824p	1.019	16.68
TK3_PO.P	0.950	0.840	17.32	8.357F	3.445p	1.502	17.08
TK4_PO.P	0.980	0.840	54.65	4.095F	4.145p	2.385	27.25
TK4_PO.S	0.980	0.840	54.65	4.095F	4.144a	2.885	27.24
TK5_PO.P	1.000	0.840	34.66	0.465a	3.066p	1.248	0.00
TK5_PO.S	1.000	0.840	34.66	0.465a	3.066a	1.248	0.00
TK6_PO.P	0.980	0.840	24.13	7.284a	4.591p	1.460	29.57
TK6_PO.S	0.980	0.840	24.13	7.284a	4.588a	1.460	29.60
TK8_PO.P	0.980	0.840	37.71	21.895a	4.113p	3.829	35.63
TK8_PO.S	0.980	0.840	37.71	21.895a	4.111p	3.829	35.62
TK9_PO.P	0.980	0.840	23.85	26.088a	2.766p	4.095	57.52
TK9_PO.S	0.980	0.840	23.85	26.088a	2.761a	4.095	57.49
TK1_FW.P	0.980	1.060	16.56	17.379F	1.517p	1.322	6.8*
CPP_OIL.P	0.500	0.890	0.62	11.184a	0.906p	0.435	0.58
SLUDGE.S	0.225	1.000	0.77	11.084a	1.289a	0.404	0.91
SEWAGE.S	0.100	0.890	0.49	18.676a	5.299a	3.285	0.77
FOOD.P	0.980	0.840	9.58	18.687a	3.500p	5.929	5.49
Total Tanks			411.95	5.790a	0.354p	2.622	346.18
Total Weight			2,101.92	3.272a	0.014p	5.775	
HULL		1.025	2,205.53	2.086a	0.005p	2.787	-4.646
TK1_FW.S	Flooded	1.025	-17.32	17.379F	1.524a	1.340	-4.646
SOFTBRCOMP.C	Flooded	1.025	-86.39	22.461F	0.001p	2.918	-4.846
Total Displacement		1.025	2,101.82	3.256a	0.018p	2.793	

Righting Arms: 0.000 0.000  
 Distances in METERS: -----Moments in m.-MT.

FREEBOARD STATUS

USK DRAFT draft: 4.828 @ 30.25t, 4.523 @ 24.63t  
 Trim: Fwd 0.305/54.875, Heel: Port 0.06 deg.  
 Least freeboard is 2.934 m. located at 1.000F  
 Least extra freeboard (to margin line) is 2.879 m. located at 1.000F

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GHS 11.50 CCGS JOHN P. Tully  
 NO.204 - COMPT 73-91 @ 4.9M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES with FLOODING  
 Trim: Fwd 0.305/54.875, Heel: Port 0.06 deg., VCG = 5.775

LCF	Displacement	Buoyancy-Ctr.	Weight/	Moment/
Draft	Weight (MT)	LCB	VCB	LCF
4.623	2,101.82	3.256a	2.793	6.85
				6.570a
				25.54
				66.65
				1.377

Distances in METERS: -----Specific Gravity = 1.025 -----Moment in m.-MT.  
 Trim is per 34.88m.

Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARMS vs HEEL ANGLE with FLOODING  
 Total CG: LCG = 3.272a TCG = 0.014p VCG = 5.775  
 Free Surface Adjustment: 0.165  
 Adjusted CG: LCG = 3.271a TCG = 0.014p VCG = 5.939

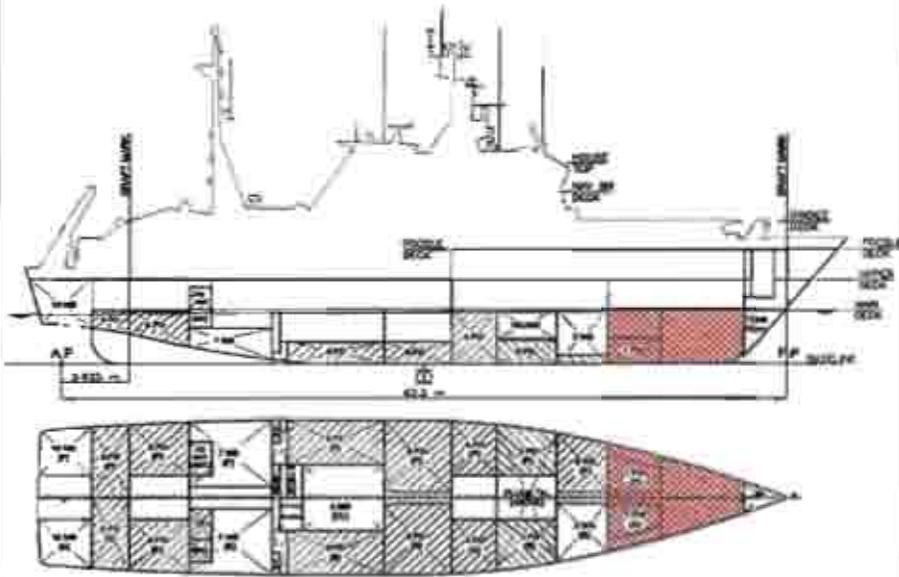
Origin	Degrees of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	in Trim	Area
			in Heel	Weight
4.646	0.32f	0.06p	2,101.82	0.000
4.641	0.32f	2.56p	2,101.91	0.000
4.622	0.33f	5.06p	2,101.92	0.000
4.592	0.34f	7.56p	2,101.92	0.000
4.550	0.35f	10.06p	2,101.92	0.000
4.497	0.37f	12.56p	2,101.92	0.000
4.432	0.40f	15.06p	2,101.92	0.000
4.355	0.44f	17.56p	2,101.92	0.000
4.266	0.48f	20.06p	2,101.92	0.000
4.183	0.52f	22.56p	2,101.92	0.000
4.129	0.53f	23.35p	2,101.92	0.000
4.046	0.57f	25.06p	2,101.92	0.000
3.915	0.61f	27.56p	2,101.92	0.000
3.773	0.64f	30.06p	2,101.92	0.000
3.621	0.69f	32.56p	2,101.93	0.000
3.458	0.72f	35.06p	2,102.19	0.000
3.284	0.76f	37.56p	2,102.18	0.000
3.253	0.55f	37.99p	2,101.92	0.000
3.099	0.49f	40.06p	2,101.92	0.000
2.904	0.39f	42.56p	2,102.21	0.000
2.703	0.27f	45.06p	2,102.20	0.000
2.507	0.16f	47.44p	2,101.90	0.000

Distances in METERS: -----Specific Gravity = 1.025 -----Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 346.2 m.-MT was applied to artificially modify the CG.

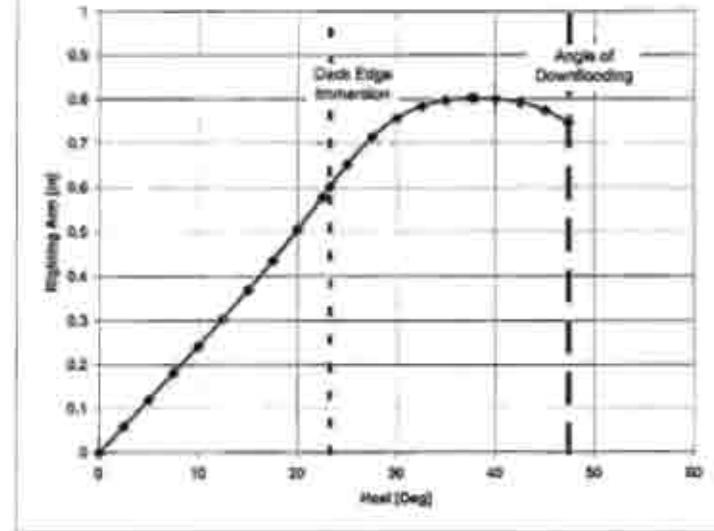
Critical Point: -----LCF-----TCP-----VCG  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

Damage Case No.204 - Comp 73-91 @ 4.9 m



NOTE: Helicopter included in case mass depicted in diagram above.

Damage Case No.204 - Comp 73-91 @ 4.9 m



DAMAGE STABILITY CRITERIA		Min/Max	Attained
(1) GM at Equilibrium	>	0.050 m	1.577 m
(2) Absolute Angle at Equilibrium	<	15.00 Deg	0.00 P
(3) Absolute Angle at Deck/Ingen Immersion	>	0.00 Deg	23.75 P

01/30/09 09:54:44 STX Canada Marine, Inc.  
 GNS 11.50 CGCS JOHN P. Tully  
 NO. 300 - COMPT 52-66 @ 1.0M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 2.996 @ 30.25f, 4.670 @ 24.63a  
 Trim: Aft 0.672/54.875, Heel: Port 4.18 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,424.60	2.595a	0.346a	8.457
AFT STORES	5.00	22.350a	1.330p	6.558
FWD STORES	3.00	30.000r	0.000	8.500
Galley Stores	14.00	20.250r	0.000	8.000
Gas in Jettisonable TX	0.68	20.250a	6.100p	11.000
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490a	0.080a	8.130
UPPER DECK CONTAINER	4.35	26.100a	4.650p	8.600
POCSLS DECK MACHINERY	8.98	8.320a	4.670a	11.000
POCSLS DECK CONTAINER	3.86	14.350a	5.480a	11.300
HELICOPTER	2.50	21.000r	0.000	14.300
ROSETTE EQUIPMENT	0.30	0.700a	5.600a	9.000
Total Fixed	1,689.97	2.659a	0.069a	5.543

Part	Load	SpGr	Weight (MT)	LCG	TCG	VCG	FSM
TK2_WS.P	0.200	1.025	16.53	13.050r	1.906p	1.023	19.05
TK3_PO.P	0.950	0.840	17.32	8.326f	3.488p	1.503	5.47
TK3_PO.S	0.158	1.025	3.32	8.312f	2.636a	0.765	2.67
TK4_PO.P	0.980	0.840	54.66	4.090f	4.171p	2.885	8.11
TK4_PO.S	0.050	1.025	3.43	4.042r	2.751a	0.762	3.62
TK5_PO.P	1.000	0.840	34.66	0.465a	3.066p	1.248	0.00
TK5_PO.S	1.000	0.840	34.66	0.465a	3.066p	1.248	0.00
TK6_PO.P	0.980	0.840	24.12	7.341a	4.619p	1.461	2.12
TK6_PO.S	0.980	0.840	24.12	7.341a	4.619p	1.461	2.03
TK7_PO.P	0.980	0.840	37.71	21.907a	4.145p	1.850	4.21
TK7_PO.S	0.980	0.840	37.71	21.907a	4.080a	3.830	4.15
TK8_PO.P	0.980	0.840	23.84	26.094a	2.814p	4.096	2.64
TK9_PO.S	0.980	0.840	23.84	26.094a	2.713a	4.096	2.56
TK1_FM.S	0.380	1.000	18.58	57.365f	1.534p	1.322	1.23
TK1_FM.S	0.400	1.000	18.57	57.375f	1.501a	1.322	1.56
CP#_CIL.P	0.500	0.890	0.62	11.185a	0.966p	0.437	0.51
SLUDGE.S	0.223	1.000	0.77	11.137a	1.217a	0.407	0.61
SEWAGE.S	0.100	0.890	0.49	15.709a	5.184a	1.289	0.78
FOOD.P	0.980	0.840	0.58	18.889a	3.518p	5.929	0.85
Total Tanks			380.82	9.992a	0.891a	2.495	62.16
Total Weight			2,070.79	3.272a	0.108p	5.799	

HULL	1.025	displ (MT)	LCB	TCB	VCB	Refnt
		2,070.79	3.310a	0.335p	2.691	-4.347

Righting Arms: 0.000 0.000p  
 Distances in METERS:-----Moments in m.-MT.

FREEBOARD STATUS  
 USK DRAFT draft: 2.996 @ 30.25f, 4.670 @ 24.63a  
 Trim: Aft 0.672/54.875, Heel: Port 4.18 deg.  
 Least freeboard is 2.360 m. located at 32.130a  
 Least extra freeboard (to margin line) is 2.284 m. located at 32.110a

01/21/09 09:55:00 STX Canada Marine, Inc.  
 GNS 11.50 CGCS JOHN P. Tully  
 NO. 300 - COMPT 52-66 @ 1.0M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.672/54.875, Heel: Port 4.18 deg., VCG = 5.799

LCF	Displacement	Buoyancy-Ctr.	Weight/	Moment/
Draft	Weight (MT)	LCB	VCB	LCF
4.438	2,070.79	3.310a	2.691	7.07
				5.800a
				28.75
				76.19
				3.866

Distances in METERS.-----Specific Gravity = 1.025-----Moment in m.-MT.  
 Trim is per 54.88m.

Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARM vs HEEL ANGLE  
 Total CG: LCG = 3.272a TCG = 0.108p VCG = 5.799  
 Free Surface Adjustment: 0.030  
 Adjusted CG: LCG = 3.273a TCG = 0.106p VCG = 5.828

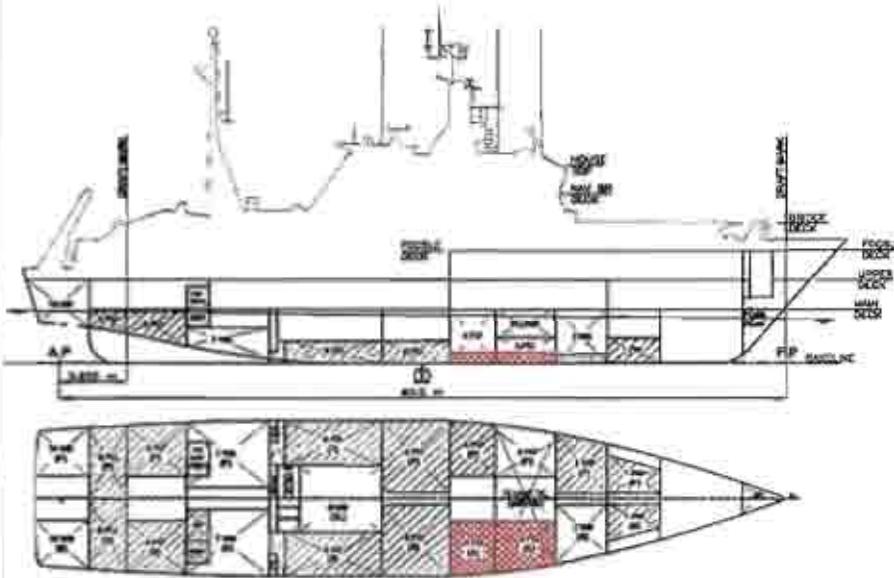
Origin	Degrees of	Displacement	Righting Arms	Flood Ft.			
Depth	Trim	Heel	Weight (MT)	Area			
				Height			
4.342	0.70a	4.18p	2,071.13	0.000	0.000	0.0000	6.324(1)
4.319	0.65a	4.68p	2,070.79	0.000	0.064	0.0014	5.998(1)
4.287	0.67a	9.18p	2,070.79	0.000	0.129	0.0056	5.662(1)
4.243	0.64a	11.58p	2,070.79	0.000	0.194	0.0126	5.320(1)
4.189	0.61a	14.18p	2,070.79	0.000	0.261	0.0228	4.972(1)
4.123	0.56a	16.68p	2,070.79	0.000	0.329	0.0354	4.619(1)
4.046	0.50a	19.18p	2,070.79	0.000	0.400	0.0513	4.262(1)
3.955	0.43a	21.68p	2,070.79	0.000	0.472	0.0704	3.903(1)
3.851	0.35a	24.18p	2,070.79	0.000	0.542	0.0925	3.545(1)
3.841	0.34a	24.38p	2,070.79	0.000	0.547	0.0945	Margin
3.730	0.27a	26.68p	2,070.80	0.000	0.604	0.1175	3.188(1)
3.599	0.22a	29.18p	2,070.79	0.000	0.647	0.1448	2.826(1)
3.457	0.19a	31.68p	2,070.74	0.000	0.671	0.1735	2.460(1)
3.304	0.17a	34.18p	2,070.92	0.000	0.683	0.2031	2.089(1)
3.142	0.18a	36.68p	2,071.02	0.000	0.687	0.2331	1.715(1)
2.970	0.15a	39.18p	2,070.79	0.000	0.687	0.2634	1.341(1)
2.970	0.21a	39.18p	2,071.10	0.000	0.684	0.2630	1.340(1)
2.788	0.26a	41.68p	2,070.58	0.000	0.678	0.2927	0.963(1)
2.597	0.32a	44.18p	2,070.68	0.000	0.670	0.3221	0.587(1)
2.399	0.40a	46.68p	2,070.59	0.000	0.637	0.3511	0.209(1)
2.289	0.45a	48.08p	2,071.23	0.000	0.606	0.3667	-0.001(1)

Distances in METERS.-----Specific Gravity = 1.025-----Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 62.2 m.-MT was applied to artificially modify the CG.

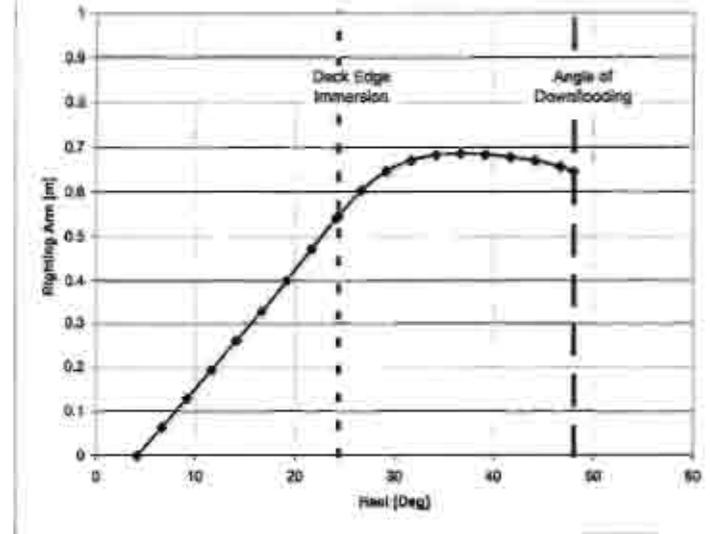
Critical Point:-----LCB-----TCB-----VCP  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

Damage Case No.300 - Comp 52-66 @ 1.0 m



NOTE: Helicopter included in mass (not depicted in diagram above).

Damage Case No.300 - Comp 52-66 @ 1.0 m



LIN	DAMAGE STABILITY CRITERIA	Min/Max	Accained
(1)	St at Equilibrium	> 0.050	n. 1.466 P
(2)	Absolute Angle at Equilibrium	< 15.00 deg	4.18 P
(3)	Absolute Angle at Deck/margin immersion	> 0.00 deg	26.38 P

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GHS 11.50 CCGS JOHN P. Tully  
 NO.301 - COMPT 52-66 @ 2.25M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.151 @ 30.25f, 4.674 @ 24.63a  
 Trim: Aft 0.522/54.875, Heel: Port 1.39 deg.

Part	Weight(MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	7.595a	0.048s	6.457
AFT STORES	5.00	22.350a	1.330p	6.556
FRD STORES	3.00	30.000f	0.000	8.500
Galley Stores	14.00	20.250f	0.000	6.000
Gas in Jactisonable TX	0.68	20.250a	6.100p	11.000
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490a	0.050s	8.130
UPPER DECK CONTAINER	4.35	26.100a	4.850p	8.800
POCSLE DECK MACHINERY	8.98	8.320a	4.670a	11.000
POCSLE DECK CONTAINER	3.86	14.350a	5.480a	11.300
HELICOPTER	2.50	21.000f	0.000	14.300
ROSETTE EQUIPMENT	0.90	0.700a	5.600s	9.000
<b>Total Fixed</b>	<b>1,699.97</b>	<b>7.659a</b>	<b>0.069s</b>	<b>6.543</b>

Load	SpGr	Weight (MT)	LCG	TCG	VCG	FSM
TK2_WB.P	0.200	1.025	13.066f	1.852p	1.819	17.47
TK3_PO.P	0.950	0.840	17.32	8.326f	3.471p	15.71
TK3_PO.S	1.000	1.025	22.25	8.348f	3.465a	1.538
TK4_PO.P	0.980	0.840	54.66	6.090f	5.157p	2.925
TK4_PO.S	0.322	1.025	21.94	4.073f	3.792a	1.532
TK5_PO.P	1.000	0.840	34.66	0.465a	3.066p	1.248
TK5_PO.S	1.000	0.840	34.66	0.465a	3.066p	1.248
TK6_PO.P	0.980	0.840	24.13	7.348a	4.410p	1.461
TK6_PO.S	0.980	0.840	24.12	7.345a	4.569p	1.480
TK8_PO.P	0.980	0.840	37.71	21.906a	4.133p	3.829
TK8_PO.S	0.980	0.840	37.71	21.910a	4.092a	3.829
TK9_PO.P	0.980	0.840	23.85	26.091a	2.802p	4.096
TK9_PO.S	0.980	0.840	23.85	26.095a	2.725a	4.096
TK1_FW.P	0.980	1.000	16.56	17.362f	1.528p	1.327
TK1_FW.S	0.980	1.000	16.56	17.368f	1.510a	1.322
CPP_OIL.P	0.500	0.890	0.62	11.185a	0.925p	0.435
SLUDGE.S	0.273	1.000	0.77	11.107a	1.261s	0.405
SEWAGE.S	0.100	0.890	0.49	18.704a	5.261s	3.255
FOOD.S	0.380	0.840	9.58	18.689a	3.509p	3.929
<b>Total Tanks</b>			<b>418.04</b>	<b>4.910a</b>	<b>0.462p</b>	<b>2.422</b>
<b>Total Weight</b>			<b>2,108.02</b>	<b>3.105a</b>	<b>0.037p</b>	<b>5.726</b>

HULL	1.025	Displ (MT)	LCG	TCG	VCG	RefHt
		2,108.48	3.135a	0.110p	2.709	-4.424
<b>Righting Arms:</b>			<b>0.001a</b>	<b>0.000p</b>		
<b>Distances in METERS:</b>						<b>Moments in m.-MT.</b>

FREEBOARD STATUS  
 USK DRAFT draft: 4.151 @ 30.25f, 4.674 @ 24.63a  
 Trim: Aft 0.522/54.875, Heel: Port 1.39 deg.  
 Least freeboard is 2.715 m. located at 32.130a  
 Least extra freeboard (to margin line) is 2.639 m. located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GHS 11.50 CCGS JOHN P. Tully  
 NO.301 - COMPT 52-66 @ 2.25M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.522/54.875, Heel: Port 1.39 deg., VCG = 5.726

LCP	Displacement	Buoyancy-Ctr.	Weight/	Moment/
Draft	Weight(MT)	LCB	VCB	cm
4.494	2,108.48	3.135a	2.709	7.08
				5.776a
				29.11
				75.75
				1.610

Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT.  
 Trim is per 54.88m.

Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 3.105a TCG = 0.037p VCG = 5.726  
 Free Surface Adjustment: 0.095  
 Adjusted CG: LCG = 3.106a TCG = 0.034p VCG = 5.820

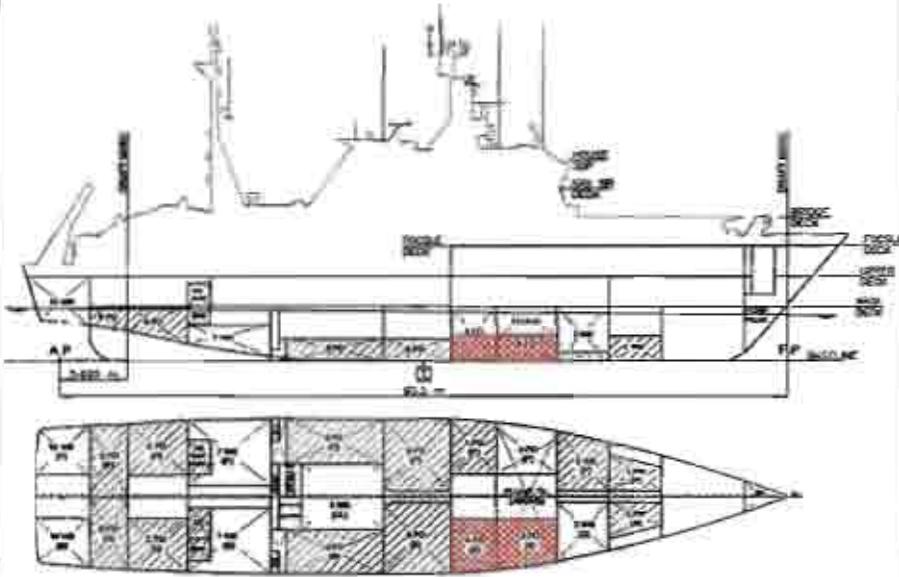
Origin	Degree of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight(MT)	in Trim-in Heel
4.424	0.55a	1.39p	2,108.35	0.000 0.000
4.412	0.54a	3.89p	2,107.83	0.000 0.062
4.391	0.53a	6.39p	2,108.02	0.000 0.125
4.359	0.52a	8.89p	2,108.02	0.000 0.187
4.316	0.49a	11.39p	2,108.01	0.000 0.251
4.262	0.46a	13.89p	2,108.01	0.000 0.315
4.196	0.41a	16.39p	2,108.01	0.000 0.382
4.119	0.35a	18.89p	2,108.01	0.000 0.451
4.030	0.29a	21.39p	2,108.01	0.000 0.522
3.925	0.22a	23.89p	2,108.01	0.000 0.591
3.905	0.21a	24.35p	2,108.01	0.000 0.604
3.807	0.15a	26.39p	2,108.02	0.000 0.656
3.676	0.09a	28.89p	2,108.02	0.000 0.699
3.535	0.06a	31.39p	2,108.02	0.000 0.726
3.384	0.06a	33.89p	2,108.12	0.000 0.739
3.223	0.07a	36.39p	2,108.20	0.000 0.742
3.215	0.07a	36.51p	2,107.99	0.000 0.743
3.052	0.10a	38.89p	2,108.32	0.000 0.740
2.870	0.15a	41.39p	2,108.05	0.000 0.734
2.680	0.22a	43.89p	2,108.00	0.000 0.726
2.483	0.30a	46.39p	2,107.99	0.000 0.711
2.377	0.35a	47.72p	2,108.01	0.000 0.699

Distances in METERS. Specific Gravity = 1.025. Area in m.-Rad.

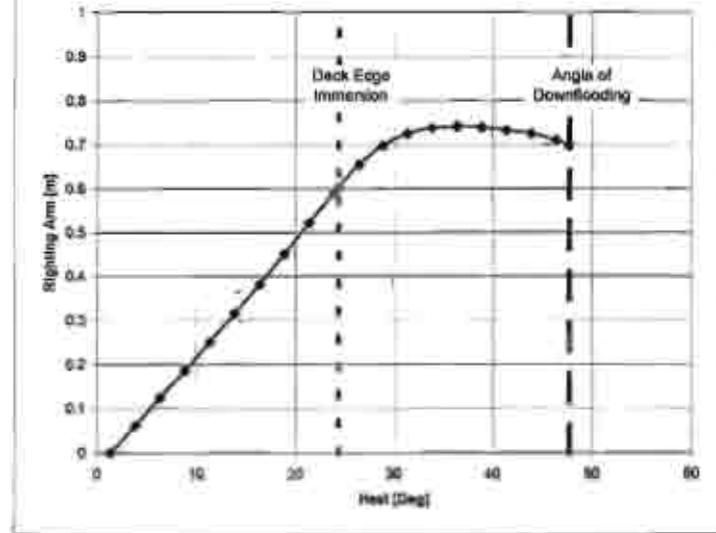
Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 199.6 m.-MT was applied to artificially modify the CG.

Critical Point: LCP---TCP---VCP  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 2.630a 7.000 11.300

Damage Case No.301 - Comp 52-66 @ 2.25 m



Damage Case No.301 - Comp 52-66 @ 2.25 m



DAMAGE STABILITY CRITERIA			
	Min/Max	Attained	
(1) GM at Equilibrium	> 0.050 m	1.410 F	
(2) Absolute Angle at Equilibrium	< 15.00 deg	1.39 F	
(3) Absolute Angle at Deck/Margin Immersion	> 0.00 deg	24.55 F	

NOTE: Helicopter included in casg (not depicted in diagram above).

01/30/09 09:54:44 STX Canada Marine, Inc.  
GHS 11.50 CCGS JOHN P. Tully  
NO.302 - COMPT 52-66 @ 3.0M - LOADLINE DEPARTURE CONDITION

HEIGHT and DISPLACEMENT STATUS  
USK DRAFT draft: 4.392 @ 30.25t, 4.665 @ 24.63t  
Trim: Aft 0.273/54.875, Heel: Port 0.39 deg.

Part	Weight (MT)	LCG	TCG	VCG			
LIGHT SHIP	1,621.60	2.595a	0.048a	6.457			
AFT STORES	5.00	32.350a	1.330p	8.556			
IMO STORES	3.00	30.000f	0.000	8.500			
Galley Stores	14.00	20.250a	0.000	6.000			
Gas in Jettisonable TK	0.60	20.250a	6.100p	11.000			
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.050a	8.130			
UPPER DECK CONTAINER	4.35	26.100a	4.650p	8.600			
FOCSLE DECK MACHINERY	8.98	8.320a	4.670a	11.000			
FOCSLE DECK CONTAINER	3.86	14.350a	5.480a	11.300			
HELICOPTER	2.50	21.000f	0.000	14.300			
ROSETTE EQUIPMENT	0.90	0.700a	5.600a	9.000			
Total Fixed	1,689.97	2.659a	0.069a	6.543			
Load	-@p@-	Weight (MT)	LCG	TCG	VCG	FSM	
TK2_WB.F	0.200	1.025	16.61	13.077f	1.832p	1.019	16.92
TK3_PO.F	0.950	0.840	17.32	8.337f	3.453p	1.502	17.12
TK3_PO.S	1.000	1.025	22.25	8.349f	3.465a	1.538	0.00
TK4_PO.F	0.980	0.840	54.63	4.091f	4.148p	2.885	27.27
TK4_PO.S	0.510	1.025	34.73	4.082f	3.878a	1.935	29.34
TK5_PO.F	1.000	0.840	34.66	0.465a	3.066p	1.248	0.00
TK5_PO.S	1.000	0.840	34.66	0.465a	3.066a	1.248	0.00
TK6_PO.F	0.980	0.840	24.13	7.343a	6.598p	1.160	28.16
TK6_PO.S	0.980	0.840	24.13	7.343a	6.581a	1.460	27.75
TK8_PO.F	0.980	0.840	37.71	21.906a	4.115p	3.829	35.67
TK8_PO.S	0.980	0.840	37.71	21.907a	4.106a	3.829	35.61
TK9_PO.F	0.980	0.840	23.84	26.094a	2.780p	4.095	57.62
TK9_PO.S	0.980	0.840	23.84	26.094a	2.747a	4.095	57.95
TK1_FW.F	0.980	1.000	16.56	17.388f	1.521p	1.322	6.89
TK1_FW.S	0.980	1.000	16.56	17.370f	1.516a	1.322	6.82
FLUME.C	0.273	1.025	62.74	8.409f	0.106p	2.627	665.96
CPE OIL.F	8.500	0.890	0.62	11.185a	0.910p	0.435	0.50
SLUDGS.S	0.223	1.000	0.77	11.098a	1.281a	0.404	0.87
SEWAGE.S	0.100	0.890	0.49	18.698a	5.289a	3.285	0.77
FOOD.P	0.980	0.840	9.38	18.688a	1.503p	5.929	3.49
Total Tanks			673.57	3.041a	0.293p	2.446	1018.19
Total Weight			2,163.54	2.834a	0.310p	5.845	
Displ (MT)	LCG	TCG	VCG	Refit			
MSL	1.025	2,163.33	2.848a	0.030p	2.751	-4.529	
Righting Arms	0.000	0.000p					
Distances in METERS	Moments in m.-MT						

01/30/09 09:54:44 STX Canada Marine, Inc.  
GHS 11.50 CCGS JOHN P. Tully  
NO.302 - COMPT 52-66 @ 3.0M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
Trim: Aft 0.273/54.875, Heel: Port 0.39 deg., VCG = 5.646

LCF	Displacement	Buoyancy-Ctr.	weight/	Moment/
Draft	Weight (MT)	LCB	VCB	cm
4.571	2,163.33	2.848a	2.751	7.11
		3.647a	29.49	74.62
				1.062
Distances in METERS		Specific Gravity = 1.025		Moment in m.-MT
		Trim is per 54.88a		

Draft is from USK DRAFT. True Free Surface included.

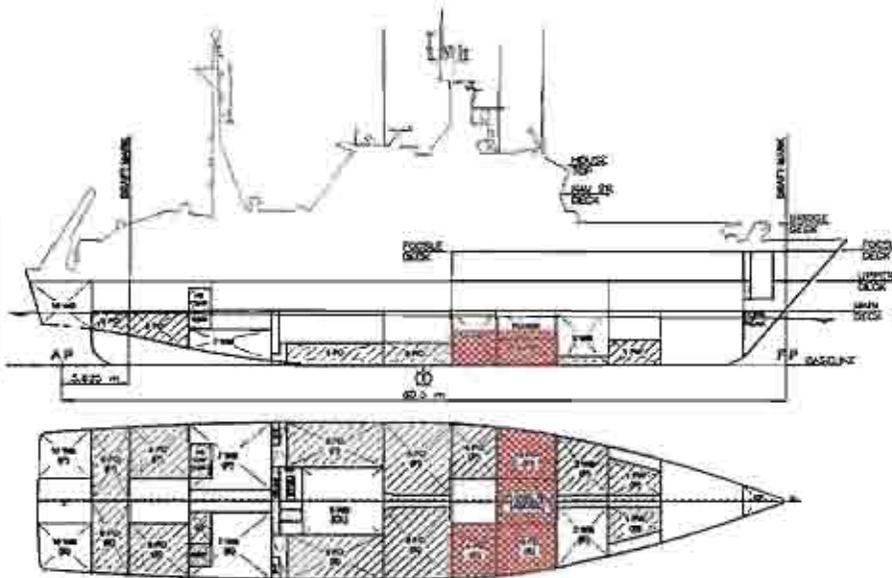
RIGHTING ARMS vs REEL ANGLE  
Total CG: LCG = 2.834a TCG = 0.010p VCG = 5.646  
Free Surface Adjustment: 0.471  
Adjusted CG: LCG = 2.832a TCG = 0.007p VCG = 6.117

Origin	Degrees of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight (MT)	Area
4.529	0.25a	0.39p	2,163.63	0.000
4.522	0.25a	2.89p	2,163.59	0.000
4.503	0.28a	5.39p	2,163.13	0.000
4.475	0.27a	7.89p	2,163.54	0.000
4.436	0.25a	10.39p	2,163.54	0.000
4.385	0.22a	12.89p	2,163.54	0.000
4.323	0.18a	15.39p	2,163.54	0.000
4.249	0.13a	17.89p	2,163.54	0.000
4.163	0.08a	20.39p	2,163.54	0.000
4.063	0.02a	22.89p	2,163.54	0.000
4.010	0.02a	24.09p	2,163.54	0.000
3.948	0.05a	25.39p	2,163.54	0.000
3.822	0.11a	27.89p	2,163.54	0.000
3.685	0.14a	30.39p	2,163.54	0.000
3.538	0.14a	32.89p	2,163.66	0.000
3.501	0.14a	33.46p	2,163.49	0.000
3.380	0.13a	35.39p	2,163.73	0.000
3.212	0.10a	37.89p	2,163.69	0.000
3.034	0.04a	40.39p	2,163.75	0.000
2.847	0.03a	42.89p	2,163.50	0.000
2.652	0.11a	45.39p	2,163.14	0.000
2.506	0.18a	47.25p	2,163.86	0.000
Distances in METERS		Specific Gravity = 1.025		Area in m.-sq.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 1018.2 m.-MT was applied to artificially modify the CG.

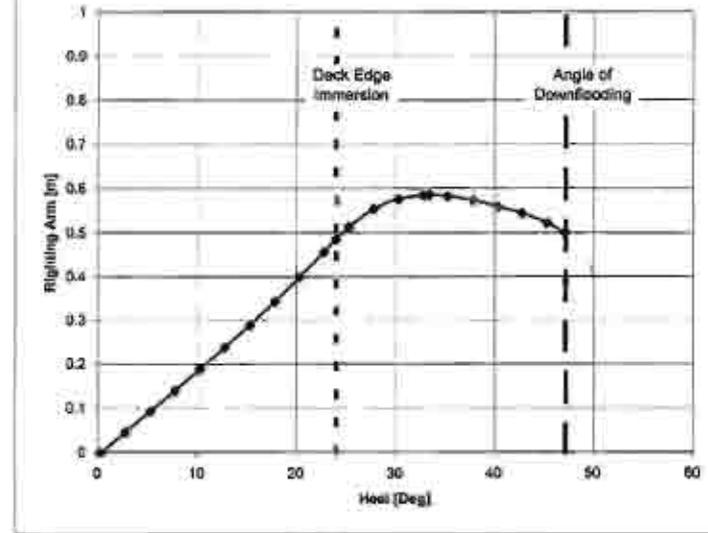
Critical Point: LCG = 2.834a TCG = 0.010p VCG = 5.646  
(1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

Damage Case No.302 - Comp 52-66 @ 3.0 m



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.302 - Comp 52-66 @ 3.0 m



LIM	-----DAMAGE STABILITY CRITERIA-----	Min/Max	Attained
(1)	GZ at Equilibrium	> 0.050 m	1.062 ?
(2)	Absolute Angle at Equilibrium	< 15.00 deg	2.35 ?
(3)	Absolute Angle at Deck/margin Immersion	> 0.00 deg	24.03 ?

11/30/09 09:04:44 STX Canada Marine, Inc.  
 DMS 11.50 COCS JOHN P. Tully  
 NO.101 - COMPT 52-66 @ 4.0M - LOADLINE DEPARTURE CONDITION

WEIGHT AND DISPLACEMENT STATUS  
 USK DRAFT draft: 8.717 @ 30.252, 1.657 @ 14.63a  
 Trim: Twd 0.060/34.875, Heel: Stbd 1.38 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,424.40	2.595a	0.910a	4.467
APT STORES	5.00	22.330a	1.230p	4.588
PHD STORES	3.00	30.000z	0.600	4.300
Galley Stores	14.00	20.250z	1.00z	6.000
GAS in Jettisonable TX	0.68	20.250a	4.100p	11.000
40 Crew and Effiants @ 125	5.00	3.000	0.200	11.200
HYPER DECK MACHINERY	17.10	19.400a	0.030a	8.138
UPPER DECK CONTAINER	4.35	26.100a	4.550p	3.400
POCCLE DECK MACHINERY	8.98	8.320a	4.870a	11.200
POCCLE DECK CONTAINER	3.86	14.350a	5.480a	11.300
HELICOPTER	2.50	21.000z	0.00z	14.300
ROSETTS EQUIPMENT	0.90	0.700a	5.400a	8.000
<b>Total Fixed</b>	<b>1,889.91</b>	<b>2.439a</b>	<b>0.949a</b>	<b>4.543</b>

Part	Load	SpGr	Weight (MT)	LCG	TCG	VCG	FSK
TK2_HB.P	0.200	1.025	16.62	13.892z	1.800p	1.210	14.04
TK3_FO.P	0.950	0.840	17.37	8.154z	1.431p	1.302	16.81
TK3_FO.S	1.000	1.025	22.25	8.348z	2.468a	1.539	0.00
TK4_FO.P	0.900	0.840	34.45	4.894z	1.113p	2.88z	27.18
TK4_FO.S	0.766	1.025	52.10	4.090z	4.104p	2.457	31.77
TK5_FO.P	1.000	0.840	34.66	2.465a	2.066p	1.248	0.00
TK5_FO.S	1.000	0.840	34.66	2.465a	2.066a	1.248	0.30
TK6_FO.P	0.980	0.840	24.13	7.312a	1.367p	1.481	8.26
TK6_FO.S	0.980	0.840	24.13	7.312a	4.410a	1.460	8.47
TK8_FO.P	0.980	1.040	37.71	21.901a	4.931p	3.826	30.80
TK8_FO.S	0.980	0.840	37.71	21.900a	4.134a	3.828	20.76
TK9_FO.P	0.980	0.840	23.85	26.061a	4.720p	4.098	13.03
TK9_FO.S	0.980	0.840	23.85	26.061a	2.402a	4.098	13.04
TK1_FB.P	0.980	1.000	16.56	17.378z	1.508p	1.32z	4.28
TK1_FB.S	0.980	1.000	16.56	17.371z	1.527a	1.32z	5.28
FLUNG.C	0.449	1.025	101.68	8.432z	0.178a	1.137	745.30
OPP OIL.P	0.500	0.890	0.62	11.289a	0.380p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.084a	1.231a	0.404	1.27
SEWAGE.S	0.100	0.890	0.49	18.886a	5.338a	3.28z	0.77
FOCAL.P	0.000	0.840	8.88	18.887a	1.231p	5.028	1.49
<b>Total Tanso</b>			<b>368.90</b>	<b>1.541a</b>	<b>0.037p</b>	<b>1.22z</b>	<b>928.10</b>
<b>Total Weight</b>			<b>2,239.87</b>	<b>2.482a</b>	<b>0.986a</b>	<b>5.273</b>	

Dist	Righting Arms	LCG	TCG	VCG	Refit
Dist	1.025	2,239.87	2.479a	0.100a	2.81z
<b>Distances in METERS</b>					<b>-4.689</b>

Righting Arms: 0.000 0.000a  
 Distances in METERS: ----- Moments in m.-MT.

FOREBOARD STATUS  
 USK DRAFT draft: 8.717 @ 30.252, 1.657 @ 14.63a  
 Trim: Twd 0.060/34.875, Heel: Stbd 1.38 deg.  
 Least freeboard is 2.772 m. located at 1.000z  
 Least extra freeboard (to margin line) is 2.486 m. located at 1.000z

01/30/09 09:04:44 STX Canada Marine, Inc.  
 DMS 11.50 COCS JOHN P. Tully  
 NO.101 - COMPT 52-66 @ 4.0M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Twd 0.060/34.875, Heel: Stbd 1.38 deg., VCG = 5.573

ICF Displacement Buoyancy-Ctr. Weight/ Moment/  
 Draft--Weight(MT)--LCG--VCG--cm--ICF--cm cubic--GM--CGC  
 1.878 2,239.87 2.479a 5.515 7.16 5.446a 30.08 11.70 1.128  
 Distances in METERS, Specific Gravity = 1.025, Moment in m.-MT.  
 Trim is per 51.88m.

Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARM vs HEEL ANGLE  
 Total CG: LCG = 2.482a TCG = 0.039a VCG = 5.573  
 Free Surface Adjustments: 0.419  
 Adjusted CG: LCG = 2.482a TCG = 0.025a VCG = 5.992

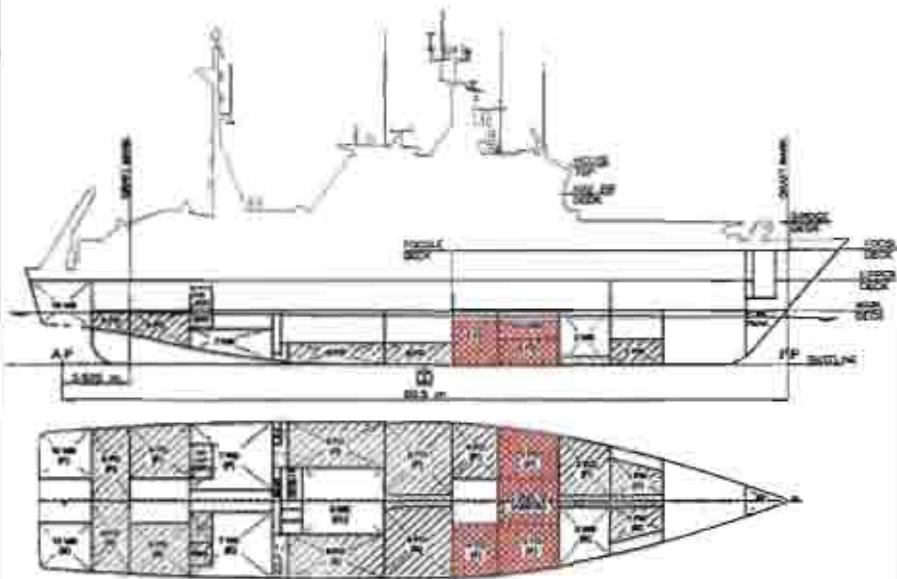
Origin	Degree of	Displacement	Righting Arm	Flood Pt
Depth	Trim	Heel	Weight(MT)	Area
4.688	0.04z	1.139a	2,239.88	0.0000
4.656	0.07z	1.89a	2,239.86	0.0011
4.633	0.07z	2.39a	2,239.39	0.0044
4.599	3.09z	8.89a	2,239.87	0.0098
4.554	3.11z	11.35a	2,239.87	0.0175
4.493	0.14z	13.85a	2,239.87	0.0254
4.428	3.17z	16.39a	2,239.87	0.0397
4.346	3.22z	18.93a	2,239.87	0.0545
4.252	3.27z	21.38a	2,239.87	0.0719
4.144	0.30z	23.02a	2,239.88	0.0947
4.144	0.32z	23.88a	2,239.87	0.0991
4.023	0.37z	26.39a	2,239.88	0.1149
3.893	0.41z	28.99a	2,239.88	0.1368
3.751	0.42z	31.39a	2,239.88	0.1662
3.599	0.41z	33.89a	2,240.07	0.2026
3.478	0.38z	35.77z	2,239.89	0.2429
3.427	0.37z	36.39a	2,240.06	0.2807
3.394	0.36z	37.02a	2,239.87	0.3278
3.254	0.32z	38.99a	2,239.88	0.4021
3.051	0.24z	41.39a	2,239.74	0.5128
2.552	0.14z	43.89a	2,239.88	0.6905
2.058	3.07z	46.39a	2,239.90	0.9379
2.078	0.26z	46.43a	2,239.87	0.9303

Distances in METERS, Specific Gravity = 1.025, Area in m.-Rad.

Notes: The weights and center of gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 399.1 m.-MT was applied to artificially modify the CG.

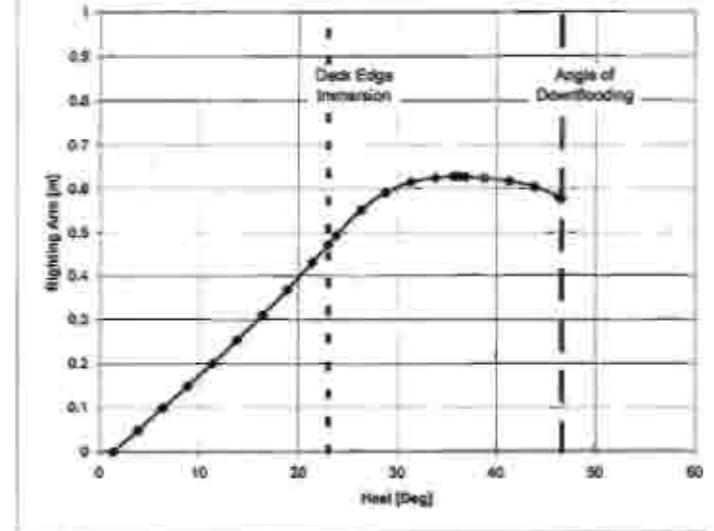
1) CAPTAIN'S ROOM WINDOW FLOOD 7.830a 7.500 11.300

Damage Case No.303 - Comp 52-66 @ 4.0 m



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.303 - Comp 52-66 @ 4.0 m



Lim	-----DAMAGE STABILITY CRITERIA-----	Req/Max	Attained
(1)	GM at Equilibrium	> 0.050 m	1.128 m
(2)	Absolute Angle at Equilibrium	< 15.00 deg	1.39 deg
(3)	Absolute Angle at Deck/margin Immersion	> 0.00 deg	23.03 deg

01/30/09 09:54:44 STX Canada Marine, Inc.  
 RMS 11.50 CGCS JOHN P. Tully  
 NO.304 - COMPT 52-60 @ 4.9M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.961 @ 30.254, 4.650 @ 24.634  
 Trim: Pnd 0.331/54.875, Heel: Stbd 2.59 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	2.990a	0.048a	0.457
AFT STORES	9.00	28.390a	1.330p	6.356
FWD STORES	3.00	30.000a	0.000	8.300
Galley Stores	14.00	20.250f	0.000	6.000
Gas in Jettisonable Tn	0.66	20.200a	6.100p	11.000
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490a	0.050a	8.130
UPPER DECK CONTAINERS	4.35	26.100a	4.600p	6.900
FOCSLE DECK MACHINERY	8.98	8.320a	4.670a	11.000
FOCSLE DECK CONTAINER	3.86	10.350a	5.420a	11.300
HELICOPTER	2.50	21.000f	0.000	14.300
ROSETTE EQUIPMENT	0.90	0.700a	5.600a	9.000
Total Fixed	2,689.97	2.698a	0.969a	6.543

Item	load	spgs	Weight (MT)	LCG	TCG	VCG	FSM
TK3_HL.P	0.200	1.025	16.42	13.101f	1.778p	1.220	15.59
TK3_PO.P	0.950	0.840	17.32	6.361f	3.400p	1.503	10.84
TK4_PO.P	0.980	0.840	54.65	4.039f	4.124p	2.985	16.42
TK5_PO.P	1.000	0.940	34.66	0.455a	3.066p	1.248	0.50
TK3_PO.S	1.000	0.840	34.66	0.455a	3.066a	1.248	0.00
TK6_PO.P	0.980	0.840	24.13	7.201a	4.543p	1.461	3.64
TK6_PO.S	0.980	0.840	24.12	7.299a	4.617a	1.461	3.73
TK8_PO.P	0.980	0.840	37.71	21.898a	4.084p	1.829	8.37
TK8_PO.S	0.980	0.840	37.71	21.897a	4.141a	3.329	8.38
TK9_PO.P	0.980	0.840	23.84	26.091a	3.717p	4.096	3.21
TK9_PO.S	0.980	0.840	23.84	26.090a	3.810p	4.096	5.23
TK1_FM.P	0.980	1.000	16.56	17.364f	1.902p	1.322	2.52
TK1_FM.S	0.980	1.000	16.56	17.375f	1.532a	1.322	2.39
OPP_OIL.P	0.900	0.890	0.62	11.184a	0.868p	0.436	0.50
SLUDGE.S	0.223	1.000	0.77	11.072a	1.393a	0.409	1.16
SEWAGE.S	0.100	0.890	0.49	18.677a	5.372a	3.266	0.77
PODAY.P	0.980	0.840	9.58	18.637a	3.486p	5.929	1.70
Total Tanks			373.85	6.210a	0.904a	2.527	86.38
Total Weight			2,063.82	5.302a	0.109p	5.815	

Item	Displ (MT)	LCG	TCG	VCG	Heel
HULL	1,025	2,304.20	2.190a	0.191a	2.973
TK3_PO.S	Flooded 1,025	-22.25	8.348f	3.465a	1.538
TK4_PO.S	Flooded 1,025	-68.05	4.093f	4.198a	2.925
FLUID.C	Flooded 1,025	-150.09	8.441f	0.163a	3.545
Total Displacement	1,025	1,063.81	3.264a	0.027a	2.838

Righting Arms: 0.008 0.100a  
 Distances in METERS: ----- Moments in m.-MT.

FREEBOARD STATUS

USK DRAFT draft: 4.961 @ 30.254, 4.650 @ 24.634  
 Trim: Pnd 0.331/54.875, Heel: Stbd 2.59 deg.  
 Least freeboard is 2.502 m, located at 1.000f  
 Least extra freeboard (to margin line) is 2.426 m, located at 1.000f

01/30/09 09:54:44 STX Canada Marine, Inc.  
 RMS 11.50 CGCS JOHN P. Tully  
 NO.304 - COMPT 52-60 @ 4.9M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES with FLOODING  
 Trim: Pnd 0.331/54.875, Heel: Stbd 2.58 deg., VCG = 5.815

LCF Displacement Buoyancy-Ctr. Weight/ Moment/  
 Draft---Weight(MT)---LCB---VCB---cm---LCF---cm trim---GCL---GNT  
 4.782 2,063.82 3.284a 2.836 6.83 6.019a 29.19 77.61 1.090  
 Distances in METERS.-----Specific Gravity = 1.025.-----Moment in m.-MT.  
 Trim is per 54.88M.  
 Draft is from USK DRAFT: True Free Surface Included.

RIGHTING ARMS vs HEEL ANGLE with FLOODING  
 Total CG: LCG = 1.302a TCG = 0.109p VCG = 5.815  
 Free Surface Adjustment: 0.042  
 Adjusted CG: LCG = 3.302a TCG = 0.110p VCG = 5.857

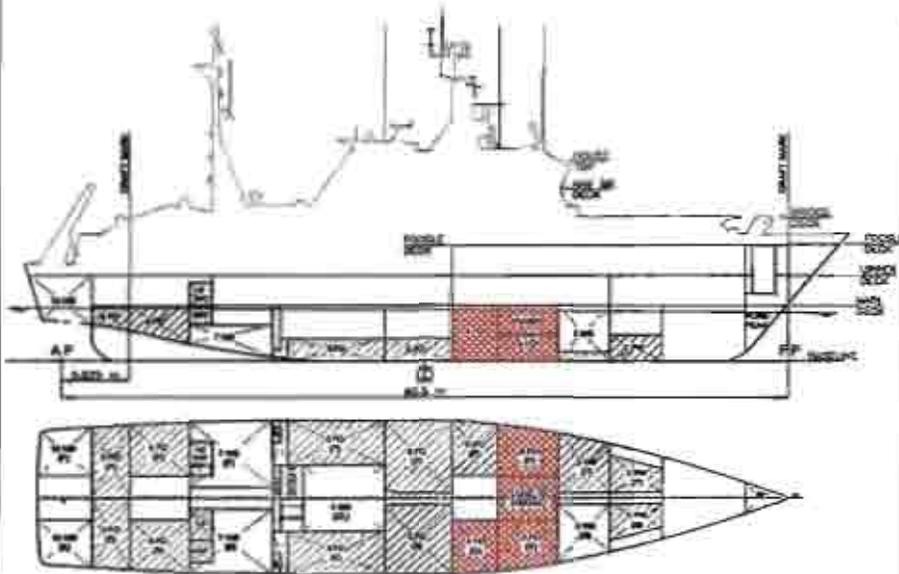
Origin	Degrees of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight(MT)	in Trim--in Heel--> Brws --Weight
4.780	0.35f	2.58a	2,063.82	0.000 0.000 0.0000 0.238(1)
4.754	2.33f	5.03a	2,063.82	0.000 0.065 0.0014 3.924(1)
4.717	0.32f	7.58a	2,063.82	0.000 0.130 0.0027 3.601(1)
4.668	0.31f	10.08a	2,064.08	0.000 0.195 0.0128 5.271(1)
4.607	0.31f	12.58a	2,063.59	0.000 0.262 0.0227 4.936(1)
4.535	3.22f	15.08a	2,063.82	0.000 0.331 0.0357 4.604(1)
4.451	3.31f	17.58a	2,063.82	0.000 0.403 0.0517 4.249(1)
4.354	0.36f	20.09a	2,063.82	0.000 0.478 0.0709 3.900(1)
4.244	0.38f	22.59a	2,063.82	0.000 0.556 0.0934 3.550(1)
4.121	0.38f	25.09a	2,063.82	0.000 0.634 0.0990 Marg Lim.
4.121	0.41f	25.09a	2,063.82	0.000 0.658 0.1194 3.198(1)
3.989	0.44f	27.59a	2,063.82	0.000 0.699 0.1484 2.841(1)
3.847	0.44f	30.09a	2,063.83	0.000 0.745 0.1799 2.478(1)
3.696	0.43f	32.59a	2,064.20	0.000 0.776 0.2132 2.110(1)
3.534	0.39f	35.09a	2,063.82	0.000 0.797 0.2475 1.740(1)
3.363	0.34f	37.59a	2,064.00	0.000 0.809 0.2826 1.365(1)
3.181	0.27f	40.09a	2,063.92	0.000 0.816 0.3181 0.990(1)
2.991	0.18f	42.59a	2,063.95	0.000 0.820 0.3538 0.614(1)
2.942	0.15f	43.22a	2,063.87	0.000 0.819 0.3627 0.519(1)
2.795	0.08f	45.09a	2,063.61	0.000 0.813 0.3894 0.235(1)
2.675	0.02f	46.63a	2,064.29	0.000 0.804 0.4111 -0.001(1)

Distances in METERS.-----Specific Gravity = 1.025.-----Area in m.-sqd.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 86.4 m.-MT was applied to artificially modify the CG.

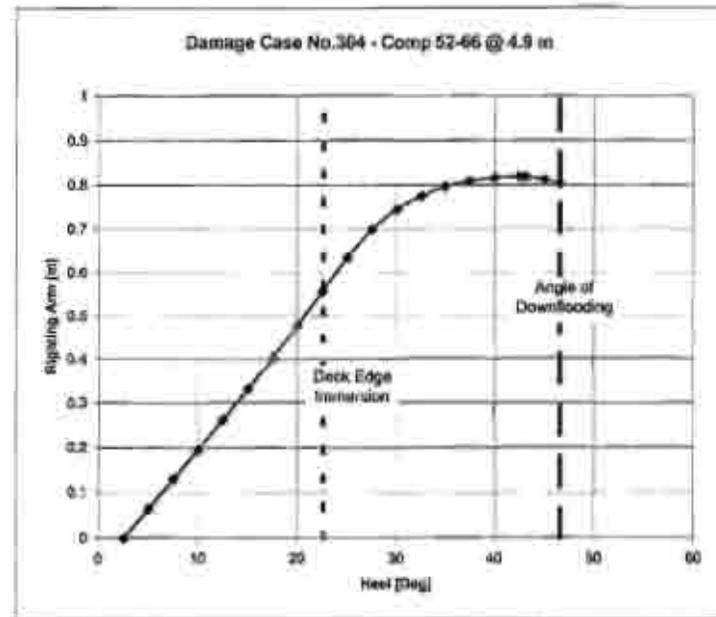
Critical Point:-----LCB---TCB---VCP  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

Damage Case No.304 - Comp 52-66 @ 4.9 m



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.304 - Comp 52-66 @ 4.9 m



DAMAGE STABILITY CRITERIA		Min/Max	Attained
(1)	GM at Equilibrium	> 0.050 m	1.430 F
(2)	Absolute Angle of Equilibrium	< 15.00 deg	2.58 F
(3)	Absolute Angle of Deck/margin Immersion	> 3.00 deg	22.66 F

01/21/09 08:53:40 STX Canada Marine, Inc.  
 CGS JOHN P. Tully  
 NO.400 - COMPT 43-52 @ 1.5M - LOA/LINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.163 @ 30.25t, 4.586 @ 24.43t  
 Trim: Aft 0.522/54.875, Heel: Port 0.83 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	2.595a	0.048a	6.457
AFT STORES	5.00	32.350a	1.339p	6.554
FWD STORES	3.00	30.000f	0.000	8.300
Galley Stores	14.00	20.250f	0.000	6.000
Gas in Jettisonable TK	0.68	20.230a	6.100p	11.800
40 Crew and Effects @ 112	9.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490a	0.050a	8.130
UPPER DECK CONTAINERS	4.35	26.100a	4.950p	8.600
FOCSLE DECK MACHINERY	8.98	8.320a	4.070a	11.000
FOCSLE DECK CONTAINERS	3.88	14.350a	5.480a	11.300
HELICOPTER	2.90	31.000f	0.000	14.300
ROSETTE EQUIPMENT	0.90	6.700a	5.600a	9.000
Total Fixed	1,839.97	2.659a	0.069p	6.543

TK	Load	Spot	Weight (MT)	LCG	TCG	VCG	FBM
TK2_Aft.P	0.200	1.025	16.61	13.068a	1.841p	1.019	27.15
TK2_FO.P	0.950	0.840	17.32	8.328a	3.461p	1.500	17.18
TK6_FO.S	0.980	0.840	54.65	4.090f	4.152p	2.883	27.30
TK4_FO.S	0.980	0.840	54.65	4.090f	4.137a	2.865	27.19
TK5_FO.P	1.000	0.840	34.66	4.465a	3.066p	1.244	0.60
TK5_FO.S	0.623	1.025	18.79	0.539a	2.604a	0.987	84.16
TK6_FO.P	0.980	0.840	24.13	7.357a	4.003p	1.460	19.64
TK6_FO.S	0.980	0.840	24.13	7.354a	4.978a	1.461	19.33
TK8_FO.P	0.980	0.840	37.71	31.911a	4.125p	1.829	32.18
TK8_FO.S	0.980	0.840	37.71	31.911a	4.099a	1.829	31.21
TK9_FO.P	0.980	0.840	23.84	26.095a	2.794p	4.095	30.30
TK9_FO.S	0.980	0.840	23.85	26.096a	2.733p	4.095	29.40
TK1_FW.P	0.980	1.000	16.56	17.362f	1.525p	1.322	5.14
TK1_FW.S	0.980	1.000	16.56	17.366f	1.513p	1.322	6.45
CPP_OIL.P	0.400	0.890	0.62	11.185a	0.917p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.105a	1.272a	0.405	0.83
SEWAGE.S	0.100	0.890	0.49	19.704a	5.277a	1.295	0.77
CONTRD.L	0.633	1.025	5.71	0.583f	0.001	0.750	0.32
Permeability override:	0.850						
PODNY.P	0.980	0.840	9.58	18.688a	3.505p	5.929	3.49
Total Tanks			426.34	4.930a	0.379p	2.554	352.99
Total Weight			2,116.31	3.115a	0.027p	5.738	

HYEL	Weight (MT)	LCG	TCG	VCG	Height	
HYEL	1.025	2,116.71	3,145a	0.060p	2,715	-6.436

Righting Arms: 0.000 0.000p  
 Distances in METERS: Moments in m.-MT

DECKBOARD STATUS  
 USK DRAFT draft: 4.163 @ 30.25t, 4.586 @ 24.43t  
 Trim: Aft 0.522/54.875, Heel: Port 0.83 deg.  
 Least freeboard is 2.770 m, located at 32.130a  
 Next worst freeboard (to margin line) is 2.694 m, located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 CGS JOHN P. Tully  
 NO.400 - COMPT 43-52 @ 1.5M - LOA/LINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.522/54.875, Heel: Port 0.83 deg., VCG = 5.738

LCF	Displacement	Buoyancy-Ctr	Weight/	Moment/
Draft	Weight (MT)	LCB	LCG	on trim
4.506	2,116.71	3,145a	2,715	7.08 5.777a 29.13 75.51 1.316

Distances in METERS: Specific Gravity = 1.025: Moment in m.-MT.  
 Trim is per 54.88m.

Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 3.116a TCG = 0.027p VCG = 5.738  
 Free Surface Adjustment: 0.167  
 Adjusted CG: LCG = 3.118a TCG = 0.019p VCG = 5.906

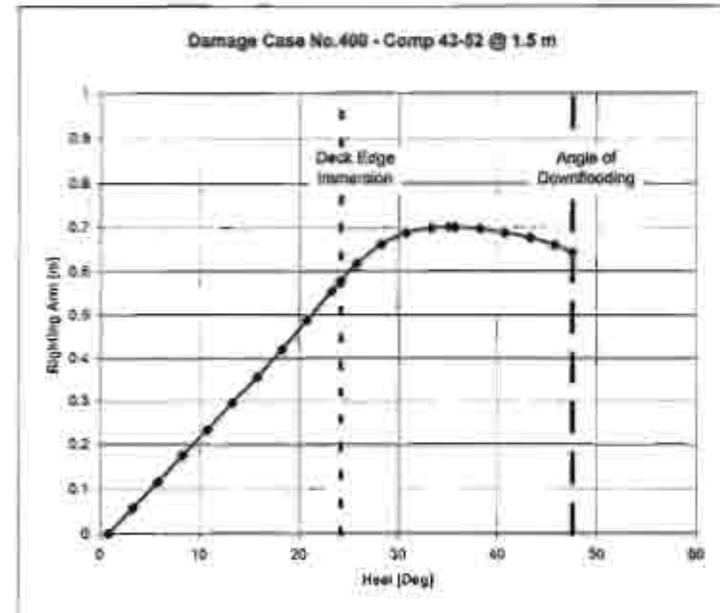
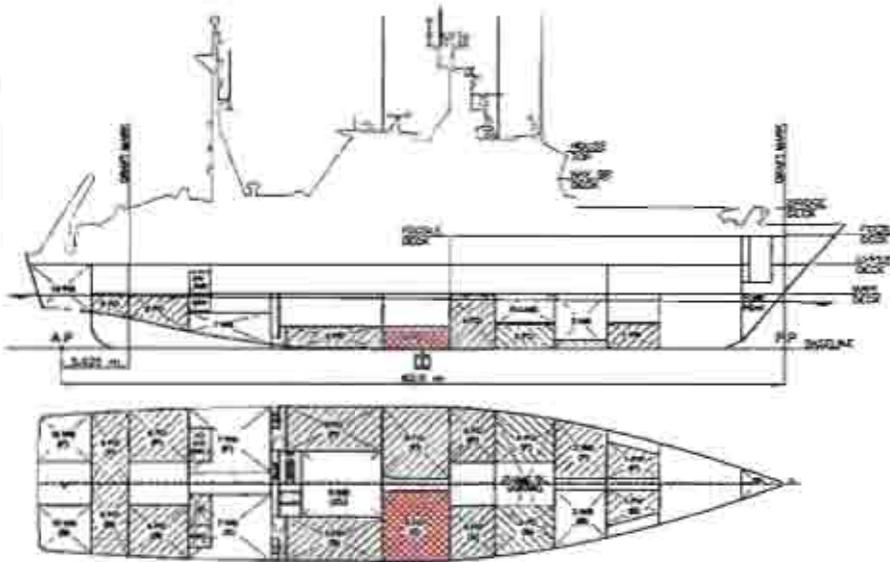
Origin	Degree of	Displacement	Righting Arms	Flood Ft
Depth	Trim	Heel	Weight (MT)	Area
4.436	0.55a	0.83p	2,116.61	0.000 0.000 0.000 4.687(1)
4.427	0.55a	3.33p	2,216.12	0.000 0.098 0.0013 6.374(1)
4.407	0.54a	5.83p	2,216.63	0.000 0.116 0.0014 6.051(1)
4.378	0.52a	8.33p	2,216.31	0.000 0.175 0.0114 5.718(1)
4.338	0.50a	10.83p	2,116.31	0.000 0.234 0.0201 5.278(1)
4.288	0.47a	13.33p	2,116.31	0.000 0.295 0.0319 5.032(1)
4.223	0.43a	15.83p	2,116.31	0.000 0.357 0.0461 4.681(1)
4.149	0.37a	18.33p	2,116.31	0.000 0.421 0.0630 4.326(1)
4.062	0.31a	20.83p	2,116.31	0.000 0.489 0.0829 3.968(1)
3.961	0.24a	23.33p	2,116.31	0.000 0.555 0.1056 3.610(1)
3.922	0.22a	24.23p	2,116.31	0.000 0.578 0.1145 Marg Inv.
3.846	0.17a	25.83p	2,116.32	0.000 0.618 0.1312 3.253(1)
3.718	0.11a	28.33p	2,116.32	0.000 0.663 0.1593 2.891(1)
3.580	0.08a	30.83p	2,116.31	0.000 0.689 0.1888 2.528(1)
3.431	0.07a	33.33p	2,116.40	0.000 0.700 0.2192 2.154(1)
3.313	0.07a	35.21p	2,116.43	0.000 0.703 0.2421 1.778(1)
3.272	0.08a	35.83p	2,116.44	0.000 0.702 0.2498 1.790(1)
3.103	0.11a	38.33p	2,116.44	0.000 0.698 0.2803 1.404(1)
2.925	0.16a	40.83p	2,116.40	0.000 0.689 0.3106 1.027(1)
2.758	0.23a	43.33p	2,116.39	0.000 0.678 0.3404 0.649(1)
2.541	0.31a	45.83p	2,116.32	0.000 0.661 0.3697 0.270(1)
2.401	0.37a	47.80p	2,116.41	0.000 0.644 0.3998 -0.000(1)

Distances in METERS: Specific Gravity = 1.025: Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 353.0 m.-MT was applied to artificially modify the CG.

Critical Point: LCG = 3.115a TCG = 0.027p VCG = 5.738  
 (1) CAPTAIN'S WINDO FLOOD 7.430a 7.000 11.300

Damage Case No.400 - Comp 43-52 @ 1.5 m  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG. 49



	DAMAGE STABILITY CRITERIA		Min/Max	Attained
(1) GM at Equilibrium	>	0.050 m.	1.316 P	
(2) Absolute Angle at Equilibrium	<	15.00 deg	0.61 P	
(3) Absolute Angle at Deck/margin Inversion	>	0.00 deg	24.23 P	

NOTE: Helicopter included in case (not depicted in diagram above).

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GMS 11.80 CGCS JOHN P. Tully  
 NO.401 - COMPT 43-52 @ 2.0M - LOADLINE DEPARTURE CONDITION

HEIGHT and DISPLACEMENT STATUS  
 USN DRAFT draft: 4.208 @ 30.25t, 4.598 @ 24.13t  
 Trim: Aft 0.490/24.875, Heel: Stbd 0.39 deg.

Item	Height (MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	2.595a	0.046a	4.457
AFT STORES	5.00	22.350a	1.330p	4.556
TRD STORES	3.00	30.000F	0.000	8.500
Galley Stores	14.00	20.350F	0.000	4.000
Gas in Jettisonable TK	0.88	20.250a	8.100p	11.000
40 Crew and Efforts @ 125	3.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	18.499a	0.850a	8.100
UPPER DECK CONTAINER	4.38	26.100a	4.450p	8.400
POCSLE DECK MACHINERY	8.80	5.320a	4.670a	11.000
POCSLE DECK CONTAINER	3.84	14.350a	5.480a	11.300
HELICOPTER	2.50	21.000F	0.000	14.300
ROSETTE EQUIPMENT	0.90	0.700a	5.600a	9.000
Total Fixed	1,689.97	2.659a	0.069a	6.543

Item	Load	SpGr	Height (MT)	LCG	TCG	VCG	FSN
TK2_WB.P	0.200	1.025	16.41	13.074F	1.819p	1.019	16.57
TK3_FW.S	0.950	0.840	17.32	8.131F	3.440p	1.502	17.03
TK4_FO.P	0.980	0.840	54.65	4.093F	4.147p	2.885	27.22
TK5_FO.S	0.980	0.840	54.65	4.093F	4.148a	2.885	27.22
TK6_FO.P	1.000	0.840	34.66	0.465a	3.066p	1.248	0.90
TK8_FO.S	1.000	1.025	42.29	0.465a	3.066a	1.248	0.32
TK6_FO.S	0.980	0.840	24.13	7.357a	4.583p	1.460	23.40
TK6_FO.S	0.980	0.840	25.13	7.357a	4.597a	1.460	23.38
TK8_FO.P	0.980	0.840	37.72	21.911a	4.106p	3.829	35.61
TK8_FO.S	0.980	0.840	37.72	21.911a	4.113a	3.829	35.47
TK9_FO.P	0.980	0.840	23.84	26.036a	2.747p	4.095	52.88
TK9_FO.S	0.980	0.840	23.84	26.096a	2.780a	4.095	53.97
TK1_FW.P	0.980	1.000	16.54	17.346F	1.514p	1.322	6.82
TK1_FW.S	0.980	1.000	18.56	17.343F	1.522a	1.322	8.89
CPP OIL.P	0.500	0.890	0.62	11.165a	0.895p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.100a	1.296a	0.404	0.95
SENGOLE.S	0.100	0.890	0.49	18.703a	5.311a	3.285	0.77
CONTROL.C	0.044	1.025	7.62	0.011F	0.103a	1.001	41.70
Permeability override:	0.880						
TOTAL P	0.980	0.840	9.59	18.689a	3.499p	3.929	3.44
Total Tanks			443.73	4.743a	0.233p	3.522	414.33
Total Weight			2,133.73	3.093a	0.310a	5.707	

Item	Displ (MT)	LCG	TCG	VCG	RefHgt	
HULL	7.025	2,133.54	3.120a	0.031a	3.725	-4.464

Righting Arms: 0.000 0.700a  
 Distances in METERS: ----- Moments in m.-MT.

FRESHWATER STATUS  
 USN DRAFT draft: 4.208 @ 30.25t, 4.598 @ 24.13t  
 Trim: Aft 0.490/24.875, Heel: Stbd 0.39 deg.  
 Least freeboard is 2.815 m. located at 32.130a  
 Least extra freeboard (to margin line) is 2.739 m. located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GMS 11.80 CGCS JOHN P. Tully  
 NO.401 - COMPT 43-52 @ 2.0M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.490/24.875, Heel: Stbd 0.39 deg., VCG = 5.707

LCF Displacement Buoyancy-Ctr. Height/ Moment/  
 Draft---Height (MT)---LCB---VCG---cm trim---LCF---cm trim---GML---GMT  
 4.530 2,133.54 3.120a 2.720 7.09 5.756a 29.24 75.20 1,306  
 Distances in METERS.-----Specific Gravity = 1.025.-----Moment in m.-MT.  
 Trim is per 54.88m.

Dist to from DEK DRAFT, True Free Surface included.

RIGHTING ARM vs HEEL ANGLE  
 Total CG: LCG = 3.093a TCG = 0.010a VCG = 5.707  
 Free Surface Adjustment: 0.194  
 Adjusted CG: LCG = 3.055a TCG = 0.009a VCG = 5.901

Depth	Trim	Heel	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight (MT)	In Trim-In Heel	Area
4.464	0.51a	0.38a	2,134.03	0.000 0.000	0.0000 6.718(1)
4.457	0.51a	2.88a	2,133.53	0.000 0.057	0.0013 6.407(1)
4.439	0.51a	5.39a	2,133.33	0.000 0.115	0.0050 6.085(1)
4.412	0.48a	7.89a	2,133.73	0.000 0.174	0.0113 5.754(1)
4.373	0.47a	10.39a	2,133.73	0.000 0.232	0.0202 5.415(1)
4.323	0.44a	12.89a	2,133.73	0.000 0.292	0.0314 5.071(1)
4.282	0.40a	15.39a	2,133.72	0.000 0.356	0.0457 4.720(1)
4.189	0.38a	17.89a	2,133.73	0.000 0.418	0.0625 4.366(1)
4.125	0.30a	20.39a	2,133.73	0.000 0.484	0.0832 4.009(1)
4.028	0.23a	22.89a	2,133.73	0.000 0.552	0.1068 3.650(1)
3.915	0.20a	24.07a	2,133.72	0.000 0.582	0.1164 Marg Imm.
3.893	0.16a	25.39a	2,133.73	0.000 0.616	0.1303 3.293(1)
3.747	0.13a	27.89a	2,133.73	0.000 0.664	0.1583 2.930(1)
3.631	0.07a	30.39a	2,133.73	0.000 0.693	0.1879 2.565(1)
3.455	0.06a	32.89a	2,133.80	0.000 0.707	0.2185 2.194(1)
3.328	0.07a	35.39a	2,133.83	0.000 0.711	0.2495 1.820(1)
3.286	0.07a	36.02a	2,133.84	0.000 0.710	0.2572 1.728(1)
3.162	0.10a	37.58a	2,134.01	0.000 0.707	0.2804 1.444(1)
2.965	0.15a	40.39a	2,133.83	0.000 0.699	0.3222 1.066(1)
2.798	0.21a	43.89a	2,133.73	0.000 0.688	0.3414 0.687(1)
2.605	0.30a	48.39a	2,133.79	0.000 0.673	0.3711 0.308(1)
2.466	0.37a	47.41a	2,133.92	0.000 0.654	0.3944 -0.000(1)

Distances in METERS.-----Specific Gravity = 1.025.-----Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 414.3 m.-MT was applied to artificially modify the CG.

Critical Point:-----LCF-----TCG-----VCG  
 712 CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300



01/21/09 08:53:40 STX Canada Marine, Inc.  
 CGS 11.50 COGS JOHN P. Tully  
 NO.402 - COMPT 43-52 @ 2.5M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.283 @ 30.25t, 4.720 @ 24.63t  
 Trim: Aft 0.437/54.87t, Heel: Scbd 0.84 deg.

Part	Weight (MT)	LCG	TCG	VCG	PSH		
LIGHT SHIP	1,624.60	2,598m	0.048g	6.457			
AFT STORES	5.00	22.350a	1.330p	6.556			
FWL STORES	3.00	30.000f	0.000	6.500			
Galley Stores	14.00	20.250f	0.000	6.000			
Gas in Jettisonable TK	0.68	20.250a	0.100p	11.000			
40 Bow and Effects @ 125	5.00	0.000	8.000	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.050a	8.130			
UPPER DECK CONTAINER	4.35	26.100a	4.650p	8.600			
FOCSLE DECK MACHINERY	8.98	8.320a	4.870a	11.000			
FOCSLE DECK CONTAINER	3.86	14.350a	3.980a	11.300			
HELICOPTER	2.30	21.000f	0.000	14.300			
ROSETTE EQUIPMENT	0.90	0.700a	5.600a	9.000			
Total fixed----->	1,689.97	2,459a	0.069g	6.543			
Load	SpG	Height (MT)	LCG	TCG	VCG	PSH	
TK2_WB.P	0.200	1.025	16.62	13.677f	1.811p	1.019	16.35
TK3_FO.P	0.950	0.840	17.32	8.136f	3.432p	1.502	16.97
TK4_FO.P	0.980	0.840	54.65	4.091f	4.137p	2.885	27.19
TK4_FO.S	0.980	0.840	54.65	4.090f	4.152a	2.885	27.31
TK5_FO.P	1.000	0.840	34.66	0.465a	3.066p	1.248	0.00
TK5_FO.S	1.000	1.025	42.29	0.465a	3.066a	1.248	0.09
TK6_FO.P	0.980	0.840	24.13	7.350a	4.575p	1.460	19.88
TK6_FO.S	0.980	0.840	24.13	7.350a	4.604a	1.460	20.11
TK8_FO.P	0.980	0.840	37.71	21.910a	4.098p	3.829	32.11
TK8_FO.S	0.980	0.840	37.71	21.909a	4.126a	3.829	32.97
TK9_FO.P	0.980	0.840	23.85	26.095a	2.733p	4.095	28.64
TK9_FO.S	0.980	0.840	23.84	26.095a	2.784a	4.095	29.30
TK1_FW.P	0.980	1.000	16.56	17.368f	1.513p	1.322	6.85
TK1_FW.S	0.980	1.000	16.56	17.368f	1.525a	1.322	5.45
CPP_OIL.P	0.500	0.890	0.62	11.185a	0.893p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.097a	1.307a	0.404	1.00
SEWAGE.S	0.100	0.880	0.49	18.701a	5.323a	3.285	0.77
CONTROL.C	0.208	1.025	35.93	0.168a	0.697a	1.988	933.15
Permeability override: 0.850							
FODAY.P	0.980	0.840	9.58	18.689a	3.485p	5.929	3.49
Total Tanks----->			472.05	4.476a	0.143p	2.506	1201.94
Total Weight----->			2,162.02	3.055a	0.022a	5.662	
HULL	1.025		2,162.04	3.079a	0.065a	2.752	-6.509
Righting Arms:				0.000	0.000a		
Distances in METERS----->							Moments in m.-MT.

FREESBOARD STATUS

USK DRAFT draft: 4.283 @ 30.25t, 4.720 @ 24.63t  
 Trim: Aft 0.437/54.87t, Heel: Scbd 0.84 deg.  
 Least freeboard is 2.746 m. located at 32.130a  
 Least extra freeboard (to margin line) is 2.670 m. located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 CGS 11.50 COGS JOHN P. Tully  
 NO.402 - COMPT 43-52 @ 2.5M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES

Trim: Aft 0.437/54.87t, Heel: Scbd 0.84 deg., VCG = 5.662

LCF	Displacement	Buoyancy-Ctr.	Weight/	Moment/				
Draft	Weight (MT)	LCB	VCB	LCF on trim	GML	GMT		
4.569	2,162.04	3.079a	2.752	7.11	5.717a	29.38	74.58	0.966

Distances in METERS.-----Specific Gravity = 1.025.-----Moment in m.-MT.  
 Trim is per 54.88m.

Draft is from USK DRAFT. True Free Surface Included.

RIGHTING ARMS vs HEEL ANGLE

Total CG: LCG = 3.055a TCG = 0.022a VCG = 5.662  
 Free Surface Adjustment: 0.556  
 Adjusted CG: LCG = 3.060a TCG = 0.014a VCG = 6.217

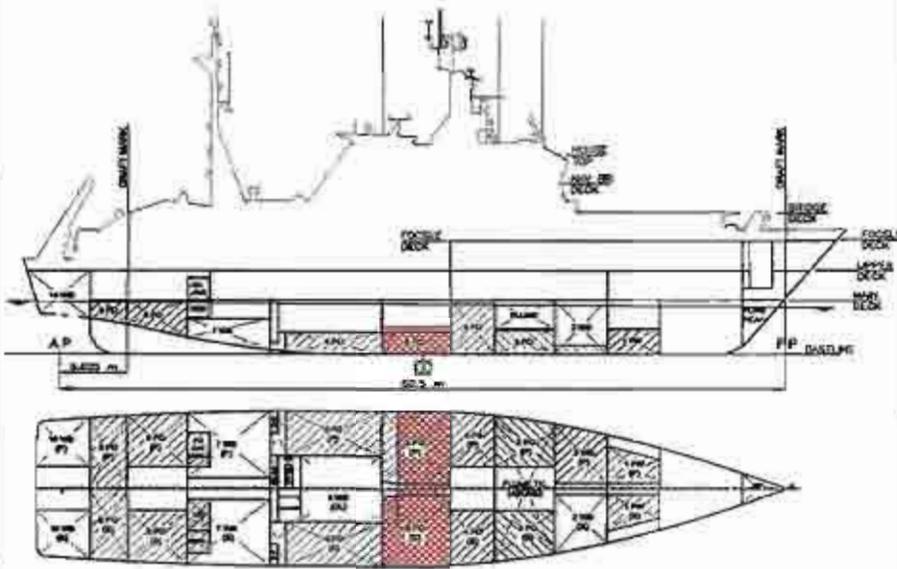
Origin	Degrees of	Displacement	Righting Arms	Flood Ft			
Depth	Trim	Heel	in Trim--in Heel	Area	Height		
4.509	0.46a	0.84a	2,162.52	0.000	0.000	0.0000	4.624(1)
4.900	0.46a	3.34a	2,162.07	0.000	0.043	0.0009	4.311(1)
4.480	0.46a	5.84a	2,161.61	0.000	0.086	0.0037	5.988(1)
4.450	0.44a	8.34a	2,162.02	0.000	0.130	0.0085	5.655(1)
4.409	0.42a	10.84a	2,162.03	0.000	0.174	0.0151	5.316(1)
4.357	0.39a	13.34a	2,162.02	0.000	0.220	0.0237	4.970(1)
4.293	0.35a	15.84a	2,162.02	0.000	0.268	0.0344	4.619(1)
4.218	0.30a	18.34a	2,162.02	0.000	0.319	0.0477	4.264(1)
4.130	0.24a	20.84a	2,162.02	0.000	0.373	0.0623	3.907(1)
4.029	0.18a	23.34a	2,162.02	0.000	0.428	0.0797	3.549(1)
4.009	0.17a	23.80a	2,162.02	0.000	0.437	0.0831	Mary Inn.
3.913	0.11a	25.84a	2,162.03	0.000	0.478	0.0995	3.191(1)
3.766	0.07a	28.34a	2,162.03	0.000	0.510	0.1211	2.827(1)
3.649	0.04a	30.84a	2,162.06	0.000	0.524	0.1438	2.458(1)
3.571	0.04a	32.19a	2,162.08	0.000	0.525	0.1561	2.257(1)
3.501	0.04a	33.34a	2,162.09	0.000	0.524	0.1666	2.085(1)
3.344	0.06a	35.84a	2,162.19	0.000	0.515	0.1893	1.709(1)
3.175	0.10a	38.34a	2,162.17	0.000	0.500	0.2115	1.331(1)
2.997	0.16a	40.84a	2,162.03	0.000	0.481	0.2329	0.952(1)
2.810	0.23a	43.34a	2,161.99	0.000	0.460	0.2534	0.572(1)
2.615	0.32a	45.84a	2,161.81	0.000	0.433	0.2729	0.191(1)
2.518	0.37a	47.09a	2,162.29	0.000	0.415	0.2821	-0.001(1)

Distances in METERS.-----Specific Gravity = 1.025.-----Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 1201.9 m.-MT was applied to artificially modify the CG.

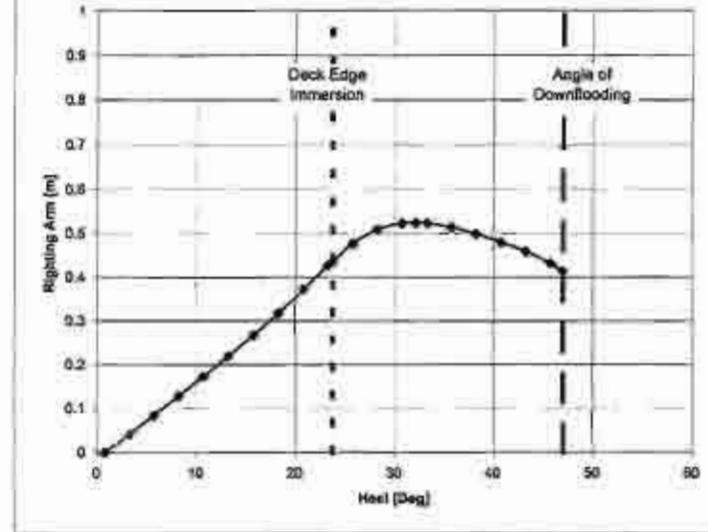
Critical Point-----LCB-----TCP-----VCP  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

**Damage Case No.402 - Comp 43-52 @ 2.5 m**  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG. 48



NOTE: Helicopter included in mass (not depicted in diagram above).

**Damage Case No.402 - Comp 43-52 @ 2.5 m**



LIMIT	DAMAGE STABILITY CRITERIA	Min/Max	Attained
(1)	GM at Equilibrium	≥ 0.050 m	0.566 m
(2)	Absolute Angle at Equilibrium	< 13.00 deg	0.84 °
(3)	Absolute Angle at Deck/margin Immersion	> 0.00 deg	23.80 °

01/21/09 08:53:40 STX Canada Marine, Inc.  
 CGS JOHN P. Tully  
 NO.403 - COMPT 43-52 @ 3.0M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.358 @ 30.25t, 4.741 @ 24.63t  
 Trim: Aft 0.383/54.875, Heel: Stbd 1.10 deg.

Part	Weight(MT)	LCG	TCG	VCG	Dist		
LIGHT SHIP	1,821.60	2.599a	0.048a	6.457			
APT STORES	5.00	22.350a	1.330p	4.556			
FWD STORES	1.00	30.000p	0.000	0.500			
Galley Stores	14.00	20.250a	0.000	6.000			
Gas in Jettableable TX	0.58	20.250a	6.100p	11.000			
4D Crew and Effects @ 123	5.00	0.000	0.000	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.050a	8.130			
UPPER DECK CONTAINER	4.35	26.100a	4.350p	8.000			
FOCSLE DECK MACHINERY	8.98	8.320a	4.670a	11.000			
FOCSLE DECK CONTAINER	3.86	14.350a	5.480a	11.300			
HELICOPTER	2.50	21.000p	0.000	14.300			
ROSETTE EQUIPMENT	0.90	0.700a	3.600a	9.000			
Total Fixed	1,889.97	2.459a	0.069a	6.563			
	Load	SpGr	Weight(MT)	LCG	TCG	VCG	Dist
TK2_WB.P	0.200	1.025	16.62	13.079p	1.807p	1.019	16.23
TK3_PO.P	0.250	0.840	17.32	8.339p	3.427p	1.502	16.94
TK4_PO.P	0.980	0.840	54.65	4.091a	4.135p	2.885	27.18
TK5_PO.S	0.980	0.840	54.65	4.091a	4.154a	2.863	27.33
TK6_PO.P	1.000	0.840	34.66	0.465a	3.666p	1.248	0.00
TK5_PO.S	1.000	1.025	62.29	0.465a	3.066a	1.248	0.06
TK6_PO.P	0.980	0.840	24.13	7.345a	4.571p	1.481	15.96
TK6_PO.S	0.980	0.840	24.13	7.345a	4.609a	1.480	15.87
TK8_PO.P	0.980	0.840	37.71	21.909a	4.095p	3.829	28.10
TK8_PO.S	0.980	0.840	37.71	21.909a	4.130a	3.829	28.91
TK9_PO.P	0.980	0.840	23.84	26.099a	2.708p	4.095	19.01
TK9_PO.S	0.980	0.840	23.85	26.099a	2.799a	4.096	19.02
TK1_FW.S	0.980	1.000	16.56	17.370p	1.311p	1.322	6.28
TK1_FW.S	0.980	1.000	16.56	17.364p	1.526a	1.322	4.97
CPP_OIL.P	0.500	0.890	0.62	11.185a	0.889p	2.475	6.58
SLUDGE.S	0.223	1.000	0.77	11.095a	1.313a	0.404	1.03
SEWAGE.S	0.100	0.800	0.49	18.899a	5.331a	2.285	0.77
CONTROL.C	0.373	1.025	64.35	0.170a	0.624a	2.328	937.63
Permeability overrides: 0.850							
PODMY.P	0.980	0.840	9.56	18.888a	1.493p	5.929	3.49
Total Tanks			500.48	4.233a	0.102p	2.520	1168.82
Total Weight			2,190.45	3.018a	0.030a	5.624	
	Displ(MT)	LCG	TCG	VCG	Dist		
HULL	1.025	2,190.28	2.037a	0.089a	2.775	-4.554	
Righting Arms:			0.401	0.008a			
Distances in METERS							Moments in m.-MT.

FREEBOARD STATUS  
 USK DRAFT draft: 4.358 @ 30.25t, 4.741 @ 24.63t  
 Trim: Aft 0.383/54.875, Heel: Stbd 1.10 deg.  
 Least freeboard is 2.702 m. located at 32.130a  
 Least extra freeboard (to margin line) is 2.626 m. located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 CGS JOHN P. Tully  
 NO.403 - COMPT 43-52 @ 3.0M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.383/54.875, Heel: Stbd 1.10 deg., VCG = 5.624

LCF Displacement Buoyancy-Ctr. Weight/ Moment/  
 Draft---Weight(MT)---LCG---VCG---cm---LCF---cm trim---GML---DMT  
 4.608 2,190.26 3.037a 2.775 7.12 5.676a 29.55 74.03 1.004  
 Distances in METERS.---Specific Gravity = 1.025.---Moment in m.-MT.  
 Trim is per 54.88m.  
 Draft is from USK DRAFT. True Free Surface included.

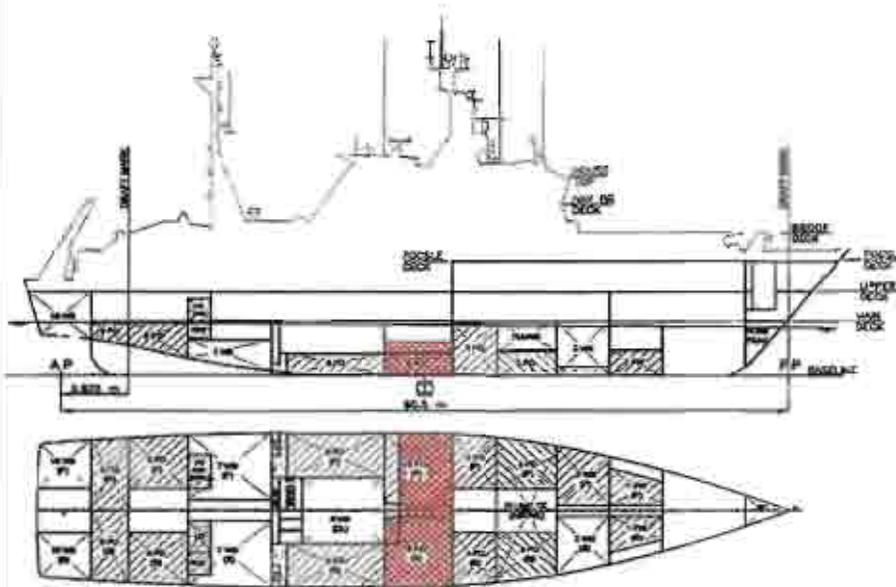
RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 3.018a TCG = 0.030a VCG = 5.624  
 Free Surface Adjustment: 0.534  
 Adjusted CG: LCG = 3.022a TCG = 0.019a VCG = 6.157

Origin	Degree of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight(MT)	Area
4.554	0.41a	1.10a	2,190.70	0.000
4.544	0.40a	1.69a	2,190.43	0.000
4.523	0.40a	5.10a	2,190.06	0.000
4.452	0.39a	8.00a	2,190.65	0.000
4.449	0.37a	11.10a	2,190.41	0.000
4.391	0.34a	13.60a	2,190.41	0.000
4.330	0.30a	16.10a	2,190.46	0.000
4.293	0.25a	18.60a	2,190.46	0.000
4.163	0.20a	21.10a	2,190.43	0.000
4.062	0.13a	23.54a	2,190.43	0.000
4.060	0.13a	23.60a	2,190.44	0.000
3.943	0.07a	26.10a	2,190.46	0.000
3.816	0.03a	28.60a	2,190.46	0.000
3.678	0.02a	31.10a	2,190.46	0.000
3.580	0.02a	32.77a	2,190.50	0.000
3.530	0.02a	33.60a	2,190.51	0.000
3.371	0.05a	36.10a	2,190.64	0.000
3.203	0.10a	38.60a	2,190.61	0.000
3.024	0.18a	41.10a	2,190.52	0.000
2.834	0.24a	43.60a	2,190.30	0.000
2.642	0.34a	46.10a	2,189.97	0.000
2.591	0.36a	46.78a	2,190.04	0.000

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load moments were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 1188.8 m.-MT was applied to artificially modify the CG.

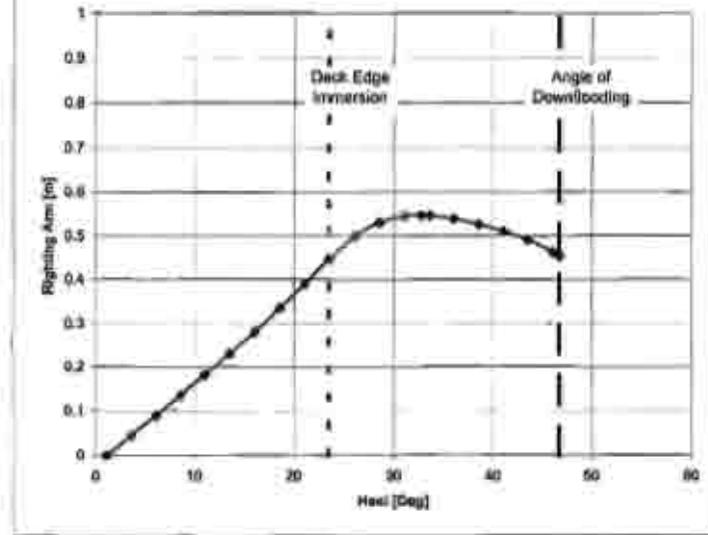
Critical Point: LCF---TCG---VCG  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

Damage Case No.403 - Comp 43-52 @ 3.0 m  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG. 48



NOTE: Helicopter included in case not depicted in diagram above.

Damage Case No.403 - Comp 43-52 @ 3.0 m



NO.	DAMAGE STABILITY CRITERIA	Min/Max	Attained
(1)	GM at Equilibrium	> 0.050 m	1.004 m
(2)	Absolute Angle at Equilibrium	< 15.00 Deg	1.10 P
(3)	Absolute Angle at Deck/Margin Inversion	> 0.00 Deg	23.34 D

01/21/09 08:53:40 STX Canada Marine, Inc.  
GHS 11.50 CCGS JOHN P. Tully  
NO.404 - COMPT 43-52 @ 4.0M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
USK DRAFT draft: 4.506 @ 30.25t, 4.789 @ 24.63t  
Trim: Aft 0.278/54.875, Heel: Stbd 1.58 deg.

Part	Weight(MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	2.955a	0.048a	6.457
AFT STORES	5.00	22.350a	1.330p	6.556
FWD STORES	3.00	30.000f	0.000	8.500
Galley Stores	14.00	20.250f	0.000	6.000
Gas in Reasonable Tr	0.68	20.250a	6.100p	11.000
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490a	0.050a	6.130
UPPER DECK CONTAINER	4.35	26.100a	4.650p	6.600
POCSLE DECK MACHINERY	8.98	6.320a	4.670a	11.000
POCSLE DECK CONTAINER	3.86	14.350a	5.480a	11.300
HELICOPTER	2.50	21.000f	0.000	14.300
ROSETTE EQUIPMENT	0.90	0.700a	5.600a	9.000
Total Fixed	1,689.97	2.459a	0.069a	6.563

Load	SpCr	Weight(MT)	LCG	TCG	VCG	PSH	
TK2_RR.P	0.200	1.025	16.62	13.083f	1.798p	1.019	16.00
TK3_FO.P	0.950	0.840	17.32	8.344f	3.419p	1.502	16.86
TK4_FO.P	0.980	0.840	54.66	4.092f	4.131p	2.885	27.11
TK4_FO.S	0.980	0.840	54.66	4.091f	4.158a	2.885	27.11
TK5_FO.2	1.000	0.840	34.66	0.465a	3.066p	1.249	0.00
TK5_FO.S	1.000	1.025	42.29	0.465a	3.066a	1.248	0.03
TK6_FO.P	0.980	0.840	24.13	7.333a	4.566p	1.461	7.75
TK6_FO.S	0.980	0.840	24.13	7.333a	4.813a	1.460	7.90
TK8_FO.P	0.980	0.840	37.71	21.906a	4.069p	3.829	13.34
TK8_FO.S	0.980	0.840	37.72	21.905a	4.135a	3.829	13.43
TK9_FO.P	0.980	0.840	23.84	26.093a	2.723p	4.098	10.88
TK9_FO.S	0.980	0.840	23.85	26.093a	2.804a	4.096	10.90
TK1_FW.P	0.980	1.000	16.56	17.373f	1.507p	1.322	5.46
TK1_FW.S	0.980	1.000	16.56	17.366f	1.528a	1.322	3.95
CRP_OIL.P	0.500	0.890	0.62	11.185a	0.883p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.091a	1.325a	0.405	1.10
SEWAGE.S	0.100	0.890	0.49	18.696a	5.344a	3.285	0.77
CONTROL.C	0.702	1.025	121.32	0.170a	0.577a	2.879	846.91
Permeability override:	0.850						
PODAY.P	0.980	0.840	9.58	18.688a	3.490p	5.929	3.24
Total Tanks			557.47	3.814a	0.035p	2.621	1121.19
Total Weight			2,247.44	2.945a	0.043a	5.570	

HULL	1.025	Displ(MT)	LCG	TCG	VCG	Righting Arms
		2,247.39	2,959a	0.119a	2.823	0.000 0.000a

Distances in METERS-----Specific Gravity = 1.025-----Moment in m.-MT.

RIGHTING ARMS vs HEEL ANGLE  
Total CG: LCG = 2.945a TCG = 0.043a VCG = 5.570  
Free Surface Adjustment: 0.499  
Adjusted CG: LCG = 2.940a TCG = 0.029a VCG = 6.069

RIGHTING ARMS vs HEEL ANGLE  
Total CG: LCG = 2.945a TCG = 0.043a VCG = 5.570  
Free Surface Adjustment: 0.499  
Adjusted CG: LCG = 2.940a TCG = 0.029a VCG = 6.069

Origin Degrees of Displacement Righting Arms Flood Pt  
Depth--Trim--Heel--Weight(MT)--in Trim--in Heel--Area--Height  
4.644 0.29a 1.58a 2,247.47 0.000 0.000 0.0000 6.419(1)  
4.631 0.29a 4.08a 2,247.47 0.000 0.047 0.0010 6.102(1)  
4.608 0.28a 6.58a 2,247.24 0.000 0.095 0.0041 5.777(1)  
4.574 0.28a 9.08a 2,247.44 0.000 0.143 0.0093 5.442(1)  
4.528 0.26a 11.58a 2,247.44 0.000 0.192 0.0166 5.102(1)  
4.471 0.23a 14.08a 2,247.44 0.000 0.243 0.0261 4.755(1)  
4.403 0.20a 16.58a 2,247.44 0.000 0.297 0.0379 4.403(1)  
4.322 0.15a 19.08a 2,247.44 0.000 0.354 0.0521 4.048(1)  
4.229 0.10a 21.58a 2,247.44 0.000 0.414 0.0688 3.691(1)  
4.168 0.07a 23.08a 2,247.44 0.000 0.450 0.0798 Marg Imm.  
4.121 0.04a 24.08a 2,247.44 0.000 0.476 0.0882 3.333(1)  
4.003 0.01a 26.58a 2,247.44 0.000 0.526 0.1101 2.970(1)  
3.876 0.03a 29.08a 2,247.44 0.000 0.557 0.1337 2.601(1)  
3.737 0.03a 31.58a 2,247.56 0.000 0.572 0.1584 2.226(1)  
3.611 0.01a 33.71a 2,247.05 0.000 0.576 0.1797 1.906(1)  
3.508 0.01a 34.08a 2,247.47 0.000 0.576 0.1835 1.849(1)  
3.549 0.00a 34.71a 2,247.48 0.000 0.579 0.1898 1.754(1)  
3.429 0.04a 36.58a 2,247.81 0.000 0.571 0.2085 1.668(1)  
3.259 0.10a 39.08a 2,247.51 0.000 0.561 0.2332 1.086(1)  
3.079 0.18a 41.58a 2,247.46 0.000 0.548 0.2574 0.703(1)  
2.891 0.27a 44.08a 2,247.06 0.000 0.530 0.2810 0.320(1)  
2.731 0.35a 46.15a 2,247.62 0.000 0.508 0.2996 -0.000(1)

Distances in METERS-----Specific Gravity = 1.025-----Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 1121.2 m.-MT was applied to artificially modify the CG.

CRITICAL POINT-----LCG-----TCP-----VCG  
1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

FREEBOARD STATUS  
USK DRAFT draft: 4.506 @ 30.25t, 4.785 @ 24.63t  
Trim: Aft 0.278/54.875, Heel: Stbd 1.58 deg.  
Least freeboard is 2.614 m, located at 32.130a  
Least extra freeboard (to margin line) is 2.539 m, located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
GHS 11.50 CCGS JOHN P. Tully  
NO.404 - COMPT 43-52 @ 4.0M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
USK DRAFT draft: 4.506 @ 30.25t, 4.789 @ 24.63t  
Trim: Aft 0.278/54.875, Heel: Stbd 1.58 deg.

HYDROSTATIC PROPERTIES  
Trim: Aft 0.278/54.875, Heel: Stbd 1.58 deg., VCG = 5.570

LCF	Displacement	Subyancy-Ctr.	Weight/	Moment/
Draft	Weight(MT)	LCG	VCG	cm
4.688	2,247.39	2.959a	2.823	7.15

Distances in METERS-----Specific Gravity = 1.025-----Moment in m.-MT.  
Trim is per 54.98m.

Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARMS vs HEEL ANGLE  
Total CG: LCG = 2.945a TCG = 0.043a VCG = 5.570  
Free Surface Adjustment: 0.499  
Adjusted CG: LCG = 2.940a TCG = 0.029a VCG = 6.069

Origin Degrees of Displacement Righting Arms Flood Pt  
Depth--Trim--Heel--Weight(MT)--in Trim--in Heel--Area--Height  
4.644 0.29a 1.58a 2,247.47 0.000 0.000 0.0000 6.419(1)  
4.631 0.29a 4.08a 2,247.47 0.000 0.047 0.0010 6.102(1)  
4.608 0.28a 6.58a 2,247.24 0.000 0.095 0.0041 5.777(1)  
4.574 0.28a 9.08a 2,247.44 0.000 0.143 0.0093 5.442(1)  
4.528 0.26a 11.58a 2,247.44 0.000 0.192 0.0166 5.102(1)  
4.471 0.23a 14.08a 2,247.44 0.000 0.243 0.0261 4.755(1)  
4.403 0.20a 16.58a 2,247.44 0.000 0.297 0.0379 4.403(1)  
4.322 0.15a 19.08a 2,247.44 0.000 0.354 0.0521 4.048(1)  
4.229 0.10a 21.58a 2,247.44 0.000 0.414 0.0688 3.691(1)  
4.168 0.07a 23.08a 2,247.44 0.000 0.450 0.0798 Marg Imm.  
4.121 0.04a 24.08a 2,247.44 0.000 0.476 0.0882 3.333(1)  
4.003 0.01a 26.58a 2,247.44 0.000 0.526 0.1101 2.970(1)  
3.876 0.03a 29.08a 2,247.44 0.000 0.557 0.1337 2.601(1)  
3.737 0.03a 31.58a 2,247.56 0.000 0.572 0.1584 2.226(1)  
3.611 0.01a 33.71a 2,247.05 0.000 0.576 0.1797 1.906(1)  
3.508 0.01a 34.08a 2,247.47 0.000 0.576 0.1835 1.849(1)  
3.549 0.00a 34.71a 2,247.48 0.000 0.579 0.1898 1.754(1)  
3.429 0.04a 36.58a 2,247.81 0.000 0.571 0.2085 1.668(1)  
3.259 0.10a 39.08a 2,247.51 0.000 0.561 0.2332 1.086(1)  
3.079 0.18a 41.58a 2,247.46 0.000 0.548 0.2574 0.703(1)  
2.891 0.27a 44.08a 2,247.06 0.000 0.530 0.2810 0.320(1)  
2.731 0.35a 46.15a 2,247.62 0.000 0.508 0.2996 -0.000(1)

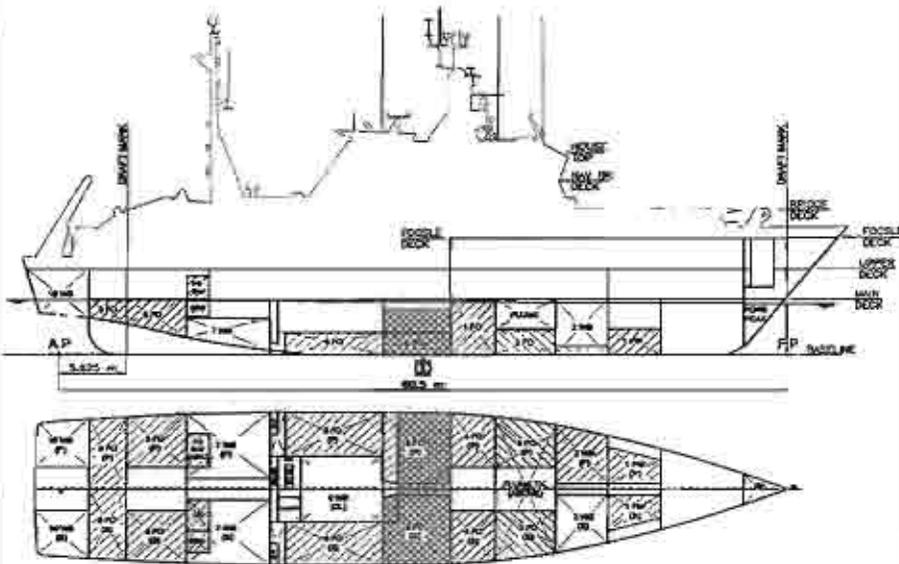
Distances in METERS-----Specific Gravity = 1.025-----Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 1121.2 m.-MT was applied to artificially modify the CG.

CRITICAL POINT-----LCG-----TCP-----VCG  
1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

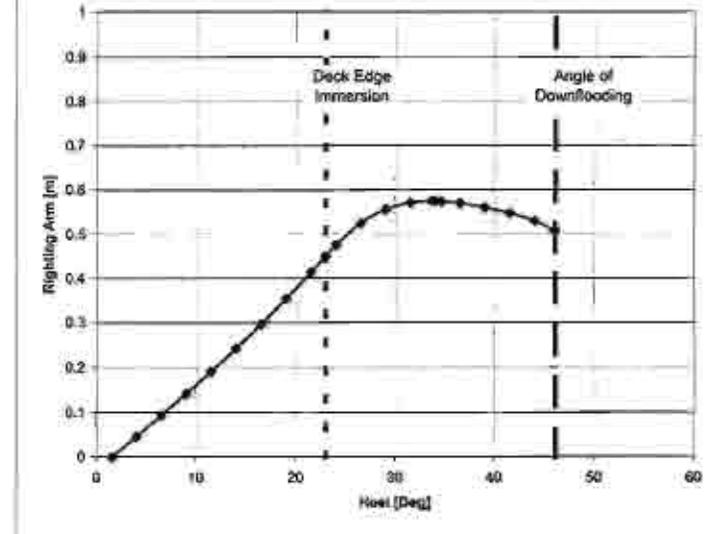
FREEBOARD STATUS  
USK DRAFT draft: 4.506 @ 30.25t, 4.785 @ 24.63t  
Trim: Aft 0.278/54.875, Heel: Stbd 1.58 deg.  
Least freeboard is 2.614 m, located at 32.130a  
Least extra freeboard (to margin line) is 2.539 m, located at 32.130a

**Damage Case No.404 - Comp 43-52 @ 4.0 m**  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG.48



NOTE: Helicopter included in case not depicted in diagram above.

**Damage Case No.404 - Comp 43-52 @ 4.0 m**



LIN	DAMAGE STABILITY CRITERIA	Min/Max	Attained
(1)	G <sub>M</sub> at Equilibrium	> 0.050 m	1.054 P
(2)	Absolute Angle at Equilibrium	< 15.00 deg	1.58 P
(3)	Absolute Angle at Deck/margin Immersion	> 0.00 deg	23.04 P

01/21/08 08:53:40 STX Canada Marine, Inc.  
 0009 JORD P. Tully  
 NO.405 - COMPT 43-52 & 4.5M - LOADING DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.588 @ 30.25t, 4.007 @ 24.43t  
 Trim: Aft 0.227/54.875, Heel: Stbd 1.81 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	2.585m	0.246m	8.427
AFT STORES	5.00	22.350m	1.230m	6.514
FWO STORES	2.00	30.500m	0.000	8.500
Galley Stores	14.00	20.250m	0.000	8.000
Gas in Jettisonable Tank	0.88	20.250m	4.100m	11.000
40 Crane and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490m	0.000	8.130
UPPER DECK CONTAINERS	4.25	24.106m	4.550m	8.800
LOWER DECK MACHINERY	8.88	9.320m	4.470m	11.000
LOWER DECK CONTAINERS	3.84	14.320m	5.480m	11.300
HELICOPTER	2.50	21.000m	0.000	14.300
ROCKET EQUIPMENT	0.90	0.700m	3.600m	9.000
<b>Total Flood</b>	<b>1,689.57</b>	<b>2.650m</b>	<b>0.246m</b>	<b>8.513</b>

Part	Load	Spdz	Weight (MT)	LCG	TCG	VCG
TK2_WB.F	0.200	1.025	16.42	13.2842	1.7940	1.025
TK3_FO.F	0.990	0.940	17.32	8.3162	3.4190	1.500
TK5_FO.F	0.990	0.940	35.65	4.8522	8.1250	2.800
TK6_FO.S	0.990	0.940	34.85	4.2512	4.1400	2.500
TK5_FO.F	1.000	0.940	24.10	5.8430	3.0640	1.244
TK6_FO.S	1.000	1.025	42.28	0.4434	3.9644	1.244
TK6_FO.F	0.990	0.940	24.13	7.3304	4.9850	1.443
TK6_FO.S	0.990	0.940	24.13	7.3294	4.6154	1.443
TK8_FO.F	0.990	0.940	37.72	21.9054	0.9880	3.229
TK8_FO.S	0.990	0.940	37.72	21.9044	4.1374	3.829
TK9_FO.F	0.990	0.940	23.84	24.2934	2.7230	4.094
TK9_FO.S	0.990	0.940	23.84	24.2924	2.8004	4.094
TK1_FW.F	0.990	1.000	16.56	17.2734	1.5060	1.322
TK1_FW.S	0.990	1.000	16.56	17.2604	1.5294	1.322
CPV_OIL.F	0.330	0.890	0.63	11.1054	0.9790	0.433
BLUDGE.S	0.223	1.000	0.77	17.0234	1.3234	0.405
SWAGE.S	0.100	0.990	0.49	18.6954	5.3504	3.286
CONTRC.S	0.948	1.025	149.26	0.1694	0.2464	3.161
Permeability override: 0.950						
TODAY.F	0.990	0.940	9.58	18.0884	3.4490	5.929
<b>Total Tank</b>			<b>168.00</b>	<b>3.8554</b>	<b>0.0070</b>	<b>2.700</b>
<b>Total Weight</b>			<b>2,275.97</b>	<b>2.9104</b>	<b>0.2434</b>	<b>5.554</b>
<b>WLL</b>	1.025					

Distances in METERS: Righting Arms: 0.200 0.200m  
 Distances in METERS: Specific Gravity = 1.025, Area in m.-Rad.

PERFORMANCE STATUS  
 USK DRAFT draft: 4.588 @ 30.25t, 4.007 @ 24.43t  
 Trim: Aft 0.227/54.875, Heel: Stbd 1.81 deg.  
 Least freeboard is 2.572 m. located at 27.130m  
 Coast extra freeboard (to margin line) is 2.494 m. located at 22.110m

01/21/08 08:53:40 STX Canada Marine, Inc.  
 0009 JORD P. Tully  
 NO.405 - COMPT 43-52 & 4.5M - LOADING DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.227/54.875, Heel: Stbd 1.81 deg., VCG = 5.554

LCF Displacement	Buoyancy-Ctr. Weight/	Moment/
Draft	Height (MT)	on trim
4.728	2,275.97	2.921m 2.846
		7.18 5.567m 30.08 72.47
Distances in METERS: Specific Gravity = 1.025, Moment in m.-MT, Trim is per 54.88m.		

Draft is from USK DRAFT. True Free Surface Included.

WEIGHTING ARM vs HEEL ANGLE  
 Total CG: LCG = 2.912m TCG = 0.049m VCG = 5.554  
 Free Surface Adjustment: 0.467  
 Adjusted CG: LCG = 2.912m TCG = 0.034m VCG = 6.040

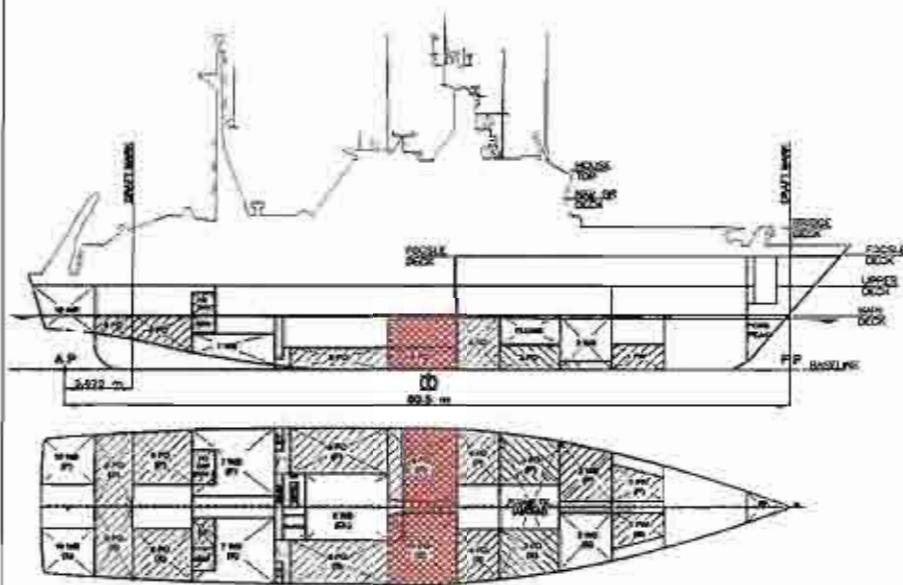
Origin	Degree of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Height (MT)	Area
4.488	0.21m	1.81m	2,275.99	0.000
4.478	0.21m	4.31m	2,275.99	0.000
4.450	0.21m	6.81m	2,276.00	0.000
4.414	0.22m	9.31m	2,275.45	0.000
4.368	0.20m	11.81m	2,275.97	0.000
4.305	0.18m	14.31m	2,275.97	0.000
4.239	0.15m	16.81m	2,275.97	0.000
4.167	0.10m	19.31m	2,275.97	0.000
4.081	0.05m	21.81m	2,275.97	0.000
4.021	0.03m	24.31m	2,275.97	0.000
4.123	0.00	26.81m	2,275.97	0.000
4.034	0.04	29.31m	2,275.97	0.000
3.906	0.03	31.81m	2,275.53	0.000
3.740	0.05	34.31m	2,276.16	0.000
3.419	0.02	36.81m	2,276.21	0.000
3.179	0.01	39.31m	2,275.96	0.000
3.459	0.03	41.81m	2,276.35	0.000
3.288	0.10	44.31m	2,276.05	0.000
3.108	0.19	46.81m	2,276.01	0.000
2.920	0.29	49.31m	2,275.52	0.000
2.805	0.38	51.81m	2,275.97	0.000

Distances in METERS: Specific Gravity = 1.025, Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 1197.8 m.-MT was applied to artificially modify the CG.

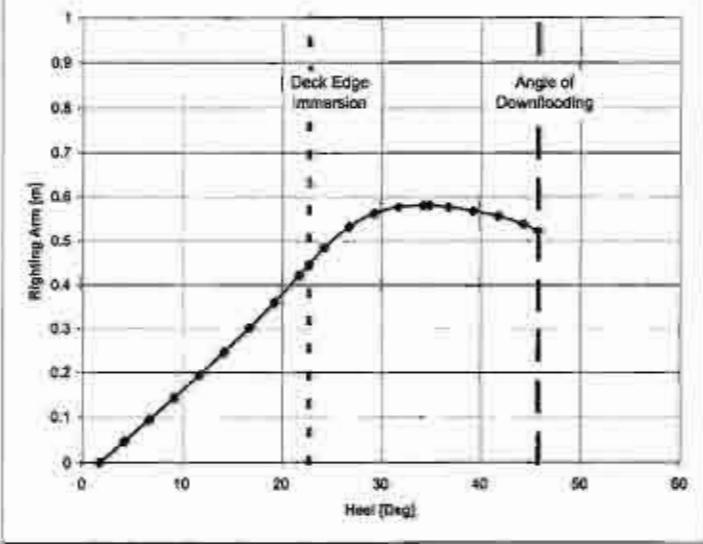
Critical Point: LCF: TCG: VCG  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630m 7.000 11.300

Damage Case No.405 - Comp 43-52 @ 4.5 m  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG.48



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.405 - Comp 43-52 @ 4.5 m



Item	Damage Stability Criteria	Min/Max	Attained
(1)	GZ at Equilibrium	> 0.050 m	1.083 F
(2)	Absolute Angle at Equilibrium	< 15.00 deg	1.91 F
(3)	Absolute Angle at Deck/margin Immersion	> 0.00 deg	22.77 F

01/21/09 08:53:48 STX Canada Marine, Inc.  
 DNS 11.50 CGCS JOHN P. Tully  
 NO.408 - COMPT 43-52 @ 4.75m - LOADLINE SIGNATURE CONDITION

WEIGHTS AND DISPLACEMENT STATUS  
 USK DRAFT draft: 0.418 @ 22.25T, 0.917 @ 24.61t  
 Trim: Att 0.201/14.87%, Heel: Stead 1.87 deg.

Part	Weight (MT)	LCG	TCG	VCG	GM		
LIGHT SHIP	1,424.80	2.595a	0.048a	0.437			
RTY STORES	5.00	22.300a	1.350a	0.506			
FWO STORES	1.20	30.000a	0.000	0.500			
Galley Stores	11.00	25.200a	0.000	0.000			
Sea in Jettisonable TK	0.88	20.200a	0.100a	11.900			
48 Case and Effects @ 1st	5.00	0.00a	0.00a	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.250a	8.130			
UPPER DECK CONTAINER	4.30	28.100a	4.850a	0.400			
PODSID DECK MACHINERY	8.99	8.110a	4.470a	11.030			
PODSID DECK CONTAINER	3.86	14.300a	5.480a	11.300			
HELICOPTER	2.50	21.400a	0.000	14.300			
ROCKET EQUIPMENT	0.90	0.700a	5.600a	9.000			
Total Fixed	1,899.87	1.853a	0.068a	0.543			
TKS No.1	Load	SpGr	Weight (MT)	LCG	TCG	VCG	GM
TKS No.1	0.100	1.025	16.82	13.081a	1.793a	1.020	11.86
TKS No.2	0.558	0.840	17.32	0.247a	3.415a	1.523	10.34
TKS No.3	0.940	0.840	54.65	0.052a	4.128a	2.885	28.95
TKS No.4	0.960	0.840	54.65	0.082a	4.151a	2.900	29.51
TKS No.5	1.000	0.840	24.84	0.465a	1.066a	1.248	0.40
TKS No.6	1.000	1.025	42.29	0.463a	1.066a	1.248	0.42
TKS No.7	0.940	0.840	24.53	7.227a	4.619a	1.481	0.72
TKS No.8	0.980	0.840	24.53	7.227a	4.619a	1.481	0.72
TKS No.9	0.980	0.840	37.72	21.904a	4.137a	1.829	13.31
TKS No.10	0.980	0.840	37.72	21.904a	4.137a	1.829	13.31
TKS No.11	0.940	0.840	23.25	24.073a	2.721a	0.094	0.31
TKS No.12	0.940	0.840	23.25	24.073a	2.721a	0.094	0.31
TKS No.13	0.940	1.000	16.56	17.317a	1.906a	1.322	4.38
TKS No.14	0.940	1.000	16.56	17.317a	1.906a	1.322	4.38
CPP OIL	0.000	0.830	0.68	11.105a	0.878a	0.420	0.50
SLOTTES	0.272	1.000	0.77	11.984a	1.333a	2.405	1.14
BERNOLS	0.100	0.890	0.49	18.494a	1.357a	1.204	1.77
CONTROL	0.940	1.025	188.18	0.164a	0.747a	2.236	640.99
Permeability override:	0.850						
FOAM	0.999	0.840	9.58	18.400a	3.489a	1.923	2.78
Total Tanks			400.32	3.582a	0.000	2.740	687.61
Total Weight			2,300.25	0.493a	0.068a	0.848	
HULL	1.925		2,290.00	2.902a	0.139a	2.898	-4.710

Distances in METERS --- Specific Gravity = 1.025 --- Moment in m.-MT.

Freeboard STATUS  
 USK DRAFT draft: 4.818 @ 20.25T, 4.817 @ 24.61t  
 Trim: Att 0.201/14.87%, Heel: Stead 1.87 deg.  
 Least freeboard is 2.558 m. located at 12.130a  
 Least extra freeboard (to margin line) is 2.482 m. located at 12.130a

01/21/09 08:53:48 STX Canada Marine, Inc.  
 DNS 11.50 CGCS JOHN P. Tully  
 NO.408 - COMPT 43-52 @ 4.75m - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Att 0.201/14.87%, Heel: Stead 1.87 deg., VCG = 0.548

LCG	Displacement	Stowage-Ctr.	Weight/	Moment/
Draft	Weight (MT)	LCG	VCG	on trim
4.747	2,290.00	2.902a	2.854	10.14
72.22	1.242			

Distances in METERS --- Specific Gravity = 1.025 --- Moment in m.-MT.  
 Trim is per 14.87%.

Draft is from USK DRAFT. True Free Surface Included.

RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 2.993a TCG = 0.051a VCG = 0.548  
 Free Surface Adjustment: 0.305  
 Adjusted CG: LCG = 2.894a TCG = 0.041a VCG = 0.852

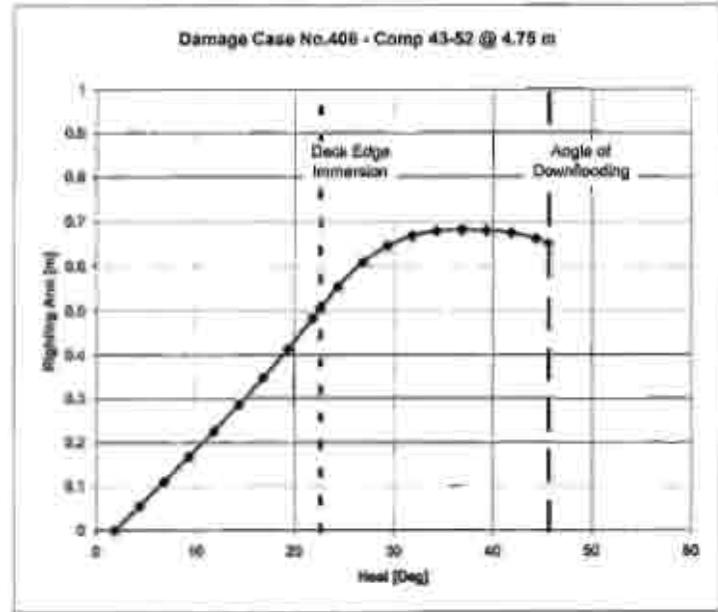
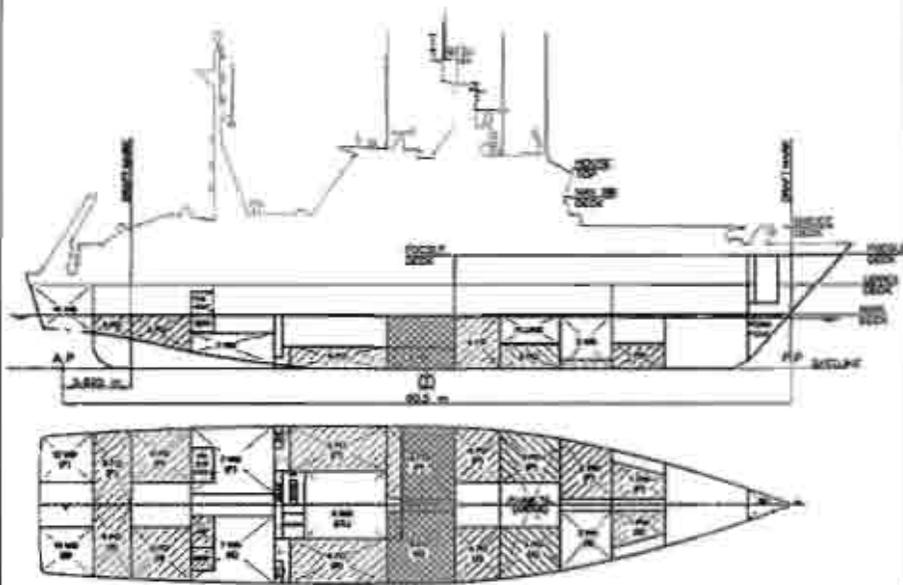
Depth	Trim	Heel	Displacement	Righting Arms	Flood Pt
0.711	0.21a	1.87a	2,290.31	0.000	0.000
0.827	0.21a	4.27a	2,290.31	0.000	0.000
0.872	0.21a	6.87a	2,290.32	0.000	0.111
0.875	0.20a	9.37a	2,289.80	0.000	0.168
0.888	0.18a	11.87a	2,290.29	0.000	0.226
0.930	0.15a	14.27a	2,290.28	0.000	0.288
0.959	0.12a	16.87a	2,290.29	0.000	0.349
0.978	0.08a	19.37a	2,290.29	0.000	0.415
0.980	0.03a	21.87a	2,290.29	0.000	0.484
0.989	0.01a	24.37a	2,290.29	0.000	0.560
0.972	0.02a	26.87a	2,290.29	0.000	0.555
0.953	0.04a	29.37a	2,290.29	0.000	0.509
0.924	0.07a	31.87a	2,289.97	0.000	0.444
0.788	0.06a	31.87a	2,290.55	0.000	0.668
0.437	0.02a	34.37a	2,290.54	0.000	0.678
0.477	0.03a	36.87a	2,290.50	0.000	0.682
0.468	0.03a	37.00a	2,290.25	0.000	0.682
0.307	0.10a	39.37a	2,240.53	0.000	0.680
0.127	0.19a	41.87a	2,290.29	0.000	0.672
0.940	0.29a	44.37a	2,290.33	0.000	0.662
2.841	0.34a	45.88a	2,290.57	0.000	0.651

Distances in METERS --- Specific Gravity = 1.025 --- Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 697.6 m.-MT was applied as artificially modify the CG.

Critical Point: LCG = 2.894a TCG = 0.041a VCG = 0.852  
 (1) CAPTAIN'S ROOM THROUGH FLOOD 7.439a 7.900 11.300

Damage Case No.406 - Comp 43-52 @ 4.75 m  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG.49



CRITERIA	Min/Max	Attained
(1) GM at Equilibrium	> 0.050 m	1.283 m
(2) Absolute Angle at Equilibrium	< 15.00 deg	1.07 deg
(3) Absolute Angle at Deck/margin Immersion	> 0.00 deg	22.62 deg

NOTE: Helicopter included in case (not depicted in diagram above).

01/21/09 08:53:00 STX Canada Marine, Inc.  
 0068 JOHN F. Tully  
 NO.500 - COMPT 24-43 @ 1.5m - LOADING DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 DSK DRAFT 4.171 @ 30.25t, 4.491 @ 24.8t  
 Trim: Aft 0.520/54.875, Heel: Port 1.12 deg.

Part	Weight (MT)	LCG	TCG	CGC	VCG		
LIGHT SHIP	1,624.80	2.395a	0.000a	0.457			
AFT STORES	3.00	22.300a	1.350p	0.354			
FWD STORES	3.00	30.000f	0.000	0.500			
Galley Stores	4.00	20.250f	0.000	0.300			
Gas to Jettisonable Tank	0.58	20.250a	0.100p	11.000			
40 Crew and Efforts @ 125	3.00	0.000	0.000	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.000a	0.130			
UPPER DECK CONTAINER	4.35	16.100a	0.450p	0.600			
LOWER DECK MACHINERY	8.98	0.380a	0.870a	11.300			
LOWER DECK CONTAINER	3.98	14.350a	0.480a	11.300			
HELICOPTER	2.00	21.000f	0.000	14.300			
ROCKETRY EQUIPMENT	0.90	0.700a	0.800a	9.000			
<b>Total Fixed</b>	<b>1,809.97</b>	<b>2.458a</b>	<b>0.000a</b>	<b>0.543</b>			
<b>Load</b>	<b>Spd</b>	<b>LCG</b>	<b>TCG</b>	<b>CGC</b>	<b>CGC</b>		
TW2_WB.F	0.200	4.028	16.41	13.047f	4.487p	1.023	17.31
TW3_FO.F	0.950	0.940	17.32	8.377f	3.448p	1.500	14.21
TW4_FO.F	0.980	0.940	34.43	4.000f	5.159p	2.883	27.33
TW4_FO.S	0.940	0.940	34.46	0.000f	4.170a	0.883	37.14
TW5_FO.F	1.000	0.940	34.66	0.485a	3.068p	1.248	0.30
TW5_FO.S	1.000	0.940	34.66	0.455a	3.006a	1.245	0.30
TW6_FO.F	0.980	0.940	34.13	7.351a	4.607p	1.480	16.25
TW6_FO.S	0.493	1.025	14.75	7.322a	4.238a	1.178	29.23
TW8_FO.F	0.980	0.940	37.71	21.910a	4.129p	3.229	27.85
TW8_FO.S	0.980	0.940	37.71	21.911a	4.095a	3.529	27.00
TW9_FO.F	0.980	0.940	21.55	20.095a	2.790p	4.294	18.58
TW9_FO.S	0.980	0.940	21.94	20.095a	2.728a	4.095	19.12
TK1_FW.F	0.980	1.000	14.16	17.342f	1.326p	1.328	4.48
TK1_FW.S	0.980	1.000	14.56	17.347f	1.311a	1.323	5.00
CPW_OIL.F	0.500	0.650	0.62	11.180a	0.971p	0.432	0.50
SGUDGE.S	0.223	1.000	0.77	11.106a	1.216a	0.405	0.81
SEWAGE.S	0.100	0.490	0.49	19.704a	0.269a	3.285	0.77
ENGINE_WB.C	0.028	1.025	12.38	7.188a	0.253p	1.301	100.75
Permeability coefficient	0.850						
FOUNT.F	0.960	1.840	5.58	10.805a	3.507p	5.500	3.45
<b>Total Tanks</b>	<b>431.50</b>	<b>4.021a</b>	<b>0.412p</b>	<b>2.550</b>	<b>409.62</b>		
<b>Total Weight</b>	<b>2,121.48</b>	<b>2.119a</b>	<b>0.009p</b>	<b>3.731</b>			
<b>HULL</b>	<b>1.025</b>	<b>2,121.46</b>	<b>2.148a</b>	<b>0.009p</b>	<b>2.720</b>	<b>-4.443</b>	
<b>Righting Arm:</b>	<b>0.000</b>	<b>0.000p</b>					
<b>Distances in METERS</b>							

REBOARD STATUS  
 DSK DRAFT 4.171 @ 30.25t, 4.491 @ 24.8t  
 Trim: Aft 0.520/54.875, Heel: Port 1.12 deg.  
 Least freeboard is 2.731 m. located at 32.130a  
 Least extra freeboard (to margin line) is 2.855 m. located at 32.130a

01/21/09 08:53:00 STX Canada Marine, Inc.  
 0068 JOHN F. Tully  
 NO.500 - COMPT 24-43 @ 1.5m - LOADING DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.520/54.875, Heel: Port 1.12 deg., VCG = 3.731

LCF Displacement Buoyancy-Ctr. Weight/ Moment/  
 Draft---Weight (MT)---LCG---VCG---CGC---CGC  
 4.313 2,121.48 3.148a 3.730 7.09 3.771a 29.05 15.14 1.185  
 Distances in METERS---Specific Gravity = 1.025---Moment in m.-WT.  
 Trim is per 54.88m.

Draft is from DSK DRAFT. True Free Surface Included.

RIGHTING ARM w/ HEEL ANGLE  
 Total CG: LCG = 3.119a VCG = 0.029p VCG = 3.731  
 Free Surface Adjustment: 0.193  
 Adjusted CG: LCG = 3.131a VCG = 0.025p VCG = 3.924

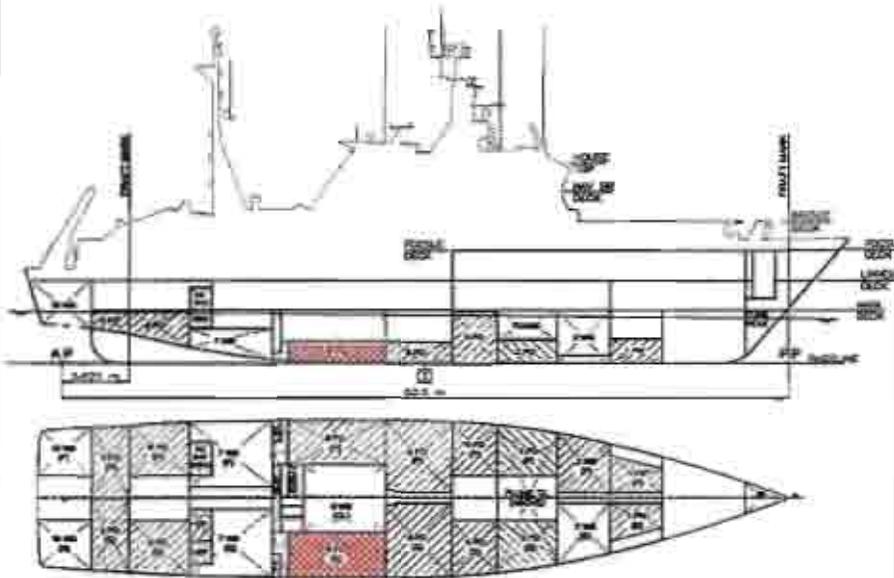
Origin	Depth	Degree of Trim	Displacement	Righting Arm	Flood Pt.		
Depth	Trim	Heel	Weight (MT)	in Trim	in Heel	Area	Height
4.443	0.35a	1.12p	2,121.79	0.000	0.000	0.0000	6.645(1)
4.433	0.34a	1.62p	2,121.29	0.000	0.057	0.6012	6.330(1)
4.413	0.34a	4.12p	2,121.47	0.000	0.115	0.0090	6.005(1)
4.380	0.32a	6.62p	2,121.48	0.000	0.172	0.0112	5.872(1)
4.340	0.30a	11.12p	2,121.47	0.000	0.233	0.0200	5.332(1)
4.280	0.26a	18.62p	2,121.47	0.000	0.291	0.0304	4.965(1)
4.223	0.42a	18.12p	2,121.47	0.000	0.352	0.0450	4.634(1)
4.147	0.35a	19.62p	2,121.48	0.000	0.417	0.0622	4.278(1)
4.058	0.30a	21.12p	2,121.47	0.000	0.483	0.0818	3.920(1)
3.956	0.23a	23.62p	2,121.48	0.000	0.549	0.1043	3.562(1)
3.932	0.22a	24.18p	2,121.47	0.000	0.563	0.1096	Margin 1m.
3.899	0.18a	26.12p	2,121.48	0.000	0.610	0.1296	3.204(1)
3.710	0.11a	28.62p	2,121.48	0.000	0.652	0.1572	2.842(1)
3.571	0.03a	31.12p	2,121.48	0.000	0.675	0.1863	2.475(1)
3.423	0.07a	33.62p	2,121.06	0.000	0.685	0.2160	2.105(1)
3.231	0.00a	35.05p	2,121.58	0.000	0.688	0.2331	1.890(1)
3.261	0.09a	36.13p	2,121.61	0.000	0.686	0.2459	1.729(1)
3.092	0.12a	38.62p	2,121.59	0.000	0.690	0.2757	1.353(1)
2.912	0.17a	41.12p	2,121.54	0.000	0.670	0.3082	0.975(1)
2.723	0.24a	43.62p	2,121.48	0.000	0.655	0.3343	0.597(1)
2.527	0.33a	46.12p	2,121.48	0.000	0.641	0.3623	0.217(1)
2.415	0.38a	47.94p	2,121.47	0.000	0.626	0.3782	0.000(1)

Distances in METERS---Specific Gravity = 1.025---Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load contents were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 409.6 m.-WT was applied to artificially modify the CG.

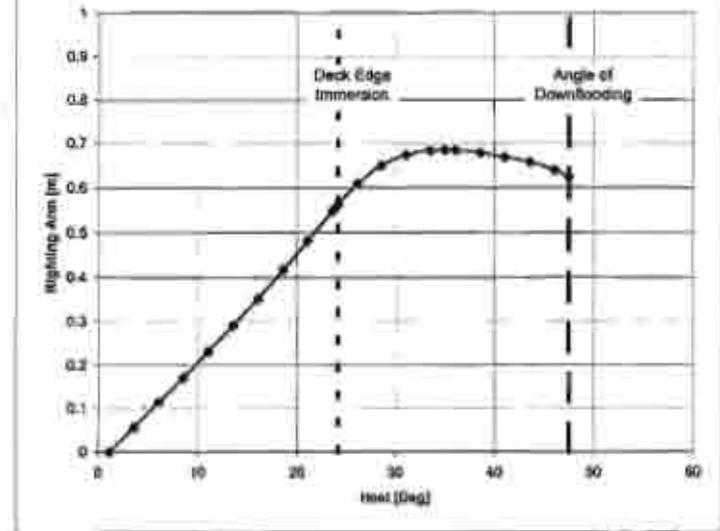
Critical Point: LCG---VCG---CGC  
 (1) CAPTAIN'S NOON WINDOW FLOOD 7.630a 7.090 11.300

Damage Case No.500 - Comp 28-43 @ 1.5 m  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG.48



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.500 - Comp 28-43 @ 1.5 m



CRITERIA	Min/Max	Attained
(1) GM at Equilibrium	> 0.050 m	1.095 m
(2) Absolute Angle at Equilibrium	< 15.00 deg	2.10 deg
(3) Absolute Angle at Deck/margin Immersion	> 0.00 deg	24.14 deg

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GRS 11.50 COGS JOHN P. Tully  
 NO.501 - COMPT 28-43 @ 2.0M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.216 @ 30.25t, 4.761 @ 24.63t  
 Trim: Att 0.345/54.875, Heel: Sbd 0.58 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	2.595a	0.048a	6.457
AFT STORES	5.00	22.350a	1.330p	6.556
FW STORES	1.00	30.000f	0.000	8.500
Galley Stores	14.00	20.750f	0.000	8.000
Gas in Jettisonable Tn	0.68	20.250a	0.100p	11.000
40 Crew and Efforts @ 123	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.450a	0.050a	8.130
UPPER DECK CONTAINER	4.35	29.100a	4.650p	8.600
POCSLE DECK MACHINERY	8.98	8.320a	4.670a	11.000
POCSLE DECK CONTAINER	1.86	14.300a	3.480a	11.300
HELICOPTER	2.50	21.000f	0.000	14.300
ROSETTE EQUIPMENT	0.50	0.750a	5.600a	9.000
<b>Total Fixed</b>	<b>1,689.97</b>	<b>2.659a</b>	<b>0.069a</b>	<b>6.543</b>

Lead	Spds	Weight (MT)	LCG	TCG	VCG	PSM
TK2 WB.F	0.200	1.025	16.62	13.073f	1.818p	1.019
TK3 FO.F	0.800	0.840	17.32	8.332f	3.437p	1.508
TK4 FO.F	0.980	0.840	24.65	4.390f	4.140p	2.885
TK5 FO.S	0.980	0.840	24.65	4.390f	4.140p	2.885
TK6 FO.F	1.000	0.840	34.66	0.465a	3.066p	1.248
TK7 FO.S	1.000	0.840	34.66	0.465a	3.066p	1.248
TK8 FO.F	0.980	0.840	34.13	7.358a	4.580p	1.461
TK9 FO.S	1.000	1.025	30.03	7.319a	4.598a	1.471
TK8 FO.F	0.980	0.840	37.71	21.912a	4.102p	3.829
TK8 FO.S	0.980	0.840	37.71	21.912a	4.102p	3.829
TK9 FO.F	0.980	0.840	23.85	26.097a	3.740p	4.095
TK9 FO.S	0.980	0.840	23.84	26.096a	3.737a	4.095
TK1 FW.F	0.980	1.000	16.56	17.362f	1.515p	1.322
TK1 FW.S	0.980	1.000	16.56	17.362f	1.515p	1.322
CPP_OIL.P	0.500	0.890	0.62	11.184a	0.897p	0.435
SLUDGE.S	0.223	1.000	0.77	11.102a	1.301a	0.404
SEWAGE.S	0.100	0.890	0.49	18.705a	5.316a	3.265
ENGINE_WG.C	0.090	1.025	40.19	7.452a	0.198a	1.622
Permeability overboard	0.890					
FDDAY.F	0.980	0.840	5.58	18.685a	3.436p	1.929
<b>Total Tanks</b>			<b>474.60</b>	<b>5.152a</b>	<b>0.173a</b>	<b>2.478</b>
<b>Total Weight</b>			<b>2,164.57</b>	<b>3.205a</b>	<b>0.016a</b>	<b>5.652</b>

Diapl (MT)	LCG	TCG	VCG	Heel
HMMA	1.000	2,164.57	2.235a	0.245a
<b>Righting Arms:</b>				<b>0.000</b>
<b>Distances in METERS:</b>				<b>0.000</b>

FREEBOARD STATUS  
 USK DRAFT draft: 4.216 @ 30.25t, 4.761 @ 24.63t  
 Trim: Att 0.345/54.875, Heel: Sbd 0.58 deg.  
 Least freeboard is 2.722 m. located at 32.130a  
 Least extra freeboard (to margin line) is 2.446 m. located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GRS 11.50 COGS JOHN P. Tully  
 NO.501 - COMPT 28-43 @ 2.0M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Att 0.345/54.875, Heel: Sbd 0.58 deg., VCG = 5.852

LCF Displacement Suoyancy-Ctr. Weight/ Moment/  
 Draft---Weight(MT)---LCG---VCG---cm---LCF---cm trim---GML---GMT  
 4.574 2,194.59 3.235a 2.755 7.10 5.760a 29.23 14.09 1.092  
 Distances in METERS. ---Specific Gravity = 1.025. ---Moment in m.-MT.  
 Trim is per 54.88m.

Draft is from USK DRAFT. True Free Surface included.  
 RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 3.205a TCG = 0.016a VCG = 5.652  
 Free Surface Adjustment: 0.449  
 Adjusted CG: LCG = 3.210a TCG = 0.012a VCG = 6.101

Origin	Progress of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight (MT)	Area
4.502	0.59a	0.58a	2,164.57	0.000
4.494	0.57a	1.08a	2,164.62	0.000
4.474	0.57a	1.58a	2,164.39	0.000
4.446	0.56a	2.08a	2,164.37	0.000
4.407	0.54a	2.58a	2,164.57	0.000
4.356	0.51a	3.08a	2,164.58	0.000
4.294	0.47a	3.58a	2,164.57	0.000
4.220	0.43a	4.08a	2,164.57	0.000
4.134	0.37a	4.58a	2,164.57	0.000
4.035	0.30a	5.08a	2,164.57	0.000
3.918	0.25a	5.58a	2,164.57	0.000
3.922	0.24a	6.08a	2,164.58	0.000
3.797	0.19a	6.58a	2,164.58	0.000
3.662	0.17a	7.08a	2,164.61	0.000
3.517	0.17a	7.58a	2,164.64	0.000
3.479	0.17a	8.08a	2,164.64	0.000
3.361	0.15a	8.58a	2,164.85	0.000
3.196	0.23a	9.08a	2,164.99	0.000
3.020	0.28a	9.58a	2,164.90	0.000
2.834	0.35a	10.08a	2,164.60	0.000
2.641	0.45a	10.58a	2,164.31	0.000
2.536	0.50a	11.08a	2,164.57	0.000

Distances in METERS. ---Specific Gravity = 1.025. ---Area in m.-Rad.  
 Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 472.4 m.-MT was applied to artificially modify the CG.

Critical Point: LCG = 3.210a TCG = 0.012a VCG = 6.101  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300



01/21/09 08:53:40 STX Canada Marine, Inc.  
 CGCS JOHN F. Tully  
 NO.502 - COMPT 28-43 @ 2.5M - HEADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT: 4.275 @ 30.255, 4.863 @ 24.634  
 Trim: Art 0.585/54.875, Heel: Stbd 0.61 deg.

Part	Height (M)	LCG	TCG	VCG
LIGHT SHIP	1.624.00	2.958a	0.048a	4.457
AFT STORES	5.00	22.350a	1.330p	6.556
FOOD STORES	3.00	30.000f	0.000	8.500
Galley Stores	14.00	20.200c	0.000	6.000
Was in Jettisonable TA	0.68	30.250a	8.100p	11.000
42 Crew and Effects @ 120	5.00	0.000	0.000	11.000
UPPER COCK MACHINERY	17.10	19.400a	0.000a	8.130
UPPER DECK CONTAINER	4.35	24.100a	4.800p	8.600
PODSIDE DECK MACHINERY	8.98	8.320a	4.470p	11.000
PODSIDE DECK CONTAINER	3.88	14.300a	5.488a	11.300
HELICOPTER	2.50	21.000f	0.000	14.300
ROSETTE EQUIPMENT	8.90	0.700a	5.800a	6.000
Total Fixed	1,689.97	2,659a	0.069a	6,543

Part	Lead	LCG	TCG	VCG	FDN		
TK2_WD.P	3.200	1.000	16.62	18.072f	1.818p	1.029	16.48
TK3_WD.P	3.950	0.840	17.37	8.331f	3.476p	1.507	17.00
TK4_WD.P	0.980	0.840	54.65	4.090f	4.138p	2.885	27.20
TK4_PO.S	0.980	0.840	54.65	4.090f	4.150a	2.885	27.29
TK5_PO.P	1.000	0.840	34.66	0.465a	3.066p	1.248	0.00
TK1_PO.S	1.000	0.840	34.66	0.465a	3.066a	1.248	0.00
TK6_PO.P	0.980	0.840	24.13	7.359a	4.580p	1.460	20.59
TK6_PO.S	1.000	1.020	38.04	3.318a	8.598a	1.471	8.00
TK7_PO.P	0.980	0.840	37.71	21.913a	4.400p	1.829	32.58
TK8_PO.S	0.940	0.940	37.71	21.922a	4.423a	1.829	33.13
TK9_PO.P	0.980	0.840	23.85	24.097a	3.739p	4.095	41.93
TK9_PO.S	0.980	0.840	23.85	24.097a	3.767a	4.095	43.09
TK1_WD.P	0.980	1.000	14.58	17.304f	1.515p	1.322	8.63
TK1_WD.S	0.950	1.000	14.58	17.381f	1.524a	1.322	5.73
CPP_OIL.P	0.500	0.890	8.62	11.185a	0.896p	0.435	0.90
ALCOH.S	0.221	1.000	4.77	11.102a	1.301a	0.495	0.97
SEWAGE.S	0.100	0.890	0.49	18.706a	5.317a	3.285	0.97
DRINK_WD.P	0.230	1.000	102.65	7.579a	0.113a	2.002	2002.08
Permeability overboard	0.850						
FOOD.P	3.950	2.840	9.58	12.407a	2.499p	5.825	3.48
Total Tunes			537.08	3,446a	0.146p	2,401	3272.64
Total Weight			2,227.05	3,331a	0.217a	8,958	

Part	Righting Arms	LCG	TCG	VCG	Heel	
SHLL	1.225	2,227.05	3,360a	0.048a	2.800	-4.500

Distances in METERS. Specific Gravity = 1.025. Moment in m.-WT.

RIGHTING ARM: 2.000 0.000a

WEIGHTBOARD STATUS  
 USK DRAFT: 4.178 @ 30.25f, 4.863 @ 24.63a  
 Trim: Art 3.585/54.875, Heel: Stbd 0.61 deg.  
 Least Freshwater is 2.612 m. located at 22.130a  
 Least extra Freshwater (to margin line) is 2.524 m. located at 22.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 CGCS JOHN F. Tully  
 NO.502 - COMPT 28-43 @ 2.5M - HEADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Art 0.585/54.875, Heel: Stbd 0.61 deg., VCG = 5.556

LCF	Displacement	Buoyancy-Ctr.	Weight/	Moment/
Draft	Height (M)	LCB	VCB	LCF
4.800	2,227.20	3.360a	2.800	7.12
5.738a	29.60	72.4a	0.555	

Distances in METERS. Specific Gravity = 1.025. Moment in m.-WT.  
 Trim is per 54.88m.

Draft is from USK DRAFT. True Free Surface Included.

RIGHTING ARM vs HEEL ANGLE  
 Total CG: LCG = 3.331a TCG = 0.017a VCG = 5.556  
 Free Surface Adjustment: 1.024  
 Adjusted CG: LCG = 3.342a TCG = 0.006a VCG = 8.580

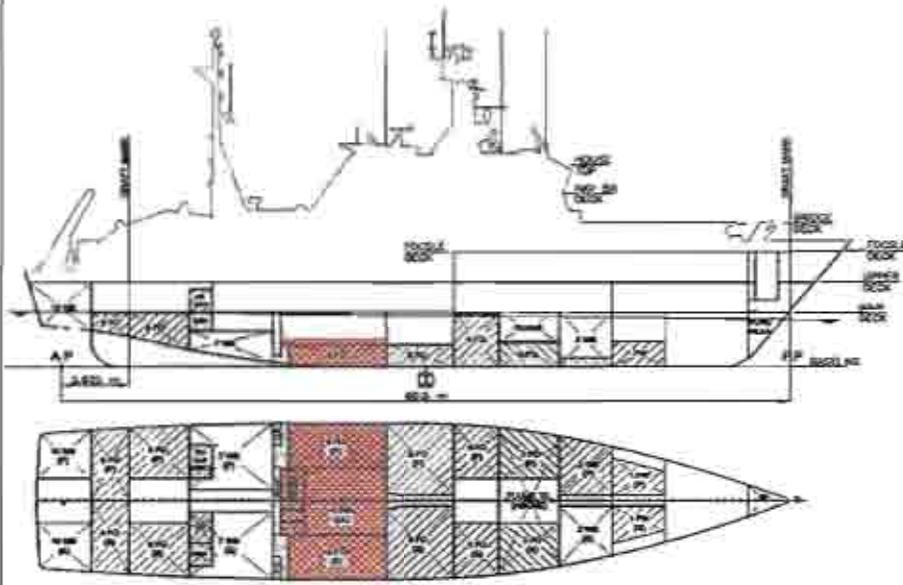
Origin	Degree of	Displacement	Righting Arms	Flood %			
Depth	Trim	Heel	in Trim--in Heel	Area--Height			
4.894	0.43a	0.00a	2,227.03	0.000	0.000	0.0000	6.557(1)
4.976	0.83a	3.11a	2,227.04	0.000	0.025	0.000a	6.244(2)
4.557	0.62a	5.61a	2,227.07	0.000	0.051	0.0022	5.921(3)
4.527	0.62a	8.11a	2,226.44	0.000	0.078	0.0000	5.689(4)
4.488	3.60a	10.61a	2,227.05	0.000	0.107	0.0091	5.249(1)
4.457	3.56a	13.11a	2,227.03	0.000	0.137	0.0144	4.904(2)
4.276	3.54a	15.61a	2,227.03	0.000	0.169	0.0212	4.552(3)
4.300	0.50a	18.11a	2,227.03	0.000	0.205	0.0280	4.197(4)
4.213	0.43a	20.61a	2,227.03	0.000	0.244	0.0360	3.839(1)
4.148	0.41a	23.11a	2,227.03	0.000	0.272	0.0449	3.480(2)
4.113	0.39a	25.61a	2,227.03	0.000	0.284	0.0525	3.125(3)
4.001	0.34a	28.11a	2,227.04	0.000	0.320	0.0637	2.768(4)
3.880	0.31a	30.61a	2,227.04	0.000	0.334	0.0780	2.410(1)
3.638	0.30a	33.11a	2,227.04	0.000	0.335	0.0828	2.025(2)
3.748	0.30a	35.61a	2,227.04	0.000	0.331	0.0824	1.673(3)
3.687	0.28a	38.11a	2,227.03	0.000	0.316	0.1088	1.309(4)
3.453	0.29a	40.61a	2,227.26	0.000	0.293	0.1201	1.011(1)
3.285	0.40a	43.11a	2,227.29	0.000	0.263	0.1322	1.227(2)
3.116	0.47a	45.61a	2,227.12	0.000	0.230	0.1450	0.942(3)
2.843	0.56a	48.11a	2,227.02	0.000	0.189	0.1523	0.657(4)
2.743	3.46a	50.61a	2,226.48	0.000	0.150	0.1599	0.371(1)
2.710	0.68a	53.11a	2,227.34	0.000	0.146	0.1611	-0.001(2)

Distances in METERS. Specific Gravity = 1.025. Area in m.-Sqd.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 2278.3 m.-WT was applied to artificially modify the CG.

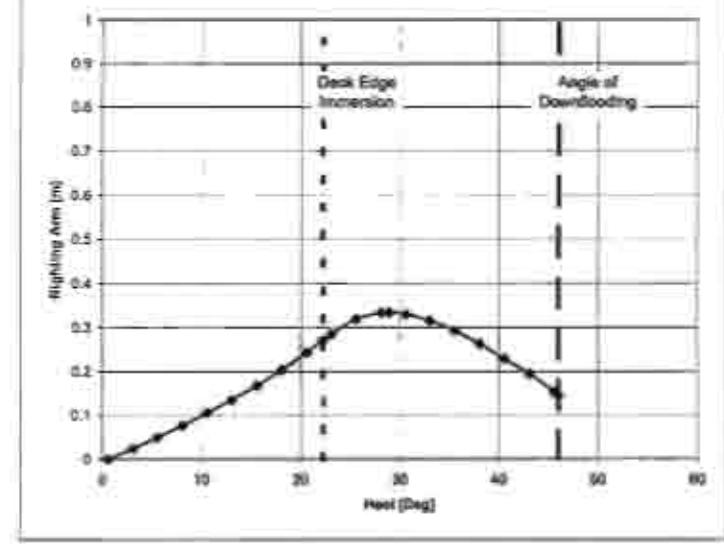
Critical Point: LCF TCG VCG  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 1.638a 1.200 11.300

Damage Case No.502 - Comp 28-43 @ 2.5 m  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG.48



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.502 - Comp 28-43 @ 2.5 m



LIH	-----DAMAGE STABILITY CRITERIA-----	Min/Max	-----	Attained
(1)	GM at Equilibrium	> 0.050	m	0.574 F
(2)	Absolute Angle at Equilibrium	< 15.00	deg	0.61 F
(3)	Absolute Angle at Deck/margin Immersion	> 0.00	deg	22.29 F

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 CGCS JOHN P. Tully  
 NO.503 - COMPT 22-43 # 3.0M - LOADLINE DEPARTURE CONDITION

**WEIGHT and DISPLACEMENT STATUS**  
 USK DRAFT draft: 4.340 @ 30.25f, 4.964 @ 24.61a  
 Trim: Aft 0.624/54.875, Heel: Sctd 0.09 deg.

Part	Weight (MT)	LCG	TCG	VCG			
LIGHT SHIP	3,624.66	2.595a	0.048a	6.457			
AFT STORES	5.00	22.350a	1.330p	6.556			
PWD STORES	3.00	30.000f	0.000	8.500			
Galley Stores	14.00	20.250f	0.000	6.000			
Gas in Jettisonable TX	0.68	20.250a	4.160p	11.000			
40 Crew and Escorts @ 125	5.00	0.000	0.000	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.050a	8.130			
UPPER DECK CONTAINERS	4.35	26.100a	4.650p	8.600			
POCSLE DECK MACHINERY	8.98	8.320a	4.670a	11.000			
POCSLE DECK CONTAINERS	3.86	14.350a	5.480a	11.300			
HELICOPTER	2.50	21.000f	0.000	14.300			
ROSETTS EQUIPMENT	0.90	0.700a	5.600a	9.000			
<b>Total Fixed</b>	<b>1,689.97</b>	<b>2,658a</b>	<b>0,068a</b>	<b>6,543</b>			
	<b>Load</b>	<b>SpGr</b>	<b>Weight (MT)</b>	<b>LCG</b>	<b>TCG</b>	<b>VCG</b>	<b>PEW</b>
TK2 WB.F	0.200	1.025	26.41	13.369f	1.825p	1.018	16.78
TK2 FO.F	0.990	0.840	17.12	8.320f	3.446p	1.202	17.07
TK4 FO.F	0.980	0.840	34.65	4.089f	4.144p	2.882	27.25
TK4 FO.S	0.980	0.840	34.65	5.099f	4.145a	2.882	27.25
TK5 FO.F	1.000	0.840	34.66	0.485a	3.066p	1.248	0.00
TK5 FO.S	1.000	0.840	34.66	3.685a	3.966a	1.244	0.00
TK6 FO.F	0.980	0.840	24.13	7.363a	4.588p	1.460	-20.84
TK6 FO.S	1.000	1.025	30.04	7.318a	4.588a	1.471	0.00
TK5 FO.P	0.980	0.840	37.71	21.913a	4.111p	3.829	35.63
TK5 FO.S	0.980	0.840	37.71	21.913a	4.113a	3.828	35.65
TK9 FO.F	0.980	0.840	23.84	26.098a	2.759p	4.086	57.50
TK9 FO.S	0.980	0.840	23.84	26.098a	2.767p	4.298	57.54
TK1 FW.F	0.980	1.000	16.56	17.362f	1.519p	1.322	6.35
TK1 FW.S	0.980	1.000	16.56	17.362f	1.520a	1.322	6.87
CPP OIL.F	0.500	0.990	0.62	11.185a	0.904p	0.435	0.30
SLUDGE.S	0.223	1.000	0.77	11.104a	1.290a	0.405	0.92
SEWAGE.S	0.100	0.890	0.49	18.707a	5.302a	2.285	0.77
ENGINE RM.C	0.371	1.025	165.31	7.585a	0.166p	2.285	2002.86
Permeability override:	0.850						
PODGY.F	0.380	0.840	9.58	18.889a	3.486p	3.929	3.49
<b>Total Tanks</b>			<b>599.73</b>	<b>5,671a</b>	<b>0.184p</b>	<b>3.482</b>	<b>2317.66</b>
<b>Total Weight</b>			<b>3,289.70</b>	<b>3,448a</b>	<b>0.002a</b>	<b>5.479</b>	
			<b>Displ(MT)</b>	<b>LCG</b>	<b>TCG</b>	<b>VCG</b>	<b>Refnt</b>
HULL	1.025		2,289.64	3,477a	0.006a	2.660	-4.869
<b>Righting Arms:</b>			<b>0.300</b>	<b>0.800</b>			
<b>Distances in METERS:</b>							<b>Moments in m.-MT.</b>

**FREEBOARD STATUS**  
 USK DRAFT draft: 4.340 @ 30.25f, 4.964 @ 24.61a  
 Trim: Aft 0.624/54.875, Heel: Sctd 0.09 deg.  
 Least freeboard is 2.568 m. located at 32.130a  
 Least extra freeboard (to margin line) is 2.492 m. located at 30.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 CGCS JOHN P. Tully  
 NO.503 - COMPT 22-43 # 3.0M - LOADLINE DEPARTURE CONDITION

**HYDROSTATIC PROPERTIES**  
 Trim: Aft 0.624/54.875, Heel: Sctd 0.09 deg., WCG = 5.479

LCF	Displacement	Buoyancy-Ctr.	Weight/	Moment/
Draft	Weight (MT)	LCB	cm	LCF
4.749	2,289.64	3.477a	2.860	7.14
				5.711a
				29.63
				71.01
				0.599

Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT.  
 Trim is per 54.85%  
 Draft is from USK DRAFT, True Free Surface Included.

**RIGHTING ARMS vs HEEL ANGLE**  
 Total CG: LCG = 3.448a TCG = 0.002a VCG = 5.479  
 Free Surface Adjustment: 1.012  
 Adjusted CG: LCG = 3.458a TCG = 0.001a VCG = 0.492

Origin	Degree of	Displacement	Righting Arms	Flood %
Depth	Trim	Heel	LCG	Area
4.667	0.57a	0.00a	2,289.70	0.0000
4.662	0.47a	2.59a	2,289.70	0.0006
4.645	0.47a	5.08a	2,289.70	0.0028
4.616	0.46a	7.59a	2,289.70	0.0054
4.579	0.45a	10.09a	2,289.70	0.0098
4.530	0.44a	12.59a	2,289.70	0.0155
4.470	0.41a	15.09a	2,289.70	0.0227
4.397	0.37a	17.59a	2,289.70	0.0315
4.311	0.23a	19.09a	2,289.70	0.0421
4.273	0.31a	21.16a	2,289.70	0.0472
4.218	0.48a	22.59a	2,289.70	0.0545
4.107	0.43a	25.09a	2,289.70	0.0688
3.991	0.42a	27.59a	2,289.70	0.0843
3.912	0.42a	29.17a	2,289.70	0.0966
3.865	0.42a	30.09a	2,289.71	0.1002
3.728	0.45a	32.59a	2,289.58	0.1159
3.580	0.49a	35.09a	2,289.57	0.1310
3.421	0.55a	37.59a	2,289.90	0.1450
3.252	0.64a	40.09a	2,289.81	0.1578
3.073	0.76a	42.59a	2,289.69	0.1692
2.888	0.85a	45.09a	2,289.35	0.1791
2.860	0.85a	45.21a	2,290.01	0.1796

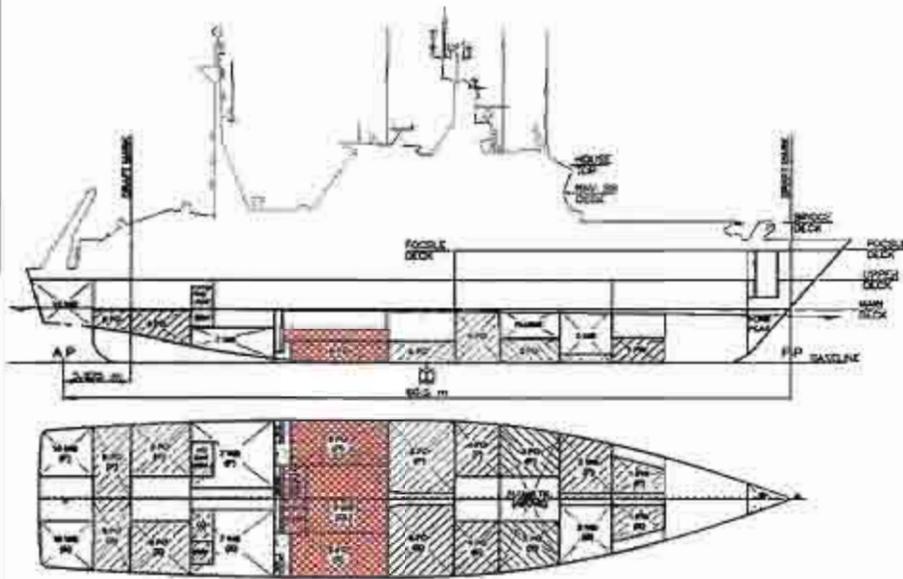
Distances in METERS. Specific Gravity = 1.025. Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 2317.6 m.-MT was applied to artificially modify the CG.

Critical Point: LCG = 3.458a TCG = 0.001a VCG = 0.492  
 (1) CAPTAIN'S ROOM WITHOOP FLOOR 7.530a T.000 11.300

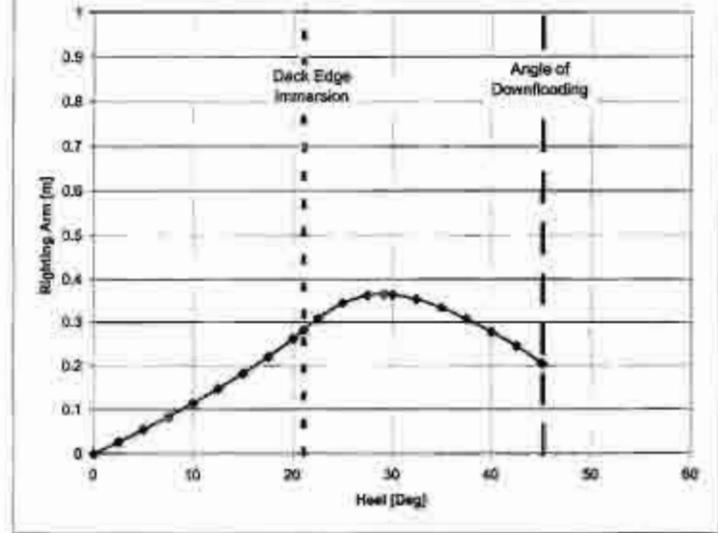
Damage Case No.503 - Comp 28-43 @ 3.0 m

IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG.48



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.503 - Comp 28-43 @ 3.0 m



LCM	DAMAGE STABILITY CRITERIA	Min/Max	Attained
(1)	G <sub>R</sub> at Equilibrium	> 0.050 m	0.399 F
(2)	Absolute Angle at Equilibrium	< 13.00 deg	0.09 F
(3)	Absolute Angle at Deck/margin Immersion	> 0.00 deg	31.16 F

01/21/99 08:53:48 STX Canada Marine, Inc.  
 CGGS JOHN P. Tully  
 NO.504 - COMPT 28-43 @ 3.5M - LOADLINE DEPARTURE CONDITION

**WEIGHT and DISPLACEMENT STATUS**  
 USN DRAFT draft: 4.401 @ 30.25t, 3.045 @ 24.63t  
 Trim: Aft 0.664/34.875, Heel: Port 0.32 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,424.60	2.556	0.045	8.437
AFT STORES	3.00	22.750	1.739	4.596
FWB STORES	3.00	50.000	0.000	8.500
Galley Stores	14.00	20.250	0.000	4.000
Gas in Jettableable TK	0.48	20.250	6.100	11.000
40 Case and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490	0.000	8.133
UPPER DECK CONTAINER	4.35	26.100	4.639	8.400
FOCIBLE DECK MACHINERY	9.88	8.320	4.670	11.000
FOCIBLE DECK CONTAINER	3.86	14.350	5.480	13.300
HELICOPTER	2.50	31.500	0.000	14.300
ROCKET EQUIPMENT	0.90	0.700	3.500	9.000
Total Fixed	1,489.97	2.659	0.059	8.643

TK#	REL.P	Load	Spd	Weight (MT)	LCG	TCG	VCG	FM
TK2	REL.P	0.200	1.055	16.61	13.566	1.833	1.019	14.83
TK3	FO.S	0.950	0.840	17.32	8.325	1.433	1.507	17.14
TK4	FO.S	0.980	0.840	54.65	4.089	4.147	2.825	27.28
TK5	FO.S	0.980	0.840	54.65	4.089	4.142	2.865	27.22
TK6	FO.S	1.000	0.840	34.68	9.405	3.066	1.249	0.00
TK7	FO.S	1.000	0.840	34.68	0.465	3.066	1.249	0.00
TK8	FO.S	0.980	0.840	24.12	7.369	4.594	1.460	20.16
TK9	FO.S	1.000	1.000	30.04	7.319	4.599	1.471	0.00
TK10	FO.S	0.980	0.840	37.71	21.914	4.117	3.809	35.09
TK11	FO.S	0.980	0.840	37.71	21.914	4.107	3.809	34.82
TK12	FO.S	0.980	0.840	23.84	24.998	2.776	4.095	32.58
TK13	FO.S	0.980	0.840	23.84	24.998	2.750	4.095	31.66
TK14	FW.S	0.980	1.000	16.56	17.360	1.522	1.322	6.34
TK15	FW.S	0.980	1.000	16.56	17.362	1.517	1.322	6.01
OPP	DTL.P	0.500	0.990	0.62	11.185	0.809	0.431	0.50
SLUDGE	S	0.223	1.000	0.77	11.107	1.211	0.405	0.68
SEWAGE	S	0.100	0.880	0.49	18.708	2.291	3.283	0.77
ENGINE	RM.T	0.512	1.025	227.58	1.590	0.188	2.550	2002.47
Permeability override				0.890				
FOOTING	F	0.980	0.840	9.58	18.488	1.502	5.829	2.49
Total Tanks				662.38	5.854	0.019	2.589	2304.06
Total Weight				2,352.35	2.588	0.009	5.426	

NULL	Diapl (MT)	LCG	TCG	VCG	Stabil	
NULL	1.328	2,352.12	3.589	0.023	2.311	-0.752

Righting Arms: 0.000 4.000  
 Distances in METERS: Moments in m.-MT

**FREEBOARD STATUS**  
 USN DRAFT draft: 4.401 @ 30.25t, 3.045 @ 24.63t  
 Trim: Aft 0.664/34.875, Heel: Port 0.32 deg.  
 Least freeboard is 2.438 m. located at 32.150m  
 Least extra freeboard (to margin line) is 2.359 m. located at 42.110m

01/21/99 08:53:49 STX Canada Marine, Inc.  
 CGGS JOHN P. Tully  
 NO.504 - COMPT 28-43 @ 3.5M - LOADLINE DEPARTURE CONDITION

**HYDROSTATIC PROPERTIES**  
 Trim: Aft 0.664/34.875, Heel: Port 0.32 deg., VCG = 5.420

LCF	Displacement	Buoyancy-Ctr.	Weight	Moment
Draft	Weight (MT)	LCB	VCB	GM
4.401	2,352.12	3.589	2.311	7.17
				3,693
				29.84
				49.66
				0.470

Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT.  
 Trim is per 34.88m. True Free Surface included.  
 Draft is from USN DRAFT.

**RIGHTING ARMS vs HEEL ANGLE**  
 Total CG: LCG = 2.588m TCG = 0.009m VCG = 5.420  
 Free Surface Adjustment: 0.979  
 Adjusted CG: LCG = 3.570m TCG = 0.004m VCG = 6.399

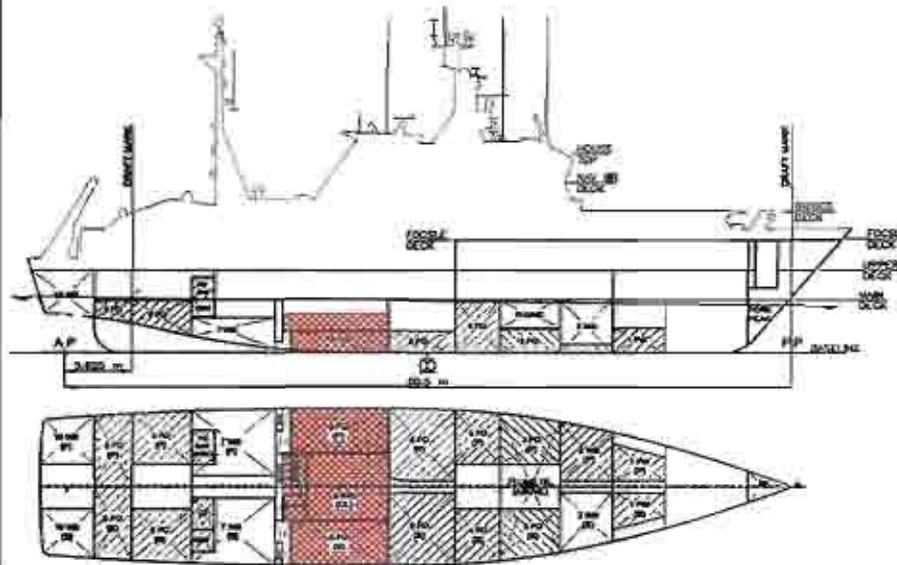
Origin Depth	Degree of Trim	Displacement	Righting Arms	Flood Pt			
		Weight (MT)	in Trim-in Heel	Area Height			
4.731	0.71	0.32p	2,352.85	0.000	0.000	0.000	6.415(1)
4.744	0.71	2.42p	2,352.87	0.000	0.000	0.000	6.103(1)
4.724	0.71	8.33p	2,352.87	0.000	0.060	0.004	5.782(1)
4.697	0.71	1.60p	2,352.37	0.000	0.092	0.009	5.451(1)
4.657	0.70	12.30p	2,351.92	0.000	0.126	0.017	5.113(1)
4.607	0.69	12.62p	2,352.35	0.000	0.162	0.017	4.767(1)
4.644	0.68	15.30p	2,352.35	0.000	0.201	0.024	4.414(1)
4.470	0.65	17.80p	2,352.35	0.000	0.243	0.034	4.062(1)
4.393	0.68	20.00p	2,352.34	0.000	0.285	0.045	3.704(1)
4.386	0.68	20.32p	2,352.34	0.000	0.292	0.046	3.704(1)
4.294	0.65	22.62p	2,352.35	0.000	0.337	0.058	3.343(1)
4.178	0.59	25.32p	2,352.35	0.000	0.371	0.073	2.972(1)
4.065	0.53	27.62p	2,352.30	0.000	0.397	0.091	2.593(1)
3.993	0.54	29.50p	2,352.35	0.000	0.390	0.103	2.334(1)
3.941	0.55	30.32p	2,352.35	0.000	0.390	0.108	2.207(1)
3.886	0.58	32.82p	2,352.70	0.000	0.380	0.125	1.818(1)
3.660	0.66	35.32p	2,352.66	0.000	0.362	0.141	1.426(1)
3.503	0.74	37.92p	2,352.66	0.000	0.338	0.157	1.033(1)
3.336	0.83	40.32p	2,352.40	0.000	0.311	0.174	0.640(1)
3.159	0.95	42.02p	2,352.24	0.000	0.281	0.183	0.248(1)
3.047	1.02	44.17p	2,352.51	0.000	0.258	0.192	-0.001(1)

Distances in METERS. Specific Gravity = 1.025. Area in m.-Rad.

Note: The Height and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 2304.0 m.-MT was applied to artificially modify the CG.

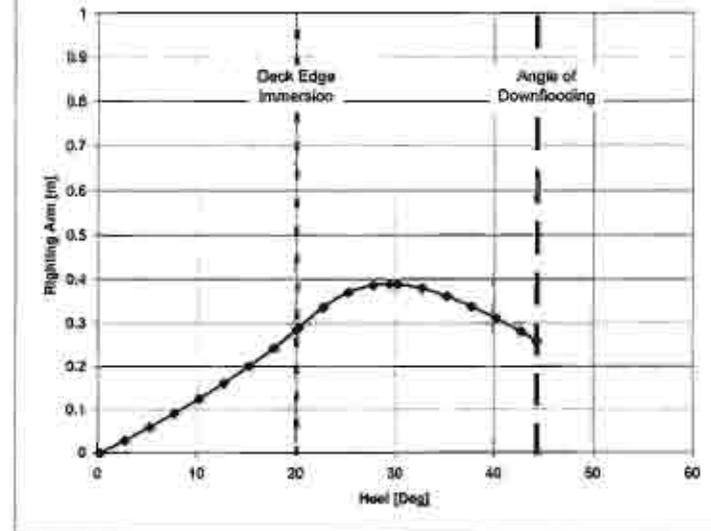
Critical Point: LCF VCB VCG  
 (1) CAPTAIN'S ROOM HINDON FLOOD 7.638m 7.000 11.200

**Damage Case No.504 - Comp 28-43 @ 3.5 m**  
**IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG. 48**



NOTE: Helicopter included in case (not depicted in diagram above).

**Damage Case No.504 - Comp 28-43 @ 3.5 m**



LCM	DAMAGE STABILITY CRITERIA	Min/Max	Attained
(1)	GK at Equilibrium	> 0.050 m.	0.470 P
(2)	Absolute Angle at Equilibrium	< 15.00 deg	0.32 P
(3)	Absolute Angle at Deck/margin Immersion	> 0.00 deg	20.08 P

01/21/09 08:53:40 STX Canada Marine, Inc.  
 COGS JOHN P. Tully  
 NO.505 - COMPT 28-43 @ 4.0M - LOADLINE DEPARTURE CONDITION

HEIGHT AND DISPLACEMENT STATUS  
 USK DRAFT draft: 4.462 @ 30.25F, 5.155 @ 24.5L  
 Trim: Aft 0.704/54.875, Heel: Port 0.64 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,624.60	2.555a	0.049a	6.457
APP STORES	3.00	22.350a	1.330p	6.556
PWD STORES	3.00	30.000f	0.000	2.500
Galley Stores	14.00	20.250f	0.000	6.000
Gas in Jettisonable TK	0.68	20.250a	4.100p	11.000
4U Crew and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.490a	0.450a	8.130
UPPER DECK CONTAINER	4.35	26.100a	4.650p	8.400
FOCSE DECK MACHINERY	8.98	5.320a	4.870a	11.000
FOCSE DECK CONTAINER	3.86	14.350a	5.480a	11.300
HELICOPTER	2.50	21.000f	0.000	14.300
ROSETTE EQUIPMENT	0.90	0.700a	5.600a	9.000
Total fixed	1,689.97	2.659a	0.069a	6.543

Part	Load	SpGr	Weight (MT)	LCG	TCG	VCG	PSM
TK2_WD.F	0.200	1.025	16.61	13.064f	1.839p	1.019	17.10
TK3_FO.F	0.950	0.840	17.32	8.323a	3.409p	1.502	17.10
TK4_FO.F	0.980	0.840	54.65	4.088f	4.153p	2.885	27.29
TK5_FO.S	0.980	0.840	54.65	4.088f	4.129a	2.889	27.20
TK5_FO.F	1.000	0.840	34.66	0.465a	3.066p	1.249	0.00
TK5_FO.S	1.000	0.840	34.66	0.465a	3.066a	1.248	0.00
TK6_FO.F	0.980	0.840	24.13	7.365a	4.599p	1.461	18.64
TK6_FO.S	1.000	1.025	30.04	7.719a	4.599a	1.471	0.00
TK8_FO.F	0.980	0.840	27.71	21.914a	4.122p	3.823	31.90
TK8_FO.S	0.980	0.840	27.71	21.914a	4.102a	3.823	31.21
TK9_FO.F	0.980	0.840	23.84	26.088a	2.789p	4.095	40.92
TK9_FO.S	0.980	0.840	23.85	26.088a	2.739a	4.095	39.75
TK1_FW.S	0.980	1.000	16.56	17.359f	1.524p	1.322	4.97
TK1_FW.S	0.980	1.000	16.56	17.360f	1.515a	1.322	6.36
CPP_OIL.F	0.500	0.890	0.62	11.188a	0.914p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.109a	1.275a	0.405	0.65
SENSELS	0.100	0.800	0.49	18.710a	5.282a	3.289	0.77
ENGINE_RM.C	0.653	1.025	290.60	7.592a	0.222p	2.809	2002.06
Permeability override: 0.850							
FOAM.F	0.980	0.840	4.38	18.853a	3.804p	3.929	2.98
Total Tanker			785.06	6.805a	0.222p	2.658	2270.20
Total Weight			2,415.03	3.663a	0.049p	3.377	

Displ (MT)	LCG	TCG	VCG	Heel
HULL	2,414.67	3.695a	0.049a	2.963
Righting Arms	0.000	0.000p		
Distances in METERS				Moments in m.-MT

FREEBOARD STATUS  
 USK DRAFT draft: 4.462 @ 30.25F, 5.155 @ 24.5L  
 Trim: Aft 0.704/54.875, Heel: Port 0.64 deg.  
 Least freeboard is 2.289 m. located at 32.130a  
 Least extra freeboard (to margin line) is 2.211 m. located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 COGS JOHN P. Tully  
 NO.505 - COMPT 28-43 @ 4.0M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.704/54.875, Heel: Port 0.64 deg., VCB = 3.177

LCF	Displacement	Buoyancy-Ctr.	Height/	Moment/
LCF	Weight (MT)	LCB	VCB	on trim
4.622	2,414.67	3.695a	2.963	7.21
				3.675a
				30.08
				68.38
				0.735

Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT. Trim is per 54.98a.

Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 3.663a TOG = 3.019p VCG = 5.377  
 Free Surface Adjustment: 0.940  
 Adjusted CG: LCG = 3.675a TOG = 0.008p VCG = 6.317

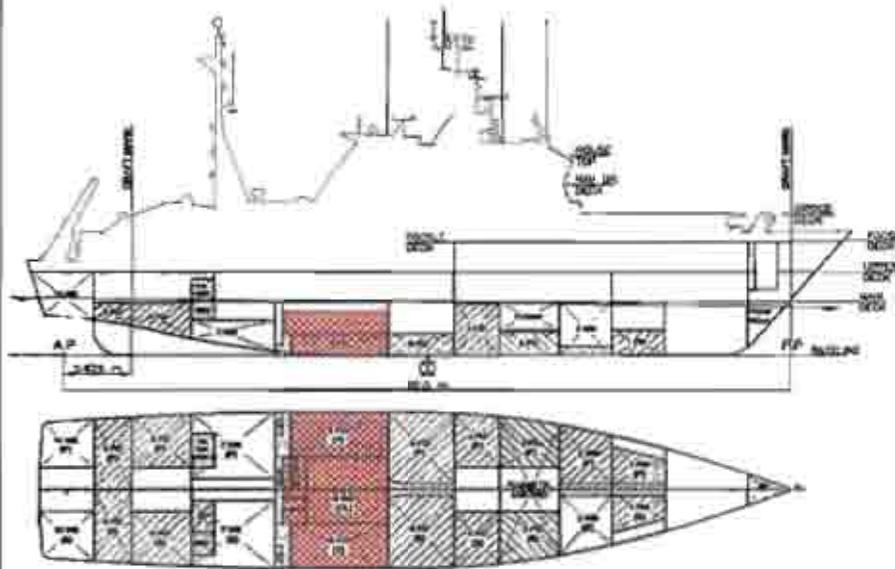
Origin	Degree of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight (MT)	Area
4.833	0.75a	0.64p	2,415.03	0.000
4.833	0.75a	3.14p	2,415.03	0.000
4.805	0.75a	5.64p	2,415.03	0.000
4.775	0.75a	8.14p	2,415.03	0.000
4.753	0.75a	10.64p	2,415.03	0.000
4.681	0.75a	13.14p	2,415.03	0.000
4.416	0.75a	15.64p	2,415.03	0.000
4.540	0.67a	18.14p	2,415.03	0.000
4.508	0.67a	19.07p	2,415.03	0.000
4.451	0.65a	20.64p	2,415.03	0.000
4.383	0.62a	23.14p	2,415.03	0.000
4.249	0.60a	25.64p	2,415.03	0.000
4.136	0.60a	28.14p	2,415.03	0.000
4.044	0.67a	30.02p	2,415.03	0.000
4.013	0.68a	30.64p	2,415.03	0.000
3.880	0.75a	33.14p	2,415.03	0.000
3.733	0.83a	35.64p	2,415.03	0.000
3.590	0.90a	38.14p	2,415.03	0.000
3.414	1.04a	40.64p	2,415.03	0.000
3.239	1.16a	43.14p	2,414.78	0.000
3.211	1.18a	43.54p	2,415.25	0.000

Distances in METERS. Specific Gravity = 1.025. Area in m.-Rad.

Note: The Height and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ADJUSTED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 2270.3 m.-MT was applied to artificially modify the CG.

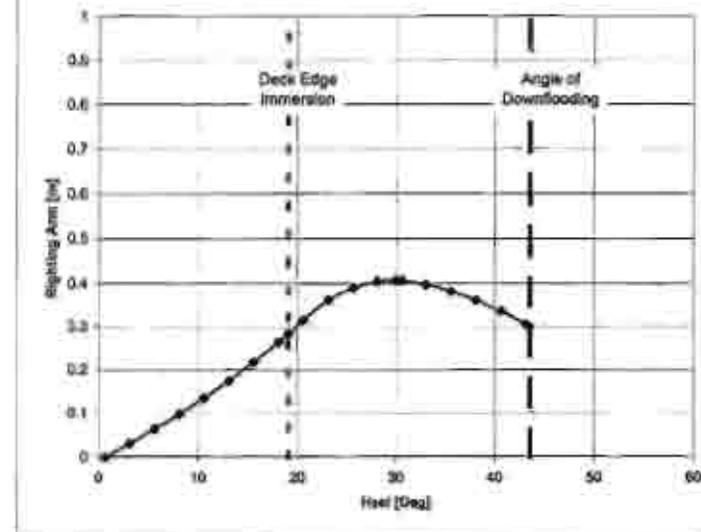
Critical Point: LCB-----TCP-----VCP  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

Damage Case No.505 - Comp 28-43 @ 4.0 m  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG. 48



NOTE: Helicopters included in case (not depicted in diagram above)

Damage Case No.505 - Comp 28-43 @ 4.0 m



	DAMAGE STABILITY CRITERIA		Min/Max	Attained
(1) GM at Equilibrium	≥	0.050	m.	0.735 P
(2) Absolute Angle at Equilibrium	≤	15.00	deg	0.64 P
(3) Absolute Angle at Deck/edge Immersion	>	0.00	deg	19.07 F

01/21/09 09:53:48 STX Canada Marine, Inc.  
 CGS JOHN P. Tully  
 NO.306 - COMPT 28-43 @ 4.9M - LOADING DEPARTURE CONDITION

**WEIGHT and DISPLACEMENT STATUS**  
 USE DRAFT draft: 4.577 @ 30.25t, 5.349 @ 24.63t  
 Trim: Att 0.771/34.875, Heel: Port 0.60 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,824.00	2.585a	0.048a	4.457
AFT STORES	5.00	27.350a	1.330p	4.556
PHO STORES	3.00	30.000a	0.000	8.500
Sally Stores	14.00	20.250a	0.000	6.000
Gas in Jettisonable TR	0.98	20.250a	6.100p	11.500
40 Crew and Effects @ 130	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	11.10	19.490a	0.098a	8.110
UPPER DECK CONTAINERS	4.35	24.100a	4.800p	8.400
POCILE DECK MACHINERY	8.96	8.320a	4.670a	11.800
POCILE DECK CONTAINERS	3.86	14.350a	5.492a	11.300
HELICOPTER	2.50	21.000a	0.000	14.300
ROCKET EQUIPMENT	0.50	0.700a	5.600a	8.000
<b>Total Flood</b>	<b>1,689.97</b>	<b>2,459a</b>	<b>0.059a</b>	<b>4,343</b>

Item	Load	SpGr	Weight (MT)	LCG	TCG	VCG	TRM
TKS_HL.P	1.200	1.025	16.61	15.082t	1.839p	1.615	17.09
TKS_FD.P	0.950	0.840	17.32	8.321f	3.488p	1.507	17.15
TKS_PO.S	0.680	0.840	54.65	4.988f	4.150p	2.889	17.28
TKH_PO.S	0.990	0.840	54.25	4.982f	4.140a	2.895	17.20
TKS_FD.F	1.800	0.440	34.66	0.465a	0.066p	1.244	17.00
TKS_PO.S	1.000	0.840	34.86	0.485a	0.064a	1.244	0.00
TKS_PO.P	0.980	0.840	24.13	7.385a	4.596p	1.940	18.40
TKS_PO.P	0.980	0.840	37.71	21.914a	4.120p	2.829	31.56
TKS_PO.S	0.980	0.840	37.71	21.914a	4.100a	2.829	30.77
TKF_PO.F	0.960	0.840	23.84	24.059a	2.789p	0.895	41.55
TKF_PO.S	0.960	0.840	23.85	24.059a	2.741a	4.095	40.29
TKI_FW.P	0.940	1.020	16.36	17.350f	1.534p	1.322	4.80
TKI_FW.S	0.960	1.000	16.56	17.961f	1.516a	1.322	4.23
CPP_OCL.P	0.640	0.880	6.62	11.185a	0.913p	0.535	0.30
STORAGE.S	0.253	1.000	6.77	11.170a	1.275a	0.409	0.85
STRAGE.S	0.100	0.890	6.69	18.712a	5.289a	1.089	0.77
TODAY.F	0.990	0.840	9.58	19.685a	3.504p	5.929	3.49
<b>Total Tanks</b>			<b>404.37</b>	<b>4,768a</b>	<b>0.580p</b>	<b>2,409</b>	<b>148.00</b>
<b>Total Weight</b>			<b>2,094.34</b>	<b>3,246a</b>	<b>0.027p</b>	<b>6,752</b>	

Item	Displ (MT)	LCG	TCG	VCG	TRM	
HULL	1,036	2,520.24	1,489a	0.041p	1,204	-4.068
TKS_PO.S Flooded	1,021	-30.04	7,318a	4.596a	1,471	-6.388
SHIP'S STORES Flooded	1,028	+406.00	7,550a	0.104p	2,279	-4.958
<b>Total Displacement</b>	<b>3,085</b>	<b>2,094.20</b>	<b>3,101a</b>	<b>0.689p</b>	<b>3,076</b>	

Righting Arms: 0.680 0.000p  
 Distances in METERS: -----

**FREEBOARD STATUS**  
 USE DRAFT draft: 4.571 @ 30.25t, 5.349 @ 24.63t  
 Trim: Att 0.771/34.875, Heel: Port 0.60 deg.  
 Least freeboard is 2.101 m. located at 33.198a  
 Least extra freeboard (to margin line) is 1.025 m. located at 33.130a

01/21/09 09:53:48 STX Canada Marine, Inc.  
 CGS JOHN P. Tully  
 NO.306 - COMPT 28-43 @ 4.9M - LOADING DEPARTURE CONDITION

**RIGHTING PROPERTIES with FLOODING**  
 Trim: Att 0.771/34.875, Heel: Port 0.60 deg., VCG = 3.789

LCF Displacement Buoyancy-Ctr. Weight/ Moment/  
 Draft---Weight (MT)---LCB---VCG---LCF---on trim---GML---SAT  
 5.082 2,094.20 3.105a 3.026 7.09 5.612a 30.66 80.34 1.465  
 Distances in METERS. -----Specific Gravity = 1.025. -----Moment in m.-MT.  
 Trim is per 34.88a.

Draft is from USE DRAFT. True Free Surface Included.

**RIGHTING ARMS vs HEEL ANGLE with FLOODING**  
 Total CG: LCG = 3.066a TCG = 0.027p VCG = 3.789  
 Free Surface Adjustment: 0.123  
 Adjusted CG: LCG = 3.068a TCG = 0.055p VCG = 3.917

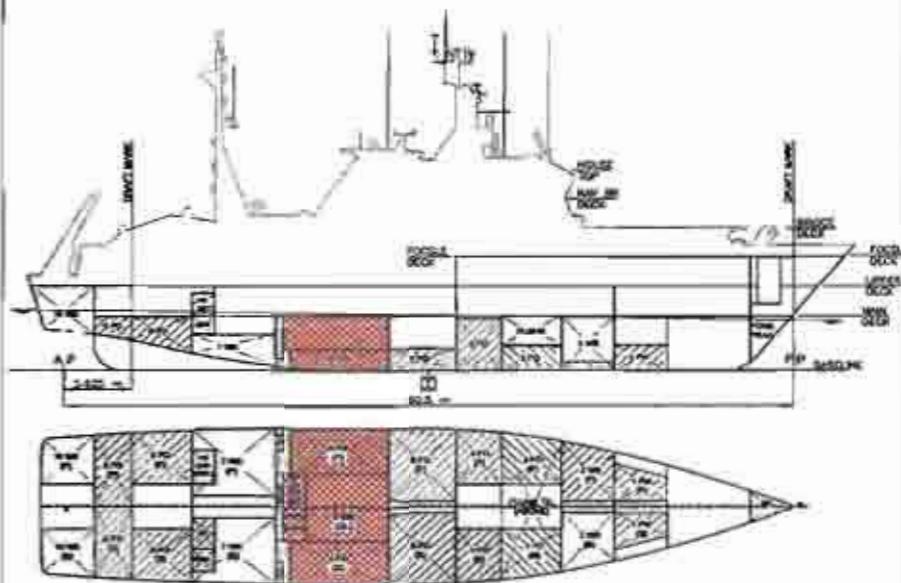
Origna	Depth	Heel	Displacement	Righting Arms	Flood Pt		
Depth	Trim	Heel	Weight (MT)	In Trim-In Heel	Area		
4.998	0.81a	0.60p	2,094.20	0.000	0.000	4.129(1)	
4.976	0.81a	3.10p	2,094.20	0.000	0.074	3.821(1)	
4.945	0.80a	5.60p	2,093.97	0.000	0.134	3.003(1)	
4.901	0.79a	8.10p	2,093.81	0.000	0.189	3.194(1)	
4.847	0.78a	10.60p	2,094.34	0.000	0.243	3.025(1)	
4.780	0.78a	13.10p	2,094.34	0.000	0.289	0.036a	4.337(1)
4.700	0.76a	15.60p	2,094.34	0.000	0.338	0.654	4.202(1)
4.609	0.75a	18.10p	2,094.34	0.000	0.465	0.071	3.963(1)
4.506	0.70a	19.61p	2,094.34	0.000	0.474	0.073	Marg Imm.
4.504	0.68a	20.40p	2,094.34	0.000	0.536	0.030	3.522(1)
4.390	0.67a	21.10p	2,094.34	0.000	0.596	0.1177	3.174(1)
4.269	0.67a	25.80p	2,093.81	0.000	0.640	0.1444	2.818(1)
4.143	0.67a	28.10p	2,094.74	0.000	0.670	0.1732	2.448(1)
4.009	0.63a	30.60p	2,094.63	0.000	0.688	0.2029	2.076(1)
3.854	0.68a	33.10p	2,094.52	0.000	0.696	0.2331	1.701(1)
3.788	0.69a	34.49p	2,094.33	0.000	0.697	0.2301	1.491(1)
3.635	0.71a	35.60p	2,094.61	0.000	0.694	0.2625	1.224(1)
3.523	0.70a	38.10p	2,094.04	0.000	0.491	0.2928	0.948(1)
3.342	0.68a	40.60p	2,094.18	0.000	0.484	0.3239	0.669(1)
3.152	0.95a	43.10p	2,098.34	0.000	0.472	0.3534	0.390(1)
3.053	0.99a	44.20p	2,094.34	0.000	0.463	0.3678	-0.000(1)

Distances in METERS. -----Specific Gravity = 1.025. -----Area in m.-Sqr.

Note: The weights and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 238.0 m.-MT was applied to artificially modify the CG.

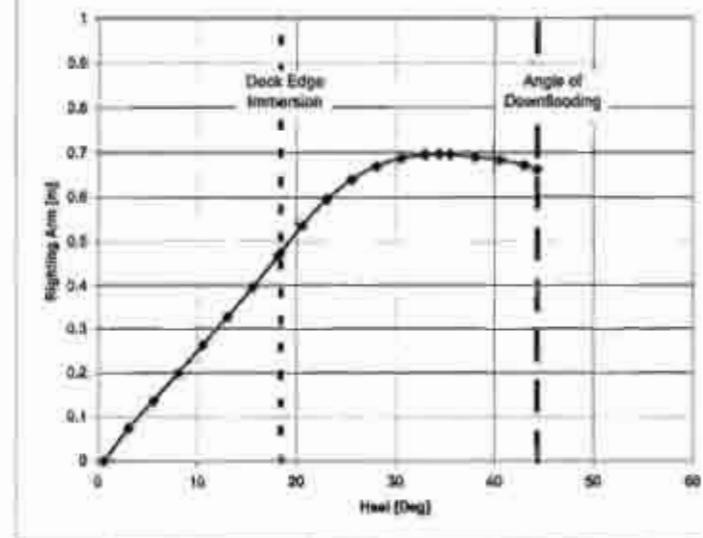
Critical Point: LCG---TCG---VCG  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 3.430a 7.000 11.300

Damage Case No.506 - Comp 28-43 @ 4.9 m  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG.48



NOTE: Helicopter included in mass that depicted in diagram above!

Damage Case No.506 - Comp 28-43 @ 4.9 m



LINE	DAMAGE STABILITY CRITERIA	Min/Max	Attained
(1)	G <sub>R</sub> at Equilibrium	> 0,050 m	1,865 ?
(2)	Absolute Angle at Equilibrium	< 15,00 deg	0,60 #
(3)	Absolute Angle at Deck/Margin Immersion	> 0,00 deg	18,41 ?

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GNS 11.50 CCGS JOHN P. Tully  
 NO.600 - COMPT 4-28 @ 1.0M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.318 @ 30.25f, 4.496 @ 24.63a  
 Trim: Aft 0.177/54.875, Heel: Sctd 4.19 deg.

Part	Weight (MT)	LCG	TCG	VCG			
LIGHT SHIP	1,624.60	2.595a	0.048a	6.437			
AFT STORES	5.00	22.350a	1.330p	6.556			
FWO STORES	5.00	30.000f	0.000	8.503			
Galley Stores	14.00	20.350f	0.000	6.000			
Gas in Jettisonable Tk	0.68	20.250a	6.300p	11.000			
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.050a	6.130			
UPPER DECK CONTAINER	4.35	26.100a	4.650p	6.600			
FOCSLE DECK MACHINERY	8.98	8.320a	4.670a	11.000			
FOCSLE DECK CONTAINER	3.86	14.350a	5.480a	11.300			
HELICOPTER	2.59	21.000f	0.000	14.300			
ROSETTE EQUIPMENT	0.90	0.700a	5.600a	9.000			
Total Fixed	1,689.97	2.659a	0.059a	6.543			
Load	SpGr	Weight (MT)	LCG	TCG	VCG	FSM	
TK2_WB.P	0.200	1.025	16.62	13.094f	1.755p	1.022	14.92
TK7_WB.P	0.026	1.025	1.40	13.975a	1.480p	0.838	1.66
TK3_PO.P	0.950	0.840	17.32	8.356f	3.391p	1.504	5.47
TK4_PO.P	0.980	0.840	54.66	4.093f	4.118p	2.886	7.90
TK4_PO.S	0.980	0.840	54.66	4.092f	4.171a	2.886	7.96
TK5_PO.P	1.000	0.840	34.66	0.465a	3.066p	1.248	0.00
TK5_PO.S	1.000	0.840	34.66	0.465a	3.066a	1.248	0.00
TK6_PO.P	0.980	0.840	24.12	7.324a	4.559p	1.461	1.59
TK6_PO.S	0.980	0.840	24.12	7.323a	4.620a	1.461	1.67
TK8_PO.S	0.980	0.840	37.71	21.902a	4.145a	3.830	4.01
TK9_PO.S	0.990	0.840	25.84	26.092a	2.814a	4.096	2.59
TK1_FW.P	0.980	1.000	16.56	17.381f	1.500p	1.322	1.38
TK1_FW.S	0.980	1.000	16.56	17.369f	1.535a	1.322	1.16
CPF_OIL.P	0.500	0.890	0.62	11.185a	0.844p	0.477	0.51
SLUDGE.S	0.223	1.000	0.77	11.078a	1.397a	0.408	1.33
SEWAGE.S	0.100	0.890	0.49	18.693a	5.416a	3.289	0.78
FOUNDRY.P	0.088	1.025	10.79	16.200a	0.020a	0.501	2.93
Permeability override:	0.850						
PODAY.P	0.980	0.840	5.58	18.688a	3.492p	5.929	0.84
Total Tanks			379.14	2.232a	0.286a	2.287	56.71
Total Weight			2,069.11	2.580a	0.108a	5.763	
Displ (MT)				LCG	TCG	VCG	RefHt
HULL	1.025		2,069.12	2.580a	0.334a	2.684	-4.390
Righting Arms:				0.000	0.000a		
Distances in METERS							Moments in m.-MT

FREEBOARD STATUS  
 USK DRAFT draft: 4.318 @ 30.25f, 4.496 @ 24.63a  
 Trim: Aft 0.177/54.875, Heel: Sctd 4.19 deg.  
 Least freeboard is 2.600 m. located at 32.130a  
 Least extra freeboard (to margin line) is 2.524 m. located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GNS 11.50 CCGS JOHN P. Tully  
 NO.600 - COMPT 4-28 @ 1.0M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.177/54.875, Heel: Sctd 4.19 deg., VCG = 5.763

LCF	Displacement	Buoyancy-Ctr	Weight/	Moment/			
Draft	Weight (MT)	LCB	VCB	LCF	cm trim	GML	GWT
4.318	2,069.12	2.590a	2.684	7.05	3.485a	28.75	76.26
Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT.							
Trim is per 54.88a.							

Draft is from USK DRAFT. True Free Surface included.

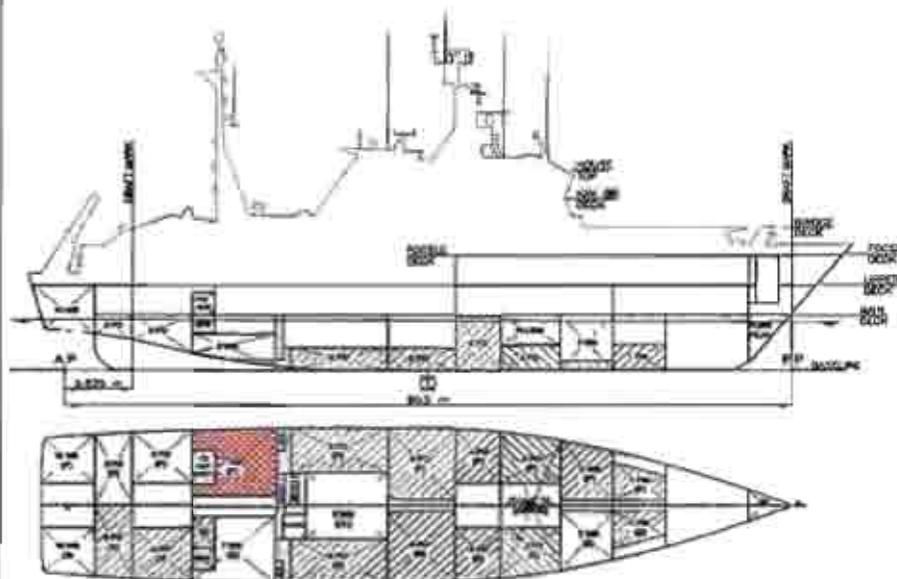
RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 2.580a TCG = 0.108a VCG = 5.763  
 Free Surface Adjustment: 0.027  
 Adjusted CG: LCG = 2.580a TCG = 0.106a VCG = 5.790

Origin	Degrees of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight (MT)	Area
				Height
4.391	0.182	4.19a	2,069.46	0.0000
4.367	0.17a	6.69a	2,069.11	0.000
4.343	0.14a	9.19a	2,069.11	0.000
4.288	0.11a	11.69a	2,069.11	0.000
4.232	0.07a	14.19a	2,069.11	0.000
4.164	0.02a	16.69a	2,069.11	0.000
4.084	0.041	19.19a	2,069.11	0.000
3.992	0.11f	21.69a	2,069.11	0.000
3.888	0.18f	24.19a	2,069.11	0.000
3.841	0.20f	25.10a	2,069.11	0.000
3.761	0.25f	26.89a	2,069.11	0.000
3.624	0.32f	29.19a	2,069.11	0.000
3.477	0.36f	31.69a	2,069.11	0.000
3.319	0.38f	34.19a	2,068.71	0.000
3.152	0.38f	36.69a	2,069.17	0.000
2.975	0.36f	39.19a	2,069.21	0.000
2.836	0.33f	41.66a	2,069.14	0.000
2.788	0.32f	41.69a	2,069.17	0.000
2.593	0.26f	44.19a	2,069.38	0.000
2.351	0.18f	46.69a	2,069.18	0.000
2.223	0.13f	48.63a	2,069.34	0.000
Distances in METERS. Specific Gravity = 1.025. Area in m.-Rad.				

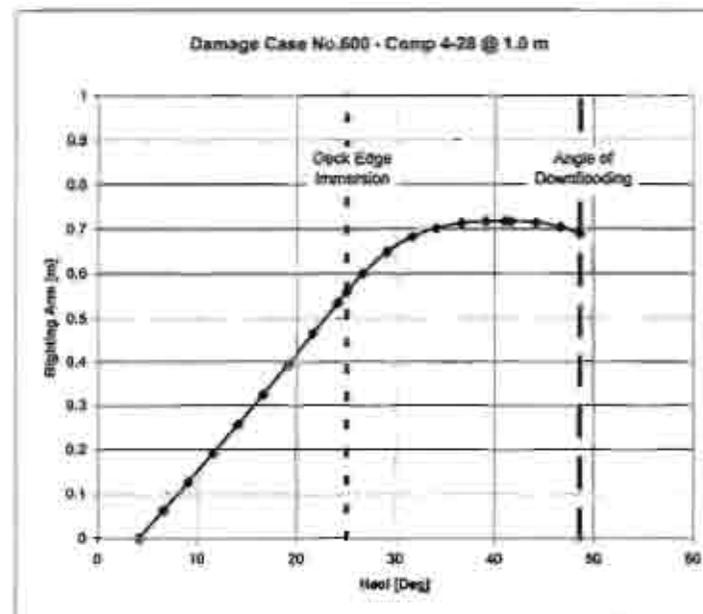
Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 56.7 m.-MT was applied to artificially modify the CG.

Critical Point LCF TCP VCP  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

Damage Case No.600 - Comp 4-28 @ 1.0 m  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG.48



NOTE: Helicopters included in case when depicted in diagram above.



LD	DAMAGE STABILITY CRITERIA	Min/Max	Attained
(1)	GM at Equilibrium	> 0.050 m	1.450 m
(2)	Absolute Angle at Equilibrium	< 15.00 deg	4.10 P
(3)	Absolute Angle at Deck/Margin Immersion	> 5.00 deg	25.10 P

01/21/09 08:53:40 STX Canada Marine, Inc.  
 USS 11:50 CODE JOHN P. Tully  
 NO. 601 - COMPT 4-28 @ 2.0m - LOADING DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.294 @ 30.25t, 4.57t @ 24.42t  
 Trim: Aft 0.278/24.87t, Heel: Stbd 3.23 deg.

Part	Weight (MT)	LCB	TCG	VCG
LIGHT SHIP	1,424.63	3.585a	0.549a	2.457
APT STORES	5.00	22.380a	1.330p	8.554
POD STORES	3.00	30.200P	0.000	8.500
Galley Stores	14.00	20.250P	0.000	6.400
Gas in Jettisonable TX	0.44	20.250a	6.100p	11.000
10 Crew and Effects @ 12t	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	14.450a	0.050p	8.100
UPPER DECK COMBINDER	4.35	24.100a	4.930p	8.800
PODSIDE DECK MACHINERY	8.90	8.320a	4.870a	11.000
PODSIDE DECK CONTAINER	2.94	14.750a	5.480a	11.300
HELICOPTER	2.50	21.000P	0.000	14.300
ROSETTE EQUIPMENT	0.90	0.700a	1.800a	8.000
Total Fixed	1,689.87	2.459a	0.049a	6.943

Item	Load	SpGr	Weight (MT)	LCB	TCG	VCG	FWL
TK1_WD.P	0.200	1.025	16.62	13.089P	1.771p	1.021	15.11
TK7_WD.P	0.250	1.025	16.65	15.146a	2.142p	1.570	24.81
TK1_FO.P	0.850	0.810	17.32	4.151P	3.184p	1.503	2.11
TK1_FO.S	0.980	0.810	94.65	4.094P	4.921p	2.884	11.82
TK4_FO.S	0.300	0.840	54.65	4.991P	4.168a	2.884	11.98
TK3_FO.P	1.000	0.840	34.66	0.465a	3.066p	1.248	2.00
TK5_FO.S	1.000	0.940	34.66	0.465a	3.066a	1.248	0.00
TK6_FO.P	0.980	0.840	74.12	7.329a	4.521p	1.461	2.52
TK6_FO.S	0.980	0.810	24.11	7.326a	4.619a	1.461	2.59
TK8_FO.P	0.001	1.025	0.03	19.478a	2.189p	1.904	0.01
TK8_FO.S	0.880	0.810	37.71	21.901a	4.143a	3.825	0.02
TK9_FO.S	0.880	0.940	33.94	24.031a	3.812a	4.094	3.85
TK1_FW.S	0.980	1.000	16.56	17.318P	1.902p	1.322	2.05
TK1_FW.S	0.980	1.000	16.56	17.366P	1.332a	1.322	1.74
CFP_OIL.P	0.500	0.850	0.62	11.125a	0.840p	0.436	0.50
SLUDGE.S	0.223	1.000	0.77	11.064a	1.388a	0.406	1.24
SLUDGE.S	3.100	0.850	0.49	16.496a	5.389a	3.267	0.97
PERCHLOR.P	0.178	1.025	21.54	16.197a	0.000a	1.025	2.00
Permeability override:	0.600						
FOCAL.P	0.980	0.910	8.58	18.488a	3.484p	3.229	1.21
Total Tanks			407.14	7.133a	0.156a	2.232	127.67
Total Weight			2,097.15	2.755a	0.044a	5.707	

Item	Displacement	LCB	TCG	VCG	Heel/Tr	
HULL	1.025	2,097.15	2.771a	0.284a	2.703	-4.43t

Righting Arms: 0.000 @ 0.00a

Distances in METERS, Moments in m.-MT

FREEBOARD STATUS  
 USK DRAFT draft: 4.294 @ 30.25t, 4.57t @ 24.42t  
 Trim: Aft 0.278/24.87t, Heel: Stbd 3.21 deg.  
 least freeboard is 2.630 m. located at 32.130a  
 least extra freeboard (to margin line) is 2.954 m. located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 USS 11:50 CODE JOHN P. Tully  
 NO. 601 - COMPT 4-28 @ 2.0m - LOADING DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.278/24.87t, Heel: Stbd 3.23 deg., VCG = 5.707

LCF	Displacement	Buoyancy-Ctr.	Weight/	Moment/
Draft	Weight (MT)	LCB	VCG	in trim
4.474	2,097.15	2.771a	2.703	7.08
		5.607a	29.05	74.01
				1.457

Distances in METERS, Specific Gravity = 1.025, Moment in m.-MT  
 Trim is per 54.98m.

Draft is trim USK DRAFT. True Free Surface Included.

RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCB = 2.755a TCG = 0.044a VCG = 5.707  
 Free Surface Adjustment: 0.061  
 Adjusted CG: LCB = 2.756a TCG = 0.043a VCG = 5.768

Origin	Degrees of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight (MT)	Area
4.427	0.25a	3.21a	2,097.49	0.000
4.407	0.25a	5.71a	2,097.15	0.000
4.378	0.25a	8.21a	2,097.15	0.000
4.347	0.25a	10.71a	2,097.15	0.000
4.316	0.25a	13.21a	2,097.15	0.000
4.282	0.25a	15.71a	2,097.15	0.000
4.247	0.25a	18.21a	2,097.15	0.000
4.210	0.25a	20.71a	2,097.15	0.000
4.171	0.25a	23.21a	2,097.15	0.000
4.134	0.25a	25.71a	2,097.15	0.000
4.092	0.25a	28.21a	2,097.15	0.000
4.047	0.25a	30.71a	2,097.15	0.000
4.000	0.25a	33.21a	2,097.15	0.000
3.951	0.25a	35.71a	2,097.22	0.000
3.907	0.25a	38.21a	2,097.28	0.000
3.863	0.25a	40.71a	2,097.34	0.000
3.818	0.25a	43.21a	2,097.40	0.000
3.771	0.25a	45.71a	2,097.46	0.000
3.722	0.25a	48.21a	2,097.52	0.000
3.671	0.25a	50.71a	2,097.58	0.000
3.618	0.25a	53.21a	2,097.64	0.000
3.563	0.25a	55.71a	2,097.70	0.000
3.506	0.25a	58.21a	2,097.76	0.000
3.447	0.25a	60.71a	2,097.82	0.000
3.387	0.25a	63.21a	2,097.88	0.000
3.324	0.25a	65.71a	2,097.94	0.000
3.259	0.25a	68.21a	2,098.00	0.000
3.192	0.25a	70.71a	2,098.06	0.000
3.123	0.25a	73.21a	2,098.12	0.000
3.052	0.25a	75.71a	2,098.18	0.000
2.979	0.25a	78.21a	2,098.24	0.000
2.904	0.25a	80.71a	2,098.30	0.000
2.827	0.25a	83.21a	2,098.36	0.000
2.748	0.25a	85.71a	2,098.42	0.000
2.667	0.25a	88.21a	2,098.48	0.000
2.584	0.25a	90.71a	2,098.54	0.000
2.499	0.25a	93.21a	2,098.60	0.000
2.412	0.25a	95.71a	2,098.66	0.000
2.323	0.25a	98.21a	2,098.72	0.000
2.232	0.25a	100.71a	2,098.78	0.000
2.139	0.25a	103.21a	2,098.84	0.000
2.044	0.25a	105.71a	2,098.90	0.000
1.947	0.25a	108.21a	2,098.96	0.000
1.848	0.25a	110.71a	2,099.02	0.000
1.747	0.25a	113.21a	2,099.08	0.000
1.644	0.25a	115.71a	2,099.14	0.000
1.539	0.25a	118.21a	2,099.20	0.000
1.432	0.25a	120.71a	2,099.26	0.000
1.323	0.25a	123.21a	2,099.32	0.000
1.212	0.25a	125.71a	2,099.38	0.000
1.099	0.25a	128.21a	2,099.44	0.000
0.984	0.25a	130.71a	2,099.50	0.000
0.867	0.25a	133.21a	2,099.56	0.000
0.748	0.25a	135.71a	2,099.62	0.000
0.627	0.25a	138.21a	2,099.68	0.000
0.504	0.25a	140.71a	2,099.74	0.000
0.379	0.25a	143.21a	2,099.80	0.000
0.252	0.25a	145.71a	2,099.86	0.000
0.123	0.25a	148.21a	2,099.92	0.000
0.000	0.25a	150.71a	2,099.98	0.000

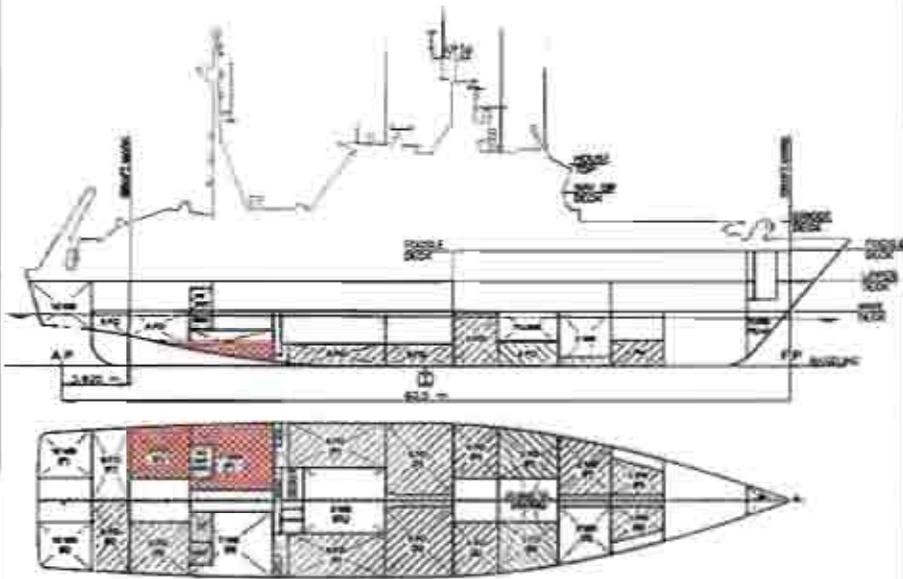
Distances in METERS, Specific Gravity = 1.025, Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 127.7 m.-MT was applied to artificially modify the CG.

Critical Point: LCF = 7.630a TCG = 0.000 VCG = 11.300  
 1) CAPTAIN'S ROOM WINDOW FLOOD

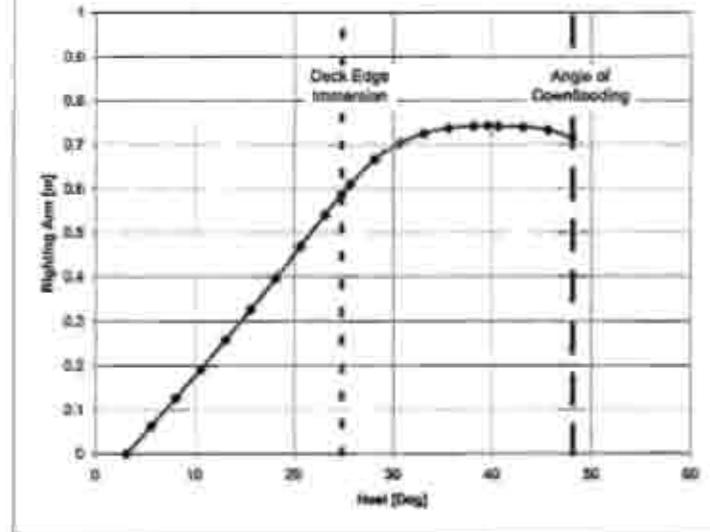
Damage Case No.601 - Comp 4-28 @ 2.0 m

IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG.49



NOTE: Helicopters included in case load depicted in disaster view.

Damage Case No.601 - Comp 4-28 @ 2.0 m



DAMAGE STABILITY CRITERIA		SLA/Sea	Attained
(1)	GM at Equilibrium	> 0.050 m	1.457 F
(2)	Absolute Angle at Equilibrium	< 15.00 deg	5.21 P
(3)	Absolute Angle at Back/margin Immersion	> 0.00 deg	34.85 P

01/21/09 08:53:40 STX Canada Marine, Inc.  
 CGS JOHN F. Yully  
 NO.602 - CONFY 4-28 @ 3.0M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT: 4.235 @ 30.252, 4.717 @ 24.434  
 Trim: Aft 0.478/54.875, Heel: Stbd 0.29 deg.

Part	Weight (MT)	LCG	TCG	VCG			
LIGHT SHIP	1,624.60	8.298a	0.048a	6.457			
AFT STORES	5.00	22.380a	1.330p	6.556			
FWD STORES	1.00	30.800F	0.000	8.500			
Galley Stores	14.00	20.250F	0.000	4.000			
Gas in Jettisonable TK	0.69	20.250a	6.100p	11.000			
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.550a	8.130			
UPPER DECK CONTAINER	4.35	24.100a	0.650p	8.600			
PODSIDE DECK MACHINERY	8.98	8.320a	4.670a	11.000			
PODSIDE DECK CONTAINER	3.86	14.350a	0.480a	11.300			
HELICOPTER	2.50	21.000F	0.000	14.300			
ROCKETEER EQUIPMENT	0.90	0.700a	0.400a	9.500			
Total Fixed	1,689.97	2.689a	0.068a	6.543			
Load	SpGr	Weight (MT)	LCG	TCG	VCG	PSM	
TK2 WB.P	0.200	1.025	16.41	13.074F	1.821p	1.019	16.61
TK7 WB.P	0.912	1.025	48.60	15.749a	3.418p	2.118	56.50
TK3 FO.P	0.950	0.840	17.32	8.333F	3.442p	1.502	17.04
TK6 FO.P	0.980	0.840	56.65	8.090F	4.162p	2.885	27.22
TK4 FO.S	0.880	0.840	54.65	6.090F	4.147a	2.885	27.26
TK5 FO.P	1.000	0.840	34.66	0.465a	3.066p	1.248	8.00
TK5 FO.S	1.000	0.840	34.66	0.465a	3.066p	1.248	8.00
TK8 FO.P	0.980	0.840	24.13	7.357a	4.589p	1.461	23.82
TK6 FO.S	0.980	0.840	24.13	7.357a	4.589p	1.460	23.98
TK8 FO.P	0.118	1.025	5.55	21.079a	3.254p	0.717	11.23
TK8 FO.S	0.840	0.840	37.71	21.810a	4.117a	3.829	36.66
TK9 FO.P	0.014	1.025	0.43	25.241a	0.718p	2.907	0.98
TK9 FO.S	0.980	0.340	23.84	26.080a	2.775a	4.085	51.58
TK1 PW.P	0.980	1.000	16.56	17.366F	1.517p	1.322	6.88
TK1 PW.S	0.980	1.000	16.56	17.366F	1.521a	1.322	6.88
CPE OIL.P	0.500	0.890	0.62	11.185a	0.901p	0.435	7.50
SLODGE.S	0.223	1.000	0.77	11.100a	1.294a	0.404	0.96
SEWAGE.S	0.100	0.850	0.43	18.702a	3.308a	3.285	0.77
POPMFRM.F	0.512	0.828	38.45	16.859a	0.409p	1.708	62.84
Permeability override: 0.850							
FODAY.P	0.950	0.840	5.58	18.888a	3.489p	5.929	3.45
Total Tanks			489.07	4.711a	0.325p	2.272	286.23
Total Weight			2,150.04	3.088a	0.396a	6.629	
ROLL	1.025		2,150.04	3.123a	0.023a	2.762	-4.489
Righting Arms				0.000	0.000a		
Distances in METERS							Moments in m.-MT.

FREEDBOARD STATUS  
 USK DRAFT draft: 4.235 @ 30.252, 4.717 @ 24.434  
 Trim: Aft 0.478/54.875, Heel: Stbd 0.29 deg.  
 Least foreboard is 2.810 m. located at 32.130a  
 Least deck foreboard (to margin line) is 2.734 m. located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 CGS JOHN F. Yully  
 NO.602 - CONFY 4-28 @ 3.0M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 0.478/54.875, Heel: Stbd 0.29 deg., VCU = 3.629

Draft	Displacement	LCG	VCG	TCG	LCF	on trim	GML	GMT
4.553	2,150.04	3.123a	2.762	1.10	3.742a	29.32	14.83	1.385

Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT.  
 Trim is per 54.88m.  
 Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARM vs HEEL ANGLE  
 Total CG: LCG = 3.088a TCG = 0.000a VCG = 5.629  
 Free Surface Adjustment: 0.182  
 Adjusted CG: LCG = 3.099a TCG = 0.007a VCG = 5.829

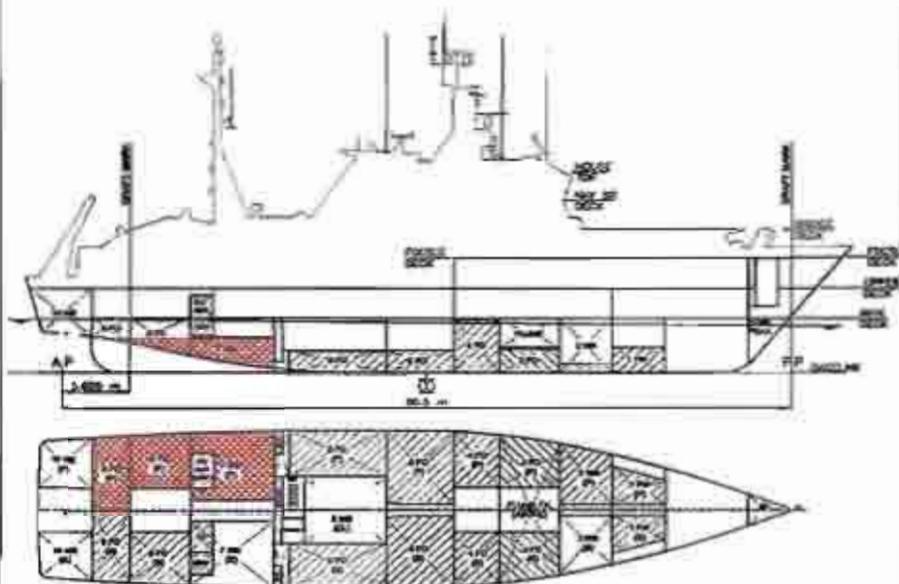
Origin	Distance of	Displacement	Righting Arm	Filed Pt			
Depth	Trim	Heel	in Trim	Area			
4.489	0.50a	0.29a	2,150.34	0.000	0.000	6.708(1)	
4.492	0.50a	2.79a	2,149.84	0.000	0.061	0.0013	6.397(1)
4.465	0.50a	3.29a	2,149.80	0.000	0.122	0.0053	6.075(1)
4.437	0.48a	7.79a	2,150.04	0.000	0.184	0.0120	5.745(1)
4.399	0.46a	10.29a	2,150.04	0.000	0.246	0.0214	5.407(1)
4.348	0.44a	12.79a	2,150.04	0.000	0.310	0.0339	5.062(1)
4.288	0.40a	15.29a	2,150.03	0.000	0.375	0.0484	4.712(1)
4.216	0.35a	17.79a	2,150.04	0.000	0.442	0.0663	4.358(1)
4.131	0.29a	20.29a	2,150.04	0.000	0.512	0.0871	4.001(1)
4.033	0.23a	22.79a	2,150.04	0.000	0.583	0.1110	3.642(1)
3.987	0.20a	23.87a	2,150.03	0.000	0.614	0.1223	Margin
3.901	0.16a	25.39a	2,150.04	0.000	0.663	0.1380	3.285(1)
3.796	0.11a	27.79a	2,150.04	0.000	0.705	0.1676	2.923(1)
3.661	0.08a	30.29a	2,150.04	0.000	0.737	0.1992	2.556(1)
3.516	0.07a	32.79a	2,150.10	0.000	0.765	0.2318	2.184(1)
3.360	0.06a	35.29a	2,150.13	0.000	0.762	0.2649	1.809(1)
3.287	0.06a	36.41a	2,150.14	0.000	0.763	0.2798	1.640(1)
3.196	0.11a	37.79a	2,150.27	0.000	0.762	0.2981	1.431(1)
3.038	0.16a	40.29a	2,150.14	0.000	0.757	0.3313	1.053(1)
2.833	0.23a	42.79a	2,150.08	0.000	0.749	0.3641	0.674(1)
2.640	0.32a	45.29a	2,150.03	0.000	0.736	0.3966	0.293(1)
2.490	0.39a	47.79a	2,150.33	0.000	0.720	0.4208	-0.000(1)

Distances in METERS. Specific Gravity = 1.025. Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 386.7 m.-MT was applied to artificially modify the CG.

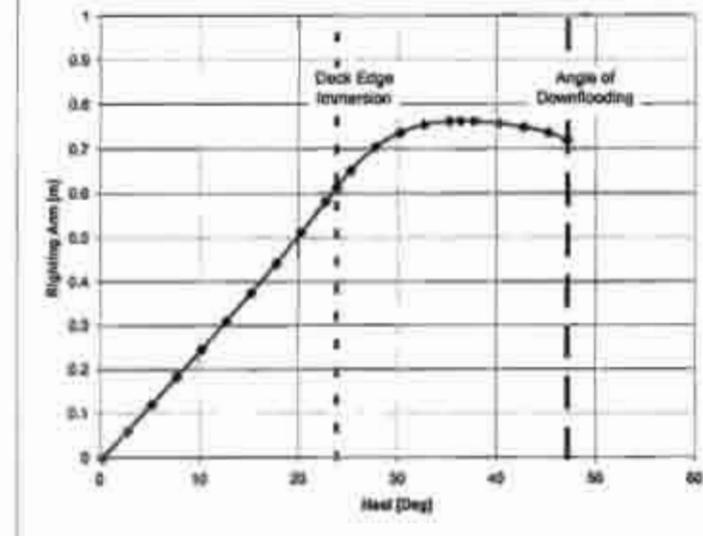
Critical Points: LCG TCG VCG  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.610a 7.000 11.300

Damage Case No.602 - Comp 4-28 @ 3.0 m  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG.48



NOTE: Helicopter included in Case (not depicted in diagram above).

Damage Case No.602 - Comp 4-28 @ 3.0 m



DAMAGE STABILITY CRITERIA		Min/Max	Attained
(1)	GM at Equilibrium	> 0.050 m	1.384 P
(2)	Absolute Angle to Equilibrium	< 15.00 deg	0.25 P
(3)	Absolute Angle to Deck/Margin Immersion	> 0.00 deg	22.67 P

01/21/09 08:53:40 STX Canada Marine, Inc.  
 OCS JOHN P. Tully  
 NO.603 - COMPT 4-28 @ 4.0m - LOADLINE DEPARTURE CONDITION

**WEIGHT and DISPLACEMENT STATUS**  
 UNK DRAFT drafts: 0.113 @ 30.25F, 4.948 @ 24.4m  
 Trim: Aft 0.833/34.875, Heel: Port 4.37 deg.

Part	Weight (MT)	LCG	TCG	VCG
LIGHT SHIP	1,424.60	2,355a	0.348a	4.467
AFT STORES	3.00	22.350a	1.330p	6.558
FWD STORES	3.00	30.000F	0.000	8.500
Galley Stores	14.00	29.200F	0.000	6.000
Gas in Jettisonable Yk	0.68	20.550a	6.100p	11.000
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	13.498a	0.953a	8.120
UPPER DECK CONTAINER	4.35	26.100a	4.450p	8.800
PODSLE DECK MACHINERY	8.98	8.320a	4.670a	11.000
PODSLE DECK CONTAINER	1.96	14.300a	5.400a	11.300
HELICOPTER	2.50	21.000F	0.000	10.300
ROCKETRY EQUIPMENT	0.90	0.700a	5.800a	8.000
Total Fixed	1,489.97	2,859a	0.868a	6.543

Load	SpGr	Height (MT)	LCG	TCG	VCG	KG	
TK2_WB.F	0.980	1.025	16.65	13.045F	1.911p	1,023	19.17
TK3_WB.F	1.000	1.025	53.34	16.622a	2.952p	2,204	0.91
TK3_PO.F	0.950	0.840	17.32	8.523F	3.488p	1,504	5.18
TK4_WB.F	0.980	0.840	54.65	4.090F	4.172p	2,488	7.73
TK4_PO.F	0.980	0.840	54.65	4.091F	4.188a	2,488	7.73
TK5_WB.F	1.000	0.840	34.66	0.465a	3.088p	1,249	0.00
TK5_PO.F	1.000	0.840	34.66	0.465a	3.066a	1,249	0.00
TK6_WB.F	0.980	0.840	24.12	7.346a	4.619p	1,441	2.17
TK6_PO.F	0.980	0.840	24.12	7.346a	4.619a	1,441	2.17
TK8_WB.F	0.952	1.025	33.32	21.773a	4.088p	3,344	42.05
TK8_PO.F	0.980	0.840	37.71	21.910a	4.080a	3,830	3.95
TK9_WB.F	0.402	1.025	11.93	25.987a	2.582p	2,613	62.87
TK9_PO.F	0.999	0.840	23.84	26.005a	2.713a	4,098	2.41
TK1_WB.F	0.980	1.000	16.59	17.361F	1.534p	1,322	1.21
TK1_PO.F	0.960	1.000	16.59	17.374F	1.501a	1,322	1.54
CPP_OIL.F	0.500	0.590	0.42	11.785a	0.987p	0.427	0.51
SLUDGE.S	0.223	1.000	0.77	11.121a	2.216a	0.406	0.40
SEWAGE.S	0.100	0.990	0.49	10.714a	5.170a	1.290	0.78
FOFUM/WB.F	0.659	1.025	81.00	16.103a	1.905p	2,678	140.38
Permeability override: 0.850							
FOFAY.F	0.980	0.810	9.58	16.489a	1.519p	1,829	0.79
Total Tanks			539.14	6.820a	0.703p	2,403	422.14
Total Weight			2,229.11	3.666a	0.123p	5.555	
HEEL	1.025		Displ (MT)	LCG	TCG	VCG	Weight
			2,228.99	3.707a	2.332p	2.825	-4.545

Righting Arm: 0.000 0.400p  
 Distances in METERS. Moments in m.-MT.

**TRICORD STATUS**  
 UNK DRAFT drafts: 0.113 @ 30.25F, 4.948 @ 24.4m  
 Trim: Aft 0.833/34.875, Heel: Port 4.37 deg.  
 Least freeboard is 2.038 m, located at 38.130m  
 Least extra freeboard (to margin line) is 1.968 m, located at 32.430m

01/21/09 08:53:40 STX Canada Marine, Inc.  
 OCS JOHN P. Tully  
 NO.603 - COMPT 4-28 @ 4.0m - LOADLINE DEPARTURE CONDITION

**HYDROSTATIC PROPERTIES**  
 Trim: Aft 0.833/34.875, Heel: Port 4.37 deg., VCG = 5.555

LCF Displacement Buoyancy-Ctr. Weight/ Moment/  
 Draft---Weight (MT)---LCG---VCG---cm---LCF---cm trim---GML---GMT  
 4.942 2,228.99 3.707a 2.824 7.14 5.813a 29.48 72.43 1.453  
 Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT.  
 Trim is per 54.88m.

Draft is from UNK DRAFT, True Free Surface Included.

**RIGHTING ARM vs HEEL ANGLE**  
 Total CG: LCG = 3.666a TCG = 0.123p VCG = 5.555  
 Free Surface Adjustment: 0.180  
 Adjusted CG: LCG = 3.668a TCG = 0.109p VCG = 5.735

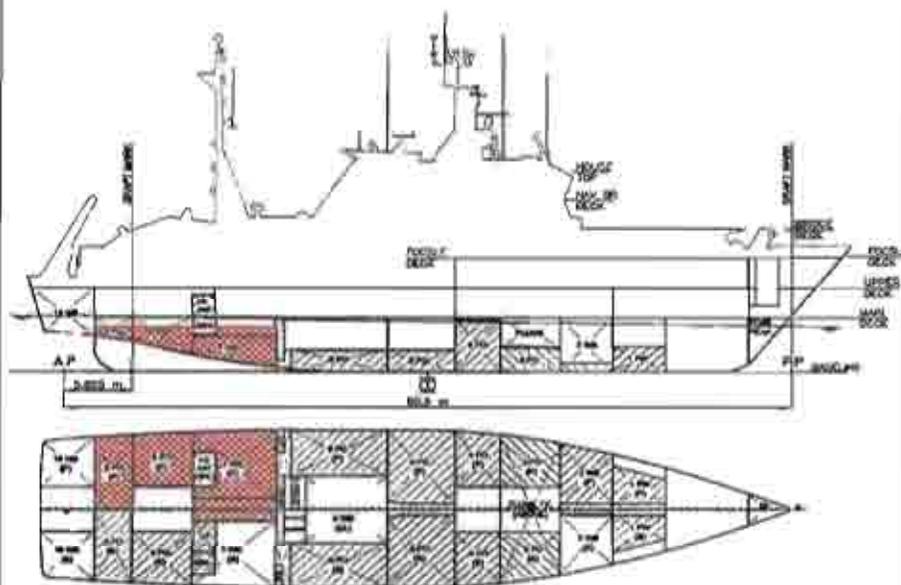
Heel	Degree of Trim	Displacement	Righting Arm	Flood Pt
Depth	Trim	Heel	Displ (MT)	Area
4.542	0.87a	4.37p	2,229.11	0.000
4.521	0.87a	4.87p	2,228.90	0.000
4.498	0.86a	5.37p	2,229.12	0.000
4.442	0.84a	5.87p	2,229.11	0.000
4.380	0.82a	6.37p	2,229.12	0.000
4.318	0.79a	6.87p	2,229.11	0.000
4.259	0.75a	7.37p	2,229.11	0.000
4.197	0.69a	7.87p	2,229.11	0.000
4.144	0.67a	8.37p	2,229.12	0.000
4.043	0.62a	8.87p	2,229.12	3.900
3.929	0.58a	9.37p	2,229.12	8.000
3.904	0.57a	9.87p	2,229.73	0.000
3.870	0.56a	10.37p	2,229.15	0.000
3.825	0.54a	10.87p	2,229.12	0.000
3.769	0.54a	11.37p	2,229.35	0.000
3.705	0.50a	11.87p	2,229.95	0.000
3.626	0.47a	12.37p	2,229.60	0.000
3.527	0.41a	12.87p	2,229.19	0.000
3.442	0.34a	13.37p	2,229.22	0.000
3.377	0.27a	13.87p	2,229.53	0.000

Distances in METERS. Specific Gravity = 1.025. Area in m.-Sq.

Note: The Weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 402.1 m.-MT was applied to artificially modify the CG.

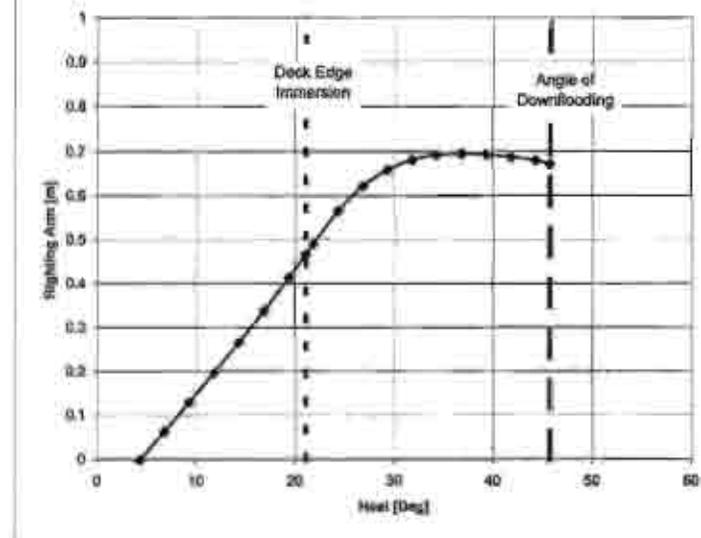
Critical Point: LCF TCG VCG  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.830a 7.000 11.300

Damage Case No.603 - Comp 4-28 @ 4.0 m  
 IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG.48



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.603 - Comp 4-28 @ 4.0 m



	DAMAGE STABILITY CRITERIA		Min/Max	Attained
(1) GM at Equilibrium	>	0.050 m		1.453 ?
(2) Absolute Angle at Equilibrium	<	15.00 deg		1.37 ?
(3) Absolute Angle at Deck/margin Immersion	>	0.00 deg		21.10 ?

01/21/09 09:52:40 STX Canada Marine, Inc.  
 GMS 11.50 CGCS JOHN P. Tully  
 NO. 604 - COMPT 4-28 @ 4.5m - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 8.031 @ 30.25t, 9.081 @ 24.43t  
 Trim: Aft 1.043/34.87t, Heel: Port 4.84 deg.

Part	Weight (MT)	LCG	TCG	VCG			
LIDST BRIP	1,821.60	2.555e	0.048e	6.457			
AFT STORES	5.00	22.352e	1.330p	6.566			
FWD STORES	3.00	30.000e	0.000	8.500			
Galley Stores	14.00	28.250e	0.000	6.000			
Gas in Jactiannahio T1	0.68	20.250e	6.100p	11.000			
40 Cans and Effects @ 125	5.00	0.000	0.000	11.000			
UPPER DECK MACHINERY	17.10	19.490e	0.050e	8.120			
UPPER DECK CONTAINER	4.35	26.100e	4.650p	8.600			
FOCSE DECK MACHINERY	8.98	6.320e	4.670e	11.000			
FOCSE DECK CONTAINER	3.86	14.250e	5.480e	11.300			
HELICOPTER	2.50	21.000e	0.000	14.300			
ROSETTE EQUIPMENT	0.90	0.700e	5.600e	9.000			
Total Fixed	1,989.97	2.655e	0.069e	6.543			
	Load	SpGr	Weight (MT)	LCG	TCG	VCG	FSW
TK2_WB.F	0.200	1.025	10.62	13.028E	1.963p	1.028	20.41
TK7_WB.F	1.000	1.025	53.34	15.822e	3.552p	2.204	0.01
TK3_PO.F	0.950	0.840	17.32	9.323e	3.507p	1.504	2.69
TK4_PO.F	0.960	0.840	54.44	4.089E	4.176p	2.866	4.01
TK4_PO.S	0.960	0.840	54.64	4.091E	4.113e	2.886	2.98
TK5_PO.F	1.000	0.840	34.66	0.465e	3.066p	1.248	0.00
TK5_PO.S	1.000	0.840	34.66	0.465e	3.066e	1.248	0.00
TK6_PO.F	0.980	0.840	24.12	7.346e	4.621p	1.461	1.10
TK6_PO.S	0.980	0.840	24.13	7.346e	4.559e	1.461	1.03
TK8_PO.F	0.800	1.025	37.50	21.877e	4.197p	3.645	14.22
TK8_PO.S	0.980	0.840	37.71	21.911e	4.078e	3.830	2.03
TK9_PO.F	0.729	1.025	21.68	26.073e	2.993p	3.915	71.48
TK9_PO.S	0.980	0.840	23.44	28.055e	2.710e	4.090	1.22
TK1_FH.F	0.980	1.000	16.56	17.341E	1.536p	1.322	0.62
TK1_FH.S	0.980	1.000	16.56	17.377E	1.490e	1.323	0.66
UFF_OIL.F	0.500	0.890	0.62	11.186e	1.002p	0.443	0.51
SLUDGE.S	0.223	1.000	0.77	11.129e	1.183e	0.411	0.56
SEWAGE.S	0.100	0.890	0.49	18.720e	5.108e	3.297	0.79
FDPUMP.F	0.648	1.025	104.41	16.124e	2.247p	3.040	193.57
Permeability override:	0.850						
FOG.W.F	0.980	0.840	5.58	18.689e	3.521p	5.930	0.40
Total Tanks			583.89	7.426e	0.958p	2.598	349.64
Total Weight			2,273.87	3.885e	0.194p	5.530	
			SpGr (MT)	LCG	TCG	VCG	Permt
BULK	1.025		2,273.86	4.036e	0.512p	2.688	-6.862

Righting Arms: 0.000 0.000p  
 Distances in METERS: Moments in m.-MT.

FREEBOARD STATUS  
 USK DRAFT draft: 4.031 @ 10.25t, 5.081 @ 24.43t  
 Trim: Aft 1.043/34.87t, Heel: Port 4.84 deg.  
 Least freeboard is 1.571 m. located at 32.130e  
 Least extra freeboard (to margin line) is 1.499 m. located at 32.130e

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GMS 11.50 CGCS JOHN P. Tully  
 NO. 604 - COMPT 4-28 @ 4.5m - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 Trim: Aft 1.043/34.87t, Heel: Port 4.84 deg., VCG = 5.130

LCF Displacement	Buoyancy-Ctr. Weight/	Moment/
Draft: Weight (MT)	LCG	VCG
4.721	2,273.86	4.036e 2.688 7.16 1.834e 29.52 71.25 1.529
Distances in METERS	Specific Gravity = 1.025	Moment in m.-MT
	Trim is per 54.00e.	

Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARMS vs HEEL ANGLE  
 Total CG: LCG = 3.985e TCG = 0.194p VCG = 5.530  
 Free Surface Adjustment: 0.150  
 Adjusted CG: LCG = 3.988e TCG = 0.178p VCG = 5.683

Origin	Degrees of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Heel	Weight (MT)	In Trim--In Heel--> Area --Height
4.542	1.07e	8.84p	2,273.90	0.000 0.000 0.0000 5.677(1)
4.528	1.05e	9.34p	2,273.86	0.000 0.068 0.0015 5.340(1)
4.483	1.07e	11.84p	2,273.87	0.000 0.138 0.0040 4.996(1)
4.427	1.05e	14.34p	2,273.87	0.000 0.210 0.0136 4.646(1)
4.360	1.02e	16.84p	2,273.86	0.000 0.286 0.0244 4.291(1)
4.281	0.97e	19.34p	2,273.86	0.000 0.365 0.0386 3.933(1)
4.276	0.97e	19.43p	2,273.86	0.000 0.370 0.0396 Marg. Yaw.
4.190	0.92e	21.84p	2,273.87	0.000 0.447 0.0563 3.571(1)
4.088	0.88e	24.34p	2,273.87	0.000 0.520 0.0774 3.204(1)
3.976	0.86e	26.84p	2,273.87	0.000 0.575 0.1014 2.829(1)
3.858	0.87e	29.34p	2,273.87	0.000 0.612 0.1273 2.446(1)
3.728	0.89e	31.84p	2,274.19	0.000 0.634 0.1545 2.059(1)
3.597	0.94e	34.34p	2,274.20	0.000 0.646 0.1825 1.669(1)
3.435	1.00e	36.84p	2,274.16	0.000 0.651 0.2108 1.278(1)
3.362	1.03e	37.99p	2,273.93	0.000 0.652 0.2338 1.098(1)
3.273	1.08e	39.34p	2,274.26	0.000 0.651 0.2392 0.805(1)
3.100	1.17e	41.84p	2,273.98	0.000 0.648 0.2676 0.492(1)
2.919	1.28e	44.34p	2,273.88	0.000 0.641 0.2957 0.099(1)
2.873	1.31e	44.97p	2,273.87	0.000 0.638 0.3027 0.000(1)

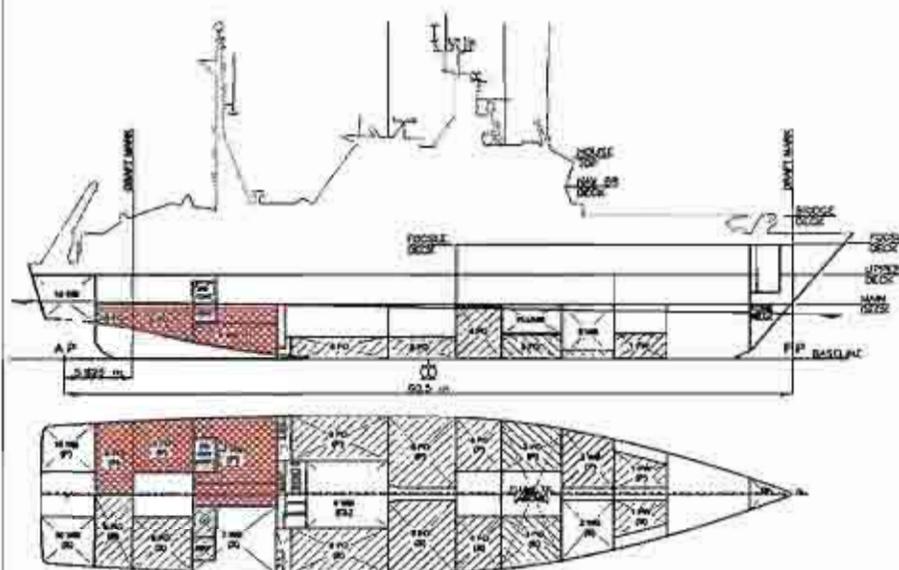
Distances in METERS. Specific Gravity = 1.025. Area in m.-Sq.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 349.6 m.-MT was applied to artificially modify the CG.

Critical Point: LCG = 3.988e TCG = 0.178p VCG = 5.683  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630e 7.900 11.300

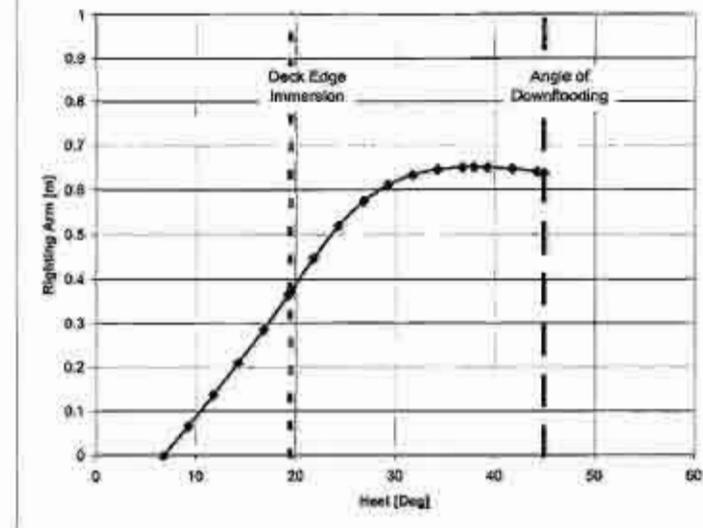
Damage Case No.604 - Comp 4-28 @ 4.5 m

IMPORTANT! SEE NOTE REGARDING VERTICAL EXTENT OF DAMAGE ON PG. 48



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.604 - Comp 4-28 @ 4.5 m



LIN	DAMAGE STABILITY CRITERIA	Min/Max	Attained
(1)	GM at Equilibrium	> 0.050 m	1.529 P
(2)	Absolute Angle at Equilibrium	< 15.00 deg	6.91 P
(3)	Absolute Angle at Deck/Margin Immersion	> 0.00 deg	19.49 P

01/21/09 08:53:42 STX Canada Marine, Inc.  
 SHS 11.30 COGS JOHN P. Tully  
 NO. 625 - COMPT 4-28 @ 4.9M - LOADING DEPARTURE CONDITION

**WEIGHT and DISPLACEMENT STATUS**  
 OSK DRAFT draft: 3.956 @ 30.35t, 5.18E @ 24.4t  
 Trim: Aft 1.211/34.875, Heel: Port 7.94 deg.

Part	Weight (MT)	LCG	YCG	VCG
LIGHT SHIP	1,624.60	2.295t	0.018t	6.457
APV STORES	5.00	22.350t	1.330t	6.566
FWD STORES	3.00	30.200t	0.800	8.500
Sally Stores	14.00	20.250t	0.000	6.000
Gas in Jettisonable Tx	0.00	20.250t	4.100t	11.000
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000
UPPER DECK MACHINERY	17.10	19.450t	0.050t	8.130
UPPER DECK CONTAINER	4.35	24.100t	4.650t	8.600
PODSLE DECK MACHINERY	6.98	8.320t	4.470t	11.300
PODSLE DECK CONTAINER	3.26	14.350t	5.400t	11.300
HELICOPTER	2.50	21.800t	0.000	14.300
ROSETTE EQUIPMENT	0.38	0.700t	5.600t	9.000
<b>Total Fixed</b>	<b>1,689.97</b>	<b>2.659t</b>	<b>0.069t</b>	<b>5.542</b>

Item	Load	Spd	Weight (MT)	LCG	YCG	VCG	Ym
TK1_WB.P	0.200	1.028	16.63	13.818t	1.989t	1.031	21.26
TK3_PO.P	0.950	0.840	17.32	8.321t	2.510t	1.505	2.18
TK4_PO.P	0.980	0.940	34.65	4.089t	4.177t	2.804	3.18
TK6_PO.S	0.980	0.840	34.65	4.691t	4.112t	2.895	2.16
TK5_PO.P	1.000	0.810	34.66	0.465t	3.066t	1.248	0.00
TK3_PO.S	1.000	0.840	34.66	0.465t	1.066t	1.248	0.00
TK6_PO.P	0.980	0.840	24.12	7.348t	4.822t	1.481	0.88
TK6_PO.S	0.980	0.840	24.12	7.348t	4.559t	1.481	0.88
TK5_PO.S	0.980	0.810	27.71	21.932t	4.075t	2.830	1.85
TK9_PO.S	0.980	0.840	23.84	24.099t	2.709t	4.096	0.97
TK3_FW.P	0.980	1.000	16.36	17.360t	1.537t	1.323	2.61
TK1_FW.S	0.980	1.000	16.36	17.368t	1.499t	1.323	0.72
CPP_OIL.P	0.500	0.890	6.82	11.166t	1.019t	0.443	6.55
SLUDGE.S	0.323	1.000	0.77	11.134t	1.170t	0.413	0.47
SERVIS.S	0.100	0.980	0.49	19.728t	5.078t	2.301	0.79
FOGAY.P	0.980	0.840	4.58	16.489t	3.521t	5.920	0.32
<b>Total Tanks</b>			<b>366.94</b>	<b>1.787t</b>	<b>0.339t</b>	<b>2.269</b>	<b>37.44</b>
<b>Total Weight</b>			<b>2,056.92</b>	<b>2.503t</b>	<b>0.699t</b>	<b>3.784</b>	

Item	Weight (MT)	LCG	YCG	VCG	Ym	
WLS	2,109.01	4.291t	0.589t	2.931	-4.580	
TK3_WB.P	Flooded 1.028	-33.34	19.823t	3.581t	2.204	-4.563
TK5_PO.P	Flooded 1.028	-44.96	21.905t	4.117t	3.450	-4.960
TK3_PO.S	Flooded 1.028	-29.69	20.993t	4.773t	4.111	-4.560
FOGAYED.S	Flooded 1.028	-123.07	14.108t	2.137t	3.239	-4.960
<b>Total Displacement</b>	<b>1.028</b>	<b>1,004.83</b>	<b>2.989t</b>	<b>0.307t</b>	<b>2.691</b>	

Righting Arms: 0.000 0.000g  
 Distances in METERS: Moments in m.-MT.

**FRAMING STATUS**  
 OSK DRAFT draft: 3.966 @ 30.35t, 5.18E @ 24.4t  
 Trim: Aft 1.211/34.875, Heel: Port 7.94 deg.  
 Least Freeboard is 1.903 m. located at 33.136t  
 Least extra freeboard (no margin limit) is 1.227 m. located at 33.136t

01/21/09 08:53:40 STX Canada Marine, Inc.  
 SHS 11.30 COGS JOHN P. Tully  
 NO. 625 - COMPT 4-28 @ 4.9M - LOADING DEPARTURE CONDITION

**HYDROSTATIC PROPERTIES with FLOODING**  
 Trim: Aft 1.211/34.875, Heel: Port 7.94 deg., VCG = 3.794

LCF Displacement: Buoyancy-Ctr. Weight/ Moment/  
 Draft: Height (MT) LCG YCG VCG LCF on trim DFL GWT  
 4.770 2,054.83 2.589t 2.891 7.13 6.643t 29.62 19.05 1.903  
 Distances in METERS Specific Gravity = 1.025 Moment in m.-MT  
 Trim is per 64.88m.  
 Draft is from OSK DRAFT. True Free Surface included.

**RIGHTING ARM vs HEEL ANGLE with FLOODING**  
 Total CG: LCG = 3.503t YCG = 0.699t VCG = 3.794  
 Free Surface Adjustment: 0.018  
 Adjusted CG: LCG = 3.504t YCG = 0.101t VCG = 3.812

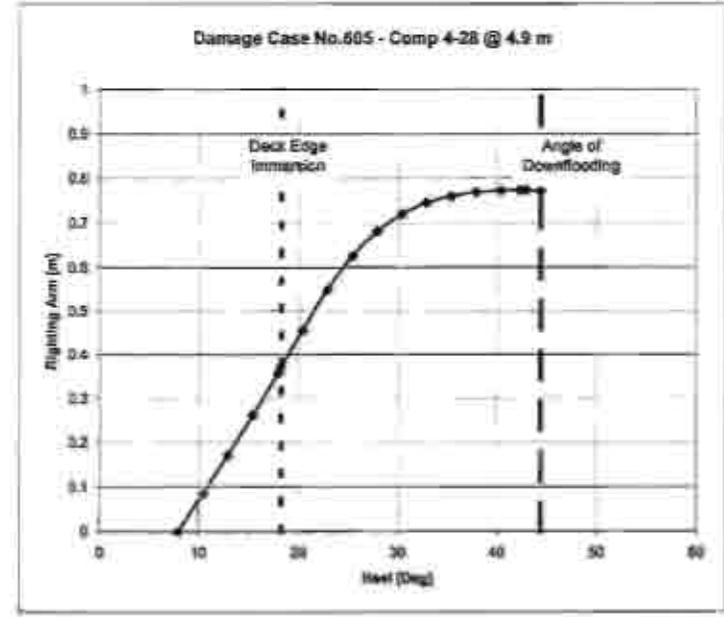
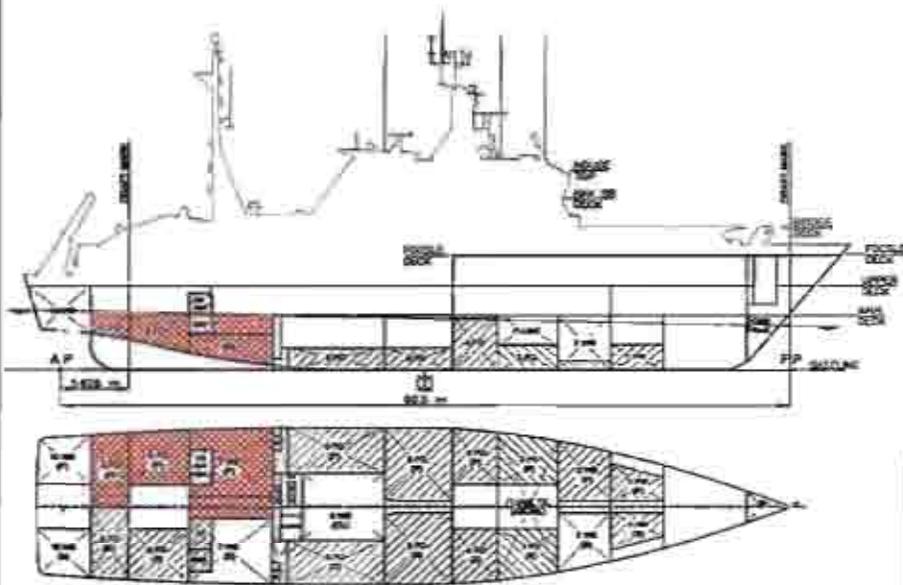
Origin	Depth	Trials	Heel	Displacement	Righting Arm	Flood Ft	
Depth	Trials	Heel	Weight (MT)	In Trim	In Heel	Area	Height
4.581	1.29t	7.96p	2,057.04	0.000	0.000	0.0000	5.471(1)
4.541	1.28t	10.48p	2,056.82	0.000	0.085	0.0019	5.131(1)
4.491	1.24t	12.58p	2,056.82	0.000	0.172	0.0074	4.784(1)
4.430	1.21t	15.46p	2,056.82	0.000	0.263	0.0169	4.432(1)
4.358	1.18t	17.94p	2,056.81	0.000	0.358	0.0300	4.075(1)
4.287	1.17t	19.30p	2,056.81	0.000	0.472	0.0527	3.710(1)
4.216	1.17t	20.44p	2,056.82	0.000	0.497	0.0682	3.450(1)
4.179	1.09t	22.96p	2,056.82	0.000	0.550	0.0700	3.289(1)
4.076	1.00t	25.48p	2,056.82	0.000	0.627	0.0960	2.932(1)
3.964	1.00t	27.96p	2,056.61	0.000	0.683	0.1246	2.590(1)
3.883	1.11t	30.46p	2,056.61	0.000	0.721	0.1552	2.251(1)
3.711	1.11t	32.94p	2,057.27	0.000	0.768	0.1972	1.898(1)
3.567	1.21t	35.48p	2,056.82	0.000	0.761	0.2502	1.416(1)
3.423	1.20t	37.96p	2,057.15	0.000	0.739	0.3016	1.018(1)
3.269	1.28t	40.46p	2,056.99	0.000	0.774	0.3573	0.622(1)
3.118	1.48t	42.93p	2,056.80	0.000	0.775	0.4128	0.225(1)
2.975	1.49t	45.94p	2,057.16	0.000	0.775	0.4611	0.225(1)
2.972	1.58t	48.38p	2,057.14	0.000	0.772	0.5053	0.000(1)

Distances in METERS Specific Gravity = 1.025 Area in m.-sqd.

Note: The Weight and Center of Gravity used for the righting arm above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 37.1 m.-MT was applied to artificially modify the CG.

Critical Point: LCF YCG VCG  
 (3) CAPTAIN'S ROOM WINDOW FLOOD 7.430t 7.606 11.360

Damage Case No.605 - Comp 4-28 @ 4.9 m  
 IMPORTANT! SEE NOTES REGARDING VERTICAL EXTENT OF DAMAGE ON PG. 44



L70 DAMAGE STABILITY CRITERIA

	Min/Max	Attained
(1) GM at Equilibrium	> 0.050 m	1.800 F
(2) Absolute Angle at Equilibrium	< 15.00 deg	7.56 F
(3) Absolute Angle at Deck/margin Immersion	> 9.00 deg	18.30 F

NOTE: Helicopter included in case (not depicted in diagram above).

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GNS 11.50 0006 JOHN P. Tully  
 NO.700 - COMPT AFT-4 @ 1.28 - DEADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 DEK DRAFT draft: 4.136 @ 20.25t, 4.72t @ 24.63t  
 Trim: Aft 0.388/34.87t, Heel: Starb 0.48 deg.

Fast	Weight (MT)	LCB	VCG	VCO			
LIGHT SHIP	1,424.40	2.595t	0.048t	0.457			
AFT STORES	3.00	22.350t	1.330t	4.854			
POD STORES	3.00	30.000t	0.000	0.000			
Galley Stores	14.00	20.350t	0.000	0.000			
Gas in Jettisonable Tank	0.68	25.250t	6.100t	11.009			
44 Crew and Effects @ 12t	5.00	3.000	0.000	11.000			
OPEN DECK MACHINERY	17.10	28.400t	0.000	0.130			
UPPER DECK CONTAINER	4.83	28.100t	4.850t	0.600			
PODSIDE DECK MACHINERY	8.98	4.320t	4.670t	12.002			
PODSIDE DECK CONTAINER	3.84	14.350t	5.160t	11.300			
HELICOPTER	2.50	21.000t	0.000	14.300			
ROCKET EQUIPMENT	0.90	0.700t	1.600t	9.000			
Total Fixed	1,889.91	2.133t	0.069t	6.343			
Lead	SpGr	Height (MT)	LCB	VCG	VCO	FSH	
TK1_HB.F	0.200	1.025	16.61	13.971t	1.618t	1.018	16.54
TK1_FC.F	0.950	0.840	17.32	0.210t	3.430t	1.509	17.00
TK4_FC.F	0.960	0.840	54.45	4.290t	4.141t	2.865	27.21
TK5_FC.F	0.980	0.840	54.45	4.290t	4.141t	2.865	27.37
TK6_FC.F	0.980	0.840	54.45	4.290t	4.141t	2.865	0.00
TK7_FC.F	1.000	0.840	54.64	0.463t	1.044t	1.314	-0.00
TK8_FC.F	0.980	0.840	28.13	1.340t	4.183t	1.640	20.73
TK9_FC.F	0.980	0.840	24.13	1.380t	4.257t	1.448	20.03
TK10_FC.F	0.980	0.840	37.71	21.913t	4.100t	3.829	34.43
TK11_FC.F	0.980	0.840	37.71	21.913t	4.100t	3.829	34.88
TK12_FC.F	0.980	0.840	23.85	24.057t	2.710t	4.095	49.70
TK13_FC.F	0.980	0.840	23.85	24.057t	2.710t	4.095	44.82
TK14_FC.F	0.980	1.000	16.56	17.964t	1.510t	1.322	0.75
TK15_FC.F	0.980	1.000	16.56	17.964t	1.520t	1.322	4.20
CPP_D11.F	0.500	0.890	2.42	11.100t	0.890t	0.435	0.53
SLUDGE.S	0.333	1.000	0.77	11.102t	1.298t	0.405	0.84
SEWAGE.S	0.100	0.890	0.49	10.704t	0.110t	0.285	0.77
FOODAV.F	0.960	0.840	3.48	14.400t	5.187t	0.509	3.49
TK16_HB.S	0.117	1.025	0.04	29.574t	3.517t	4.207	21.45
Total Tanker			436.65	5.166t	0.203t	2.602	328.23
Total Weight			2,124.82	2.214t	0.012t	0.740	
HULL	1.025		2,126.33	4.244t	0.028t	1.724	-4.444

Righting Arms: 0.000 0.000t  
 Distances in METERS: 0.000t @ 0.000m

FREEBOARD STATUS  
 DEK DRAFT draft: 4.136 @ 20.25t, 4.72t @ 24.63t  
 Trim: Aft 0.388/34.87t, Heel: Starb 0.48 deg.  
 Least Freeboard is 2.769 m, located at 32.130t  
 Least extra Freeboard (to margin line) is 2.493 m, located at 32.130t

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GNS 11.50 0006 JOHN P. Tully  
 NO.700 - COMPT AFT-4 @ 4.38 - DEADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES  
 TRIM: Aft 0.388/34.87t, Heel: Starb 0.48 deg., VCG = 5.734

LCF Displacement Buoyancy-Ctr. Weight/ Moment/  
 Draft---Weight (MT)---LCB---VCG---GM---LFB---Gr trim---GML---GMU  
 4.520 2,126.33 3.240t 2.724 7.08 0.798t 29.14 15.21 1.322  
 Distances in METERS: Specific Gravity = 1.025, Moment in m.-MT.  
 Trim is per 54.88m.  
 Draft is from DEK DRAFT. True Free Surface included.

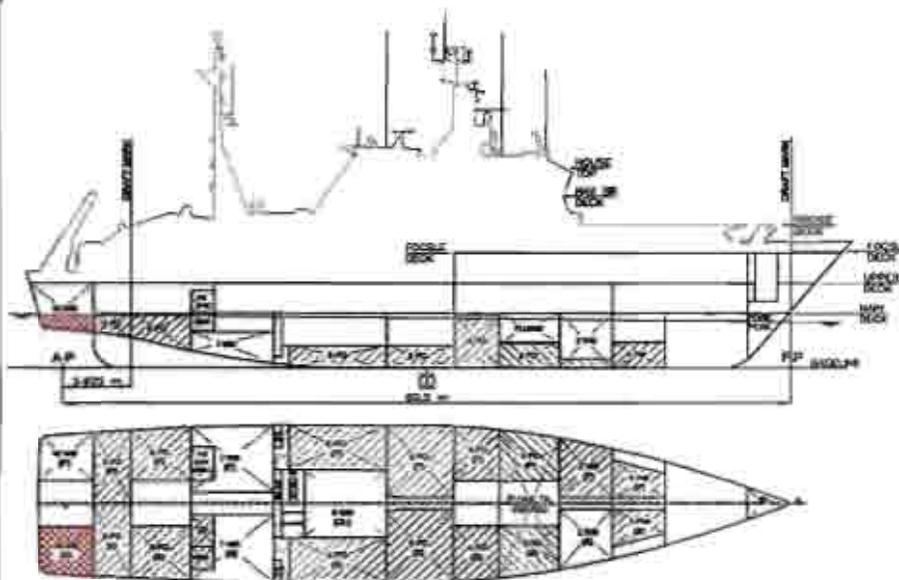
RIGHTING ARMS vs WHEEL SHIELD  
 Total GM: LCG = 3.214t VCG = 0.012t VCO = 5.734  
 Free Surface Adjustment: 0.159  
 Adjusted CG: LCG = 3.216t VCG = 0.011t VCO = 5.893

Origin	Degree of	Displacement	Righting Arms	Flows Ft
Depth	Trim	Heel	Weight (MT)	Area
4.344	0.61t	0.43t	2,126.83	0.000
4.427	0.61t	2.90t	2,126.33	0.000
4.419	0.61t	5.48t	2,126.33	0.000
4.393	0.55t	7.98t	2,126.33	0.000
4.352	0.57t	10.48t	2,126.52	0.000
4.302	0.54t	12.98t	2,126.52	0.000
4.241	0.50t	15.48t	2,126.52	0.000
4.168	0.45t	17.98t	2,126.52	0.000
4.080	0.28t	20.48t	2,126.52	0.000
3.985	0.22t	22.98t	2,126.32	0.000
3.841	0.20t	23.91t	2,126.45	0.000
3.672	0.25t	25.43t	2,126.52	0.000
3.577	0.25t	27.98t	2,126.32	0.000
3.411	1.18t	30.18t	2,126.52	0.000
3.443	0.15t	32.58t	2,126.60	0.000
3.239	0.12t	35.01t	2,126.83	0.000
3.208	0.17t	35.42t	2,126.63	0.000
3.258	0.17t	36.10t	2,126.64	0.000
3.143	0.18t	37.05t	2,126.82	0.000
2.960	0.24t	40.88t	2,126.85	0.000
2.780	0.21t	42.88t	2,126.60	0.000
2.565	0.28t	45.48t	2,126.53	0.000
2.425	0.48t	47.40t	2,126.42	0.000

Distances in METERS: Specific Gravity = 1.025, Area in m.-sq.  
 Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 338.2 m.-MT was applied to artificially modify the CG.

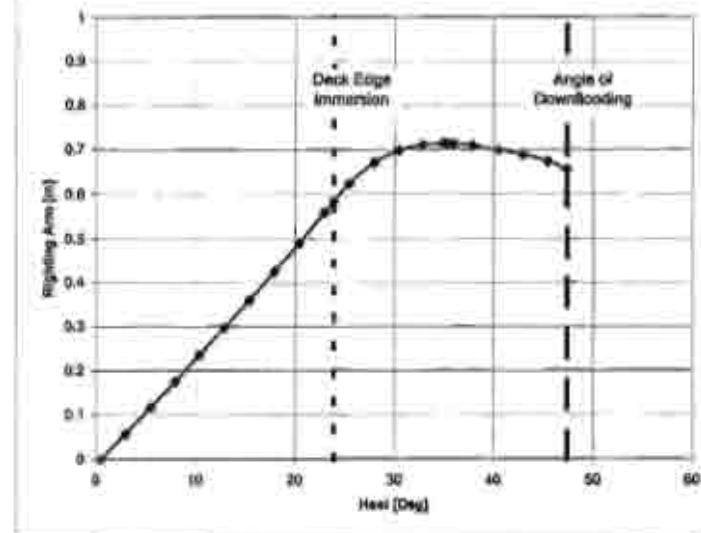
Critical Point: LCG 7.636t VCG 1.000 VCO 11.300  
 (1) CAPTAIN'S ROOM WINDOW

Damage Case No.700 - Comp Aft-4 @ 4.5 m



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.700 - Comp Aft-4 @ 4.5 m



	DAMAGE STABILITY CRITERIA		Min/Max	Attained
(1) GM at Equilibrium	>	0.050	m	1.322 P
(2) Absolute Angle at Equilibrium	<	15.00	deg	0.48 P
(3) Absolute Angle at Deck/margin Immersion	>	0.00	deg	23.91 P

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GHS 11.50 CCGS JOHN P. Tully  
 NO.701 - COMPT AFT-4 @ 4.9M - LOADLINE DEPARTURE CONDITION

WEIGHT and DISPLACEMENT STATUS  
 USK DRAFT draft: 4.110 @ 30.25t, 4.749 @ 24.63t  
 Trim: Aft 0.638/54.875, Heel: Sbbd 1.00 deg.

Part	Weight (MT)	LCG	TCG	VCG			
LIGHT SHIP	1,624.60	2.595a	0.048s	6.457			
AFT STORES	5.00	22.350a	1.530p	6.556			
FWD STORES	3.00	30.000f	0.000	8.500			
Galley Stores	14.00	20.250f	0.000	6.000			
Gas in Jettisonable Tk	0.68	20.250a	4.100p	11.000			
40 Crew and Effects @ 125	5.00	0.000	0.000	11.000			
UPPER DECK MACHINERY	17.10	19.490a	0.050s	8.130			
UPPER DECK CONTAINER	4.35	26.100a	4.650p	8.600			
POCSLE DECK MACHINERY	8.98	8.320a	4.670a	11.000			
POCSLE DECK CONTAINER	1.86	14.350a	5.480s	11.300			
HELICOPTER	2.50	21.000f	0.000	14.300			
ROSBYTE EQUIPMENT	0.90	0.700a	5.600s	9.000			
Total Fixed	1,689.97	2.659a	0.089a	6.543			
TK2_WB.P	0.200	1.025	16.62	13.072f	1.809p	1.019	16.31
TK3_FO.P	0.950	0.840	17.32	8.331f	3.430p	1.502	16.95
TK4_FO.P	0.980	0.840	54.65	4.090f	4.136p	2.885	27.19
TK4_FO.S	0.980	0.840	54.65	4.089f	4.153a	2.885	27.32
TK5_FO.P	1.000	0.840	34.66	0.465a	3.066p	1.248	0.00
TK5_FO.S	1.000	0.840	34.66	0.465a	3.066a	1.248	0.00
TK6_FO.P	0.980	0.840	24.12	7.358a	4.575p	1.460	17.48
TK6_FO.S	0.980	0.840	24.12	7.358a	4.604a	1.460	17.48
TK8_FO.P	0.980	0.840	37.71	21.912a	4.097p	3.829	27.69
TK8_FO.S	0.980	0.840	37.71	21.912a	4.128s	3.829	28.74
TK9_FO.P	0.980	0.840	23.84	24.096a	2.730p	4.095	22.74
TK9_FO.S	0.980	0.840	23.85	24.096a	2.797a	4.095	22.90
TK1_PW.P	0.980	1.000	16.56	17.365f	1.512p	1.322	5.92
TK1_PW.S	0.980	1.000	16.56	17.360f	1.526a	1.322	4.48
CPP_OIL.P	0.500	0.580	0.62	11.185a	0.891p	0.435	0.50
SLUDGE.S	0.223	1.000	0.77	11.102a	1.310s	0.405	1.02
SEWAGE.S	0.100	0.890	0.69	18.707a	5.328s	3.285	0.77
PODAY.P	0.980	0.840	9.58	18.489a	3.494p	5.929	2.49
Total Tanks			428.49	4.912a	0.269p	2.577	20.97
Total Weight			2,118.46	3.114a	0.000	5.740	
HULL		1.025	2,133.31	3.331a	0.078s	2.731	-4.447
TK10_WB.S	Flooded	1.025	-14.86	29.715a	3.760s	4.422	-4.447
Total Displacement		1.025	2,118.76	3.150a	0.053a	2.720	

Righting Arms: 0.000 0.000s  
 Distances in METERS: \_\_\_\_\_ Moments in m.-MT.

FREBOARD STATUS  
 USK DRAFT draft: 4.110 @ 30.25t, 4.749 @ 24.63t  
 Trim: Aft 0.638/54.875, Heel: Sbbd 1.00 deg.  
 Least freeboard is 2.671 m. located at 32.130a  
 Least extra freeboard (to margin line) is 2.595 m. located at 32.130a

01/21/09 08:53:40 STX Canada Marine, Inc.  
 GHS 11.50 CCGS JOHN P. Tully  
 NO.701 - COMPT AFT-4 @ 4.9M - LOADLINE DEPARTURE CONDITION

HYDROSTATIC PROPERTIES WITH FLOODING  
 Trim: Aft 0.638/54.875, Heel: Sbbd 1.00 deg., VCG = 5.740

LCF	Displacement	Buoyancy-Ctr.	Weight/	Moment/
Draft	Weight (MT)	LCB	VCB	LCF
4.522	2,118.76	3.150a	2.720	6.90
				5.172a
				27.14
				70.29
				1.217

Distances in METERS. Specific Gravity = 1.025. Moment in m.-MT.  
 Trim is per 54.88m.  
 Draft is from USK DRAFT. True Free Surface included.

RIGHTING ARMS vs REEL ANGLE WITH FLOODING  
 Total CG: LCG = 3.114a TCG = 0.000 VCG = 5.740  
 Free Surface Adjustment: 0.114  
 Adjusted CG: LCG = 3.116a TCG = 0.002p VCG = 5.854

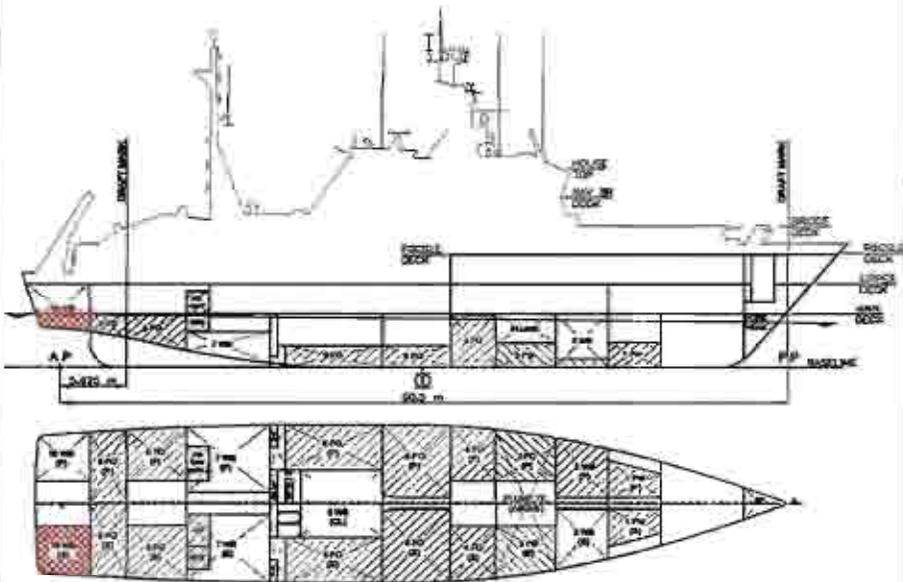
Origin	Degree of	Displacement	Righting Arms	Flood Pt
Depth	Trim	Reel	Weight (MT)	Area
4.447	0.67a	1.00a	2,118.53	0.0000
4.439	0.70a	3.50a	2,118.46	0.0012
4.422	0.72a	6.00a	2,118.46	0.0047
4.393	0.75a	8.50a	2,118.46	0.0105
4.355	0.76a	11.00a	2,118.47	0.0188
4.305	0.76a	13.50a	2,118.60	0.0296
4.245	0.76a	16.00a	2,118.67	0.0429
4.172	0.75a	18.50a	2,118.46	0.0590
4.088	0.72a	21.00a	2,118.47	0.0778
4.060	0.71a	21.76a	2,118.46	0.0842
3.991	0.69a	23.50a	2,118.47	0.0936
3.881	0.67a	26.00a	2,118.47	0.1261
3.762	0.67a	28.50a	2,118.52	0.1508
3.634	0.69a	31.00a	2,118.91	0.1783
3.494	0.73a	33.50a	2,118.74	0.2065
3.478	0.73a	33.77a	2,118.63	0.2095
3.343	0.78a	36.00a	2,118.47	0.2347
3.184	0.86a	38.50a	2,118.62	0.2627
3.014	0.94a	41.00a	2,118.48	0.2901
2.834	1.05a	43.50a	2,118.64	0.3171
2.646	1.16a	46.00a	2,117.98	0.3433
2.642	1.16a	46.05a	2,118.89	0.3441

Distances in METERS. Specific Gravity = 1.025. Area in m.-Rad.

Note: The Weight and Center of Gravity used for the righting arms above include tank loads. However, the tank load centers were NOT ALLOWED TO SHIFT with heel and trim changes. Rather, a constant Free Surface Moment of 241.0 m.-MT was applied to artificially modify the CG.

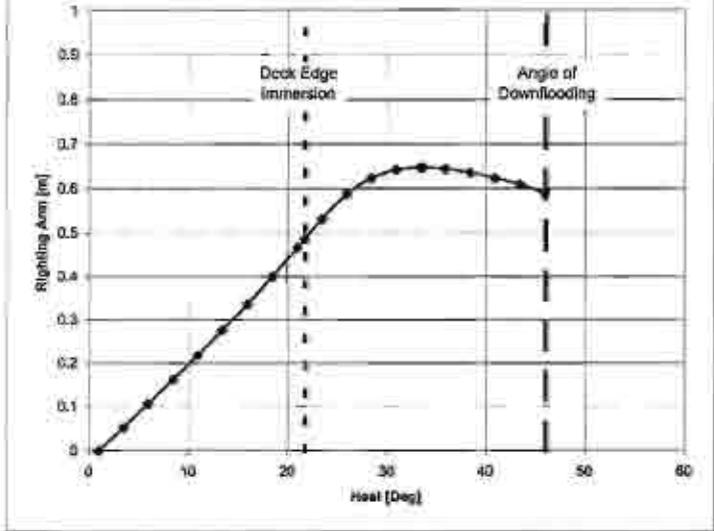
Critical Point: LCF = 3.116a TCG = 0.002p VCG = 5.854  
 (1) CAPTAIN'S ROOM WINDOW FLOOD 7.630a 7.000 11.300

Damage Case No.701 - Comp Aft-4 @ 4.9 m



NOTE: Helicopter included in case (not depicted in diagram above).

Damage Case No.701 - Comp Aft-4 @ 4.9 m



NO	CRITERIA	Min/Max	Attained
(1)	GM at Equilibrium	> 0.050 m	1.217 m
(2)	Absolute Angle at Equilibrium	< 15.00 deg	1.00 deg
(3)	Absolute Angle at Deck/margin Immersion	> 0.00 deg	21.78 deg

**Appendix A - Inclining Report**

### EXECUTIVE SUMMARY

STX Canada Marine has performed an inclining experiment for the Canadian Coast Guard Ship the "John P. Tully" on Tuesday, December 16<sup>th</sup>, 2008. The derived lightship weight and centres of gravity are summarized below, and are compared to the original lightship weight of the vessel, derived in the only previous inclining done 23 years ago. The current lightship weight calculated includes the aft A-frame and large deck crane on the starboard side of the focsle deck, as well as the Rosette crane and latch. Other research equipment on the starboard side of the upper deck, and on the aft focsle deck is considered removable and hence not part of the lightship weight.

#### Lightship Weight and VCG derived from Inclining Experiment

	Weight [T]	LCG [m]	TCG [m]	VCG [m]
Lightship	1624.60	-2.595	0.048	6.457
Previous Lightship (March 24 <sup>th</sup> , 1985)	1453.0	-1.53	0.0	6.62
Difference:	171.6	-1.065	0.048	-0.163
Reference:	L - Loadline mark, 375mm aft of Frame 49 - All +ve, T - Longl CL - stbd +ve, V - Baseline - upwards +ve			

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**1 ANALYSIS OF INCLINING DATA**

**Date:** Tuesday, 16 December 2008  
**Time:** 7:00 a.m. – 3:00 p.m.  
**Location:** Nanaimo Shipyard, Nanaimo, British Columbia  
**Present:** John Gilbert, Transport Canada  
 Greg Anstey, Public Works  
 Mark Cook, STX Canada Marine  
 Wylie Thibodeau, STX Canada Marine  
**Weather:** Temperature about -5° C, Clear, Wind about 5 knots  
 Wave height about 4 inches  
**Water Density:** 1.021 S.G.

**Location of Pendulums:** The forward pendulum was hung from underneath scaffolding built up over the watertight hatch at frame 97 on the Focslie deck. This pendulum extended down into the Boson's Store on the upper deck. The aft pendulum was hung from the aft mast onto the aft end of the focslie deck. Scaffolding was used to hang the pendulum clear from obstructions.

	LENGTH
Pendulum No1 - Fr.97	4016.4 mm (155'11/8" measured)
Pendulum No2 - Aft mast	6194.4 mm (243'7/8" measured)

**Drafts - As inclined:**

	Port Side	Starboard Side	Mean Draft
Draft at Fwd Marks	3.71 m	3.71 m	3.71 m
Draft at Loadline	3.945 m	4.071 m	4.008 m
Draft at Aft Marks	4.14 m	4.24 m	4.19 m

**Heel angle based on aft draft marks:**

Difference in aft draft marks = 0.10 m

Local beam (as measured from lines plan) = 12.864 m

$\tan \theta = 0.10 \text{ m} / 12.864 \text{ m}$

$\theta = 0.445^\circ$  to Starboard

**Heel angle based on loadline freeboards:**

Difference in loadline freeboards = 0.126 m

Local beam (as measured from lines plan) = 14.0 m

$\tan \theta = 0.126 \text{ m} / 14.0 \text{ m}$

$\theta = 0.516^\circ$  to Starboard

**Average Heel angle used for hydrostatics calculation:  $\theta = 0.4805^\circ$  to Starboard**

**Personnel on Board:** 9

**Inclining Weights:**

Weight groups 1 and 2 were placed on the port side, aft of midships, and weight groups 3 and 4 were placed on the starboard side forward of midships. For more information, See Appendix C.

**Pendulum Deflections and Heeling Moments:** See Appendix C.

**Condition of Tanks and Bilges:** See Tank Status, Appendix D

**Determination of GM:**

$GM \text{ As-inclined (Fluid)} = (w \cdot d) / (\Delta \tan \phi)$

Where  $w \cdot d$  = Applied Moment (Tonne-metres)

$\Delta = 1786.9$  Tonnes

$\tan \phi = y/l = \text{Mean Deflection/Pendulum Length}$

Using the deflection and heeling moment data from Appendix C, the average heeling moment ( $w \cdot d$ ) and average ratio of deflection to pendulum length ( $\tan \phi$ ) were calculated for both pendulums.

$GM(\text{Pendulum 1}) \text{ As-inclined (Fluid)} = (37.14) / (1786.9 \times 0.01748) = 1.189 \text{ [m]}$

$GM(\text{Pendulum 2}) \text{ As-inclined (Fluid)} = (37.14) / (1786.9 \times 0.01748) = 1.184 \text{ [m]}$

$GM(\text{Average of Pendulums 1 and 2}) \text{ As-inclined (Fluid)} = 1.187 \text{ [m]}$



01/06/09 19:00:03  
085 11.40A

Alex Tardif Marine Inc.  
CCSB JOHN P. TULLY

.....  
RECALCULATE FOR VCG = 6.163 (M)  
.....

WEIGHT and DISPLACEMENT STATUS  
USK DRAFT draft: 3.697 @ 30.25t, 4.190 @ 24.65t  
Trim: Aft 0.493/50.875, Heel: Stbd 0.48 deg.  
Deflection in INL: 0.040 SAGGING

Part	Weight (MT)	LCG	TCG	VCG
WEIGHT	1,786.90	2.524	0.011	6.163
DISPL	1,786.90	2.557	0.042	2.439
Righting Arm:		0.000	0.000	
Distances in METERS				

HYDROSTATIC PROPERTIES  
Trim: Aft 0.493/50.875, Heel: Stbd 0.48 deg., VCG = 6.163  
Deflection in INL: 0.040 SAGGING

Draft	Weight (MT)	LCB	VCB	cm	10%	cm trim	GM	GM'
4.035	1,786.90	2.957	2.135	6.84	5.013	26.78	82.26	1.303
Distances in METERS		Specific Gravity = 1.021		Revised in m-MT.				
Draft is from USK DRAFT		Trim is per 54.88m						

**Derivation of Lightship Weight and Longitudinal Center of Gravity (LCG):**

The lightship weight and centres of gravity have been determined, as presented in Table 1 below.

Table 1 – Weight Summary and Analysis

	Weight [T]	LCG [m]	TCG [m]	VCG [m]
Lightship (Inclining – Dec 16 <sup>th</sup> , 2008)	1624.60	-2.595	0.048	6.457
Reference:	L – Loadline mark, 375mm aft of Frame 49 - Aft +ve, T - Long CL - stbd +ve, V - Baseline - upwards +ve			

## 2 CONCLUSIONS

STX Canada Marine has performed an inclining experiment for the Canadian Coast Guard Ship the "John P. Tully" on Tuesday, December 16<sup>th</sup>, 2008. The derived lightship weight and centres of gravity are summarized below, and are compared to the original lightship weight of the vessel, derived in the only previous inclining done 23 years ago. The current lightship weight calculated includes the aft A-frame and large deck crane on the starboard side of the focsle deck, as well as the Rosette crane and hatch. Other research equipment on the starboard side of the upper deck and on the aft focsle deck is considered removable and hence not part of the lightship weight.

Table 2 - Comparison of Pre-refit Inclining Results with 2003 inclining

	Weight (T)	LCG (m)	TCG (m)	VCG (m)
Lightship (Inclining - Dec 16 <sup>th</sup> , 2008)	1524.60	-2.590	0.048	6.457
Previous Lightship (March 24 <sup>th</sup> , 1985)	1453.0	-1.53	0.0	6.62
Difference:	171.6	-1.065	0.048	-0.163
Reference:	L - Loadline mark, 375mm aft of Frame 49 - Aft +ve, T - Long) CL - stbd +ve, V - Baseline - upwards +ve			

**Appendix B - Inclining Experiment Draft & Freeboard Measurements**

**Measurement of Draft Marks:**

Draft Mark Location	Port	Starboard	Heel
Forward Drafts - At Stem	3.71 m	3.71 m	3.71m
All Draft Marks	4.14 m	4.24 m	4.19m

Measurement	Port	Starboard	Heel
At Loadline	83 cm *	41 cm **	-
Freeboard to deck line (mm)	3369	3243	
Freeboard to deck edge (mm)	3669	3543	
Height of upper deck above baseline (mm)	7600	7600	
Keel plate thickness (mm)	14	14	
Draft to USK (m)	3.945	4.071	
Beam at loadline (m)			14
Beam at aft draft marks (m)			12.884
Heel based on loadline			0.516
Heel based on aft draft marks			0.445
Average heel			0.4805

Total Hog / Sag as measured: 3.4 cm Sagging  
 SG of water as measured: 1.021

\* - Port freeboard is measured from the bottom of the tropical load line mark to the water surface

\*\* - Starboard freeboard is measured from the bottom of the loadline mark to the water surface

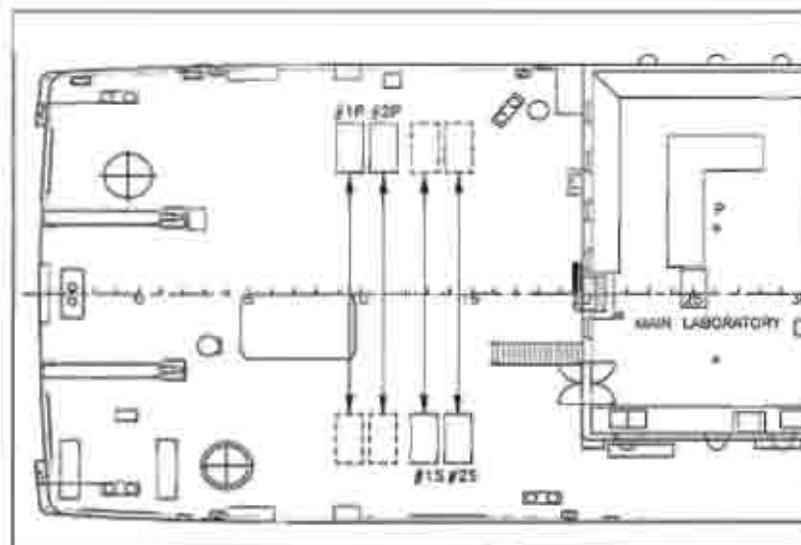
**Appendix C - Inclining Experiment General Data**

### Inclining Weights

Weight #	Concrete block	Wt	Wt	Wt
1	Concrete block	4350	1974	1,074
2	Concrete block	4200	1906	1,906
3	Concrete block	4550	2064	2,064
4	Concrete block	4400	1996	1,996
5	Concrete block	4250	1928	1,928
6	Concrete block	4400	1996	1,996
7	Concrete block	4300	1951	1,951
8	Concrete block	4350	1974	1,974

Wt #	Weight Group 1 - 2000 Lbs		Weight Group 2 - 2000 Lbs			Weight Group 3 - 2000 Lbs			Weight Group 4 - 2000 Lbs		
	Wt #	Wt (Lbs)	Wt #	Wt (Lbs)	Wt (Lbs)	Wt #	Wt (Lbs)	Wt (Lbs)	Wt #	Wt (Lbs)	Wt (Lbs)
3	1225	1,825	6	1996	1,996	3	2064	2,064	1	1874	1,874
8	1974	1,974	7	1951	1,951	4	1996	1,996	2	1906	1,906
Group Totals:	2802	3,802		3947	3,947		4065	4,065		3679	3,679

### Inclining Weight Arrangement



### Pendulum Deflections and Heeling Moments

#### Pendulum No. 1 - Forward pendulum, Hatch

Length of Pendulum (m): 40.00 (m)

Angle	Weight	Distance	Height	Weight	Distance	Height	Tan(Phi)	Heeling Moment
1	1	3800	3.902	9.710	37.89	108.5	0.0163	
2	2	3800	3.947	9.700	38.20	110.0	0.0170	
3	3	3847	3.947	9.700	38.29	110.0	0.0170	
4	4	3800	3.902	9.710	37.89	108.5	0.0163	
5	5	4001	4.061	9.120	37.08	109.0	0.0173	
6	6	3878	3.878	9.100	38.30	110.0	0.0169	
7	7	3878	3.878	9.100	38.30	110.0	0.0169	
8	8	4001	4.061	9.120	37.08	109.0	0.0173	
				Total:	307.10		Total:	0.1358
				Mean Moment = (Σ wd / Σ):	37.14	Mean Tan(φ) = (Σ Tan(φ) / Σ):	0.017475	

$$GM_1 (\text{As-inclined}) = \frac{w \times d}{D \times \tan(\phi)} = \frac{37.14}{0.09 \times 0.01748} = 1.168 \text{ (m)}$$

#### Pendulum No. 2 - Aft Mast

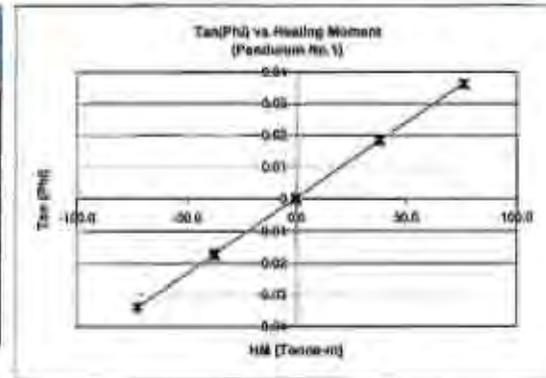
Length of Pendulum (m): 40.00 (m)

Angle	Weight	Distance	Height	Weight	Distance	Height	Tan(Phi)	Heeling Moment
1	1	3800	3.902	9.710	37.89	108.5	0.0173	
2	2	3847	3.947	9.700	38.29	110.0	0.0169	
3	3	3847	3.947	9.700	38.29	110.0	0.0169	
4	4	3800	3.902	9.710	37.89	108.5	0.0173	
5	5	4001	4.061	9.120	37.08	109.0	0.0167	
6	6	3878	3.878	9.100	38.30	110.0	0.0169	
7	7	3878	3.878	9.100	38.30	110.0	0.0169	
8	8	4001	4.061	9.120	37.08	109.0	0.0171	
				Total:	307.10		Total:	0.1408
				Mean Moment = (Σ wd / Σ):	37.14	Mean Tan(φ) = (Σ Tan(φ) / Σ):	0.017536	

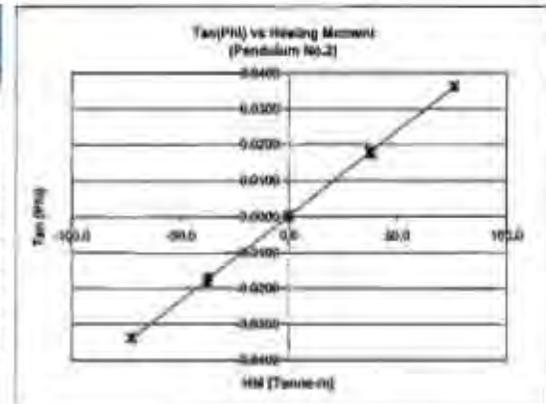
$$GM_2 (\text{As-inclined}) = \frac{w \times d}{D \times \tan(\phi)} = \frac{37.14}{0.09 \times 0.01758} = 1.164 \text{ (m)}$$

GM (As-inclined) = 1.167 m

Angle	Weight	Distance	Height	Weight	Distance	Height	Tan(Phi)	Heeling Moment
1	1	3800	3.902	9.710	37.89	108.5	0.0163	
2	2	3800	3.947	9.700	38.20	110.0	0.0170	
3	3	3847	3.947	9.700	38.29	110.0	0.0170	
4	4	3800	3.902	9.710	37.89	108.5	0.0163	
5	5	4001	4.061	9.120	37.08	109.0	0.0173	
6	6	3878	3.878	9.100	38.30	110.0	0.0169	
7	7	3878	3.878	9.100	38.30	110.0	0.0169	
8	8	4001	4.061	9.120	37.08	109.0	0.0173	
				Total:	307.10		Total:	0.1358
				Mean Moment = (Σ wd / Σ):	37.14	Mean Tan(φ) = (Σ Tan(φ) / Σ):	0.017475	



Angle	Weight	Distance	Height	Weight	Distance	Height	Tan(Phi)	Heeling Moment
1	1	3800	3.902	9.710	37.89	108.5	0.0173	
2	2	3847	3.947	9.700	38.29	110.0	0.0169	
3	3	3847	3.947	9.700	38.29	110.0	0.0169	
4	4	3800	3.902	9.710	37.89	108.5	0.0173	
5	5	4001	4.061	9.120	37.08	109.0	0.0167	
6	6	3878	3.878	9.100	38.30	110.0	0.0169	
7	7	3878	3.878	9.100	38.30	110.0	0.0169	
8	8	4001	4.061	9.120	37.08	109.0	0.0171	
				Total:	307.10		Total:	0.1408
				Mean Moment = (Σ wd / Σ):	37.14	Mean Tan(φ) = (Σ Tan(φ) / Σ):	0.017536	



**Appendix D - Inclining Experiment Weight Summary**

**Inclining Weight Summary and Analysis**

	Weight (Tons)	LCC (m)	TCC (m)	VCG (m)	Change
As-Inclined Displacement Pre surface connection	1768.90	-2.624	0.271	8.280	
As-Inclined Displacement (Corrected for F.S.M)	1768.90	-2.324	0.011	6.174	
Weights Off	-43.22	-16.722	-0.144	0.692	
Weights On	14.30	-10.285	4.488	0.019	
Total Weights Off	-153.48	3.227	0.060	1.944	
Lightsails	1824.69	0.000	0.000	0.000	
<p>Note: LCC is calculated from midships, forward positive and aft negative.  TCC is referenced from longitudinal centerline, positive to starboard.  VCG is referenced from baseline, positive upwards.</p>					

### Weights OFF

	QTY	UNIT	LCG	TPC	LCG
<b>Weights On</b>					
<b>Upper Deck</b>					
Ice	1	0.074	6.448	0.000	18.450
<b>Bridge Deck</b>					
Scaffolding	1	0.050	-18.314	0.000	12.900
Stair Bms	1	0.200	21.000	0.000	13.400
10 man life raft	1	3.098	-11.500	1.010	14.000
25 man life raft	1	0.178	-11.500	1.000	14.000
8" Pipe and elbows	1	0.290	-14.500	1.574	13.400
Port Covering/Protection	1	0.090	7.875	-4.190	13.400
Starboard Covering/Protection	1	0.090	7.875	4.100	13.400
Ice	1	0.538	0.000	0.000	12.300
<b>Forward Deck</b>					
2 x 25 man life rafts	1	0.302	-20.500	5.059	11.300
Shipyard mooring line	1	3.150	30.375	0.000	10.300
Gas	1	0.015	28.000	1.620	10.800
Fan	1	0.010	26.000	2.200	10.800
Welding Lines	1	0.020	27.875	-1.330	10.800
Shipyard mooring line	1	0.190	26.000	-4.530	10.300
Deck Covering/Protection	1	0.092	13.387	0.000	10.300
Fire suppression room damage	1	0.025	9.000	0.000	10.800
Shipyard Equipment - port side	1	0.200	-8.000	-4.000	10.800
Shipyard equipment - starboard side	1	0.200	8.000	4.000	10.800
Emergency Gen. Room damage	1	0.030	-13.375	0.000	10.800
Ice	1	0.457	-4.375	0.000	10.200
Ice	1	0.179	30.375	0.000	10.300
Plasma Latch to the Inboard	1	0.750	-2.680	4.400	10.300

	QTY	UNIT	LCG	TPC	LCG	
<b>Weights Off Continued</b>						
<b>Upper Deck</b>						
Deck Covering/Protection	1	0.540	9.123	-1.000	7.600	
Officers Lounge Covering/Protection	1	0.092	17.897	3.580	7.600	
Officers Mess Covering/Protection	1	0.090	8.016	3.589	7.600	
Shipyard Equipment and Tools	1	0.600	-13.375	-2.000	8.600	
Ice	1	0.538	-24.000	0.000	7.600	
Forward Inclining Equipment (barrel)	1	0.115	30.375	0.000	8.000	
All Inclining Equipment (barrel)	1	0.115	-19.625	0.000	8.000	
Chain Box	1	0.150	-30.250	5.750	8.000	
Shipyard mooring line	1	0.190	-31.149	-6.000	7.600	
Starboard Crane - Main Store (relocate to stowed pos)	1	7.243	-28.382	1.317	14.020	
Starboard Crane - Air Boom (relocate to stowed pos)	1	2.598	-28.334	-5.900	13.940	
Starboard Crane - Air Cylinders (relocate to stowed pos)	1	1.308	-28.382	-1.300	15.140	
3 personnel aboard during Inclining	3	0.673	0.000	0.000	8.600	
Forward Store	1	3.000	30.000	0.000	8.600	
<b>Main Deck</b>						
Cold Store	1	0.100	17.825	0.000	5.400	
Cleaning Locker	1	0.100	3.750	3.900	5.400	
Crews Lounge Covering/Protection	1	0.050	8.062	3.200	5.400	
Crews Mess Covering/Protection	1	0.050	8.060	-4.000	5.400	
10 sheets of 3/4 plywood	1	0.250	-25.250	1.970	6.000	
Deck Covering/Protection	1	0.811	0.000	0.000	4.900	
All Stores	1	5.000	-22.350	-1.330	6.356	
<b>Inboard Weights (Starboard Side)</b>						
Inclining Weights - Group 1 - Port All	1	3.902	-24.288		1.043	
Inclining Weights - Group 2 - Port Forward	1	3.947	-23.267	-4.600	1.043	
Inclining Weights - Group 3 - Starboard All	1	4.061	-21.579	0.000	1.043	
Inclining Weights - Group 4 - Starboard Forward	1	3.875	-20.034	-4.500	1.043	
Total Weights to Come Off:			43.220	-16.722	-0.144	0.633

Note: LCG Reference from midships (FL 50) positive forward, TPC reference from center line, positive starboard, VCG reference from base line, positive up

### Weights On

Description	No. OF	Weight (Tonnes)	LCO (kg)	TCG (kg)	VCG (kg)
<b>Weights On</b>					
<b>Below Deck</b>					
Steel Bow	1	0.200	-18.314	0.000	13.400
3 SS main life rafts	1	0.500	4.600	6.985	14.900
<b>Upper Deck</b>					
10 life raft	1	0.070	-7.720	4.200	11.600
Roosts back to be installed	1	0.750	0.000	0.000	10.380
<b>Main Deck</b>					
Main lab counter tops	1	0.230	-13.60	4.00	8.30
Main lab cabinets	1	0.110	-13.30	4.00	8.30
Accommodation life cabinets	1	0.055	4.60	8.50	8.30
Cool room panels	1	0.290	5.00	3.00	11.80
Main lab sink panels	1	0.380	-13.80	4.20	9.00
Fume hood	1	0.080	-12.70	4.00	9.00
Main lab deckhead panels	1	0.110	-16.00	2.00	12.80
Cool room shelving	1	0.100	6.00	3.00	9.20
misc. insulation	1	0.130	-14.40	3.00	15.80
Chair bar	1	0.180	18.10	8.00	8.00
Steel Aft Crane - Main Boom (relocate to stowed pos)	1	2.260	-22.40	5.20	11.10
Steel Aft Crane - Jib Boom (relocate to stowed pos)	1	2.580	-20.80	5.20	9.80
Steel Aft Crane - Jib Cylinder (relocate to stowed pos)	1	1.300	-20.00	5.20	10.80
<b>Total Weights to Go On:</b>					
		14.40	-18.295	4.400	16.810

Note: LCO Relieved from main deck positive forward, TCG relieved from centre line, positive 400, VCG relieved from main life, positive up.

### Tank Status

Tank Name	Forward	Aftward	LCO (Tonnes)	TCG (kg)	VCG (kg)	PSH (Tons)	Comments
<b>Tank Weights to be Deducted from Lightship</b>							
Purge Tank	50 to 60	0.00					dry
Fuel # 3 Port *	50 to 60	0.00					0.75m sounding
Fuel # 3 Star	50 to 60	0.00					0.75m sounding
Fuel # 4 Port	52 to 54	37.74	4.00	-4.00	2.20	25.84	5.20m sounding
Fuel # 4 Star	52 to 54	37.08	4.00	-4.00	2.27	24.88	5.20m sounding
Fuel # 5 Port	43 to 57	20.50	-0.48	-0.82	1.05	75.78	1.60m sounding
Fuel # 5 Star	43 to 57	23.20	-0.51	-2.80	0.30	74.00	1.80m sounding
Fuel # 6 Port	30 to 43	0.01	-5.80	-0.05	0.04	0.00	0.6m sounding
Fuel # 6 Star	30 to 43	0.01	-5.80	0.05	0.04	0.00	0.5m sounding
Fuel # 8 Port	9 to 17	0.00					0.6m sounding
Fuel # 8 Star	9 to 17	0.00					1.00m sounding
Fuel # 9 Port	5 to 9	0.00					1.00m sounding
Fuel # 9 Star	5 to 9	0.00	-28.90	0.00	2.01	0.18	2.0m sounding
Day Tank	18.5 to 21.5	4.54	-18.00	0.00	5.62	3.41	2.30m sounding
Storage	20 to 32	0.80	-11.00	1.20	0.40	0.80	1.57m sounding
Main Eng. Lubr Oil Storage	17 to 20	0.00					
Aux. Lubr Oil Storage	17 to 20	0.00					
Stem Tube Oil Storage		0.00					
Generator Oil Storage		0.00					
Hydraulic Oil Storage		0.00					
No. 1 FW Port	73 to 80	0.30	17.40	-0.70	0.07	0.12	1m sounding
No. 1 FW Star	73 to 80	0.00					dry
No. 2 WB Port	66 to 73	0.00					dry
No. 2 WB Star	66 to 73	0.00					dry
No. 3 WB Center	30 to 43	0.00					dry
No. 7 WB Port	17 to 30	0.00					dry
No. 7 WB Star	17 to 30	0.00					dry
No. 10 WB Port	5 to 10	0.00					dry
No. 10 WB Star	5 to 10	0.00					dry
Row Thruster Cyl Barge		0.30	20.74	0.00	0.04	1.00	
<b>Total tank weights to come off:</b>							
		133.40	0.00	0.00	0.00	209.72	

\* Where soundings read zero cubic meters in the sounding tubes, tank volumes have been determined from the OHS record.

**Appendix E - Draft & Freeboard Photos**

Draft and Freeboard Photos



Forward Draft Marks, port side



Leading Freeboard Measurement, port side

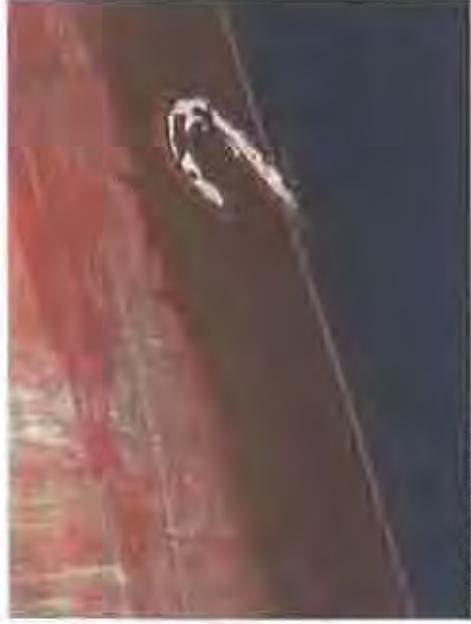
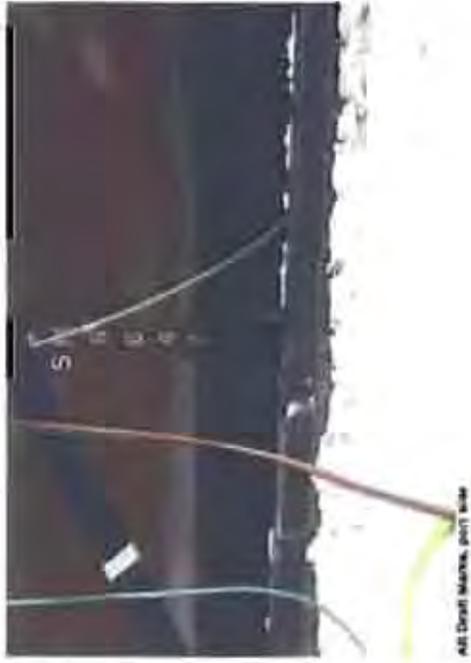


Forward Draft Marks, starboard side



Leading Freeboard measurement, starboard side

Draft and Freeboard Photos



**Appendix F - Tank Sounding Tables**







**No. 9 Part (Setling) Fuel Oil**

1.38	129.10	1.33	4.1	1.33	4.1
1.39	129.10	1.30	4.1	1.30	4.1
1.40	129.10	1.18	4.0	1.18	4.0
1.41	129.10	1.15	4.0	1.15	4.0
1.42	129.10	1.12	4.0	1.12	4.0
1.43	129.10	1.08	4.0	1.08	4.0
1.44	129.10	1.05	4.0	1.05	4.0
1.45	129.10	1.01	4.0	1.01	4.0
1.46	129.10	0.98	4.0	0.98	4.0
1.47	129.10	0.95	4.0	0.95	4.0
1.48	129.10	0.92	4.0	0.92	4.0
1.49	129.10	0.88	4.0	0.88	4.0
1.50	129.10	0.84	4.0	0.84	4.0
1.51	129.10	0.81	4.0	0.81	4.0
1.52	129.10	0.78	4.0	0.78	4.0
1.53	129.10	0.75	4.0	0.75	4.0
1.54	129.10	0.72	4.0	0.72	4.0
1.55	129.10	0.68	4.0	0.68	4.0
1.56	129.10	0.65	4.0	0.65	4.0
1.57	129.10	0.62	4.0	0.62	4.0
1.58	129.10	0.58	4.0	0.58	4.0
1.59	129.10	0.55	4.0	0.55	4.0
1.60	129.10	0.52	4.0	0.52	4.0
1.61	129.10	0.48	4.0	0.48	4.0
1.62	129.10	0.45	4.0	0.45	4.0
1.63	129.10	0.42	4.0	0.42	4.0
1.64	129.10	0.38	4.0	0.38	4.0
1.65	129.10	0.35	4.0	0.35	4.0
1.66	129.10	0.32	4.0	0.32	4.0
1.67	129.10	0.28	4.0	0.28	4.0
1.68	129.10	0.25	4.0	0.25	4.0
1.69	129.10	0.22	4.0	0.22	4.0
1.70	129.10	0.18	4.0	0.18	4.0
1.71	129.10	0.15	4.0	0.15	4.0
1.72	129.10	0.12	4.0	0.12	4.0
1.73	129.10	0.08	4.0	0.08	4.0
1.74	129.10	0.05	4.0	0.05	4.0
1.75	129.10	0.02	4.0	0.02	4.0
1.76	129.10	0.00	4.0	0.00	4.0
1.77	129.10	0.00	4.0	0.00	4.0
1.78	129.10	0.00	4.0	0.00	4.0
1.79	129.10	0.00	4.0	0.00	4.0
1.80	129.10	0.00	4.0	0.00	4.0
1.81	129.10	0.00	4.0	0.00	4.0
1.82	129.10	0.00	4.0	0.00	4.0
1.83	129.10	0.00	4.0	0.00	4.0
1.84	129.10	0.00	4.0	0.00	4.0
1.85	129.10	0.00	4.0	0.00	4.0
1.86	129.10	0.00	4.0	0.00	4.0
1.87	129.10	0.00	4.0	0.00	4.0
1.88	129.10	0.00	4.0	0.00	4.0
1.89	129.10	0.00	4.0	0.00	4.0
1.90	129.10	0.00	4.0	0.00	4.0
1.91	129.10	0.00	4.0	0.00	4.0
1.92	129.10	0.00	4.0	0.00	4.0
1.93	129.10	0.00	4.0	0.00	4.0
1.94	129.10	0.00	4.0	0.00	4.0
1.95	129.10	0.00	4.0	0.00	4.0
1.96	129.10	0.00	4.0	0.00	4.0
1.97	129.10	0.00	4.0	0.00	4.0
1.98	129.10	0.00	4.0	0.00	4.0
1.99	129.10	0.00	4.0	0.00	4.0
2.00	129.10	0.00	4.0	0.00	4.0

**No. 8 Starboard (Setling) Fuel Oil**

1.38	29.10	1.33	7.7	1.33	7.7
1.39	29.10	1.30	7.7	1.30	7.7
1.40	29.10	1.25	7.7	1.25	7.7
1.41	29.10	1.22	7.7	1.22	7.7
1.42	29.10	1.18	7.7	1.18	7.7
1.43	29.10	1.15	7.7	1.15	7.7
1.44	29.10	1.12	7.7	1.12	7.7
1.45	29.10	1.08	7.7	1.08	7.7
1.46	29.10	1.05	7.7	1.05	7.7
1.47	29.10	1.01	7.7	1.01	7.7
1.48	29.10	0.98	7.7	0.98	7.7
1.49	29.10	0.95	7.7	0.95	7.7
1.50	29.10	0.92	7.7	0.92	7.7
1.51	29.10	0.88	7.7	0.88	7.7
1.52	29.10	0.85	7.7	0.85	7.7
1.53	29.10	0.82	7.7	0.82	7.7
1.54	29.10	0.78	7.7	0.78	7.7
1.55	29.10	0.75	7.7	0.75	7.7
1.56	29.10	0.72	7.7	0.72	7.7
1.57	29.10	0.68	7.7	0.68	7.7
1.58	29.10	0.65	7.7	0.65	7.7
1.59	29.10	0.62	7.7	0.62	7.7
1.60	29.10	0.58	7.7	0.58	7.7
1.61	29.10	0.55	7.7	0.55	7.7
1.62	29.10	0.52	7.7	0.52	7.7
1.63	29.10	0.48	7.7	0.48	7.7
1.64	29.10	0.45	7.7	0.45	7.7
1.65	29.10	0.42	7.7	0.42	7.7
1.66	29.10	0.38	7.7	0.38	7.7
1.67	29.10	0.35	7.7	0.35	7.7
1.68	29.10	0.32	7.7	0.32	7.7
1.69	29.10	0.28	7.7	0.28	7.7
1.70	29.10	0.25	7.7	0.25	7.7
1.71	29.10	0.22	7.7	0.22	7.7
1.72	29.10	0.18	7.7	0.18	7.7
1.73	29.10	0.15	7.7	0.15	7.7
1.74	29.10	0.12	7.7	0.12	7.7
1.75	29.10	0.08	7.7	0.08	7.7
1.76	29.10	0.05	7.7	0.05	7.7
1.77	29.10	0.02	7.7	0.02	7.7
1.78	29.10	0.00	7.7	0.00	7.7
1.79	29.10	0.00	7.7	0.00	7.7
1.80	29.10	0.00	7.7	0.00	7.7
1.81	29.10	0.00	7.7	0.00	7.7
1.82	29.10	0.00	7.7	0.00	7.7
1.83	29.10	0.00	7.7	0.00	7.7
1.84	29.10	0.00	7.7	0.00	7.7
1.85	29.10	0.00	7.7	0.00	7.7
1.86	29.10	0.00	7.7	0.00	7.7
1.87	29.10	0.00	7.7	0.00	7.7
1.88	29.10	0.00	7.7	0.00	7.7
1.89	29.10	0.00	7.7	0.00	7.7
1.90	29.10	0.00	7.7	0.00	7.7
1.91	29.10	0.00	7.7	0.00	7.7
1.92	29.10	0.00	7.7	0.00	7.7
1.93	29.10	0.00	7.7	0.00	7.7
1.94	29.10	0.00	7.7	0.00	7.7
1.95	29.10	0.00	7.7	0.00	7.7
1.96	29.10	0.00	7.7	0.00	7.7
1.97	29.10	0.00	7.7	0.00	7.7
1.98	29.10	0.00	7.7	0.00	7.7
1.99	29.10	0.00	7.7	0.00	7.7
2.00	29.10	0.00	7.7	0.00	7.7

**No. 10 Port & Starboard Water Ballast**

1.38	50.0	1.38	21.7	1.38	21.7
1.39	50.0	1.48	21.7	1.48	21.7
1.40	50.0	1.50	20.8	1.50	20.8
1.41	50.0	1.75	19.8	1.75	19.8
1.42	50.0	1.70	18.8	1.70	18.8
1.43	50.0	1.65	17.8	1.65	17.8
1.44	50.0	1.60	17.0	1.60	17.0
1.45	50.0	1.55	16.2	1.55	16.2
1.46	50.0	1.50	15.2	1.50	15.2
1.47	50.0	1.45	14.2	1.45	14.2
1.48	50.0	1.40	13.2	1.40	13.2
1.49	50.0	1.35	12.2	1.35	12.2
1.50	50.0	1.30	11.2	1.30	11.2
1.51	50.0	1.25	10.2	1.25	10.2
1.52	50.0	1.20	9.2	1.20	9.2
1.53	50.0	1.15	8.2	1.15	8.2
1.54	50.0	1.10	7.2	1.10	7.2
1.55	50.0	1.05	6.2	1.05	6.2
1.56	50.0	1.00	5.2	1.00	5.2
1.57	50.0	0.95	4.2	0.95	4.2
1.58	50.0	0.90	3.2	0.90	3.2
1.59	50.0	0.85	2.2	0.85	2.2
1.60	50.0	0.80	1.2	0.80	1.2
1.61	50.0	0.75	0.2	0.75	0.2
1.62	50.0	0.70	0.1	0.70	0.1
1.63	50.0	0.65	0.1	0.65	0.1
1.64	50.0	0.60	0.1	0.60	0.1
1.65	50.0	0.55	0.1	0.55	0.1
1.66	50.0	0.50	0.1	0.50	0.1
1.67	50.0	0.45	0.1	0.45	0.1
1.68	50.0	0.40	0.1	0.40	0.1
1.69	50.0	0.35	0.1	0.35	0.1
1.70	50.0	0.30	0.1	0.30	0.1
1.71	50.0	0.25	0.1	0.25	0.1
1.72	50.0	0.20	0.1	0.20	0.1
1.73	50.0	0.15	0.1	0.15	0.1
1.74	50.0	0.10	0.1	0.10	0.1
1.75	50.0	0.05	0.1	0.05	0.1
1.76	50.0	0.00	0.1	0.00	0.1
1.77	50.0	0.00	0.1	0.00	0.1
1.78	50.0	0.00	0.1	0.00	0.1
1.79	50.0	0.00	0.1	0.00	0.1
1.80	50.0	0.00	0.1	0.00	0.1
1.81	50.0	0.00	0.1	0.00	0.1
1.82	50.0	0.00	0.1	0.00	0.1
1.83	50.0	0.00	0.1	0.00	0.1
1.84	50.0	0.00	0.1	0.00	0.1
1.85	50.0	0.00	0.1	0.00	0.1
1.86	50.0	0.00	0.1	0.00	0.1
1.87	50.0	0.00	0.1	0.00	0.1
1.88	50.0	0.00	0.1	0.00	0.1
1.89	50.0	0.00	0.1	0.00	0.1
1.90	50.0	0.00	0.1	0.00	0.1
1.91	50.0	0.00	0.1	0.00	0.1
1.92	50.0	0.00	0.1	0.00	0.1
1.93	50.0	0.00	0.1	0.00	0.1
1.94	50.0	0.00	0.1	0.00	0.1
1.95	50.0	0.00	0.1	0.00	0.1
1.96	50.0	0.00	0.1	0.00	0.1
1.97	50.0	0.00	0.1	0.00	0.1
1.98	50.0	0.00	0.1	0.00	0.1
1.99	50.0	0.00	0.1	0.00	0.1
2.00	50.0	0.00	0.1	0.00	0.1

**Sludge Tank**

1.38	2.4	1.38	2.4	1.38	2.4
1.39	2.4	1.30	2.4	1.30	2.4
1.40	2.4	1.17	2.4	1.17	2.4
1.41	2.4	1.18	2.1	1.18	2.1
1.42	2.4	1.12	2.0	1.12	2.0
1.43	2.4	1.10	2.0	1.10	2.0
1.44	2.4	1.07	2.1	1.07	2.1
1.45	2.4	1.05	2.4	1.05	2.4
1.46	2.4	1.03	2.4	1.03	2.4
1.47	2.4	0.97	2.3	0.97	2.3
1.48	2.4	0.94	2.0	0.94	2.0
1.49	2.4	0.92	2.1	0.92	2.1
1.50	2.4	0.80	2.0	0.80	2.0
1.51	2.4	0.88	1.8	0.88	1.8
1.52	2.4	0.80	1.7	0.80	1.7
1.53	2.4	0.80	1.6	0.80	1.6
1.54	2.4	0.77	1.4	0.77	1.4
1.55	2.4	0.75			

Day Tank (Port)

2.10	11.2	1.00	3.0
2.07	11.1	0.99	3.2
2.05	11.0	0.99	3.1
2.03	10.9	0.99	3.0
2.00	10.7	0.90	4.4
1.97	10.6	0.88	4.7
1.95	10.2	0.85	4.9
1.92	10.2	0.83	4.4
1.90	10.2	0.80	4.3
1.87	10.0	0.76	4.1
1.85	9.8	0.75	4.0
1.83	9.8	0.73	3.9
1.82	9.8	0.70	3.7
1.77	9.7	0.68	3.4
1.75	9.4	0.65	3.5
1.70	9.2	0.63	3.9
1.70	9.1	0.60	3.7
1.67	9.0	0.58	3.1
1.65	8.7	0.55	3.0
1.62	8.7	0.53	3.0
1.60	8.9	0.50	3.7
1.57	8.4	0.48	3.3
1.53	8.3	0.48	3.4
1.52	8.1	0.43	3.3
1.50	8.0	0.40	3.1
1.47	7.8	0.38	3.0
1.45	7.7	0.35	3.0
1.42	7.6	0.33	3.1
1.40	8.0	0.30	3.6
1.37	7.5	0.28	3.3
1.35	7.2	0.25	3.3
1.32	7.1	0.23	3.3
1.30	6.6	0.20	3.1
1.27	6.9	0.19	3.9
1.26	6.5	0.15	3.6
1.27	6.8	0.13	3.7
1.26	6.2	0.08	3.4
1.17	6.1	0.08	3.3
1.15	6.1	0.09	3.3
1.15	6.0	0.08	3.1
1.10	6.2		
1.07	6.1		
1.05	6.9		
1.03	5.7		

Humid Tank

2.68	183.7	1.27	72.1
2.62	183.2	1.25	70.6
2.60	180.7	1.23	69.2
2.57	182.2	1.20	67.7
2.54	187.7	1.17	66.3
2.50	188.1	1.14	64.9
2.50	184.6	1.12	63.4
2.47	183.1	1.10	62.0
2.45	181.6	1.07	60.5
2.40	180.1	1.08	60.1
2.40	138.4	1.02	57.7
2.37	137.4	1.00	56.2
2.28	134.1	0.98	54.9
2.25	134.1	0.93	53.4
2.20	132.4	0.93	51.9
2.21	121.1	0.90	50.6
2.28	120.0	0.87	49.1
2.22	128.1	0.85	47.7
2.09	120.4	0.82	46.2
2.17	125.1	0.80	44.9
2.18	123.4	0.78	43.4
2.12	122.1	0.75	42.0
2.10	120.6	0.72	40.6
2.01	119.1	0.70	39.1
2.08	117.6	0.67	37.7
2.02	116.1	0.65	36.2
2.00	114.6	0.62	34.8
1.97	113.1	0.60	33.3
1.95	111.6	0.57	32.0
1.92	110.2	0.55	30.7
1.90	108.7	0.53	29.2
1.87	107.2	0.50	27.8
1.85	106.2	0.48	26.4
1.80	104.2	0.45	25.0
1.77	103.2	0.43	23.6
1.77	101.2	0.40	22.2
1.75	97.2	0.38	20.8
1.70	94.2	0.35	19.4
1.67	93.4	0.32	18.0
1.58	92.2	0.28	15.2
1.62	92.2	0.28	13.8
1.60	91.0	0.23	12.5
1.51	82.6	0.20	11.1
1.58	89.1	0.19	9.7
1.52	86.6	0.13	6.2
1.50	85.2	0.13	5.9
1.47	83.7	0.10	5.2
1.45	82.0	0.07	4.1
1.42	80.8	0.05	2.1
1.40	78.3	0.00	1.4
1.37	77.8		
1.25	76.4		
1.22	75.0		
1.20	72.2		

Main Engine Lube Oil Storage

160	10000
160	10000
155	9750
150	9400
148	9150
140	8600
125	7400
130	7600
125	7300
120	7000
113	7000
110	6900
105	6400
100	6200
95	5900
90	5600
85	5300
80	5000
75	4700
70	4400
65	4200
60	3800
55	3600
50	3400
45	3200
40	2800
35	2200
30	2100
25	1700
20	1600
15	1500
10	1400
5	1300

Sewage

105	2300
100	2100
100	2000
105	4000
140	4700
125	4700
130	4300
125	4600
120	4800
110	3500
100	2400
100	2200
90	2000
80	2200
80	2400
75	2400
70	2100
60	1400
55	1800
50	1400
45	1400
40	1300
35	1200
30	1200
25	1100
20	1000
15	900
10	800
5	700

Port CPP Oil Tank

1.25	1.4
1.22	1.4
1.20	1.4
1.17	1.3
1.15	1.2
1.12	1.3
1.10	1.3
1.07	1.2
1.05	1.2
1.02	1.1
1.00	1.1
0.97	1.1
0.89	1.0
0.88	1.0
0.82	1.0
0.82	0.9
0.80	0.8
0.80	0.8
0.77	0.9
0.75	0.9
0.73	0.9
0.70	0.9
0.65	0.8
0.65	0.8
0.60	0.8
0.60	0.8
0.58	0.8
0.55	0.8
0.53	0.8
0.50	0.8
0.48	0.8
0.45	0.8
0.45	0.8
0.40	0.8
0.40	0.8
0.38	0.8
0.35	0.8
0.32	0.8
0.30	0.8
0.28	0.8
0.25	0.8
0.25	0.8
0.20	0.8
0.20	0.8
0.18	0.8
0.15	0.8
0.15	0.8
0.10	0.8
0.10	0.8
0.05	0.8
0.00	0.8

**Stern Tube Oil Storage Tank**

MEASUREMENT NO.	VOLUME LITERS	SENDER LITERS	RECEIVER LITERS	DRANGE LITERS	VOLUME LITERS	SENDER LITERS	RECEIVER LITERS
122	289	20	313	30	337	34	37
128	334	36	366	36	377	37	33
118	216	34	250	24	233	25	45
124	276	34	310	32	328	34	47
121	270	42	314	38	316	38	34
123	281	45	326	41	319	34	31
121	281	38	315	38	329	38	38
126	294	38	333	38	334	38	24
126	301	34	335	34	332	34	24
127	270	31	301	31	300	31	24
127	270	31	301	31	300	31	24
128	271	31	302	31	301	31	24
128	271	31	302	31	301	31	24
129	272	31	303	31	302	31	24
129	272	31	303	31	302	31	24
130	273	31	304	31	303	31	24
130	273	31	304	31	303	31	24
131	274	31	305	31	304	31	24
131	274	31	305	31	304	31	24
132	275	31	306	31	305	31	24
132	275	31	306	31	305	31	24
133	276	31	307	31	306	31	24
133	276	31	307	31	306	31	24
134	277	31	308	31	307	31	24
134	277	31	308	31	307	31	24
135	278	31	309	31	308	31	24
135	278	31	309	31	308	31	24
136	279	31	310	31	309	31	24
136	279	31	310	31	309	31	24
137	280	31	311	31	310	31	24
137	280	31	311	31	310	31	24

**Gearbox Oil Storage Tank**

MEASUREMENT NO.	VOLUME LITERS	SENDER LITERS	RECEIVER LITERS	DRANGE LITERS	VOLUME LITERS	SENDER LITERS	RECEIVER LITERS
10	112	14	124	14	131	14	14
16	166	16	180	16	184	16	16
16	166	16	180	16	184	16	16
17	167	16	183	16	187	16	16
16	167	16	183	16	187	16	16
17	168	16	184	16	189	16	16
17	168	16	184	16	189	16	16
18	169	16	185	16	190	16	16
18	169	16	185	16	190	16	16
19	170	16	186	16	191	16	16
19	170	16	186	16	191	16	16
20	171	16	187	16	192	16	16
20	171	16	187	16	192	16	16
21	172	16	188	16	193	16	16
21	172	16	188	16	193	16	16
22	173	16	189	16	194	16	16
22	173	16	189	16	194	16	16
23	174	16	190	16	195	16	16
23	174	16	190	16	195	16	16
24	175	16	191	16	196	16	16
24	175	16	191	16	196	16	16
25	176	16	192	16	197	16	16
25	176	16	192	16	197	16	16
26	177	16	193	16	198	16	16
26	177	16	193	16	198	16	16
27	178	16	194	16	199	16	16
27	178	16	194	16	199	16	16
28	179	16	195	16	200	16	16
28	179	16	195	16	200	16	16
29	180	16	196	16	201	16	16
29	180	16	196	16	201	16	16
30	181	16	197	16	202	16	16
30	181	16	197	16	202	16	16
31	182	16	198	16	203	16	16
31	182	16	198	16	203	16	16
32	183	16	199	16	204	16	16
32	183	16	199	16	204	16	16
33	184	16	200	16	205	16	16
33	184	16	200	16	205	16	16
34	185	16	201	16	206	16	16
34	185	16	201	16	206	16	16
35	186	16	202	16	207	16	16
35	186	16	202	16	207	16	16
36	187	16	203	16	208	16	16
36	187	16	203	16	208	16	16
37	188	16	204	16	209	16	16
37	188	16	204	16	209	16	16
38	189	16	205	16	210	16	16
38	189	16	205	16	210	16	16
39	190	16	206	16	211	16	16
39	190	16	206	16	211	16	16
40	191	16	207	16	212	16	16
40	191	16	207	16	212	16	16
41	192	16	208	16	213	16	16
41	192	16	208	16	213	16	16
42	193	16	209	16	214	16	16
42	193	16	209	16	214	16	16
43	194	16	210	16	215	16	16
43	194	16	210	16	215	16	16
44	195	16	211	16	216	16	16
44	195	16	211	16	216	16	16
45	196	16	212	16	217	16	16
45	196	16	212	16	217	16	16
46	197	16	213	16	218	16	16
46	197	16	213	16	218	16	16
47	198	16	214	16	219	16	16
47	198	16	214	16	219	16	16
48	199	16	215	16	220	16	16
48	199	16	215	16	220	16	16
49	200	16	216	16	221	16	16
49	200	16	216	16	221	16	16
50	201	16	217	16	222	16	16
50	201	16	217	16	222	16	16
51	202	16	218	16	223	16	16
51	202	16	218	16	223	16	16
52	203	16	219	16	224	16	16
52	203	16	219	16	224	16	16
53	204	16	220	16	225	16	16
53	204	16	220	16	225	16	16
54	205	16	221	16	226	16	16
54	205	16	221	16	226	16	16
55	206	16	222	16	227	16	16
55	206	16	222	16	227	16	16
56	207	16	223	16	228	16	16
56	207	16	223	16	228	16	16
57	208	16	224	16	229	16	16
57	208	16	224	16	229	16	16
58	209	16	225	16	230	16	16
58	209	16	225	16	230	16	16
59	210	16	226	16	231	16	16
59	210	16	226	16	231	16	16
60	211	16	227	16	232	16	16
60	211	16	227	16	232	16	16
61	212	16	228	16	233	16	16
61	212	16	228	16	233	16	16
62	213	16	229	16	234	16	16
62	213	16	229	16	234	16	16
63	214	16	230	16	235	16	16
63	214	16	230	16	235	16	16
64	215	16	231	16	236	16	16
64	215	16	231	16	236	16	16
65	216	16	232	16	237	16	16
65	216	16	232	16	237	16	16
66	217	16	233	16	238	16	16
66	217	16	233	16	238	16	16
67	218	16	234	16	239	16	16
67	218	16	234	16	239	16	16
68	219	16	235	16	240	16	16
68	219	16	235	16	240	16	16
69	220	16	236	16	241	16	16
69	220	16	236	16	241	16	16
70	221	16	237	16	242	16	16
70	221	16	237	16	242	16	16
71	222	16	238	16	243	16	16
71	222	16	238	16	243	16	16
72	223	16	239	16	244	16	16
72	223	16	239	16	244	16	16
73	224	16	240	16	245	16	16
73	224	16	240	16	245	16	16
74	225	16	241	16	246	16	16
74	225	16	241	16	246	16	16
75	226	16	242	16	247	16	16
75	226	16	242	16	247	16	16
76	227	16	243	16	248	16	16
76	227	16	243	16	248	16	16
77	228	16	244	16	249	16	16
77	228	16	244	16	249	16	16
78	229	16	245	16	250	16	16
78	229	16	245	16	250	16	16
79	230	16	246	16	251	16	16
79	230	16	246	16	251	16	16
80	231	16	247	16	252	16	16
80	231	16	247	16	252	16	16
81	232	16	248	16	253	16	16
81	232	16	248	16	253	16	16
82	233	16	249	16	254	16	16
82	233	16	249	16	254	16	16
83	234	16	250	16	255	16	16
83	234	16	250	16	255	16	16
84	235	16	251	16	256	16	16
84	235	16	251	16	256	16	16
85	236	16	252	16	257	16	16
85	236	16	252	16	257	16	16
86	237	16	253	16	258	16	16
86	237	16	253	16	258	16	16
87	238	16	254	16	259	16	16
87	238	16	254	16	259	16	16
88	239	16	255	16	260	16	16
88	239	16	255	16	260	16	16
89	240	16	256	16	261	16	16
89	240	16	256	16	261	16	16
90	241	16	257	16	262	16	16
90	241	16	257	16	262	16	16
91	242	16	258	16	263	16	16
91	242	16	258	16	263	16	16
92	243	16</					

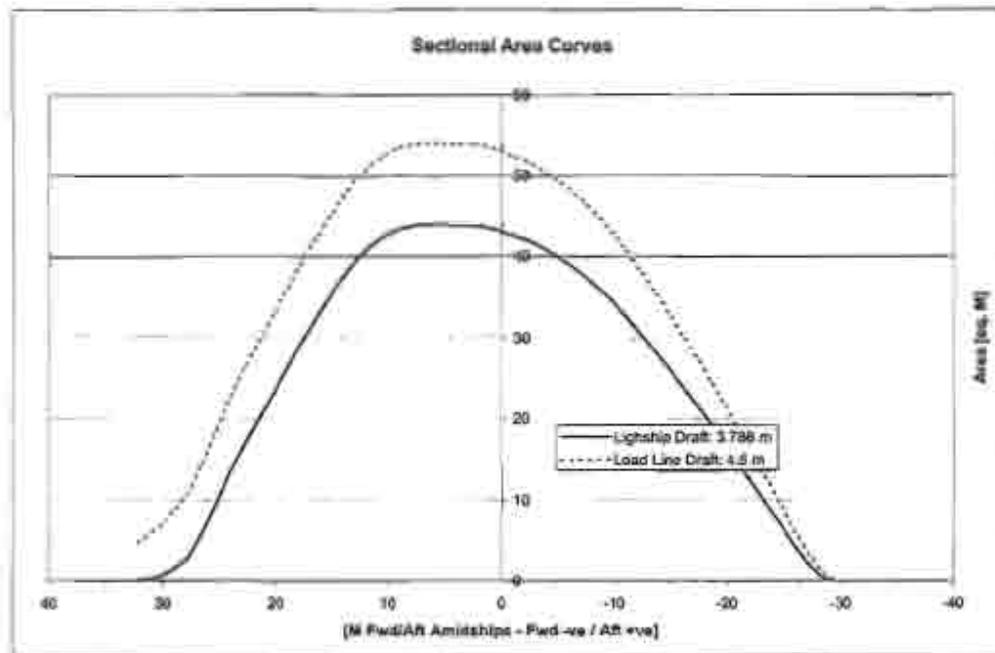
**Appendix G - Hullform Coefficients and Sectional Area Curves**

**Hullform Coefficients**

COEFFS OF FORM  
HULL.C Component of Part HULL  
Trim: seco Heel: seco

Ref Pt	Volume	Block Coef	Displ/Length	WaterPl	MaxBent	PrismaticCoef	
Depth----- (Cu m.)	Coef	Length	Coef	Coef	Long	Vert	
4.500	2097	0.533	251.2	0.799	0.852	0.625	0.667
3.788	1627	0.492	199.0	0.747	0.824	0.597	0.659

Distances in METERS, --- Length is true waterline  
HULL Reference Point: Long = 0.000 Trans = 0.000 Vert = 0.000



**Appendix H - Summary of Consolidated Weights**

### John P. Tully Consolidated Weights

Port = - 've  
 STBD = + 've  
 Fore = - 've  
 Aft = + 've

Upper Deck	Weight		LTC (kg)	LTC (ton)	ROG (kg)
	TRG	TRG1			
M/T Receiver Mooring	4900	2223	19.60	-3.71	8.10
Bonga Winch	7300	3311	19.60	-1.81	8.10
CTD Winch	12000	5443	19.60	0.00	8.10
CTD/BIONESS Net	11500	5216	20.23	3.25	8.10
Main Lab Equipment	2090	907	13.97	-2.00	8.60
<b>Total:</b>	<b>37706</b>	<b>17100</b>	<b>19.49</b>	<b>0.05</b>	<b>8.13</b>
<b>Upper Deck Container</b>	<b>9600</b>	<b>4334</b>	<b>26.10</b>	<b>-4.55</b>	<b>8.60</b>
<b>Focsle Deck</b>					
CTD Winch	12000	5443	9.51	-4.09	11.00
Hydro Winch	7800	3538	6.50	-5.55	11.00
<b>Total:</b>	<b>19800</b>	<b>8981</b>	<b>8.32</b>	<b>-4.67</b>	<b>11.00</b>
<b>Focsle Deck Container</b>	<b>8500</b>	<b>3836</b>	<b>14.35</b>	<b>5.48</b>	<b>11.30</b>
<b>ROPOS on Upper Deck (Departure)</b>					
ROV	6990	3170	25.25	0.00	8.30
ROPOS LARS on Upper Deck	20000	9072	24.48	2.45	9.80
LARS Pedestal	6681	3030	21.50	-4.66	7.85
ROPOS Winch on Upper Deck	40131	18200	21.50	-0.50	9.50
ROPOS Winch Foundation	3881	1760	21.50	-0.50	7.84
ROPOS Power Pack	6615	3000	21.80	-3.92	8.30
CABLE	3991	1810	26.25	0.00	7.80
<b>Total:</b>	<b>88292</b>	<b>40042</b>	<b>22.71</b>	<b>0.36</b>	<b>9.11</b>
<b>ROPOS on Upper Deck (Operating)</b>					
ROV (hanging from crane)		3170	21.50	13.46	7.50
ROPOS LARS on Upper Deck	20000	9072	21.50	8.37	9.80
LARS Pedestal	6681	3030	21.50	-4.66	7.85
ROPOS Winch on Upper Deck	40131	18200	21.50	-0.50	9.50
ROPOS Winch Foundation	3881	1760	21.50	-0.50	7.84
ROPOS Power Pack	6615	3000	21.80	-3.92	8.30
CABLE (hanging from crane)	3991	1810	21.50	13.46	7.50
<b>Total:</b>	<b>88292</b>	<b>40042</b>	<b>21.52</b>	<b>3.38</b>	<b>9.03</b>

ROPOS on Focsle Deck (Departure)	Weight		LTC (kg)	LTC (ton)	ROG (kg)
	TRG	TRG1			
ROV (Upper Deck)	6990	3170	22.60	5.00	8.30
ROPOS LARS on Focsle Deck	20000	9072	19.40	-4.95	12.50
LARS Pedestal	6681	3030	17.44	4.95	10.45
ROPOS Winch on Focsle Deck	40131	18200	12.77	4.95	12.20
ROPOS Winch Foundation	3881	1760	12.77	4.95	10.44
ROPOS Power Pack	6615	3000	8.86	4.34	11.00
CABLE	3991	1810	23.40	5.00	7.80
<b>Total:</b>	<b>88292</b>	<b>40042</b>	<b>15.60</b>	<b>-4.91</b>	<b>11.46</b>
<b>ROPOS on Focsle Deck (Operating)</b>					
ROV (hanging from crane)	6990	3170	17.44	13.76	10.20
ROPOS LARS on Focsle Deck	20000	9072	17.44	8.66	12.50
LARS Pedestal	6681	3030	17.44	4.95	10.45
ROPOS Winch on Focsle Deck	40131	18200	12.77	4.95	12.20
ROPOS Winch Foundation	3881	1760	12.77	4.95	10.44
ROPOS Power Pack	6615	3000	8.86	4.34	11.00
CABLE (hanging from crane)	3991	1810	17.44	13.76	10.20
<b>Total:</b>	<b>88292</b>	<b>40042</b>	<b>14.47</b>	<b>6.84</b>	<b>11.72</b>
<b>Rosette on Focsle Deck (Operating)</b>					
Sale Working Load	7718	3500	4.63	11.14	11.80
Rosette Crane Off	-10750	-4876	3.05	4.70	13.00
Rosette Crane On	10750	4876	-4.63	7.08	13.00
<b>Total:</b>	<b>7718</b>	<b>3500</b>	<b>6.77</b>	<b>14.46</b>	<b>11.80</b>
<b>Rosette on Focsle Deck (Departure)</b>					
Rosette in Stowed Position	1986	900	0.70	5.60	9.00