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## **OPERATING INSTRUCTIONS**

1. Compliance with the stability criteria indicated does not ensure immunity against capsizing regardless of the circumstances, or absolves 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 the speed and course warranted by the prevailing circumstances.
2. Calculations performed show that the vessel meets the applicable U.S. Coast Guard requirements for stability when operated as shown in the Stability Conditions enclosed in this booklet.
3. There shall never be more than one pair of partially filled fuel or water tanks at any one time.
4. Cross-connections between all port and starboard wing tanks shall be kept closed at all times when underway.
5. Deck hatches and weather tight doors to the deck house, side storerooms, and machinery spaces shall be kept closed and fully secured at all times when underway, except when actually used for transit under safe conditions.
6. Deck freeing ports shall be maintained operable and completely unobstructed at all times.
7. Bilges shall be kept pumped to minimum contents at all times.
8. Trim should generally be minimized.
9. Cargo and equipment must be positively secured against shifting in a seaway prior to leaving protected waters.
10. No weights shall be added, removed, or relocated without determining the effect on the stability of the vessel.
11. The operator shall determine the cause of any list before taking corrective action
12. No watertight bulkheads shall be removed or altered without determining the effect on the stability of the vessel.
13. Excessive winter ice loading shall be avoided. Efforts shall be made to remove accumulated winter ice from all surfaces on the vessel.
14. The hydrostatic calculations and righting arm calculations accompanying the trim and stability conditions are accomplished using a free trimming computer program, which solves for the hydrostatic properties at the actual trim and heel of the vessel. Therefore, the hydrostatic properties presented will differ slightly from the Hydrostatic Curves of Form, and Cross Curves of Stability, which are plotted with an initial trim of zero.
15. All tons used in the calculations are long tons of 2240 pounds. Vertical centers of gravity are referenced to a point about the baseline. Longitudinal centers are referenced about midships. Trims shown in righting arm data are positive aft and negative forward.
16. Owner and crew reported loading conditions and amount of ice and fish. The captain should not load ship greater than load calculated.
17. All fishing gear was added in the inclining report. The fishing gear will be taken into account in the ship's lightship.
18. The outriggers will be kept in the down position at all times when outside the harbor.

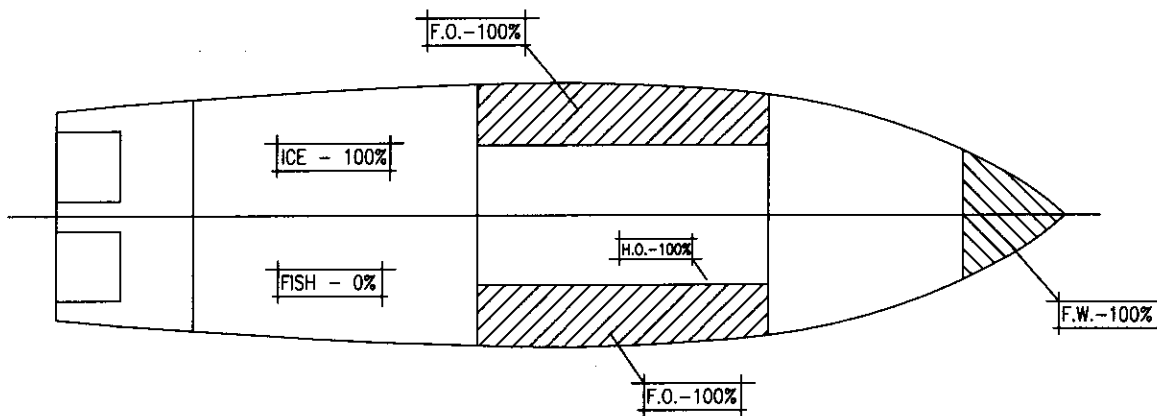
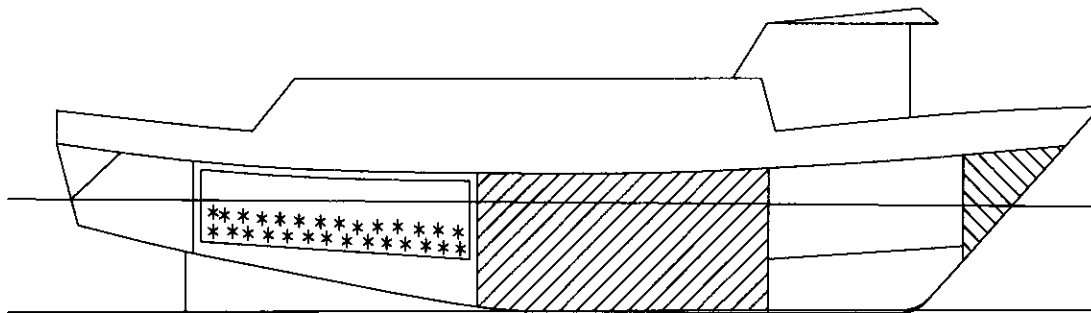
# INTACT STABILITY CONDITIONS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: READY FOR SEA

## LEGEND

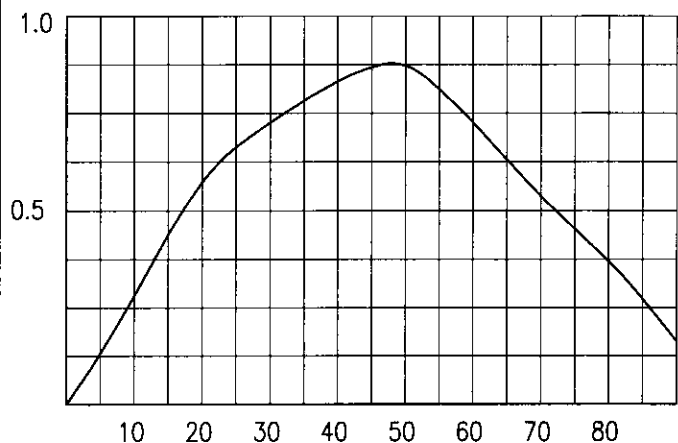
-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	<u>250.93</u>	LONG TONS
VCG:	<u>9.67</u>	FT.
LCG (+AFT):	<u>-0.64</u>	FT.
TRIM (FT)	<u>0.782 AFT</u>	FT.
TRIM (IN):	<u>9.39 AFT</u>	IN.
MOLDED DRAFT FWD:	<u>8.831</u>	FT.
MOLDED DRAFT MIDSHIP:	<u>9.222</u>	FT.
MOLDED DRAFT AFT:	<u>9.613</u>	FT.
KEEL DRAFT FWD:	<u>9.081</u>	FT.
KEEL DRAFT AFT:	<u>9.863</u>	FT.
FREEBOARD MIDSHIPS:	<u>2.528</u>	FT.

GM:	<u>1.62</u>	FT.
FREE SURFACE:	<u>0.06</u>	FT.
GM CORRECTED:	<u>1.55</u>	FT.



## RIGHTING ENERGIES:

0° - 30°	<u>12.295</u>	FT.-DEG.
0° - 40°	<u>20.106</u>	FT.-DEG.
30° - 40°	<u>7.811</u>	FT.-DEG.
MAX GZ:	<u>0.877</u>	FT.-DEG.
ANGLE @ MAX GZ:	<u>48.0</u>	FT.-DEG.

C-116 79' -11" FISHING VESSEL F/V 'SASHA-LEE' 03/16/02

READY FOR SEA

ITEM	TONS	VCG	VERT	FREE	LCG	FWD.	LCG	AFT
L.S. - INC 03/16	100 PCT	185.69	10.55	1958.77			1.48	274.82
F.W. TANK FWD PORT	98 PCT	5.79	10.81	62.58	38.75	224.26		
E.R. FUEL OIL TK P	98 PCT	21.87	7.26	158.70	7.50	164.00		
E.R. FUEL OIL TK S	98 PCT	21.87	7.26	158.70	7.50	164.00		
HYDRAULIC OIL-S	98 PCT	.57	8.14	4.63	.03		3.51	2.00
CONSUMABLE STORES	100 PCT	.50	14.93	7.46	17.25	8.63		
SHIP SPARES	100 PCT	1.25	8.50	10.63	22.50	28.13		
ICE IN HOLD	100 PCT	13.39	6.99	93.55			11.25	150.70
CATCH IN HOLD	NONE							
CATCH ON DECK	NONE							
PARAVANES UP	100 PCT	-1.99	37.50	-74.47	1.00	-1.99		
PARAVANES DOWN	100 PCT	1.99	23.50	46.67	1.00	1.99		
**WINTER ICE**	NONE							

\* TOTAL - 250.93 \* 9.67 \* 2427.22 \* 15.85 \* .64 \* 161.42 \*  
 \*\*\*\*\*

TRIM/LBP	HEEL	GZ	GZ CORR
.0096	5.0 DEGREES	.137 FEET	.132 FT.CORR.
.0096	10.0 DEGREES	.292 FEET	.281 FT.CORR.
.0098	15.0 DEGREES	.457 FEET	.440 FT.CORR.
.0105	20.0 DEGREES	.595 FEET	.573 FT.CORR.
.0121	25.0 DEGREES	.690 FEET	.663 FT.CORR.
.0150	30.0 DEGREES	.758 FEET	.726 FT.CORR.
.0188	35.0 DEGREES	.818 FEET	.782 FT.CORR.
.0235	40.0 DEGREES	.872 FEET	.831 FT.CORR.
.0378	50.0 DEGREES	.920 FEET	.872 FT.CORR.
.0490	60.0 DEGREES	.781 FEET	.726 FT.CORR.
.0605	70.0 DEGREES	.595 FEET	.536 FT.CORR.
.0702	80.0 DEGREES	.432 FEET	.370 FT.CORR.
.0808	90.0 DEGREES	.226 FEET	.163 FT.CORR.

DISPLACEMENT = 250.93 TONS  
 KMT = 11.29 FEET  
 KG = 9.67 FEET  
 GMT UNCORR. = 1.62 FEET  
 FREE SURFACE = .06 FEET  
 GMT CORRECTED = 1.55 FEET

RIGHTING ARM CURVE  
 LCB = .65 FEET FWD  
 LCG = .64 FEET FWD  
 KML = 78.88 FEET ABL  
 KB = 5.82 FEET ABL  
 GML = 69.14 FEET ABL  
 MTI = 18.07 FT. TONS  
 TONS/IN. = 3.50 LONG TONS  
 TRIM = 9.39 INCHES AFT  
 TRIM = .782 FEET AFT  
 LCF = 2.349 FEET AFT  
 MEAN DRAFT = 9.222 FEET ABL  
 LCF DRAFT = 9.245 FEET ABL  
 F.P. DRAFT = 8.831 FEET ABL  
 A.P. DRAFT = 9.613 FEET ABL

RIGHTING ENERGIES  
 0 - 30 DEG. = 12.295 FT-DEG.  
 0 - 40 DEG. = 20.106 FT-DEG.  
 30 - 40 DEG. = 7.811 FT-DEG.

\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

READY FOR SEA

DISPLACEMENT = 250.93 LONG TONS  
 MOLDED DRAFT = 9.22 FEET AT MIDSHIPS  
 KG = 9.67 FT. ABL  
 LCG = .64 FT. FWD MIDSHIPS  
 GMT CORR. = 1.56 FEET

\*\*\*Results from model with NO Sheer\*\*\*

\*\*\*Results from model with Sheer as designed\*\*\*

1.15 REQ'D - PASS 1.56 1.56 All GM Cases  
 Pass Require't

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 64.61 DEGREES  
 AREA 0 DEG. TO 30 DEG. = 12.29 FT.-DEG. 10.3 REQ'D - PASS 13.23 9.00  
 AREA 0 DEG. TO 40 DEG. = 20.10 FT.-DEG. 16.9 REQ'D - PASS 21.69 10.14  
 AREA 30 DEG TO 40 DEG. = 7.81 FT.-DEG. 5.6 REQ'D - PASS 8.46 1.14  
 MAXIMUM GZ = .877 FEET 0.66 REQ'D - PASS 0.86 0.27  
 ANGLE OF MAX GZ = 48.0 DEGREES 25.0 REQ'D -PASS 32.5 19.27  
 AREA 0 TO MAX GZ ANGLE = 26.95 FT.-DEG.  
 RANGE OF STABILITY EXCEEDS 90 DEG. (60 REQ'D) 60.44 38.35  
 positive RA from 0-60 degees

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1087.34 SQ. FT.  
 WINDAGE ARM = 11.70 FT.

GUST WIND HEEL ARM = .27 FT.

1ST GUST WIND HEEL ARM INTERCEPT = 9.8 DEGREES 14.0 MAX REQ'D - PASS  
 2ND GUST WIND HEEL ARM INTERCEPT = 84.9 DEGREES  
 RIGHTING ENERGY ABOVE WIND HEEL ARM = 16.37 FT.-DEG. 9.8 DEG. TO 50.0 DEG.  
 WINDWARD WAVE ROLL ANGLE = 17.40 DEG. (FROM GUST WIND ARM INTERCEPT)  
 AREA BELOW WIND HEEL ARM = 4.25 FT.-DEG. 9.8 DEG. TO -7.6 DEG.  
 AREA ABOVE - AREA BELOW = 12.12 FT.-DEG. POSITIVE REQ'D - PASS

\* LIFTING CRITERIA STABILITY ANALYSIS \*





WEIGHT LIFTED = 1.600 TONS  
 VERTICAL LIFT = 10.00 FEET  
 HORIZONTAL LIFT = 5.00 FEET

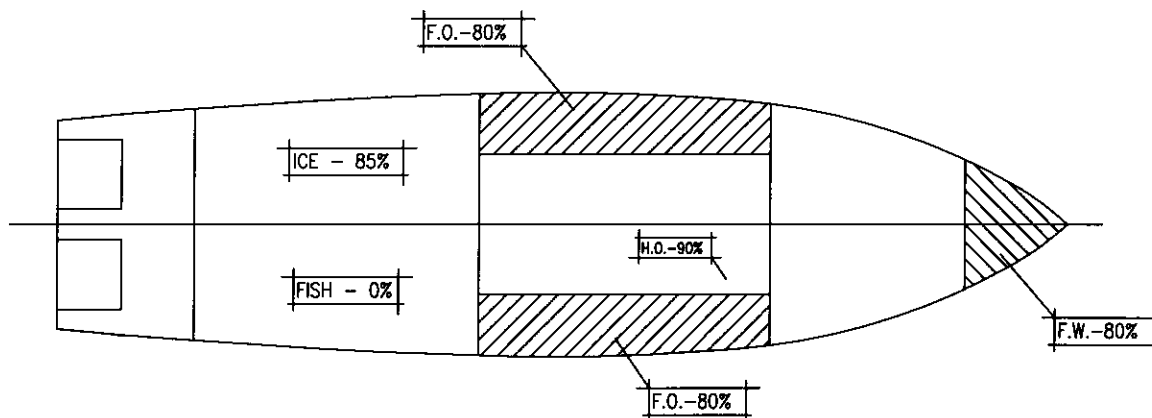
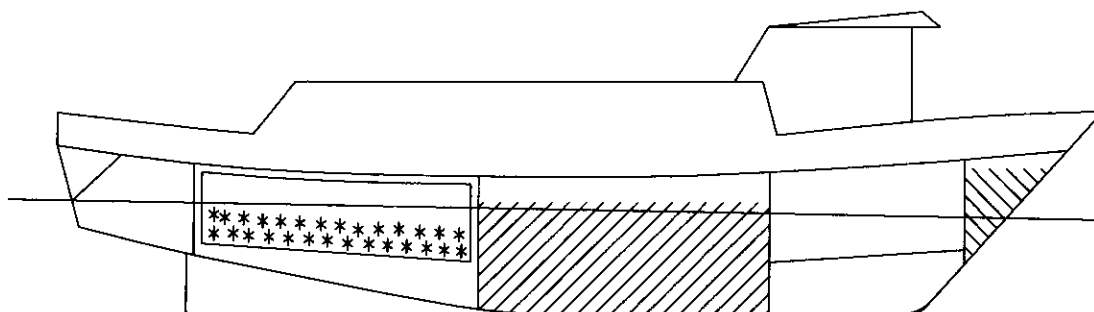
LOWER INTERCEPT ANGLE = 1.4 DEGREES  
 UPPER LIMIT ANGLE = 40.0 DEGREES  
 AREA ABOVE HEELING CURVE = 18.09 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: ARRIVAL AT FISHING GROUNDS

## LEGEND

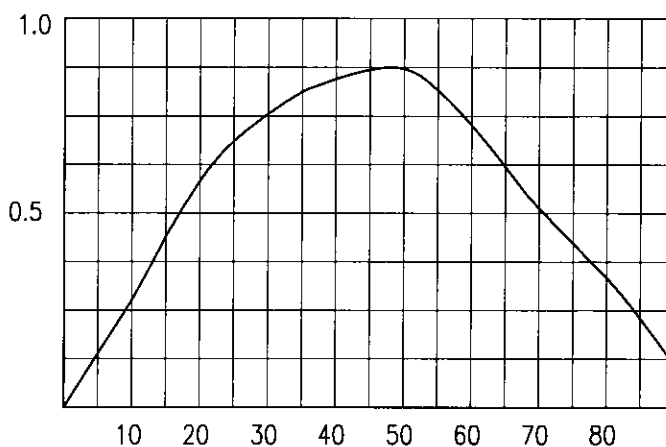
-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	<u>241.66</u>	LONG TONS
VCG:	<u>9.68</u>	FT.
LCG (+AFT):	<u>-0.17</u>	FT.
TRIM (FT)	<u>1.373 AFT</u>	FT.
TRIM (IN):	<u>16.48 AFT</u>	IN.
MOLDED DRAFT FWD:	<u>8.293</u>	FT.
MOLDED DRAFT MIDSHIP:	<u>8.980</u>	FT.
MOLDED DRAFT AFT:	<u>9.660</u>	FT.
KEEL DRAFT FWD:	<u>8.543</u>	FT.
KEEL DRAFT AFT:	<u>9.916</u>	FT.
FREEBOARD MIDSHIPS:	<u>2.770</u>	FT.

GM:	<u>1.64</u>	FT.
FREE SURFACE:	<u>0.08</u>	FT.
GM CORRECTED:	<u>1.56</u>	FT.



## RIGHTING ENERGIES:

0° - 30°	<u>12.563</u>	FT.-DEG.
0° - 40°	<u>20.644</u>	FT.-DEG.
30° - 40°	<u>8.080</u>	FT.-DEG.
MAX GZ:	<u>0.878</u>	FT.-DEG.
ANGLE @ MAX GZ:	<u>47.6</u>	FT.-DEG.

C-116 79'-11" FISHING VESSEL F/V 'SASHA-LEE' 03/16/02  
ARRIVAL AT FISHING GROUNDS

ITEM	TONS	VCG	VERT	FREE	LCG	FWD.	LCG	FWD.	MOM.	AFT
L.S. - INC 03/16	100 PCT	185.69	10.55	1958.77					1.48	274.82
F.W. TANK FWD PORT	80 PCT	4.72	10.29	48.63	38.51	181.92				
E.R. FUEL OIL TK P	80 PCT	17.85	6.44	115.04	7.42	132.45				
E.R. FUEL OIL TK S	80 PCT	17.85	6.44	115.04	7.42	132.45				
HYDRAULIC OIL-S	90 PCT	.52	7.85	4.11	.03				3.51	1.84
CONSUMABLE STORES	80 PCT	.40	14.93	5.97		6.90				
SHIP SPARES	100 PCT	1.25	8.50	10.63		28.13				
ICE IN HOLD	85 PCT	11.38	6.99	79.52					11.25	128.09
CATCH IN HOLD	NONE									
CATCH ON DECK	100 PCT	2.00	14.50	29.00					17.50	35.00
PARAVANES UP	100 PCT	-1.99	37.50	-74.47		-1.99				
PARAVANES DOWN	100 PCT	1.99	23.50	46.67		1.99				
WINTER ICE**	NONE									

TOTAL - 241.66 \* 9.68 \* 2338.91 \* 20.19 \* .17 \* 42.01 \*  
DISPLACEMENT = 241.66 TONS  
KMT = 11.32 FEET  
KG = 9.68 FEET  
GMT UNCORR. = 1.64 FEET  
FREE SURFACE = .08 FEET  
GMT CORRECTED = 1.56 FEET

RIGHTING ARM CURVE  
HEEL GZ GZ CORR  
.0170 5.0 DEGREES = .146 FEET .138 FT. CORR.  
.0172 10.0 DEGREES = .292 FEET .277 FT. CORR.  
.0173 15.0 DEGREES = .463 FEET .441 FT. CORR.  
.0177 20.0 DEGREES = .611 FEET .583 FT. CORR.  
.0193 25.0 DEGREES = .721 FEET .686 FT. CORR.  
.0220 30.0 DEGREES = .798 FEET .756 FT. CORR.  
.0255 35.0 DEGREES = .860 FEET .812 FT. CORR.  
.0303 40.0 DEGREES = .899 FEET .845 FT. CORR.  
.0446 50.0 DEGREES = .935 FEET .871 FT. CORR.  
.0556 60.0 DEGREES = .799 FEET .727 FT. CORR.  
.0646 70.0 DEGREES = .590 FEET .512 FT. CORR.  
.0750 80.0 DEGREES = .415 FEET .333 FT. CORR.  
.0863 90.0 DEGREES = .194 FEET .110 FT. CORR.

RIGHTING ENERGIES  
0 - 30 DEG. = 12.563 FT-DEG.  
0 - 40 DEG. = 20.644 FT-DEG.  
30 - 40 DEG. = 8.080 FT-DEG.



\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

ARRIVAL AT FISHING GROUNDS

DISPLACEMENT = 241.66 LONG TONS  
MOLDED DRAFT = 8.98 FEET AT MIDSHIPS  
KG = 9.68 FT. ABL  
LCG = .17 FT. FWD MIDSHIPS  
GMT CORR. = 1.56 FEET 1.15 REQ'D - PASS 1.52 1.52

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 67.00 DEGREES  
AREA 0 DEG. TO 30 DEG. = 12.56 FT.-DEG. 10.3 REQ'D - PASS 13.21 9.50  
AREA 0 DEG. TO 40 DEG. = 20.65 FT.-DEG. 16.9 REQ'D - PASS 22.13 11.31  
AREA 30 DEG TO 40 DEG. = 8.08 FT.-DEG. 5.6 REQ'D - PASS 8.92 1.81  
MAXIMUM GZ = .878 FEET 0.66 REQ'D - PASS 0.89 0.33  
ANGLE OF MAX GZ = 47.6 DEGREES 25.0 REQ'D - PASS 33.51 20.37  
AREA 0 TO MAX GZ ANGLE = 27.16 FT.-DEG.  
RANGE OF STABILITY EXCEEDS 90 DEG. (60 REQ'D) 61.19 40.12

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1106.89 SQ. FT.  
WINDAGE ARM = 11.70 FT.  
GUST WIND HEEL ARM = .29 FT.  
1ST GUST WIND HEEL ARM INTERCEPT = 10.5 DEGREES 14.0 MAX REQ'D - PASS  
2ND GUST WIND HEEL ARM INTERCEPT = 82.0 DEGREES  
RIGHTING ENERGY ABOVE WIND HEEL ARM = 16.23 FT.-DEG. 10.5 DEG. TO 50.0 DEG.  
WINDWARD WAVE ROLL ANGLE = 17.27 DEG. (FROM GUST WIND ARM INTERCEPT)  
AREA BELOW WIND HEEL ARM = 4.16 FT.-DEG. 10.5 DEG. TO -6.8 DEG.  
AREA ABOVE - AREA BELOW = 12.07 FT.-DEG. POSITIVE REQ'D - PASS

\* LIFTING CRITERIA STABILITY ANALYSIS \*

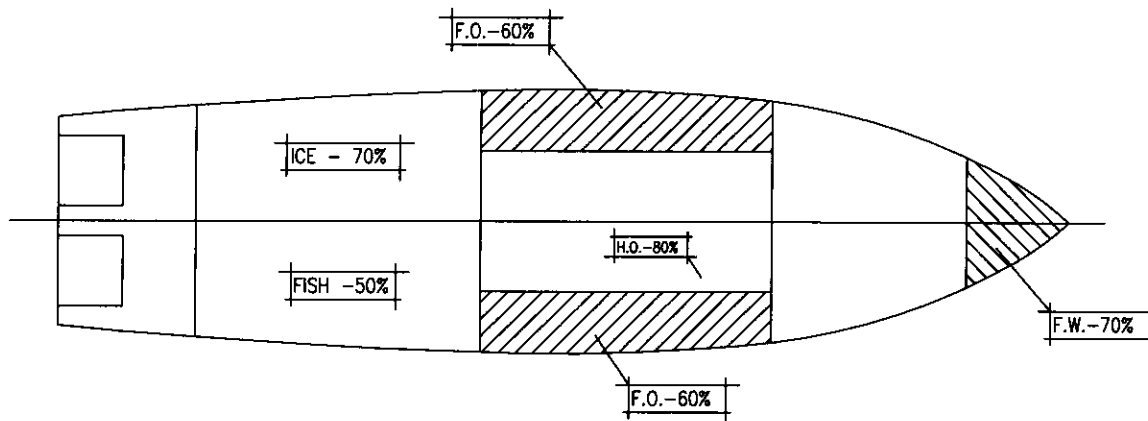
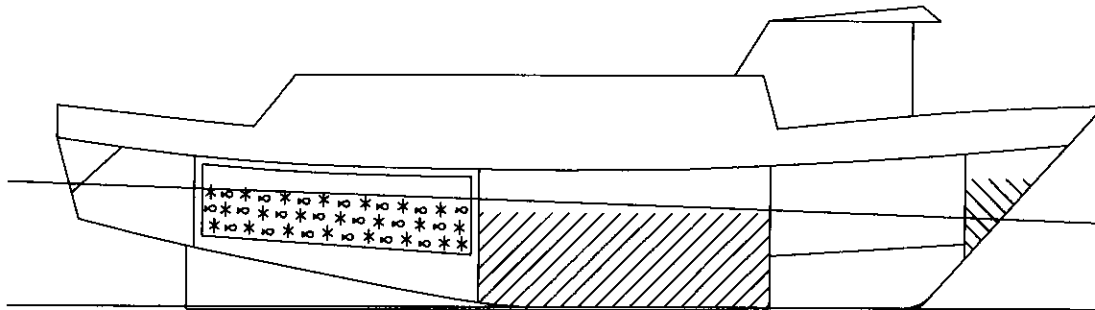
WEIGHT LIFTED = 1.600 TONS  
VERTICAL LIFT = 10.00 FEET  
HORIZONTAL LIFT = 5.00 FEET  
LOWER INTERCEPT ANGLE = 1.3 DEGREES  
UPPER LIMIT ANGLE = 40.0 DEGREES  
AREA ABOVE HEELING CURVE = 18.54 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: AT FISHING GROUNDS - 50% CATCH

## LEGEND

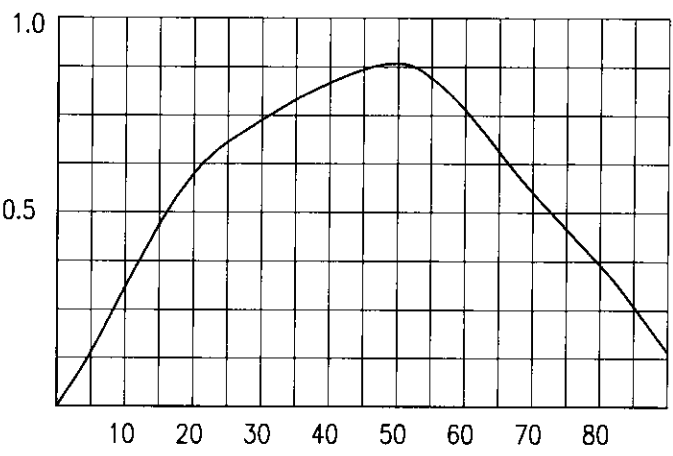
-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	<u>247.85</u>	LONG TONS
VCG:	<u>9.54</u>	FT.
LCG (+AFT):	<u>1.05</u>	FT.
TRIM (FT)	<u>2.629 AFT</u>	FT.
TRIM (IN):	<u>31.55 AFT</u>	IN.
MOLDED DRAFT FWD:	<u>7.776</u>	FT.
MOLDED DRAFT MIDSHIP:	<u>9.090</u>	FT.
MOLDED DRAFT AFT:	<u>10.405</u>	FT.
KEEL DRAFT FWD:	<u>8.026</u>	FT.
KEEL DRAFT AFT:	<u>10.655</u>	FT.
FREEBOARD MIDSHIPS:	<u>2.66</u>	FT.

GM:	<u>1.72</u>	FT.
FREE SURFACE:	<u>.06</u>	FT.
GM CORRECTED:	<u>1.65</u>	FT.



## RIGHTING ENERGIES:

0° - 30°	<u>12.861</u>	FT.-DEG.
0° - 40°	<u>20.757</u>	FT.-DEG.
30° - 40°	<u>7.896</u>	FT.-DEG.
MAX GZ:	<u>0.886</u>	FT.-DEG.
ANGLE @ MAX GZ:	<u>48.7</u>	FT.-DEG.

C-116 79'-11" FISHING VESSEL F/V 'SASHA-LEE' 03/16/02

HALF TRIP AT FISHING GROUNDS

ITEM	TONS	VCG	VERT	FREE	LCG	FWD	LCG	FWD	LCG	AFT
L.S. - INC 03/16	100 PCT	185.69	10.55	1958.77					1.48	274.82
F.W. TANK FWD PORT	70 PCT	4.13	9.97	41.21	7.46	38.39	158.71			
E.R. FUEL OIL TK P	60 PCT	13.39	5.49	73.49	4.21	7.29	97.61			
E.R. FUEL OIL TK S	60 PCT	13.39	5.49	73.49	4.21	7.29	97.61			
HYDRAULIC OIL-S	80 PCT	.46	7.50	3.49	.03			3.51		1.63
CONSUMABLE STORES	60 PCT	.30	14.93	4.48		17.25	5.18			
SHIP SPARES	100 PCT	1.25	8.50	10.63		22.50	28.13			
ICE IN HOLD	70 PCT	9.38	6.99	65.49					11.25	105.49
CATCH IN HOLD	50 PCT	17.86	7.37	131.57					12.92	230.75
CATCH ON DECK	100 PCT	2.00	14.50	29.00					17.50	35.00
PARAVANES UP	100 PCT	-1.99	37.50	-74.47		1.00	-1.99			
PARAVANES DOWN	100 PCT	1.99	23.50	46.67		1.00	1.99			
**WINTER ICE**	NONE									

TOTAL - 247.85 \* 9.54 \* 2363.82 \* 15.91 \* 1.05 \* 260.50 \*

TRIM/LBP	HEEL	GZ	GZ CORR
.0330	5.0 DEGREES	.146 FEET	.140 FT. CORR.
.0325	10.0 DEGREES	.320 FEET	.309 FT. CORR.
.0328	15.0 DEGREES	.486 FEET	.469 FT. CORR.
.0342	20.0 DEGREES	.622 FEET	.600 FT. CORR.
.0374	25.0 DEGREES	.708 FEET	.681 FT. CORR.
.0424	30.0 DEGREES	.770 FEET	.738 FT. CORR.
.0493	35.0 DEGREES	.828 FEET	.791 FT. CORR.
.0569	40.0 DEGREES	.875 FEET	.834 FT. CORR.
.0720	50.0 DEGREES	.933 FEET	.884 FT. CORR.
.0855	60.0 DEGREES	.820 FEET	.764 FT. CORR.
.0971	70.0 DEGREES	.611 FEET	.550 FT. CORR.
.1109	80.0 DEGREES	.428 FEET	.365 FT. CORR.
.1206	90.0 DEGREES	.205 FEET	.141 FT. CORR.

DISPLACEMENT = 247.85 TONS  
 KMT = 11.25 FEET  
 KG = 9.54 FEET  
 GMT UNCORR. = 1.72 FEET  
 FREE SURFACE = .06 FEET  
 GMT CORRECTED = 1.65 FEET

RIGHTING ARM CURVE  
 TRIM = 1.17 FEET AFT  
 LCG = 1.05 FEET AFT  
 KML = 77.64 FEET ABL  
 KB = 5.78 FEET ABL  
 GML = 68.04 FEET ABL  
 MTI = 17.57 FT. TONS  
 TONS/IN. = 3.47 LONG TONS  
 TRIM = 31.55 INCHES AFT  
 TRIM = 2.629 FEET AFT  
 LCF = 3.084 FEET AFT  
 MEAN DRAFT = 9.090 FEET ABL  
 LCF DRAFT = 9.192 FEET ABL  
 F.P. DRAFT = 7.776 FEET ABL  
 A.P. DRAFT = 10.405 FEET ABL

RIGHTING ENERGIES  
 0 - 30 DEG. = 12.861 FT-DEG.  
 0 - 40 DEG. = 20.757 FT-DEG.  
 30 - 40 DEG. = 7.896 FT-DEG.

\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

HALF TRIP AT FISHING GROUNDS

DISPLACEMENT = 247.85 LONG TONS  
MOLDED DRAFT = 9.09 FEET AT MIDSHIPS  
KG = 9.54 FT. ABL  
LCG = 1.05 FT. AFT MIDSHIPS  
GMT CORR. = 1.65 FEET 1.15 REQ'D - PASS 1.68 1.68

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 63.20 DEGREES  
AREA 0 DEG. TO 30 DEG. = 12.86 FT.-DEG. 10.3 REQ'D - PASS 14.27 10.17  
AREA 0 DEG. TO 40 DEG. = 20.76 FT.-DEG. 16.9 REQ'D - PASS 23.68 12.23  
AREA 30 DEG TO 40 DEG. = 7.89 FT.-DEG. 5.6 REQ'D - PASS 9.41 2.08  
MAXIMUM GZ = .886 FEET 0.66 REQ'D - PASS 0.94 0.36  
ANGLE OF MAX GZ = 48.7 DEGREES 25.0 REQ'D - PASS 33.49 20.29  
AREA 0 TO MAX GZ ANGLE = 28.26 FT.-DEG.  
RANGE OF STABILITY EXCEEDS 90 DEG. (60 REQ'D) 62.94 40.82

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1098.01 SQ. FT.  
WINDAGE ARM = 11.70 FT.

GUST WIND HEEL ARM = .28 FT.

1ST GUST WIND HEEL ARM INTERCEPT = 9.2 DEGREES 14.0 MAX REQ'D - PASS  
2ND GUST WIND HEEL ARM INTERCEPT = 83.9 DEGREES  
RIGHTING ENERGY ABOVE WIND HEEL ARM = 16.70 FT.-DEG. 9.2 DEG. TO 50.0 DEG.  
WINDWARD WAVE ROLL ANGLE = 17.43 DEG. (FROM GUST WIND ARM INTERCEPT)  
AREA BELOW WIND HEEL ARM = 4.66 FT.-DEG. 9.2 DEG. TO -8.2 DEG.  
AREA ABOVE - AREA BELOW = 12.04 FT.-DEG. POSITIVE REQ'D - PASS

\* LIFTING CRITERIA STABILITY ANALYSIS \*


WEIGHT LIFTED = 1.600 TONS  
VERTICAL LIFT = 10.00 FEET  
HORIZONTAL LIFT = 5.00 FEET

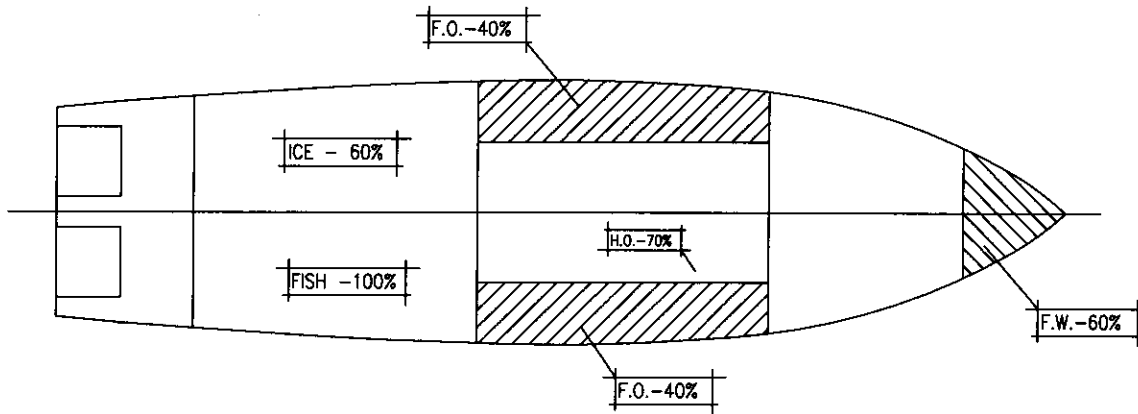
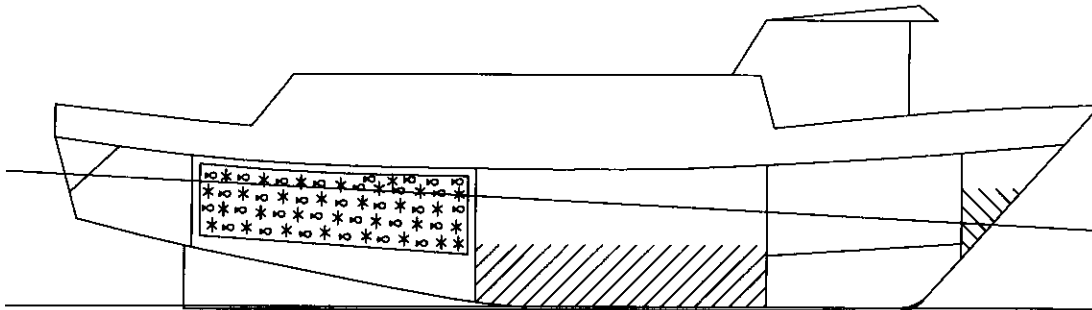
LOWER INTERCEPT ANGLE = 1.4 DEGREES  
UPPER LIMIT ANGLE = 40.0 DEGREES  
AREA ABOVE HEELING CURVE = 18.75 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: LEAVING FISHING GROUNDS - 100% CATCH

## LEGEND

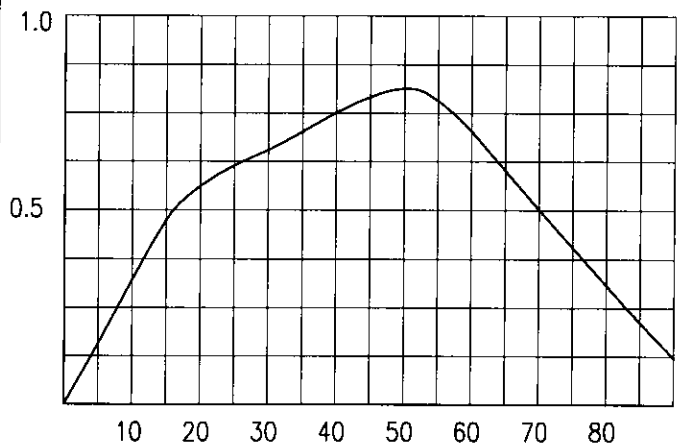
-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	<u>254.70</u>	LONG TONS
VCG:	<u>9.46</u>	FT.
LCG (+AFT):	<u>2.23</u>	FT.
TRIM (FT)	<u>3.875 AFT</u>	FT.
TRIM (IN):	<u>46.51 AFT</u>	IN.
MOLDED DRAFT FWD:	<u>7.269</u>	FT.
MOLDED DRAFT MIDSHIP:	<u>9.207</u>	FT.
MOLDED DRAFT AFT:	<u>11.145</u>	FT.
KEEL DRAFT FWD:	<u>7.519</u>	FT.
KEEL DRAFT AFT:	<u>11.395</u>	FT.
FREEBOARD MIDSHIPS:	<u>2.543</u>	FT.

GM:	<u>1.73</u>	FT.
FREE SURFACE:	<u>0.05</u>	FT.
GM CORRECTED:	<u>1.68</u>	FT.



## RIGHTING ENERGIES:

0° - 30°	<u>12.351</u>	FT.-DEG.
0° - 40°	<u>19.377</u>	FT.-DEG.
30° - 40°	<u>7.026</u>	FT.-DEG.
MAX GZ:	<u>0.815</u>	FT.-DEG.
ANGLE @ MAX GZ:	<u>49.2</u>	FT.-DEG.

C-116 79'-11" FISHING VESSEL F/V 'SASHA-LEE' 03/16/02  
 LEAVING FISHING GROUNDS - 100% CATCH

ITEM	TONS	VCG	VERT	FREE	LCG	FWD.	LCG	AFT
L.S. - INC 03/16	185.69	10.55	1958.77				1.48	274.82
100 PCT								
60 PCT	3.54	9.61	34.05	6.06	38.27	135.60		
F.W. TANK FWD PORT								
40 PCT	8.93	4.47	39.87	3.25	7.10	63.38		
E.R. FUEL OIL TK P								
40 PCT	8.93	4.47	39.87	3.25	7.10	63.38		
E.R. FUEL OIL TK S								
70 PCT	.41	7.15	2.91	.03			3.51	1.43
HYDRAULIC OIL-S								
40 PCT	.20	14.93	2.99		17.25	3.45		
CONSUMABLE STORES								
100 PCT	1.25	8.50	10.63		22.50	28.13		
SHIP SPARES								
60 PCT	8.04	6.99	56.13					
ICE IN HOLD								
100 PCT	35.71	7.37	263.14				11.25	90.42
CATCH IN HOLD								
100 PCT	2.00	14.50	29.00				12.92	461.50
CATCH ON DECK								
100 PCT	-1.99	37.50	-74.47		1.00	-1.99	17.50	35.00
PARAVANES UP								
100 PCT	1.99	23.50	46.67		1.00	1.99		
PARAVANES DOWN								
100 PCT								
**WINTER ICE**								
NONE								

TOTAL = 254.70 \* 9.46 \* 2409.56 \* 12.59 \* 2.23 \* 569.24

DISPLACEMENT = 254.70 TONS  
 KMT = 11.19 FEET  
 KG = 9.46 FEET  
 GMT UNCORR. = 1.73 FEET  
 FREE SURFACE = .05 FEET  
 GMT CORRECTED = 1.68 FEET

RIGHTING ARM CURVE  
 HEEL GZ GZ CORR  
 5.0 DEGREES = .163 FEET .158 FT.CORR.  
 10.0 DEGREES = .331 FEET .322 FT.CORR.  
 15.0 DEGREES = .487 FEET .474 FT.CORR.  
 20.0 DEGREES = .579 FEET .562 FT.CORR.  
 25.0 DEGREES = .636 FEET .615 FT.CORR.  
 30.0 DEGREES = .678 FEET .654 FT.CORR.  
 35.0 DEGREES = .731 FEET .703 FT.CORR.  
 40.0 DEGREES = .783 FEET .751 FT.CORR.  
 50.0 DEGREES = .851 FEET .814 FT.CORR.  
 60.0 DEGREES = .746 FEET .703 FT.CORR.  
 70.0 DEGREES = .547 FEET .501 FT.CORR.  
 80.0 DEGREES = .355 FEET .307 FT.CORR.  
 90.0 DEGREES = .171 FEET .121 FT.CORR.

RIGHTING ENERGIES  
 0 - 30 DEG. = 12.351 FT-DEG.  
 0 - 40 DEG. = 19.377 FT-DEG.  
 30 - 40 DEG. = 7.026 FT-DEG.

LCB = 2.37 FEET AFT  
 LCG = 2.23 FEET AFT  
 KML = 74.91 FEET ABL  
 KB = 5.85 FEET ABL  
 GML = 65.41 FEET ABL  
 MTI = 17.35 FT. TONS  
 TONS/IN. = 3.46 LONG TONS  
 TRIM = 46.51 INCHES AFT  
 LCF = 3.875 FEET AFT  
 MEAN DRAFT = 9.207 FEET ABL  
 LCF DRAFT = 9.374 FEET ABL  
 F.P. DRAFT = 7.269 FEET ABL  
 A.P. DRAFT = 11.145 FEET ABL

\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

LEAVING FISHING GROUNDS - 100% CATCH

DISPLACEMENT = 254.70 LONG TONS  
 MOLDED DRAFT = 9.21 FEET AT MIDSHIPS  
 KG = 9.46 FT. ABL  
 LCG = 2.23 FT. AFT MIDSHIPS  
 GMT CORR. = 1.68 FEET 1.15 REQ'D - PASS 1.78 1.78

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 59.47 DEGREES  
 AREA 0 DEG. TO 30 DEG. = 12.35 FT.-DEG. 10.3 REQ'D - PASS 14.79 10.17  
 AREA 0 DEG. TO 40 DEG. = 19.38 FT.-DEG. 16.9 REQ'D - PASS 24.22 12.01  
 AREA 30 DEG TO 40 DEG. = 7.03 FT.-DEG. 5.6 REQ'D - PASS 9.42 1.84  
 MAXIMUM GZ = .815 FEET 0.66 REQ'D - PASS 0.95 0.34  
 ANGLE OF MAX GZ = 49.2 DEGREES 25.0 REQ'D - PASS 32.92 19.41  
 AREA 0 TO MAX GZ ANGLE = 26.58 FT.-DEG.  
 RANGE OF STABILITY EXCEEDS 90 DEG. (60 REQ'D) 63.44 40.23

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1088.55 SQ. FT.  
 WINDAGE ARM = 11.70 FT.  
 GUST WIND HEEL ARM = .27 FT.  
 1ST GUST WIND HEEL ARM INTERCEPT = 8.4 DEGREES 14.0 MAX REQ'D - PASS  
 2ND GUST WIND HEEL ARM INTERCEPT = 81.9 DEGREES  
 RIGHTING ENERGY ABOVE WIND HEEL ARM = 14.90 FT.-DEG. 8.4 DEG. TO 50.0 DEG.  
 WINDWARD WAVE ROLL ANGLE = 17.60 DEG. (FROM GUST WIND ARM INTERCEPT)  
 AREA BELOW WIND HEEL ARM = 4.98 FT.-DEG. 8.4 DEG. TO -9.2 DEG.  
 AREA ABOVE - AREA BELOW = 9.92 FT.-DEG. POSITIVE REQ'D - PASS



\* LIFTING CRITERIA STABILITY ANALYSIS \*

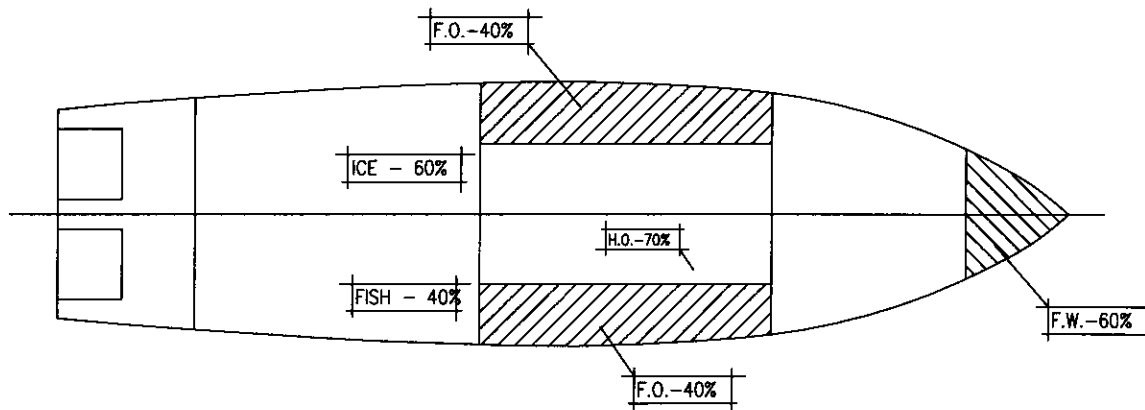
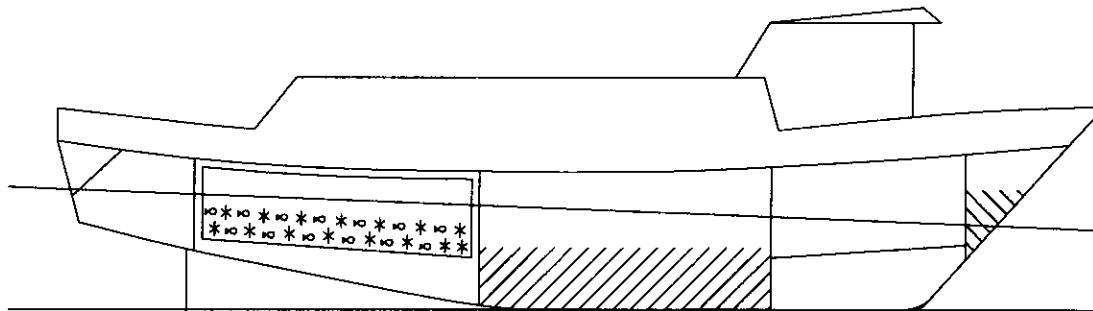
WEIGHT LIFTED = 1.600 TONS  
 VERTICAL LIFT = 10.00 FEET  
 HORIZONTAL LIFT = 5.00 FEET  
 LOWER INTERCEPT ANGLE = 1.1 DEGREES  
 UPPER LIMIT ANGLE = 40.0 DEGREES  
 AREA ABOVE HEELING CURVE = 17.38 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: LEAVING FISHING GROUNDS - 40% CATCH

## LEGEND

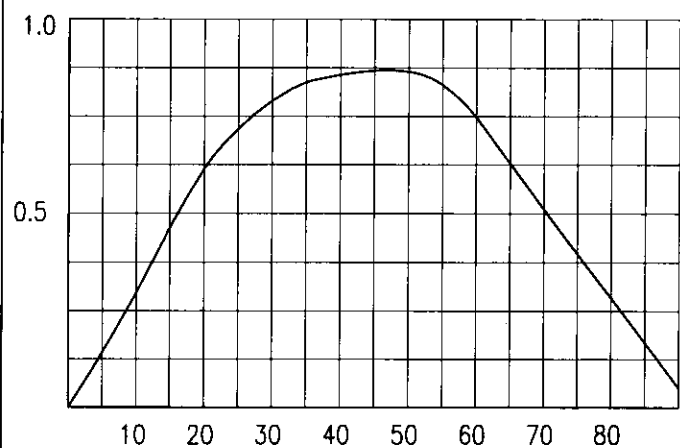
-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	<u>233.28</u>	LONG TONS
VCG:	<u>9.65</u>	FT.
LCG (+AFT):	<u>1.25</u>	FT.
TRIM (FT)	<u>2.948 AFT</u>	FT.
TRIM (IN):	<u>35.38 AFT</u>	IN.
MOLDED DRAFT FWD:	<u>7.248</u>	FT.
MOLDED DRAFT MIDSHIP:	<u>8.722</u>	FT.
MOLDED DRAFT AFT:	<u>10.196</u>	FT.
KEEL DRAFT FWD:	<u>7.498</u>	FT.
KEEL DRAFT AFT:	<u>10.446</u>	FT.
FREEBOARD MIDSHIPS:	<u>3.028</u>	FT.

GM:	<u>1.63</u>	FT.
FREE SURFACE:	<u>.05</u>	FT.
GM CORRECTED:	<u>1.58</u>	FT.



## RIGHTING ENERGIES:

0° - 30°	<u>13.193</u>	FT.-DEG.
0° - 40°	<u>21.524</u>	FT.-DEG.
30° - 40°	<u>8.331</u>	FT.-DEG.
MAX GZ:	<u>0.873</u>	FT.-DEG.
ANGLE @ MAX GZ:	<u>46.8</u>	FT.-DEG.



C-116 79/-11" FISHING VESSEL F/V 'SASHA-LEE' 03/16/02  
 LEAVING FISHING GROUNDS - 40% CATCH

ITEM	TONS	VCG	VERT	FREE	LCG	FWD.	LCG	AFT
L.S. - INC 03/16	185.69	10.55	1958.77					274.82
60 PCT	3.54	9.61	34.05	6.06	38.27	135.60		
F.W. TANK FWD PORT	8.93	4.47	39.87	3.25	7.10	63.38		
E.R. FUEL OIL TK P	8.93	4.47	39.87	3.25	7.10	63.38		
E.R. FUEL OIL TK S	.41	7.15	2.91	.03				1.43
70 PCT	.20	14.93	2.99		17.25	3.45		
CONSUMABLE STORES	1.25	8.50	10.63		22.50	28.13		
SHIP SPARES	8.04	6.99	56.13					
ICE IN HOLD	14.29	7.37	105.26				11.25	90.42
CATCH IN HOLD	2.00	14.50	29.00				12.92	184.60
CATCH ON DECK	-1.99	37.50	-74.47		1.00	-1.99		35.00
PARAVANES UP	1.99	23.50	46.67		1.00	1.99		
PARAVANES DOWN	NONE							
**WINTER ICE**								

TOTAL - 233.28 \* 9.65 \* 2251.68 \* 12.59 \* 1.25 \* 292.34

DISPLACEMENT	TONS	LCB	KML	KB	GML	MTI	TONS/IN.	TRIM	LCF	MEAN DRAFT	LCF DRAFT	F.P. DRAFT	A.P. DRAFT
DISPLACEMENT	233.28												
KMT	11.28	1.40											
KG	9.65	1.25											
GMT UNCORR.	1.63	80.44											
FREE SURFACE	.05	5.58											
GMT CORRECTED	1.58	70.73											
RIGHTING ARM CURVE		17.19											
HEEL	GZ	3.43											
5.0 DEGREES	.148	35.38											
10.0 DEGREES	.307	2.948											
15.0 DEGREES	.478	3.358											
20.0 DEGREES	.634	8.722											
25.0 DEGREES	.741	8.846											
30.0 DEGREES	.817	7.248											
35.0 DEGREES	.869	10.196											
40.0 DEGREES	.892												
50.0 DEGREES	.906												
60.0 DEGREES	.793												
70.0 DEGREES	.560												
80.0 DEGREES	.337												
90.0 DEGREES	.103												

RIGHTING ENERGIES

0 - 30 DEG.	= 13.193	FT-DEG.
0 - 40 DEG.	= 21.524	FT-DEG.
30 - 40 DEG.	= 8.331	FT-DEG.

\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

LEAVING FISHING GROUNDS - 40% CATCH

DISPLACEMENT =	233.28 LONG TONS		
MOLDED DRAFT =	8.72 FEET AT MIDSHIPS		
KG	= 9.65 FT. ABL		
LCG	= 1.25 FT. AFT MIDSHIPS		
GMT CORR.	= 1.58 FEET	1.15 REQ'D - PASS	1.58 1.58

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING	= 67.50 DEGREES		
AREA 0 DEG. TO 30 DEG.	= 13.19 FT.-DEG.	10.3 REQ'D - PASS	13.88 10.82 - Pass
AREA 0 DEG. TO 40 DEG.	= 21.53 FT.-DEG.	16.9 REQ'D - PASS	23.72 13.94
AREA 30 DEG TO 40 DEG.	= 8.33 FT.-DEG.	5.6 REQ'D - PASS	9.84 3.12
MAXIMUM GZ	= .873 FEET	0.66 REQ'D - PASS	0.96 0.45
ANGLE OF MAX GZ	= 46.8 DEGREES	25.0 REQ'D - PASS	34.3 22.44
AREA 0 TO MAX GZ ANGLE	= 27.38 FT.-DEG.		
RANGE OF STABILITY EXCEEDS 90 DEG. (60 REQ'D)		63.05	43.17

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA =	1127.66 SQ. FT.	
WINDAGE ARM =	11.71 FT.	
GUST WIND HEEL ARM =	.31 FT.	
1ST GUST WIND HEEL ARM INTERCEPT	= 10.4 DEGREES	14.0 MAX REQ'D - PASS
2ND GUST WIND HEEL ARM INTERCEPT	= 78.9 DEGREES	
RIGHTING ENERGY ABOVE WIND HEEL ARM	= 16.34 FT.-DEG.	10.4 DEG. TO 50.0 DEG.
WINDWARD WAVE ROLL ANGLE	= 17.00 DEG. (FROM GUST WIND ARM INTERCEPT)	
AREA BELOW WIND HEEL ARM	= 4.32 FT.-DEG.	10.4 DEG. TO -6.6 DEG.
AREA ABOVE - AREA BELOW	= 12.02 FT.-DEG.	POSITIVE REQ'D - PASS







\* LIFTING CRITERIA STABILITY ANALYSIS \*

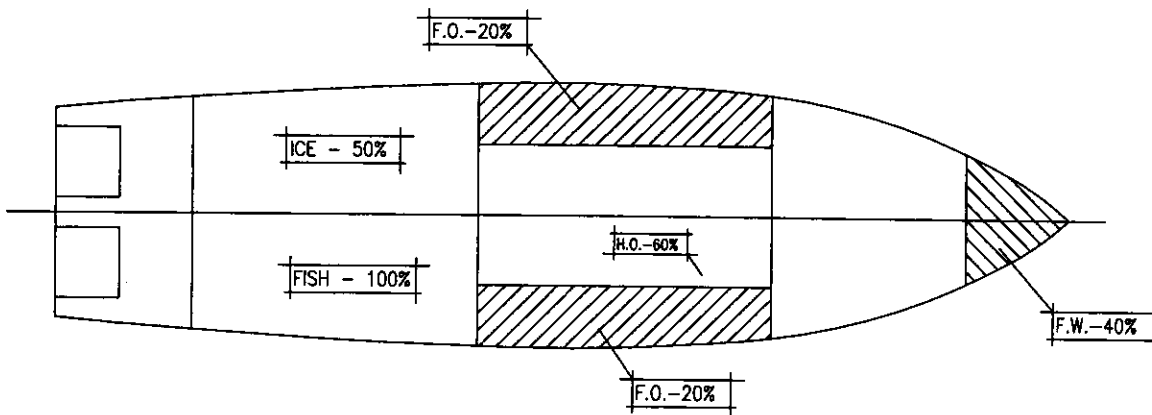
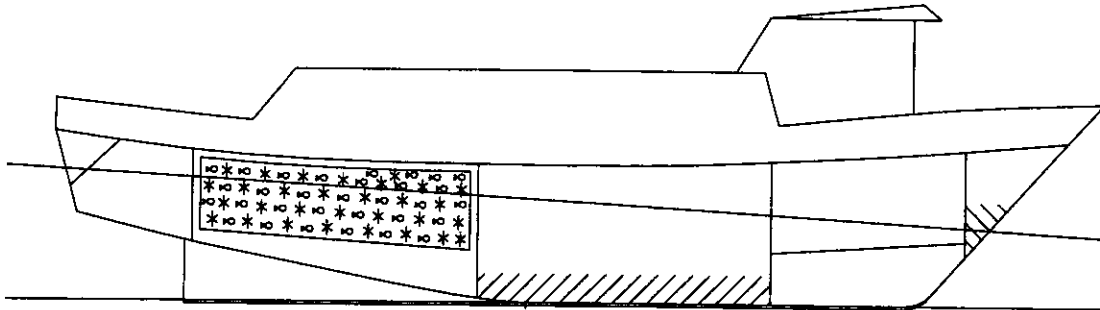
WEIGHT LIFTED	= 1.600 TONS
VERTICAL LIFT	= 10.00 FEET
HORIZONTAL LIFT	= 5.00 FEET
LOWER INTERCEPT ANGLE	= 1.3 DEGREES
UPPER LIMIT ANGLE	= 40.0 DEGREES
AREA ABOVE HEELING CURVE	= 19.38 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: ARRIVAL IN PORT - 100% CATCH

## LEGEND

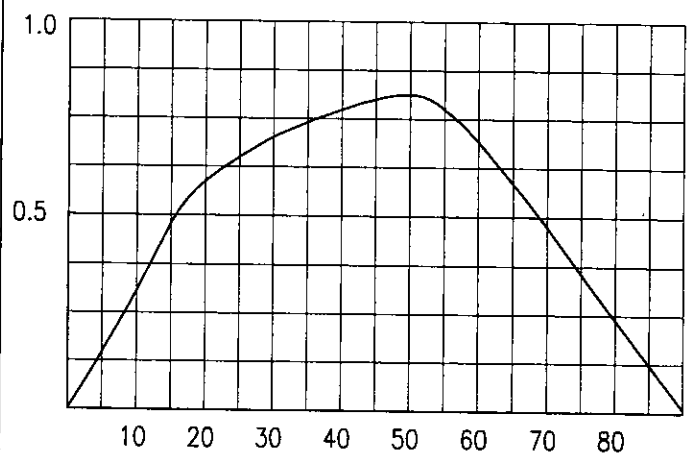
-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	241.08	LONG TONS
VCG:	9.57	FT.
LCG (+AFT):	2.63	FT.
TRIM (FT)	4.388	AFT FT.
TRIM (IN):	52.66	AFT IN.
MOLDED DRAFT FWD:	6.663	FT.
MOLDED DRAFT MIDSHIP:	8.857	FT.
MOLDED DRAFT AFT:	11.051	FT.
KEEL DRAFT FWD:	6.913	FT.
KEEL DRAFT AFT:	11.301	FT.
FREEBOARD MIDSHIPS:	2.893	FT.

GM:	1.63	FT.
FREE SURFACE:	.03	FT.
GM CORRECTED:	1.59	FT.



## RIGHTING ENERGIES:

0° - 30°	12.667	FT.-DEG.
0° - 40°	20.061	FT.-DEG.
30° - 40°	7.395	FT.-DEG.
MAX GZ:	0.815	FT.-DEG.
ANGLE @ MAX GZ:	48.4	FT.-DEG.

\*\*\*\*\*  
 \* C-116 79'-11" FISHING VESSEL F/V 'SASHA-LEE' 03/16/02  
 \* ARRIVAL IN PORT - 100% CATCH  
 \*\*\*\*\*

ITEM	TONS	VCG	VERT	FREE	LCG	FWD	LCG	FWD	LCG	AFT	MOM.
L.S. - INC 03/16	185.69	10.55	1958.77						1.48		274.82
F.W. TANK FWD PORT	2.36	8.75	20.66	3.47	38.04						
E.R. FUEL OIL TK P	4.46	3.36	14.98	2.37	6.71						
E.R. FUEL OIL TK S	4.46	3.36	14.98	2.37	6.71						
HYDRAULIC OIL-S	.35	6.79	2.37	.03							
CONSUMABLE STORES	.10	14.93	1.49		17.25				3.51		1.22
SHIP SPARES	1.25	8.50	10.63		22.50						
ICE IN HOLD	6.70	6.99	46.78						11.25		75.35
CATCH IN HOLD	35.71	7.37	263.14						12.92		461.50
CATCH ON DECK	NONE										
PARAVANES UP	1.99	37.50	-74.47		1.00						
PARAVANES DOWN	1.99	23.50	46.67		1.00						
**WINTER ICE**	NONE										
TOTAL	241.08	9.57	2306.00	8.24					2.63		633.29

DISPLACEMENT	241.08 TONS
KMT	= 11.19 FEET
KG	= 9.57 FEET
GMT UNCORRECTED	= 1.63 FEET
FREE SURFACE	= .03 FEET
GMT CORRECTED	= 1.59 FEET
RIGHTING ARM CURVE	
HEEL	GZ
5.0 DEGREES	= .150 FEET
10.0 DEGREES	= .313 FEET
15.0 DEGREES	= .488 FEET
20.0 DEGREES	= .665 FEET
25.0 DEGREES	= .719 FEET
30.0 DEGREES	= .760 FEET
35.0 DEGREES	= .795 FEET
40.0 DEGREES	= .838 FEET
50.0 DEGREES	= .812 FEET
60.0 DEGREES	= .722 FEET
70.0 DEGREES	= .506 FEET
80.0 DEGREES	= .271 FEET
90.0 DEGREES	= .042 FEET
RIGHTING ENERGIES	
0 - 30 DEG.	= 12.667 FT-DEG.
0 - 40 DEG.	= 20.061 FT-DEG.
30 - 40 DEG.	= 7.395 FT-DEG.

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\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

ARRIVAL IN PORT - 100% CATCH

DISPLACEMENT = 241.08 LONG TONS  
MOLDED DRAFT = 8.86 FEET AT MIDSHIPS  
KG = 9.56 FT. ABL  
LCG = 2.63 FT. AFT MIDSHIPS  
GMT CORR. = 1.59 FEET 1.15 REQ'D - PASS 1.67 1.67

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 63.14 DEGREES  
AREA 0 DEG. TO 30 DEG. = 12.67 FT.-DEG. 10.3 REQ'D - PASS 14.34 10.92 - Pass  
AREA 0 DEG. TO 40 DEG. = 20.06 FT.-DEG. 16.9 REQ'D - PASS 24.19 13.83  
AREA 30 DEG TO 40 DEG. = 7.39 FT.-DEG. 5.6 REQ'D - PASS 9.84 2.91  
MAXIMUM GZ = .815 FEET 0.66 REQ'D - PASS 0.97 0.44  
ANGLE OF MAX GZ = 48.4 DEGREES 25.0 REQ'D - PASS 34.13 21.69  
AREA 0 TO MAX GZ ANGLE = 26.66 FT.-DEG.  
RANGE OF STABILITY EXCEEDS 90 DEG. (60 REQ'D) 63.46 42.81

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1116.80 SQ. FT.  
WINDAGE ARM = 11.70 FT.

GUST WIND HEEL ARM = .30 FT.

1ST GUST WIND HEEL ARM INTERCEPT = 9.7 DEGREES 14.0 MAX REQ'D - PASS  
2ND GUST WIND HEEL ARM INTERCEPT = 77.5 DEGREES  
RIGHTING ENERGY ABOVE WIND HEEL ARM = 14.75 FT.-DEG. 9.7 DEG. TO 50.0 DEG.  
WINDWARD WAVE ROLL ANGLE = 17.18 DEG. (FROM GUST WIND ARM INTERCEPT)  
AREA BELOW WIND HEEL ARM = 4.52 FT.-DEG. 9.7 DEG. TO -7.5 DEG.  
AREA ABOVE - AREA BELOW = 10.23 FT.-DEG. POSITIVE REQ'D - PASS

\* LIFTING CRITERIA STABILITY ANALYSIS \*







WEIGHT LIFTED = 1.600 TONS  
VERTICAL LIFT = 10.00 FEET  
HORIZONTAL LIFT = 5.00 FEET

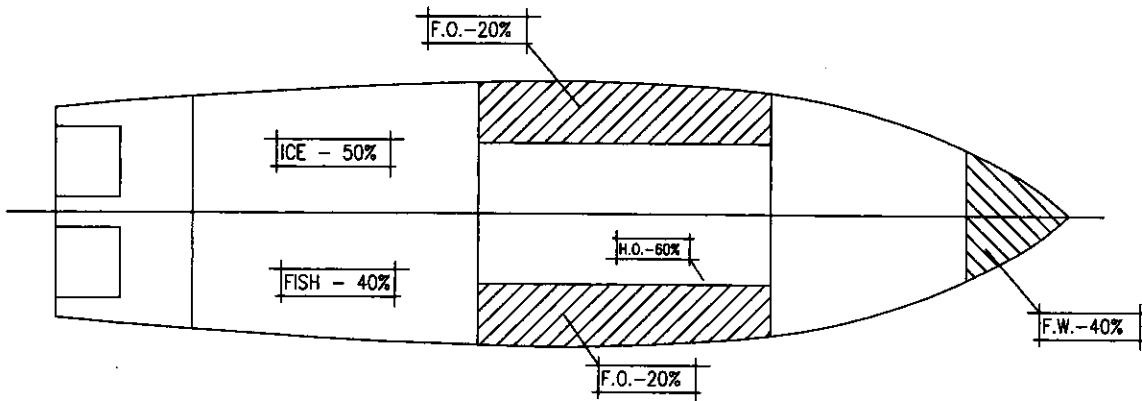
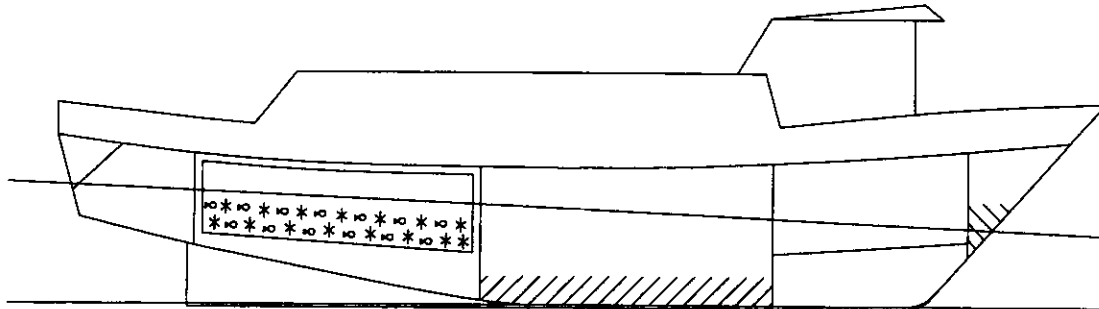
LOWER INTERCEPT ANGLE = 1.3 DEGREES  
UPPER LIMIT ANGLE = 40.0 DEGREES  
AREA ABOVE HEELING CURVE = 17.95 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: ARRIVAL IN PORT - 40% CATCH

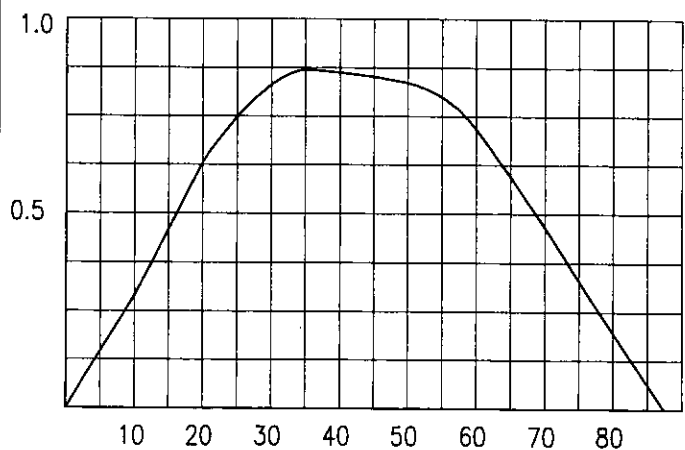
## LEGEND

-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	<u>219.66</u>	LONG TONS
VCG:	<u>9.78</u>	FT.
LCG (+AFT):	<u>1.62</u>	FT.
TRIM (FT)	<u>3.469 AFT</u>	FT.
TRIM (IN):	<u>41.63 AFT</u>	IN.
MOLDED DRAFT FWD:	<u>6.635</u>	FT.
MOLDED DRAFT MIDSHIP:	<u>8.370</u>	FT.
MOLDED DRAFT AFT:	<u>10.105</u>	FT.
KEEL DRAFT FWD:	<u>6.885</u>	FT.
KEEL DRAFT AFT:	<u>10.355</u>	FT.
FREEBOARD MIDSHIPS:	<u>3.380</u>	FT.



## RIGHTING ENERGIES:

GM:	<u>1.54</u>	FT.
FREE SURFACE:	<u>.04</u>	FT.
GM CORRECTED:	<u>1.51</u>	FT.

0° - 30°	<u>13.473</u>	FT.-DEG.
0° - 40°	<u>22.088</u>	FT.-DEG.
30° - 40°	<u>8.615</u>	FT.-DEG.
MAX GZ:	<u>0.871</u>	FT.-DEG.
ANGLE @ MAX GZ:	<u>36.2</u>	FT.-DEG.

\*\*\*\*\*  
 \* C-116 79'-11" FISHING VESSEL F/V 'SASHA-LEE' 03/16/02  
 \* ARRIVAL IN PORT - 40% CATCH  
 \*\*\*\*\*

ITEM	TONS	VCG	VERT	FREE	LCG	FWD	LCG	FWD	LCG	AFT
L.S. - INC 03/16	185.69	10.55	1958.77						1.48	274.82
F.W. TANK FWD PORT	2.36	8.75	20.66	3.47	38.04	89.85				
E.R. FUEL OIL TK P	4.46	3.36	14.98	2.37	6.71	29.95				
E.R. FUEL OIL TK S	4.46	3.36	14.98	2.37	6.71	29.95				
HYDRAULIC OIL-S	.35	6.79	2.37	.03					3.51	1.22
CONSUMABLE STORES	.10	14.93	1.49		17.25	1.73				
SHIP SPARES	1.25	8.50	10.63		22.50	28.13				
ICE IN HOLD	6.70	6.99	46.78						11.25	75.35
CATCH IN HOLD	14.29	7.37	105.26						12.92	184.60
CATCH ON DECK	NONE									
PARAVANES UP	-1.99	37.50	-74.47		1.00	-1.99				
PARAVANES DOWN	1.99	23.50	46.67		1.00	1.99				
**WINTER ICE**	NONE									
TOTAL -	219.66	9.78	2148.12	8.24					1.62	356.39

TRIM/LBP	HEEL	GZ	GZ CORR	LCB	LCG	KML	KB	GML	MTI	TONS/IN.	TRIM	TRIM	LCF	LCF	F.P.	A.P.
.0431	5.0 DEGREES	.149 FEET	.146 FT. CORR.	= 1.81 FEET AFT	= 1.62 FEET AFT	= 83.23 FEET ABL	= 5.38 FEET ABL	= 73.42 FEET ABL	= 16.80 FT. TONS	= 3.40 LONG TONS	= 41.63 INCHES AFT	= 3.469 FEET AFT	= 3.635 FEET AFT	= 8.370 FEET ABL	= 8.528 FEET ABL	= 6.635 FEET ABL
.0433	10.0 DEGREES	.297 FEET	.291 FT. CORR.													
.0430	15.0 DEGREES	.468 FEET	.459 FT. CORR.													
.0430	20.0 DEGREES	.643 FEET	.630 FT. CORR.													
.0444	25.0 DEGREES	.764 FEET	.748 FT. CORR.													
.0475	30.0 DEGREES	.849 FEET	.831 FT. CORR.													
.0519	35.0 DEGREES	.890 FEET	.869 FT. CORR.													
.0579	40.0 DEGREES	.887 FEET	.863 FT. CORR.													
.0723	50.0 DEGREES	.865 FEET	.836 FT. CORR.													
.0837	60.0 DEGREES	.750 FEET	.717 FT. CORR.													
.0931	70.0 DEGREES	.500 FEET	.465 FT. CORR.													
.1023	80.0 DEGREES	.231 FEET	.195 FT. CORR.													
.1146	90.0 DEGREES	-.033 FEET	-.070 FT. CORR.													

RIGHTING ENERGIES

0 - 30 DEG. = 13.473 FT-DEG.  
 0 - 40 DEG. = 22.088 FT-DEG.  
 30 - 40 DEG. = 8.615 FT-DEG.

\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

ARRIVAL IN PORT - 40% CATCH

DISPLACEMENT = 219.66 LONG TONS  
 MOLDED DRAFT = 8.37 FEET AT MIDSHIPS  
 KG = 9.78 FT. ABL  
 LCG = 1.62 FT. AFT MIDSHIPS  
 GMT CORR. = 1.51 FEET 1.15 REQ'D - PASS 1.49 1.49

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 71.53 DEGREES  
 AREA 0 DEG. TO 30 DEG. = 13.48 FT.-DEG. 10.3 REQ'D - PASS 13.46 11.24 - Pass  
 AREA 0 DEG. TO 40 DEG. = 22.10 FT.-DEG. 16.9 REQ'D - PASS 23.51 15.30  
 AREA 30 DEG TO 40 DEG. = 8.62 FT.-DEG. 5.6 REQ'D - PASS 10.06 4.06  
 MAXIMUM GZ = .871 FEET 0.66 REQ'D - PASS 0.97 0.54  
 ANGLE OF MAX GZ = 36.2 DEGREES 25.0 REQ'D - PASS 34.64 24.45  
 AREA 0 TO MAX GZ ANGLE = 18.82 FT.-DEG.  
 RANGE OF STABILITY = 87.3 DEGREES 60.0 REQ'D - PASS 62.78 44.74

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1155.87 SQ. FT.  
 WINDAGE ARM = 11.72 FT.

GUST WIND HEEL ARM = .34 FT.

1ST GUST WIND HEEL ARM INTERCEPT = 11.5 DEGREES 14.0 MAX REQ'D - PASS  
 2ND GUST WIND HEEL ARM INTERCEPT = 74.7 DEGREES  
 RIGHTING ENERGY ABOVE WIND HEEL ARM = 15.61 FT.-DEG. 11.5 DEG. TO 50.0 DEG.  
 WINDWARD WAVE ROLL ANGLE = 16.68 DEG. (FROM GUST WIND ARM INTERCEPT)  
 AREA BELOW WIND HEEL ARM = 4.13 FT.-DEG. 11.5 DEG. TO -5.2 DEG.  
 AREA ABOVE - AREA BELOW = 11.49 FT.-DEG. POSITIVE REQ'D - PASS

\* LIFTING CRITERIA STABILITY ANALYSIS \*





WEIGHT LIFTED = 1.600 TONS  
 VERTICAL LIFT = 10.00 FEET  
 HORIZONTAL LIFT = 5.00 FEET  
 LOWER INTERCEPT ANGLE = 1.4 DEGREES  
 UPPER LIMIT ANGLE = 36.2 DEGREES  
 AREA ABOVE HEELING CURVE = 16.80 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

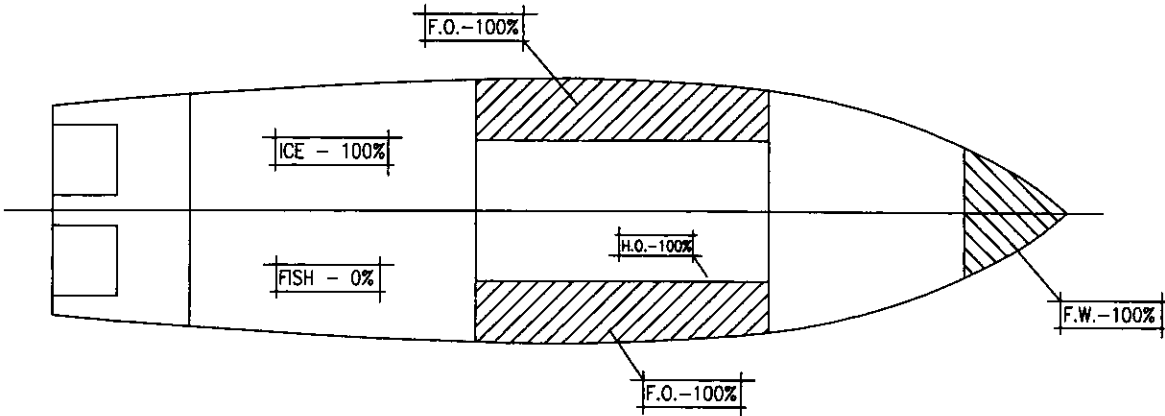
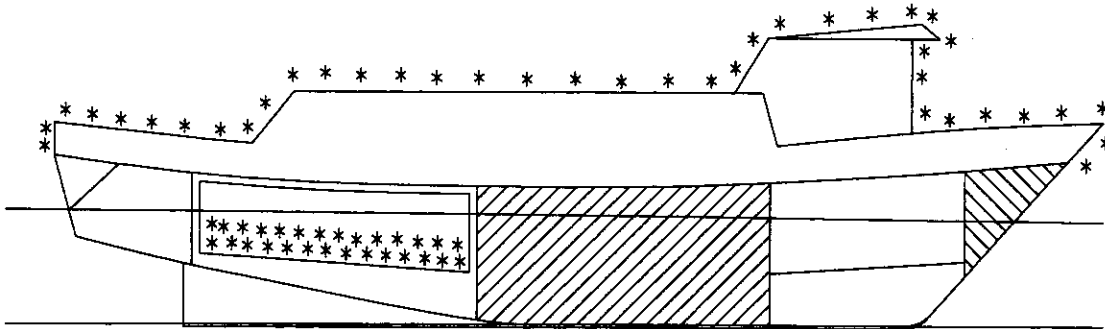


# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: READY FOR SEA \*\*WINTER ICE\*\*

## LEGEND

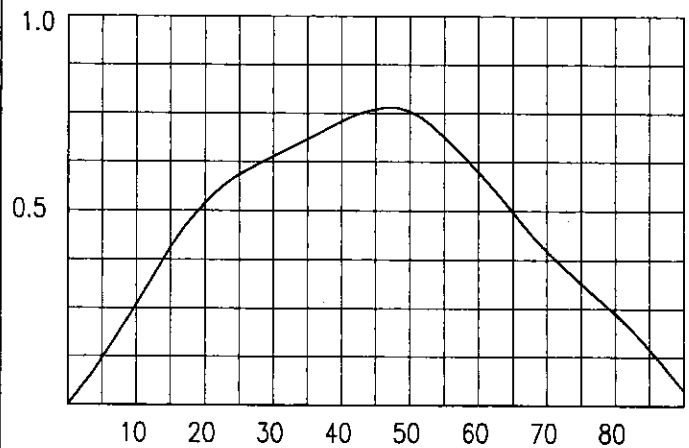
-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	<u>255.53</u>	LONG TONS
VCG:	<u>9.79</u>	FT.
LCG (+AFT):	<u>-0.64</u>	FT.
TRIM (FT)	<u>0.726</u>	AFT FT.
TRIM (IN):	<u>8.71</u>	AFT IN.
MOLDED DRAFT FWD:	<u>8.969</u>	FT.
MOLDED DRAFT MIDSHIP:	<u>9.331</u>	FT.
MOLDED DRAFT AFT:	<u>9.694</u>	FT.
KEEL DRAFT FWD:	<u>9.219</u>	FT.
KEEL DRAFT AFT:	<u>9.944</u>	FT.
FREEBOARD MIDSHIPS:	<u>2.419</u>	FT.

GM:	<u>1.50</u>	FT.
FREE SURFACE:	<u>.06</u>	FT.
GM CORRECTED:	<u>1.44</u>	FT.



## RIGHTING ENERGIES:

0° - 30°	<u>11.124</u>	FT.-DEG.
0° - 40°	<u>17.960</u>	FT.-DEG.
30° - 40°	<u>6.836</u>	FT.-DEG.
MAX GZ:	<u>0.763</u>	FT.-DEG.
ANGLE @ MAX GZ:	<u>47.2</u>	FT.-DEG.

\*\*\*\*\*  
 \* C-116 79'-11" FISHING VESSEL F/V 'SASHA-LEE' 03/16/02 \*  
 \* READY FOR SEA \*\*WINTER ICE\*\* \*  
 \*\*\*\*\*

ITEM	TONS	VCG	VERT	FREE	LCG	FWD	LCG	FWD	LCG	AFT
L.S. - INC 03/16	100 PCT	185.69	10.55	1958.77					1.48	274.82
F.W. TANK FWD PORT	98 PCT	5.79	10.81	62.58	.78	38.75		224.26		
E.R. FUEL OIL TK P	98 PCT	21.87	7.26	158.70	7.52	7.50		164.00		
E.R. FUEL OIL TK S	98 PCT	21.87	7.26	158.70	7.52	7.50		164.00		
HYDRAULIC OIL-S	98 PCT	.57	8.14	4.63	.03				3.51	2.00
CONSUMABLE STORES	100 PCT	.50	14.93	7.46		17.25		8.63		
SHIP SPARES	100 PCT	1.25	8.50	10.63		22.50		28.13		
ICE IN HOLD	100 PCT	13.39	6.99	93.55					11.25	150.70
CATCH IN HOLD	NONE									
CATCH ON DECK	NONE									
PARAVANES UP	100 PCT	-1.99	37.50	-74.47		1.00		-1.99		
PARAVANES DOWN	100 PCT	1.99	23.50	46.67		1.00		1.99		
**WINTER ICE**	100 PCT	4.60	16.28	74.89		.55		2.53		
TOTAL -		255.53	9.79	2502.11	15.85	.64		163.94		

DISPLACEMENT	TONS	LCB	FWD
KMT	11.29 FEET		.61 FEET
KG	9.79 FEET		.64 FEET
GMT UNCORR.	1.50 FEET		78.26 FEET
FREE SURFACE	.06 FEET		5.89 FEET
GMT CORRECTED	1.44 FEET		68.40 FEET
RIGHTING ARM CURVE			18.21 FT. TONS
HEEL	GZ CORR		3.52 LONG TONS
5.0 DEGREES	.126 FEET		8.71 INCHES
10.0 DEGREES	.271 FEET		.726 FEET
15.0 DEGREES	.422 FEET		2.346 FEET
20.0 DEGREES	.542 FEET		9.331 FEET
25.0 DEGREES	.618 FEET		9.353 FEET
30.0 DEGREES	.670 FEET		8.969 FEET
35.0 DEGREES	.719 FEET		9.694 FEET
40.0 DEGREES	.769 FEET		
50.0 DEGREES	.802 FEET		
60.0 DEGREES	.652 FEET		
70.0 DEGREES	.454 FEET		
80.0 DEGREES	.299 FEET		
90.0 DEGREES	.100 FEET		

\*\*\*\*\*  
 \* RIGHTING ENERGIES \*  
 \* 0 - 30 DEG. = 11.124 FT-DEG. \*  
 \* 0 - 40 DEG. = 17.960 FT-DEG. \*  
 \* 30 - 40 DEG. = 6.836 FT-DEG. \*  
 \*\*\*\*\*

\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

READY FOR SEA \*\*WINTER ICE\*\*

DISPLACEMENT = 255.53 LONG TONS  
MOLDED DRAFT = 9.33 FEET AT MIDSHIPS  
KG = 9.79 FT. ABL  
LCG = .64 FT. FWD MIDSHIPS  
GMT CORR. = 1.44 FEET 1.15 REQ'D - PASS

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 63.21 DEGREES  
AREA 0 DEG. TO 30 DEG. = 11.12 FT.-DEG. 10.3 REQ'D - PASS  
AREA 0 DEG. TO 40 DEG. = 17.96 FT.-DEG. 16.9 REQ'D - PASS  
AREA 30 DEG TO 40 DEG. = 6.83 FT.-DEG. 5.6 REQ'D - PASS  
MAXIMUM GZ = .763 FEET 0.66 REQ'D - PASS  
ANGLE OF MAX GZ = 47.2 DEGREES 25.0 REQ'D - PASS  
AREA 0 TO MAX GZ ANGLE = 23.36 FT.-DEG.  
RANGE OF STABILITY EXCEEDS 90 DEG. (60 REQ'D)

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1078.51 SQ. FT.  
WINDAGE ARM = 11.70 FT.

GUST WIND HEEL ARM = .27 FT.

1ST GUST WIND HEEL ARM INTERCEPT = 10.2 DEGREES 14.0 MAX REQ'D - PASS  
2ND GUST WIND HEEL ARM INTERCEPT = 78.2 DEGREES  
RIGHTING ENERGY ABOVE WIND HEEL ARM = 13.57 FT.-DEG. 10.2 DEG. TO 50.0 DEG.  
WINDWARD WAVE ROLL ANGLE = 17.41 DEG. (FROM GUST WIND ARM INTERCEPT)  
AREA BELOW WIND HEEL ARM = 3.98 FT.-DEG. 10.2 DEG. TO -7.2 DEG.  
AREA ABOVE - AREA BELOW = 9.59 FT.-DEG. POSITIVE REQ'D - PASS

\* LIFTING CRITERIA STABILITY ANALYSIS \*







WEIGHT LIFTED = 1.600 TONS  
VERTICAL LIFT = 10.00 FEET  
HORIZONTAL LIFT = 5.00 FEET

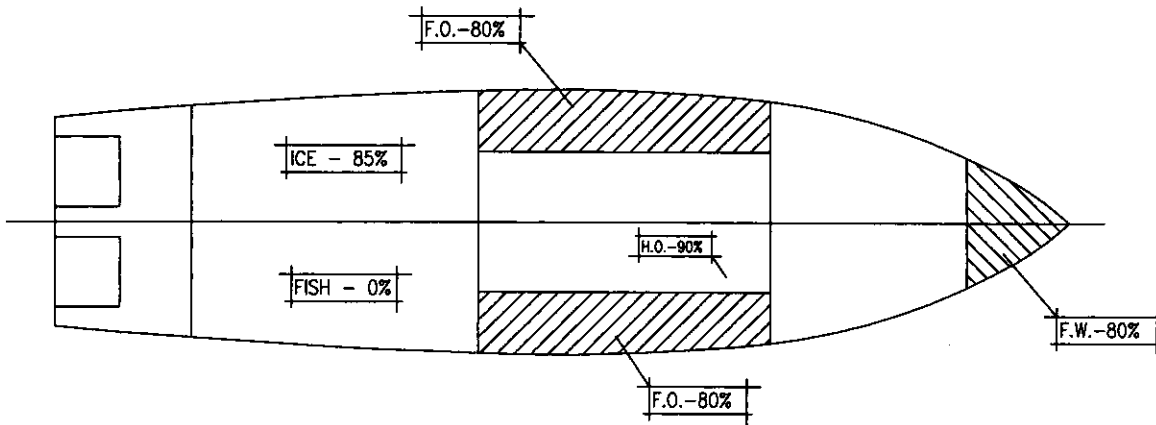
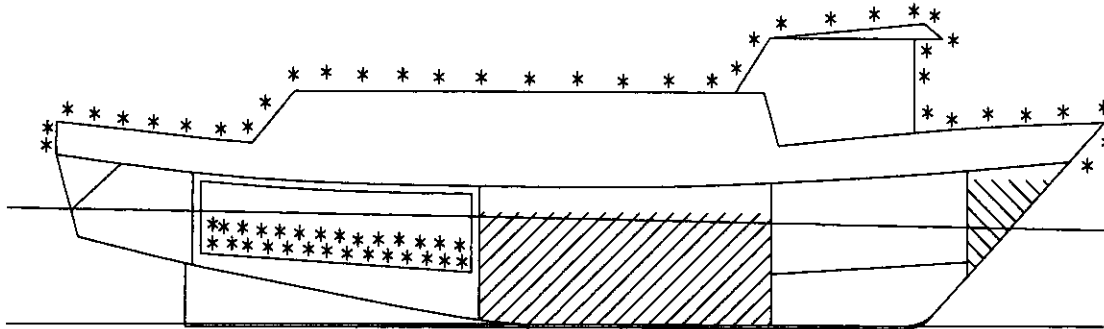
LOWER INTERCEPT ANGLE = 1.5 DEGREES  
UPPER LIMIT ANGLE = 40.0 DEGREES  
AREA ABOVE HEELING CURVE = 15.99 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: ARRIVAL AT FISHING GROUNDS \*\*WINTER ICE\*\*

## LEGEND

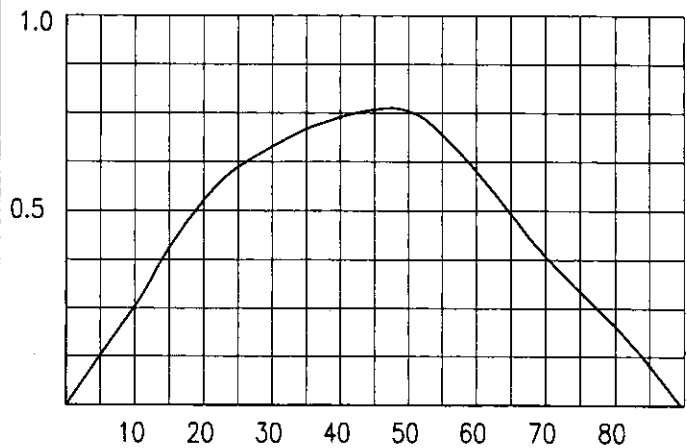
-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	246.26	LONG TONS
VCG:	9.80	FT.
LCG (+AFT):	-0.18	FT.
TRIM (FT)	1.308	AFT FT.
TRIM (IN):	15.69	AFT IN.
MOLDED DRAFT FWD:	8.437	FT.
MOLDED DRAFT MIDSHIP:	9.091	FT.
MOLDED DRAFT AFT:	9.745	FT.
KEEL DRAFT FWD:	8.687	FT.
KEEL DRAFT AFT:	9.995	FT.
FREEBOARD MIDSHIPS:	2.659	FT.

GM:	1.50	FT.
FREE SURFACE:	0.08	FT.
GM CORRECTED:	1.42	FT.



## RIGHTING ENERGIES:

0° - 30°	11.356	FT.-DEG.
0° - 40°	18.424	FT.-DEG.
30° - 40°	7.068	FT.-DEG.
MAX GZ:	0.764	FT.-DEG.
ANGLE @ MAX GZ:	47.0	FT.-DEG.

\*\*\*\*\*  
 \* C-116 79'-11" FISHING VESSEL F/V 'SASHA-LEE' 03/16/02  
 \* ARRIVAL AT FISHING GROUNDS \*\*WINTER ICE\*\*  
 \*\*\*\*\*

ITEM	TONS	VCG	VERT	FREE	LCG	FWD	LCG	FWD	LCG	AFT	MOM.
L.S. - INC 03/16	185.69	10.55	1958.77						1.48		274.82
F.W. TANK FWD PORT	4.72	10.29	48.63	9.66	38.51	181.92					
E.R. FUEL OIL TK P	17.85	6.44	115.04	5.25	7.42	132.45					
E.R. FUEL OIL TK S	17.85	6.44	115.04	5.25	7.42	132.45					
HYDRAULIC OIL-S	.52	7.85	4.11	.03					3.51		1.84
CONSUMABLE STORES	.40	14.93	5.97		17.25	6.90					
SHIP SPARES	1.25	8.50	10.63		22.50	28.13					
ICE IN HOLD	11.38	6.99	79.52						11.25		128.09
CATCH IN HOLD	NONE										
CATCH ON DECK	2.00	14.50	29.00								35.00
PARAVANES UP	-1.99	37.50	-74.47		1.00	-1.99					
PARAVANES DOWN	1.99	23.50	46.67		1.00	1.99					
**WINTER ICE**	4.60	16.28	74.89		.55	2.53					
TOTAL -	246.26	9.80	2413.80	20.19	.18	44.53					

DISPLACEMENT	TONS	LCB	FWD	AFT
KMT	11.31 FEET		.11 FEET FWD	
KG	9.80 FEET		.18 FEET FWD	
GMT UNCORR.	1.50 FEET		80.41 FEET ABL	
GMT SURFACE	.08 FEET		5.76 FEET ABL	
GMT CORRECTED	1.42 FEET		70.53 FEET ABL	
RIGHTING ARM CURVE			18.09 FT. TONS	
HEEL	GZ		3.50 LONG TONS	
5.0 DEGREES	.135 FEET		15.69 INCHES AFT	
10.0 DEGREES	.269 FEET		1.308 FEET AFT	
15.0 DEGREES	.427 FEET		2.789 FEET AFT	
20.0 DEGREES	.556 FEET		MEAN DRAFT 9.091 FEET ABL	
25.0 DEGREES	.646 FEET		LCF DRAFT 9.136 FEET ABL	
30.0 DEGREES	.705 FEET		F.P. DRAFT 8.437 FEET ABL	
35.0 DEGREES	.756 FEET		A.P. DRAFT 9.745 FEET ABL	
40.0 DEGREES	.791 FEET			
46.6	.816 FEET			
59.2	.673 FEET			
68.0	.460 FEET			
78.0	.283 FEET			
89.7	.071 FEET			

RIGHTING ENERGIES  
 0 - 30 DEG. = 11.356 FT-DEG.  
 0 - 40 DEG. = 18.424 FT-DEG.  
 30 - 40 DEG. = 7.068 FT-DEG.  
 \*\*\*\*\*

\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

ARRIVAL AT FISHING GROUNDS \*\*WINTER ICE\*\*

DISPLACEMENT = 246.26 LONG TONS  
MOLDED DRAFT = 9.09 FEET AT MIDSHIPS  
KG = 9.80 FT. ABL  
LCG = .18 FT. FWD MIDSHIPS  
GMT CORR. = 1.42 FEET 1.15 REQ'D - PASS

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 65.39 DEGREES  
AREA 0 DEG. TO 30 DEG. = 11.36 FT.-DEG. 10.3 REQ'D - PASS  
AREA 0 DEG. TO 40 DEG. = 18.43 FT.-DEG. 16.9 REQ'D - PASS  
AREA 30 DEG TO 40 DEG. = 7.07 FT.-DEG. 5.6 REQ'D - PASS  
MAXIMUM GZ = .764 FEET 0.66 REQ'D - PASS  
ANGLE OF MAX GZ = 47.0 DEGREES 25.0 REQ'D - PASS  
AREA 0 TO MAX GZ ANGLE = 23.66 FT.-DEG.  
RANGE OF STABILITY = 89.5 DEGREES 60.0 REQ'D - PASS

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1097.93 SQ. FT.  
WINDAGE ARM = 11.70 FT.

GUST WIND HEEL ARM = .28 FT.

1ST GUST WIND HEEL ARM INTERCEPT = 11.0 DEGREES 14.0 MAX REQ'D - PASS  
2ND GUST WIND HEEL ARM INTERCEPT = 75.5 DEGREES  
RIGHTING ENERGY ABOVE WIND HEEL ARM = 13.35 FT.-DEG. 11.0 DEG. TO 50.0 DEG.  
WINDWARD WAVE ROLL ANGLE = 17.26 DEG. (FROM GUST WIND ARM INTERCEPT)  
AREA BELOW WIND HEEL ARM = 3.85 FT.-DEG. 11.0 DEG. TO -6.3 DEG.  
AREA ABOVE - AREA BELOW = 9.49 FT.-DEG. POSITIVE REQ'D - PASS

\* LIFTING CRITERIA STABILITY ANALYSIS \*


WEIGHT LIFTED = 1.600 TONS  
VERTICAL LIFT = 10.00 FEET  
HORIZONTAL LIFT = 5.00 FEET

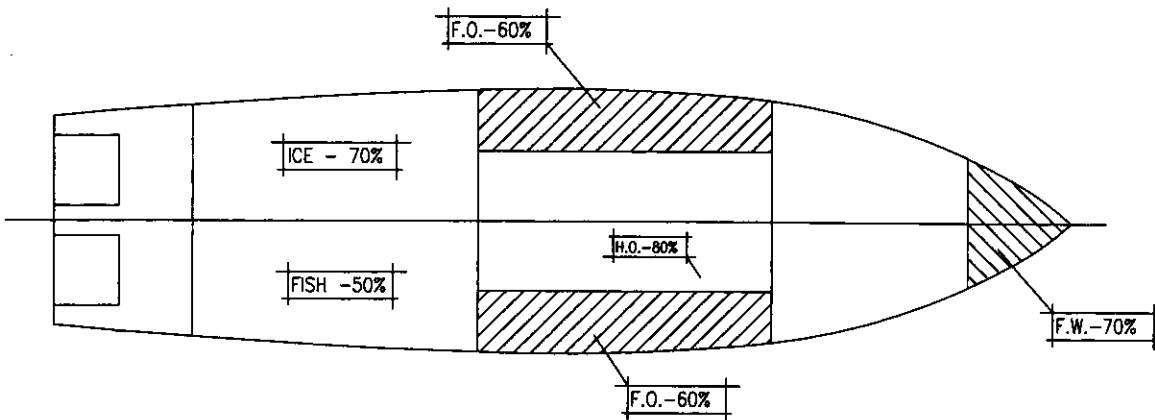
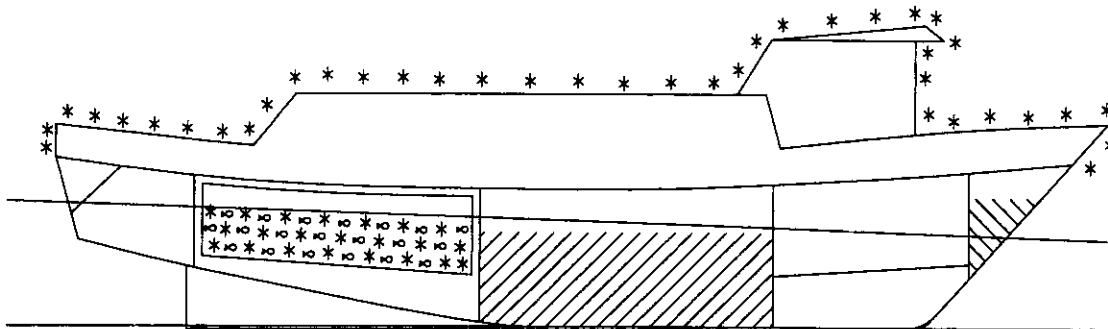
LOWER INTERCEPT ANGLE = 1.4 DEGREES  
UPPER LIMIT ANGLE = 40.0 DEGREES  
AREA ABOVE HEELING CURVE = 16.35 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: AT FISHING GROUNDS - 50% CATCH \*\*WINTER ICE\*\*

## LEGEND

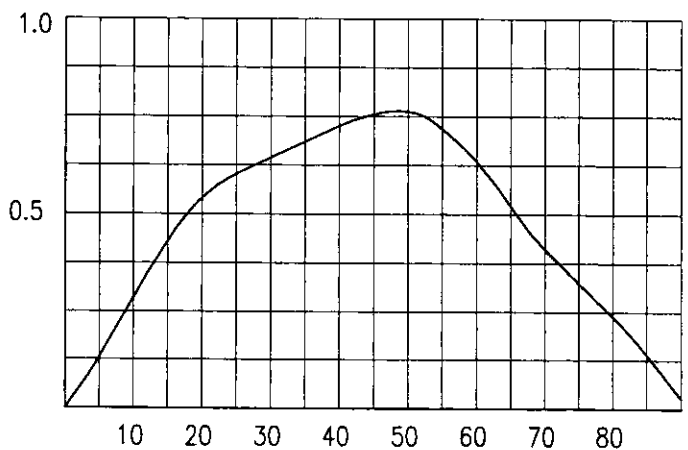
-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	<u>252.45</u>	LONG TONS
VCG:	<u>9.66</u>	FT.
LCG (+AFT):	<u>1.02</u>	FT.
TRIM (FT)	<u>2.549</u>	AFT FT.
TRIM (IN):	<u>30.59</u>	AFT IN.
MOLDED DRAFT FWD:	<u>7.927</u>	FT.
MOLDED DRAFT MIDSHIP:	<u>9.201</u>	FT.
MOLDED DRAFT AFT:	<u>10.476</u>	FT.
KEEL DRAFT FWD:	<u>8.177</u>	FT.
KEEL DRAFT AFT:	<u>10.726</u>	FT.
FREEBOARD MIDSHIPS:	<u>2.549</u>	FT.

GM:	<u>1.59</u>	FT.
FREE SURFACE:	<u>.06</u>	FT.
GM CORRECTED:	<u>1.52</u>	FT.



## RIGHTING ENERGIES:

0° - 30°	<u>11.588</u>	FT.-DEG.
0° - 40°	<u>18.437</u>	FT.-DEG.
30° - 40°	<u>6.849</u>	FT.-DEG.
MAX GZ:	<u>0.766</u>	FT.-DEG.
ANGLE @ MAX GZ:	<u>48.1</u>	FT.-DEG.

\*\*\*\*\*  
 \* C-116 79'-11" FISHING VESSEL F/V 'SASHA-LEE' 03/16/02  
 \* HALF TRIP AT FISHING GROUNDS \*\*WINTER ICE\*\*  
 \*\*\*\*\*

ITEM	TONS	VCG	VERT	FREE	LCG	FWD	MOM.	LCG	AFT	MOM.
L.S. - INC 03/16	185.69	10.55	1958.77					1.48		274.82
F.W. TANK FWD PORT	4.13	9.97	41.21	7.46	38.39	158.71				
E.R. FUEL OIL TK P	13.39	5.49	73.49	4.21	7.29	97.61				
E.R. FUEL OIL TK S	13.39	5.49	73.49	4.21	7.29	97.61				
HYDRAULIC OIL-S	.46	7.50	3.49	.03				3.51		1.63
CONSUMABLE STORES	.30	14.93	4.48		17.25	5.18				
SHIP SPARES	1.25	8.50	10.63		22.50	28.13				
ICE IN HOLD	9.38	6.99	65.49					11.25		105.49
CATCH IN HOLD	17.86	7.37	131.57					12.92		230.75
CATCH ON DECK	2.00	14.50	29.00					17.50		35.00
PARAVANES UP	-1.99	37.50	-74.47		1.00	-1.99				
PARAVANES DOWN	1.99	23.50	46.67		1.00	1.99				
**WINTER ICE**	4.60	16.28	74.89		.55	2.53				
TOTAL -	252.45	9.66	2438.71	15.91				1.02		257.97

DISPLACEMENT	TONS	LCB	FEET
KMT	11.25	1.14	FEET AFT
KG	9.66	1.02	FEET AFT
GMT UNCORR.	1.59	76.73	FEET ABL
FREE SURFACE	.06	5.84	FEET ABL
GMT CORRECTED	1.52	67.01	FEET ABL
RIGHTING ARM CURVE		17.62	FT. TONS
HEEL		3.47	LONG TONS
5.0 DEGREES	.135	30.59	INCHES AFT
10.0 DEGREES	.297	2.549	FEET AFT
15.0 DEGREES	.447	2.997	FEET AFT
20.0 DEGREES	.563	9.201	FEET ABL
25.0 DEGREES	.629	9.297	FEET ABL
30.0 DEGREES	.676	7.927	FEET ABL
35.0 DEGREES	.721	10.476	FEET ABL
40.0 DEGREES	.766		
50.0 DEGREES	.811		
60.0 DEGREES	.689		
70.0 DEGREES	.469		
80.0 DEGREES	.300		
90.0 DEGREES	.089		

RIGHTING ENERGIES  
 0 - 30 DEG. = 11.588 FT-DEG.  
 0 - 40 DEG. = 18.437 FT-DEG.  
 30 - 40 DEG. = 6.849 FT-DEG.



\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

HALF TRIP AT FISHING GROUNDS \*\*WINTER ICE\*\*

DISPLACEMENT = 252.45 LONG TONS  
MOLDED DRAFT = 9.20 FEET AT MIDSHIPS  
KG = 9.66 FT. ABL  
LCG = 1.02 FT. AFT MIDSHIPS  
GMT CORR. = 1.52 FEET 1.15 REQ'D - PASS

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 61.75 DEGREES  
AREA 0 DEG. TO 30 DEG. = 11.59 FT.-DEG. 10.3 REQ'D - PASS  
AREA 0 DEG. TO 40 DEG. = 18.44 FT.-DEG. 16.9 REQ'D - PASS  
AREA 30 DEG TO 40 DEG. = 6.85 FT.-DEG. 5.6 REQ'D - PASS  
MAXIMUM GZ = .766 FEET 0.66 REQ'D - PASS  
ANGLE OF MAX GZ = 48.1 DEGREES 25.0 REQ'D - PASS  
AREA 0 TO MAX GZ ANGLE = 24.50 FT.-DEG.  
RANGE OF STABILITY EXCEEDS 90 DEG. (60 REQ'D)

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1089.04 SQ. FT.  
WINDAGE ARM = 11.70 FT.

GUST WIND HEEL ARM = .27 FT.

1ST GUST WIND HEEL ARM INTERCEPT = 9.6 DEGREES 14.0 MAX REQ'D - PASS  
2ND GUST WIND HEEL ARM INTERCEPT = 78.0 DEGREES  
RIGHTING ENERGY ABOVE WIND HEEL ARM = 13.66 FT.-DEG. 9.6 DEG. TO 50.0 DEG.  
WINDWARD WAVE ROLL ANGLE = 17.46 DEG. (FROM GUST WIND ARM INTERCEPT)  
AREA BELOW WIND HEEL ARM = 4.36 FT.-DEG. 9.6 DEG. TO -7.9 DEG.  
AREA ABOVE - AREA BELOW = 9.31 FT.-DEG. POSITIVE REQ'D - PASS

\* LIFTING CRITERIA STABILITY ANALYSIS \*

WEIGHT LIFTED = 1.600 TONS  
VERTICAL LIFT = 10.00 FEET  
HORIZONTAL LIFT = 5.00 FEET

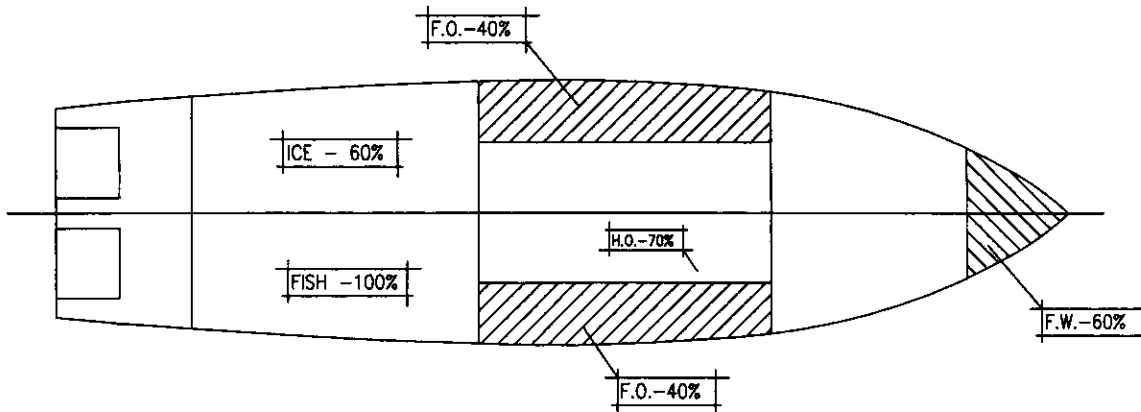
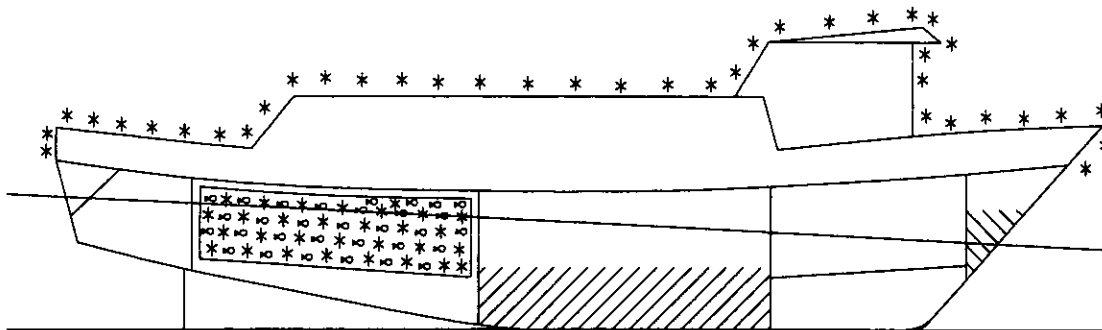
LOWER INTERCEPT ANGLE = 1.4 DEGREES  
UPPER LIMIT ANGLE = 40.0 DEGREES  
AREA ABOVE HEELING CURVE = 16.47 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: LEAVING FISHING GROUNDS - 100% CATCH \*\*WINTER ICE\*\*

## LEGEND

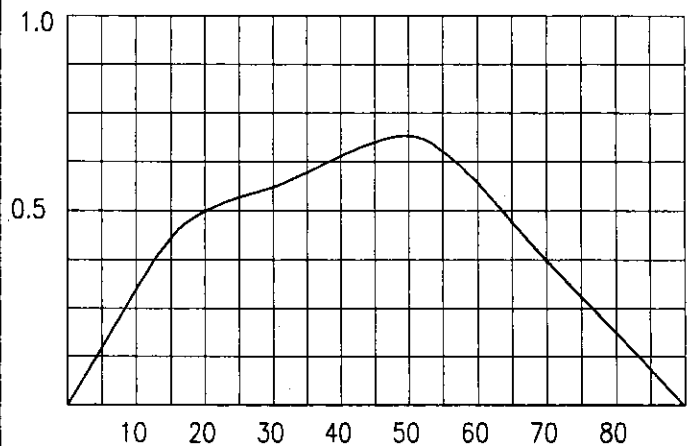
-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	259.30	LONG TONS
VCG:	9.58	FT.
LCG (+AFT):	2.19	FT.
TRIM (FT)	3.794	AFT FT.
TRIM (IN):	45.53	AFT IN.
MOLDED DRAFT FWD:	7.421	FT.
MOLDED DRAFT MIDSHIP:	9.318	FT.
MOLDED DRAFT AFT:	11.215	FT.
KEEL DRAFT FWD:	7.671	FT.
KEEL DRAFT AFT:	11.465	FT.
FREEBOARD MIDSHIPS:	2.432	FT.

GM:	1.60	FT.
FREE SURFACE:	.05	FT.
GM CORRECTED:	1.55	FT.



## RIGHTING ENERGIES:

0° - 30°	11.015	FT.-DEG.
0° - 40°	17.001	FT.-DEG.
30° - 40°	5.986	FT.-DEG.
MAX GZ:	0.693	FT.-DEG.
ANGLE @ MAX GZ:	48.7	FT.-DEG.



\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

LEAVING FISHING GROUNDS - 100% CATCH \*\*WINTER ICE\*\*

DISPLACEMENT = 259.30 LONG TONS  
MOLDED DRAFT = 9.32 FEET AT MIDSHIPS  
KG = 9.58 FT. ABL  
LCG = 2.19 FT. AFT MIDSHIPS  
GMT CORR. = 1.55 FEET 1.15 REQ'D - PASS

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 58.13 DEGREES  
AREA 0 DEG. TO 30 DEG. = 11.02 FT.-DEG. 10.3 REQ'D - PASS  
AREA 0 DEG. TO 40 DEG. = 17.01 FT.-DEG. 16.9 REQ'D - PASS  
AREA 30 DEG TO 40 DEG. = 5.99 FT.-DEG. 5.6 REQ'D - PASS  
MAXIMUM GZ = .693 FEET 0.66 REQ'D - PASS  
ANGLE OF MAX GZ = 48.7 DEGREES 25.0 REQ'D - PASS  
AREA 0 TO MAX GZ ANGLE = 22.81 FT.-DEG.  
RANGE OF STABILITY = 89.7 DEGREES 60.0 REQ'D - PASS

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1079.56 SQ. FT.  
WINDAGE ARM = 11.70 FT.

GUST WIND HEEL ARM = .26 FT.

1ST GUST WIND HEEL ARM INTERCEPT = 8.8 DEGREES 14.0 MAX REQ'D - PASS  
2ND GUST WIND HEEL ARM INTERCEPT = 75.8 DEGREES  
RIGHTING ENERGY ABOVE WIND HEEL ARM = 11.75 FT.-DEG. 8.8 DEG. TO 50.0 DEG.  
WINDWARD WAVE ROLL ANGLE = 17.64 DEG. (FROM GUST WIND ARM INTERCEPT)  
AREA BELOW WIND HEEL ARM = 4.68 FT.-DEG. 8.8 DEG. TO -8.9 DEG.  
AREA ABOVE - AREA BELOW = 7.07 FT.-DEG. POSITIVE REQ'D - PASS

\* LIFTING CRITERIA STABILITY ANALYSIS \*




WEIGHT LIFTED = 1.600 TONS  
VERTICAL LIFT = 10.00 FEET  
HORIZONTAL LIFT = 5.00 FEET

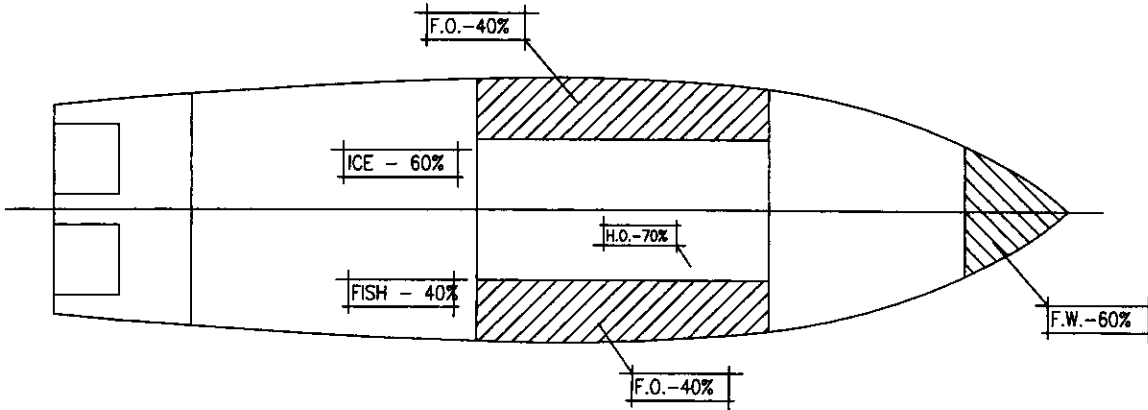
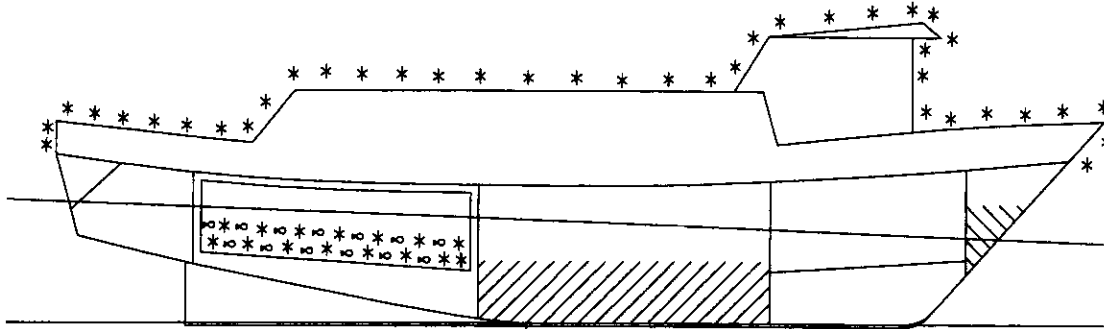
LOWER INTERCEPT ANGLE = 1.2 DEGREES  
UPPER LIMIT ANGLE = 40.0 DEGREES  
AREA ABOVE HEELING CURVE = 15.04 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: LEAVING FISHING GROUNDS - 40% CATCH \*\*WINTER ICE\*\*

## LEGEND

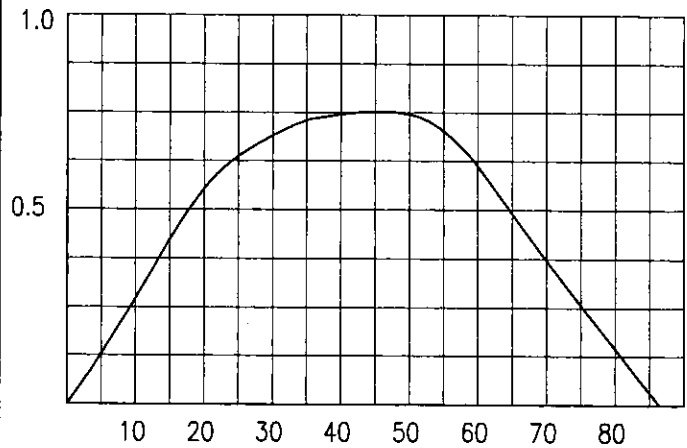
-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	<u>237.88</u>	LONG TONS
VCG:	<u>9.78</u>	FT.
LCG (+AFT):	<u>1.22</u>	FT.
TRIM (FT)	<u>2.873</u>	AFT FT.
TRIM (IN):	<u>34.47</u>	AFT IN.
MOLDED DRAFT FWD:	<u>7.400</u>	FT.
MOLDED DRAFT MIDSHIP:	<u>8.836</u>	FT.
MOLDED DRAFT AFT:	<u>10.273</u>	FT.
KEEL DRAFT FWD:	<u>7.650</u>	FT.
KEEL DRAFT AFT:	<u>10.523</u>	FT.
FREEBOARD MIDSHIPS:	<u>2.914</u>	FT.

GM:	<u>1.49</u>	FT.
FREE SURFACE:	<u>0.05</u>	FT.
GM CORRECTED:	<u>1.44</u>	FT.



## RIGHTING ENERGIES:

0° - 30°	<u>11.828</u>	FT.-DEG.
0° - 40°	<u>19.086</u>	FT.-DEG.
30° - 40°	<u>7.258</u>	FT.-DEG.
MAX GZ:	<u>0.757</u>	FT.-DEG.
ANGLE @ MAX GZ:	<u>46.1</u>	FT.-DEG.



\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

LEAVING FISHING GROUNDS - 40% CATCH \*\*WINTER ICE\*\*

DISPLACEMENT = 237.88 LONG TONS  
MOLDED DRAFT = 8.84 FEET AT MIDSHIPS  
KG = 9.78 FT. ABL  
LCG = 1.22 FT. AFT MIDSHIPS  
GMT CORR. = 1.44 FEET 1.15 REQ'D - PASS

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 66.09 DEGREES  
AREA 0 DEG. TO 30 DEG. = 11.84 FT.-DEG. 10.3 REQ'D - PASS  
AREA 0 DEG. TO 40 DEG. = 19.10 FT.-DEG. 16.9 REQ'D - PASS  
AREA 30 DEG TO 40 DEG. = 7.26 FT.-DEG. 5.6 REQ'D - PASS  
MAXIMUM GZ = .757 FEET 0.66 REQ'D - PASS  
ANGLE OF MAX GZ = 46.1 DEGREES 25.0 REQ'D - PASS  
AREA 0 TO MAX GZ ANGLE = 23.66 FT.-DEG.  
RANGE OF STABILITY = 86.4 DEGREES 60.0 REQ'D - PASS

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1118.49 SQ. FT.  
WINDAGE ARM = 11.71 FT.

GUST WIND HEEL ARM = .30 FT.

1ST GUST WIND HEEL ARM INTERCEPT = 10.9 DEGREES 14.0 MAX REQ'D - PASS  
2ND GUST WIND HEEL ARM INTERCEPT = 73.0 DEGREES  
RIGHTING ENERGY ABOVE WIND HEEL ARM = 13.27 FT.-DEG. 10.9 DEG. TO 50.0 DEG.  
WINDWARD WAVE ROLL ANGLE = 16.98 DEG. (FROM GUST WIND ARM INTERCEPT)  
AREA BELOW WIND HEEL ARM = 4.00 FT.-DEG. 10.9 DEG. TO -6.1 DEG.  
AREA ABOVE - AREA BELOW = 9.27 FT.-DEG. POSITIVE REQ'D - PASS

\* LIFTING CRITERIA STABILITY ANALYSIS \*





WEIGHT LIFTED = 1.600 TONS  
VERTICAL LIFT = 10.00 FEET  
HORIZONTAL LIFT = 5.00 FEET

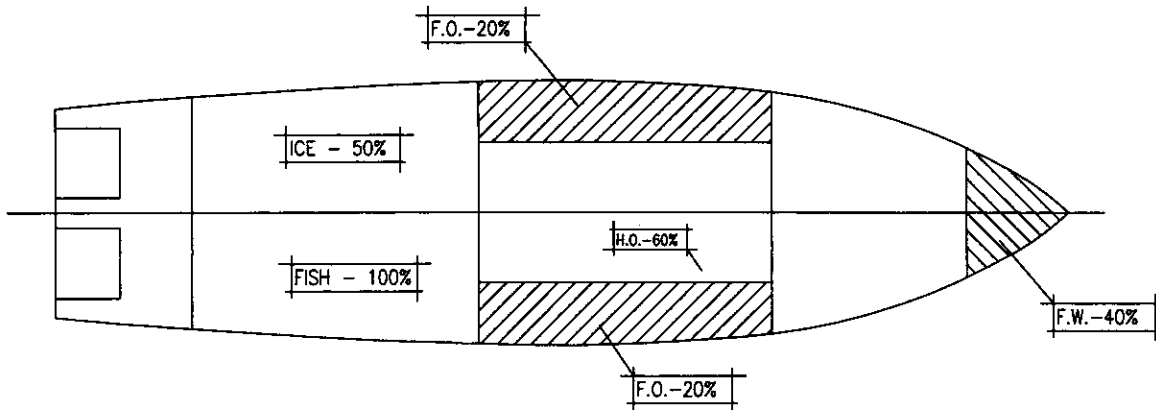
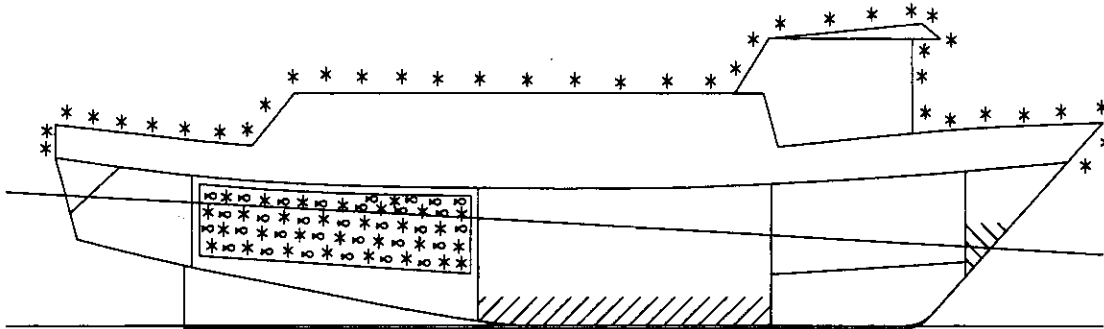
LOWER INTERCEPT ANGLE = 1.5 DEGREES  
UPPER LIMIT ANGLE = 40.0 DEGREES  
AREA ABOVE HEELING CURVE = 16.99 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: ARRIVAL IN PORT - 100% CATCH \*\*WINTER ICE\*\*

## LEGEND

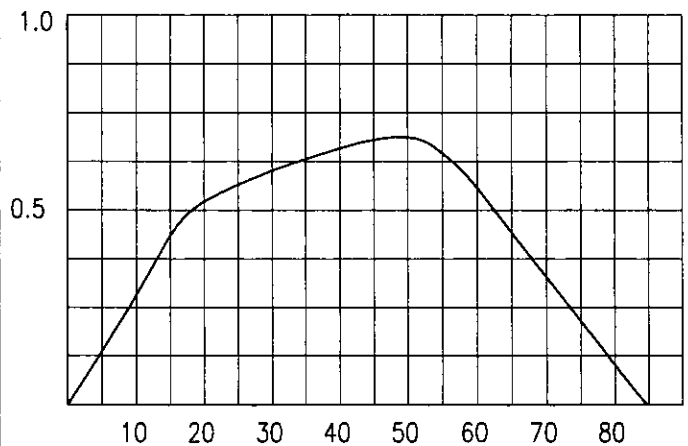
-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	<u>245.68</u>	LONG TONS
VCG:	<u>9.69</u>	FT.
LCG (+AFT):	<u>2.57</u>	FT.
TRIM (FT)	<u>4.301</u>	AFT FT.
TRIM (IN):	<u>51.61</u>	AFT IN.
MOLDED DRAFT FWD:	<u>6.821</u>	FT.
MOLDED DRAFT MIDSHIP:	<u>8.971</u>	FT.
MOLDED DRAFT AFT:	<u>11.122</u>	FT.
KEEL DRAFT FWD:	<u>7.071</u>	FT.
KEEL DRAFT AFT:	<u>11.372</u>	FT.
FREEBOARD MIDSHIPS:	<u>2.779</u>	FT.

GM:	<u>1.49</u>	FT.
FREE SURFACE:	<u>0.03</u>	FT.
GM CORRECTED:	<u>1.46</u>	FT.



## RIGHTING ENERGIES:

0° - 30°	<u>11.286</u>	FT.-DEG.
0° - 40°	<u>17.598</u>	FT.-DEG.
30° - 40°	<u>6.312</u>	FT.-DEG.
MAX GZ:	<u>0.692</u>	FT.-DEG.
ANGLE @ MAX GZ:	<u>47.9</u>	FT.-DEG.



C-116 79'-11" FISHING VESSEL F/V 'SASHA-LEE' 03/16/02

ARRIVAL IN PORT - 100% CATCH \*\*WINTER ICE\*\*

ITEM	TONS	VCG	VERT	FREE	LCG	FWD	MOM.	LCG	AFT
L.S. - INC 03/16	185.69	10.55	1958.77					1.48	274.82
F.W. TANK FWD PORT	2.36	8.75	20.66	3.47	38.04		89.85		
E.R. FUEL OIL TK P	4.46	3.36	14.98	2.37	6.71		29.95		
E.R. FUEL OIL TK S	4.46	3.36	14.98	2.37	6.71		29.95		
HYDRAULIC OIL-S	.35	6.79	2.37	.03				3.51	1.22
CONSUMABLE STORES	.10	14.93	1.49		17.25		1.73		
SHIP SPARES	1.25	8.50	10.63		22.50		28.13		
ICE IN HOLD	6.70	6.99	46.78					11.25	75.35
CATCH IN HOLD	35.71	7.37	263.14					12.92	461.50
CATCH ON DECK	NONE								
PARAVANES UP	1.99	37.50	-74.47		1.00		-1.99		
PARAVANES DOWN	1.99	23.50	46.67		1.00		1.99		
**WINTER ICE**	4.60	16.28	74.89		.55		2.53		
TOTAL -	245.68	9.69	2380.89	8.24				2.57	630.76

DISPLACEMENT	TONS	LCB	FEET
KMT	11.19	LCG	2.78
KG	9.69	KML	2.57
GMT UNCORR.	1.49	KB	76.60
FREE SURFACE	.03	GML	5.71
GMT CORRECTED	1.46	MTI	66.87
RIGHTING ARM CURVE		TONS/IN.	17.11
HEEL	GZ CORR	TRIM	3.44
5.0 DEGREES	.140	TRIM	51.61
10.0 DEGREES	.289	LCF	4.301
15.0 DEGREES	.445	MEAN DRAFT	3.762
20.0 DEGREES	.534	LCF DRAFT	8.971
25.0 DEGREES	.580	F.P. DRAFT	9.174
30.0 DEGREES	.619	A.P. DRAFT	6.821
35.0 DEGREES	.651		11.122
40.0 DEGREES	.681		
50.0 DEGREES	.713		
60.0 DEGREES	.586		
70.0 DEGREES	.327		
80.0 DEGREES	.133		
90.0 DEGREES	-.080		

RIGHTING ENERGIES

0 - 30 DEG. = 11.286 FT-DEG.  
 0 - 40 DEG. = 17.598 FT-DEG.  
 30 - 40 DEG. = 6.312 FT-DEG.

\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

ARRIVAL IN PORT - 100% CATCH \*\*WINTER ICE\*\*

DISPLACEMENT = 245.68 LONG TONS  
MOLDED DRAFT = 8.97 FEET AT MIDSHIPS  
KG = 9.69 FT. ABL  
LCG = 2.57 FT. AFT MIDSHIPS  
GMT CORR. = 1.46 FEET 1.15 REQ'D - PASS

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 61.80 DEGREES  
AREA 0 DEG. TO 30 DEG. = 11.28 FT.-DEG. 10.3 REQ'D - PASS  
AREA 0 DEG. TO 40 DEG. = 17.59 FT.-DEG. 16.9 REQ'D - PASS  
AREA 30 DEG TO 40 DEG. = 6.31 FT.-DEG. 5.6 REQ'D - PASS  
MAXIMUM GZ = .692 FEET 0.66 REQ'D - PASS  
ANGLE OF MAX GZ = 47.9 DEGREES 25.0 REQ'D - PASS  
AREA 0 TO MAX GZ ANGLE = 22.87 FT.-DEG.  
RANGE OF STABILITY = 84.6 DEGREES 60.0 REQ'D - PASS

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1107.62 SQ. FT.

WINDAGE ARM = 11.70 FT.

GUST WIND HEEL ARM = .29 FT.

1ST GUST WIND HEEL ARM INTERCEPT = 10.1 DEGREES 14.0 MAX REQ'D - PASS  
2ND GUST WIND HEEL ARM INTERCEPT = 71.7 DEGREES  
RIGHTING ENERGY ABOVE WIND HEEL ARM = 11.52 FT.-DEG. 10.1 DEG. TO 50.0 DEG.  
WINDWARD WAVE ROLL ANGLE = 17.17 DEG. (FROM GUST WIND ARM INTERCEPT)  
AREA BELOW WIND HEEL ARM = 4.18 FT.-DEG. 10.1 DEG. TO -7.0 DEG.  
AREA ABOVE - AREA BELOW = 7.34 FT.-DEG. POSITIVE REQ'D - PASS

\* LIFTING CRITERIA STABILITY ANALYSIS \*

WEIGHT LIFTED = 1.600 TONS  
VERTICAL LIFT = 10.00 FEET  
HORIZONTAL LIFT = 5.00 FEET

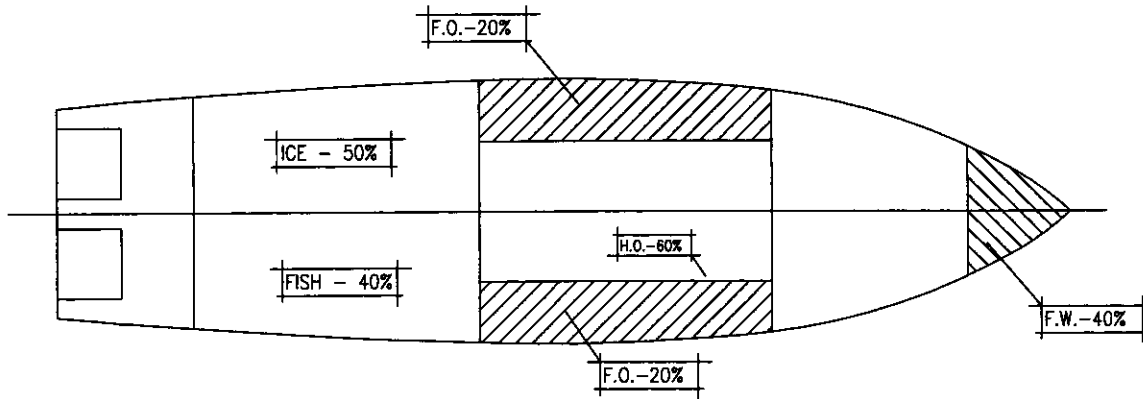
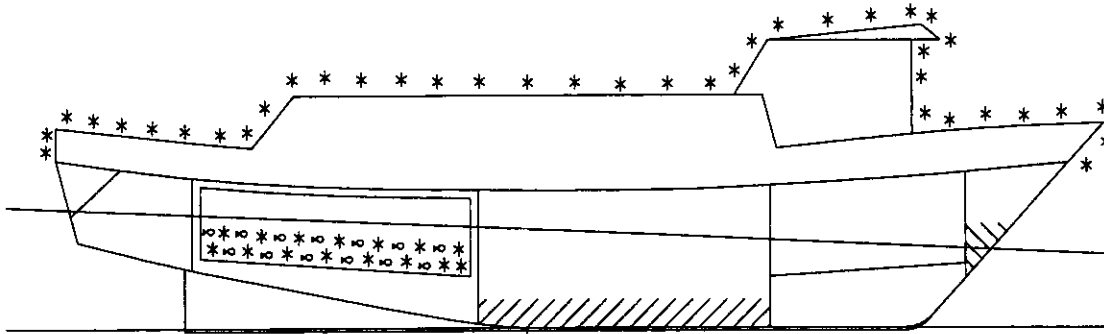
LOWER INTERCEPT ANGLE = 1.3 DEGREES  
UPPER LIMIT ANGLE = 40.0 DEGREES  
AREA ABOVE HEELING CURVE = 15.52 FT.-DEG. 15.00 FT-DEGS REQ'D - PASS

# TITLE: F/V "SASHA-LEE" STABILITY CHARACTERISTICS

CONDITION: ARRIVAL IN PORT - 40% CATCH \*\*WINTER ICE\*\*

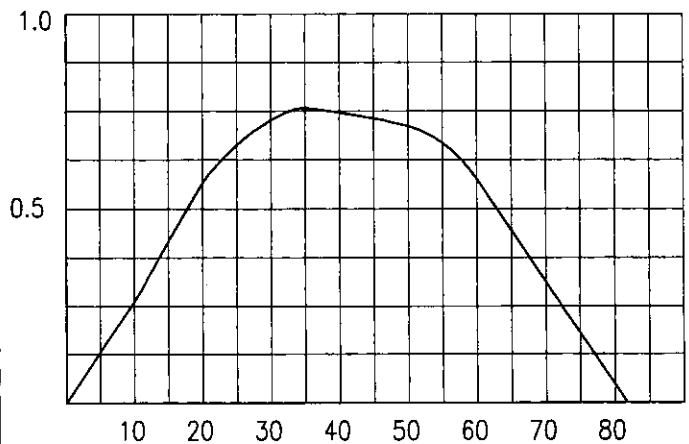
## LEGEND

-  - FRESH WATER
-  - FUEL OIL
-  - HYD./LUBE OIL
-  - S.W. BALLAST
-  - FISH
-  - ICE
-  - DIRTY OIL



## VESSEL CHARACTERISTICS:

DISPLACEMENT:	224.26	LONG TONS
VCG:	9.91	FT.
LCG (+AFT):	1.58	FT.
TRIM (FT)	3.387	AFT FT.
TRIM (IN):	40.64	AFT IN.
MOLDED DRAFT FWD:	6.792	FT.
MOLDED DRAFT MIDSHIP:	8.486	FT.
MOLDED DRAFT AFT:	10.179	FT.
KEEL DRAFT FWD:	7.042	FT.
KEEL DRAFT AFT:	10.423	FT.
FREEBOARD MIDSHIPS:	3.264	FT.



## RIGHTING ENERGIES:

0° - 30°	12.050	FT.-DEG.
0° - 40°	19.550	FT.-DEG.
30° - 40°	7.500	FT.-DEG.
MAX GZ:	0.758	FT.-DEG.
ANGLE @ MAX GZ:	35.7	FT.-DEG.

GM:	1.39	FT.
FREE SURFACE:	0.04	FT.
GM CORRECTED:	1.35	FT.

C-116 79'-11" FISHING VESSEL F/V 'SASHA-LEE' 03/16/02

ARRIVAL IN PORT - 40% CATCH \*\*WINTER ICE\*\*

ITEM	100 PCT	TONS	VCG	VERT	FREE	LCG	FWD	LCG	AFT
L.S. - INC 03/16	100 PCT	185.69	10.55	1958.77	*	*	*	1.48	274.82
F.W. TANK FWD PORT	40 PCT	2.36	8.75	20.66	3.47	38.04	89.85	*	*
E.R. FUEL OIL TK P	20 PCT	4.46	3.36	14.98	2.37	6.71	29.95	*	*
E.R. FUEL OIL TK S	20 PCT	4.46	3.36	14.98	2.37	6.71	29.95	*	*
HYDRAULIC OIL-S	60 PCT	.35	6.79	2.37	.03	*	3.51	1.22	*
CONSUMABLE STORES	20 PCT	.10	14.93	1.49	*	17.25	1.73	*	*
SHIP SPARES	100 PCT	1.25	8.50	10.63	*	22.50	28.13	*	*
ICE IN HOLD	50 PCT	6.70	6.99	46.78	*	*	*	11.25	75.35
CATCH IN HOLD	40 PCT	14.29	7.37	105.26	*	*	*	12.92	184.60
CATCH ON DECK	NONE	*	*	*	*	*	*	*	*
PARAVANES UP	100 PCT	-1.99	37.50	-74.47	*	1.00	-1.99	*	*
PARAVANES DOWN	100 PCT	1.99	23.50	46.67	*	1.00	1.99	*	*
**WINTER ICE**	100 PCT	4.60	16.28	74.89	*	.55	2.53	*	*
TOTAL -		224.26	9.91	2223.01	8.24	*	*	1.58	353.86

DISPLACEMENT	= 224.26 TONS
KMT	= 11.30 FEET
KG	= 9.91 FEET
GMT UNCORR.	= 1.39 FEET
FREE SURFACE	= .04 FEET
GMT CORRECTED	= 1.35 FEET

RIGHTING ARM CURVE

HEEL	GZ	GZ CORR
5.0 DEGREES	.134 FEET	.130 FT. CORR.
10.0 DEGREES	.270 FEET	.263 FT. CORR.
15.0 DEGREES	.427 FEET	.418 FT. CORR.
20.0 DEGREES	.579 FEET	.566 FT. CORR.
25.0 DEGREES	.678 FEET	.663 FT. CORR.
30.0 DEGREES	.746 FEET	.727 FT. CORR.
35.0 DEGREES	.778 FEET	.757 FT. CORR.
40.0 DEGREES	.770 FEET	.746 FT. CORR.
50.0 DEGREES	.739 FEET	.711 FT. CORR.
60.0 DEGREES	.608 FEET	.576 FT. CORR.
70.0 DEGREES	.346 FEET	.312 FT. CORR.
80.0 DEGREES	.082 FEET	.046 FT. CORR.
90.0 DEGREES	-.166 FEET	-.203 FT. CORR.

RIGHTING ENERGIES

0 - 30 DEG.	= 12.050 FT-DEG.
0 - 40 DEG.	= 19.550 FT-DEG.
30 - 40 DEG.	= 7.500 FT-DEG.

LCB	= 1.76 FEET AFT
LCG	= 1.58 FEET AFT
KML	= 81.94 FEET ABL
KB	= 5.45 FEET ABL
GML	= 71.99 FEET ABL
MTI	= 16.82 FT. TONS
TONS/IN.	= 3.40 LONG TONS
TRIM	= 40.64 INCHES AFT
TRIM	= 3.387 FEET AFT
LCF	= 3.548 FEET AFT
MEAN DRAFT	8.486 FEET ABL
LCF DRAFT	8.636 FEET ABL
F.P. DRAFT	6.792 FEET ABL
A.P. DRAFT	10.179 FEET ABL

\* FISHING VESSEL STABILITY ANALYSIS \*

NOTE - REQUIREMENTS APPLY ONLY TO VESSELS OVER 79 FT REGISTERED LENGTH

C-116 79.0 FT FISHING VESSEL F/V 'SASHA-LEE' 03/13/01

ARRIVAL IN PORT - 40% CATCH \*\*WINTER ICE\*\*

DISPLACEMENT = 224.26 LONG TONS  
MOLDED DRAFT = 8.49 FEET AT MIDSHIPS  
KG = 9.91 FT. ABL  
LCG = 1.58 FT. AFT MIDSHIPS  
GMT CORR. = 1.35 FEET 1.15 REQ'D - PASS

\* RIGHTING ARM CURVE CHARACTERISTICS \*

ANGLE TO DOWNFLOODING = 70.13 DEGREES  
AREA 0 DEG. TO 30 DEG. = 12.05 FT.-DEG. 10.3 REQ'D - PASS  
AREA 0 DEG. TO 40 DEG. = 19.55 FT.-DEG. 16.9 REQ'D - PASS  
AREA 30 DEG TO 40 DEG. = 7.50 FT.-DEG. 5.6 REQ'D - PASS  
MAXIMUM GZ = .758 FEET 0.66 REQ'D - PASS  
ANGLE OF MAX GZ = 35.7 DEGREES 25.0 REQ'D - PASS  
AREA 0 TO MAX GZ ANGLE = 16.32 FT.-DEG.  
RANGE OF STABILITY = 81.8 DEGREES 60.0 REQ'D - PASS

\* IMO SEVERE WIND AND ROLLING CRITERIA \*

WINDAGE AREA = 1146.59 SQ. FT.  
WINDAGE ARM = 11.71 FT.

GUST WIND HEEL ARM = .33 FT.

1ST GUST WIND HEEL ARM INTERCEPT = 12.2 DEGREES 14.0 MAX REQ'D - PASS  
2ND GUST WIND HEEL ARM INTERCEPT = 69.3 DEGREES  
RIGHTING ENERGY ABOVE WIND HEEL ARM = 12.47 FT.-DEG. 12.2 DEG. TO 50.0 DEG.  
WINDWARD WAVE ROLL ANGLE = 16.55 DEG. (FROM GUST WIND ARM INTERCEPT)  
AREA BELOW WIND HEEL ARM = 3.75 FT.-DEG. 12.2 DEG. TO -4.4 DEG.  
AREA ABOVE - AREA BELOW = 8.72 FT.-DEG. POSITIVE REQ'D - PASS

\* LIFTING CRITERIA STABILITY ANALYSIS \*

WEIGHT LIFTED = 1.600 TONS  
VERTICAL LIFT = 10.00 FEET  
HORIZONTAL LIFT = 5.00 FEET

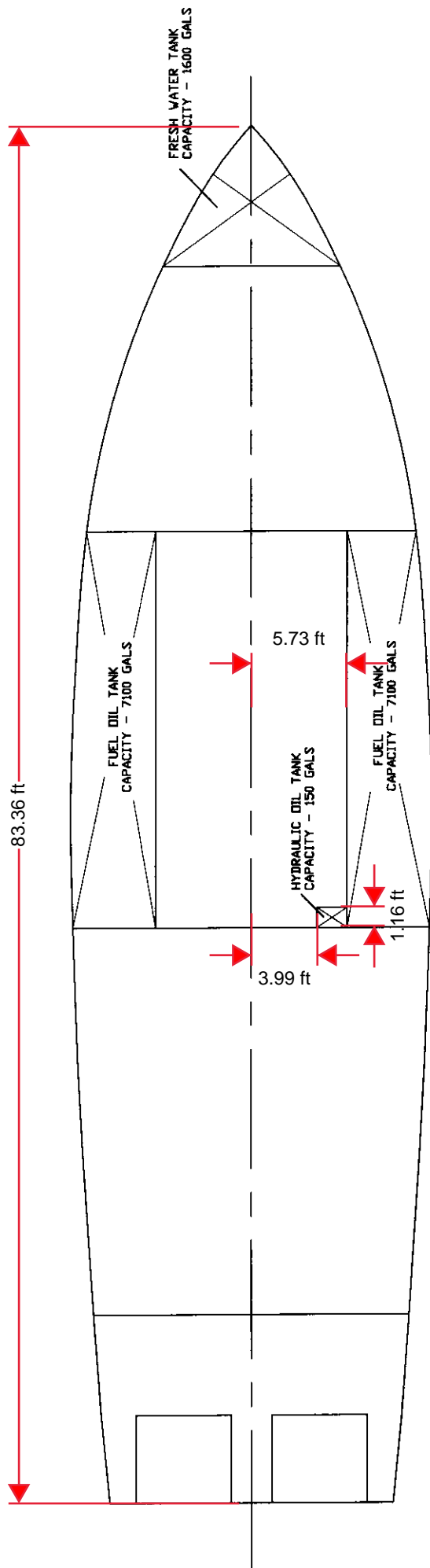
LOWER INTERCEPT ANGLE = 1.5 DEGREES  
UPPER LIMIT ANGLE = 35.7 DEGREES  
AREA ABOVE HEELING CURVE = 14.38 FT.-DEG. - NON LIFTING CONDITION

**HYDROSTATIC PROPERTIES**  
**TANK PLAN**  
**TANK CAPACITIES**

C-116 86'-8" FISHING VESSEL F/V 'SASHA-LEE' 3/12/02

LWL = 79.00 FEET			TRIM/LBP = .01156 AFT			WATER DENSITY = 35.000 CU. FT. PER TON							
TONS	TONS	DRAFT	KB	LCB	LCF	BMT	BML	TPI	MTI	CB	CP	CM	CWP
DISP	DISP	FEET	FT.	FT.	FT.	FT.	FT.	FT.	FT.				
MLD.	CORR	ABL	ABL	AFT	AFT	ABL	ABL	ABL	TONS				
38.10	38.10	3.250	2.252	-6.362	-4.495	16.828	126.393	2.075	5.080	.267	.421	.633	.566
44.50	44.50	3.500	2.413	-6.069	-3.956	15.847	124.005	2.195	5.821	.288	.438	.657	.596
51.20	51.20	3.750	2.572	-5.781	-3.443	14.846	121.251	2.301	6.549	.308	.455	.676	.622
58.14	58.14	4.000	2.727	-5.506	-3.008	13.733	117.645	2.388	7.215	.326	.470	.694	.642
65.34	65.34	4.250	2.880	-5.236	-2.607	12.635	113.953	2.460	7.854	.343	.484	.708	.659
72.83	72.83	4.500	3.034	-4.949	-2.114	11.780	111.404	2.540	8.559	.359	.498	.721	.677
80.61	80.61	4.750	3.187	-4.646	-1.512	11.096	109.824	2.627	9.339	.375	.512	.733	.697
88.63	88.63	5.000	3.340	-4.340	-.960	10.488	107.811	2.707	10.079	.390	.525	.743	.715
96.89	96.89	5.250	3.494	-4.036	-.589	9.912	104.405	2.770	10.671	.404	.538	.752	.728
105.36	105.36	5.500	3.647	-3.738	-.291	9.386	100.912	2.824	11.215	.418	.550	.759	.739
113.90	113.90	5.750	3.797	-3.458	.097	8.921	98.970	2.886	11.891	.430	.561	.766	.751
122.50	122.50	6.000	3.943	-3.201	.556	8.495	98.136	2.953	12.681	.441	.571	.773	.765
131.34	131.34	6.250	4.090	-2.940	1.040	8.143	97.599	3.024	13.522	.452	.581	.778	.780
140.55	140.55	6.500	4.239	-2.659	1.578	7.910	97.483	3.102	14.452	.463	.591	.783	.797
150.01	150.01	6.750	4.388	-2.373	2.103	7.717	97.236	3.179	15.386	.474	.601	.788	.813
159.62	159.62	7.000	4.538	-2.100	2.423	7.448	95.465	3.236	16.074	.484	.611	.792	.824
169.40	169.40	7.250	4.687	-1.836	2.538	7.116	92.433	3.272	16.517	.493	.620	.796	.829
179.31	179.31	7.500	4.836	-1.591	2.582	6.813	89.316	3.304	16.894	.503	.629	.799	.834
189.33	189.33	7.750	4.982	-1.366	2.602	6.570	86.505	3.336	17.276	.511	.638	.802	.838
199.45	199.45	8.000	5.126	-1.162	2.573	6.351	83.713	3.365	17.612	.520	.646	.805	.841
209.62	209.62	8.250	5.271	-.984	2.500	6.135	80.815	3.389	17.870	.527	.653	.807	.844
219.85	219.85	8.500	5.417	-.831	2.370	5.923	77.773	3.408	18.037	.534	.660	.809	.845
230.14	230.14	8.750	5.562	-.688	2.288	5.735	75.287	3.431	18.277	.541	.667	.811	.847
240.43	240.43	9.000	5.705	-.547	2.329	5.578	73.752	3.464	18.705	.547	.673	.813	.851
250.79	250.79	9.250	5.847	-.414	2.397	5.437	72.490	3.501	19.177	.553	.679	.815	.857
261.31	261.31	9.500	5.989	-.296	2.369	5.295	70.757	3.529	19.504	.558	.684	.816	.860
271.98	271.98	9.750	6.130	-.194	2.260	5.154	68.694	3.550	19.708	.564	.690	.817	.861
282.72	282.72	10.000	6.271	-.103	2.142	5.023	66.752	3.571	19.907	.569	.695	.818	.863
293.50	293.50	10.250	6.412	-.024	2.075	4.906	65.267	3.597	20.206	.574	.700	.819	.865
304.34	304.34	10.500	6.554	.045	1.968	4.795	63.690	3.619	20.446	.579	.705	.820	.867
315.26	315.26	10.750	6.695	.108	1.683	4.695	61.246	3.627	20.367	.583	.710	.821	.865
326.27	326.27	11.000	6.837	.165	1.242	4.615	58.107	3.625	19.999	.587	.714	.822	.861
337.15	337.15	11.250	6.977	.203	.773	4.415	55.447	3.596	19.720	.591	.718	.822	.851
348.13	348.13	11.500	7.117	.233	.730	4.084	54.680	3.625	20.080	.594	.722	.823	.854
358.66	358.66	11.750	7.251	.229	.189	3.643	52.940	3.532	20.029	.599	.728	.823	.832
367.88	367.88	12.000	7.367	.171	-1.753	3.079	47.775	3.093	18.540	.602	.747	.806	.729

DISPLACEMENT CORRECTED FOR .000 INCH THICK SHELL PLATE



TANK CAPACITY PLAN



C-116 FRESH WATER TANK - FOREPEAK

SPECIFIC DENSITY OF LIQUID = 35.990 FT-CU/TON

LOW POINT OF THE TANK IS 2.628 FT.ABL

HIGH POINT OF THE TANK IS 14.047 FT.ABL

SOUNDING TUBE LOCATION 37.50 FT. FWD MIDSHPIS, BTM 5.50 FT. ABL., TOP 14.00 FT. ABL., RAKE= .00 DEG.

WATERLINE ABL	SOUNDING FEET	VOLUME FT. CU.	CAPACITY		KG. ABL	LCG AFT	TCG PORT	FREE SURFACE	
			GALLONS	TONS				FT**4	FT-TONS
2.628	.000	.000	.000	.000	2.628	-36.300	.000	.000	.000
5.500	.000	4.294	32.123	.119	4.542	-36.300	.000	3.043	.083
6.000	.500	5.892	44.079	.164	4.874	-36.322	.000	4.756	.130
6.500	1.000	8.536	63.859	.237	5.303	-36.547	.000	7.214	.196
6.750	1.250	10.326	77.249	.287	5.539	-36.702	.000	8.912	.243
7.000	1.500	12.442	93.077	.346	5.764	-36.848	.000	11.053	.301
7.250	1.750	14.882	111.336	.414	5.990	-36.990	.000	13.571	.370
7.500	2.000	17.648	132.028	.490	6.207	-37.111	.000	16.429	.447
7.750	2.250	20.740	155.157	.576	6.416	-37.216	.000	19.752	.538
8.000	2.500	24.152	180.682	.671	6.625	-37.311	.000	23.642	.644
8.250	2.750	27.896	208.689	.775	6.824	-37.390	.000	28.199	.768
8.500	3.000	31.983	239.261	.889	7.024	-37.466	.000	33.755	.919
8.750	3.250	36.414	272.414	1.012	7.218	-37.534	.000	40.400	1.100
9.000	3.500	41.299	308.959	1.148	7.415	-37.603	.000	47.763	1.301
9.250	3.750	46.641	348.918	1.296	7.611	-37.674	.000	55.734	1.518
9.500	4.000	52.435	392.263	1.457	7.807	-37.744	.000	64.823	1.765
9.750	4.250	58.686	439.027	1.631	8.001	-37.810	.000	75.400	2.053
10.000	4.500	65.391	489.192	1.817	8.192	-37.874	.000	87.424	2.381
10.250	4.750	72.552	542.759	2.016	8.384	-37.934	.000	100.968	2.749
10.500	5.000	80.166	599.725	2.227	8.573	-37.989	.000	116.140	3.162
10.750	5.250	88.226	660.021	2.451	8.761	-38.041	.000	132.747	3.615
11.000	5.500	96.724	723.592	2.688	8.946	-38.088	.000	150.919	4.109
11.250	5.750	105.762	791.204	2.939	9.133	-38.136	.000	170.743	4.649
11.500	6.000	115.309	862.630	3.204	9.318	-38.185	.000	192.202	5.234
11.750	6.250	125.523	939.037	3.488	9.506	-38.238	.000	215.711	5.874
12.000	6.500	136.529	1021.370	3.794	9.697	-38.299	.000	241.590	6.578
12.250	6.750	148.275	1109.244	4.120	9.889	-38.366	.000	269.901	7.349
12.500	7.000	160.893	1203.639	4.470	10.085	-38.434	.000	312.476	8.509
12.750	7.250	174.308	1303.997	4.843	10.280	-38.503	.000	364.078	9.914
13.000	7.500	187.888	1405.588	5.221	10.468	-38.565	.000	322.988	8.795
13.250	7.750	202.489	1514.823	5.626	10.656	-38.597	.000	151.880	4.136
13.500	8.000	213.414	1596.553	5.930	10.797	-38.726	.000	38.448	1.047
13.750	8.250	218.680	1635.947	6.076	10.866	-38.841	.000	2.218	.060
14.000	8.500	219.402	1641.346	6.096	10.876	-38.858	.000	-2.333	-.064
14.047	8.500	219.030	1638.563	6.086	10.871	-38.849	.000	.000	.000

NOTE \*\*\*

TANK PERMEABILITY = .9800

VOLUMES AND CAPACITIES ARE CORRECTED FOR PERMEABILITY

C-116 FUEL OIL WING TANKS - ENGINE ROOM - P/S

SPECIFIC DENSITY OF LIQUID = 41.330 FT-CU/TON

LOW POINT OF THE TANK IS 1.576 FT.ABL

HIGH POINT OF THE TANK IS 12.144 FT.ABL

SOUNDING TUBE LOCATION .00 FT. AFT MIDSHIPS, BTM 1.25 FT. ABL., TOP 12.00 FT. ABL., RAKE= .00 DEG.

WATERLINE ABL	SOUNDING FEET	VOLUME FT.CU.	CAPACITY		KG. ABL	LCG AFT	TCG PORT	FREE SURFACE	
			GALLONS	TONS				FT**4	FT-TONS
1.576	.326	.000	.000	.000	1.576	-2.104	6.001	.000	.000
2.500	1.250	27.711	207.306	.670	2.266	-4.568	7.297	58.036	1.376
3.000	1.750	63.765	477.028	1.543	2.532	-5.574	7.463	82.135	1.948
3.500	2.250	103.894	777.231	2.514	2.808	-6.211	7.543	87.644	2.078
4.000	2.750	145.406	1087.786	3.518	3.077	-6.518	7.596	94.577	2.243
4.500	3.250	188.112	1407.263	4.551	3.343	-6.704	7.638	102.736	2.436
5.000	3.750	232.118	1736.478	5.616	3.610	-6.836	7.674	111.255	2.638
5.250	4.000	254.638	1904.944	6.161	3.745	-6.889	7.691	115.553	2.740
5.500	4.250	277.482	2075.844	6.714	3.879	-6.937	7.708	120.189	2.850
5.750	4.500	300.645	2249.126	7.274	4.013	-6.980	7.725	124.992	2.964
6.000	4.750	324.094	2424.547	7.842	4.148	-7.020	7.740	129.684	3.075
6.250	5.000	347.850	2602.268	8.416	4.283	-7.056	7.756	134.395	3.187
6.500	5.250	371.970	2782.707	9.000	4.418	-7.089	7.772	139.422	3.306
6.750	5.500	396.440	2965.764	9.592	4.555	-7.120	7.787	144.689	3.431
7.000	5.750	421.230	3151.224	10.192	4.692	-7.149	7.803	149.893	3.554
7.250	6.000	446.344	3339.101	10.800	4.828	-7.176	7.818	155.058	3.677
7.500	6.250	471.752	3529.173	11.414	4.965	-7.203	7.833	160.457	3.805
7.750	6.500	497.447	3721.402	12.036	5.103	-7.227	7.848	166.103	3.939
8.000	6.750	523.493	3916.255	12.666	5.241	-7.251	7.863	171.985	4.078
8.250	7.000	549.904	4113.833	13.305	5.380	-7.273	7.878	178.152	4.224
8.500	7.250	576.642	4313.857	13.952	5.519	-7.295	7.892	184.350	4.371
8.750	7.500	603.703	4516.305	14.607	5.658	-7.316	7.908	190.443	4.516
9.000	7.750	631.071	4721.042	15.269	5.797	-7.336	7.923	196.691	4.664
9.250	8.000	658.720	4927.883	15.938	5.937	-7.355	7.937	203.206	4.818
9.500	8.250	686.696	5137.172	16.615	6.077	-7.374	7.952	209.945	4.978
9.750	8.500	715.038	5349.199	17.301	6.218	-7.392	7.967	216.919	5.143
10.000	8.750	743.719	5563.759	17.995	6.359	-7.409	7.982	224.121	5.314
10.250	9.000	772.724	5780.745	18.696	6.500	-7.426	7.997	231.595	5.491
10.500	9.250	802.047	6000.115	19.406	6.642	-7.443	8.012	239.238	5.673
10.750	9.500	831.656	6221.615	20.122	6.784	-7.459	8.027	246.768	5.851
11.000	9.750	861.569	6445.399	20.846	6.926	-7.475	8.042	254.311	6.030
11.250	10.000	893.534	6684.527	21.619	7.076	-7.477	8.058	331.986	7.872
11.500	10.250	925.886	6926.555	22.402	7.227	-7.485	8.073	380.122	9.013
11.750	10.500	945.182	7070.910	22.869	7.317	-7.544	8.082	135.801	3.220
12.000	10.750	952.354	7124.557	23.043	7.350	-7.575	8.084	-5.901	-1.140
12.144	10.750	951.413	7117.524	23.020	7.346	-7.571	8.084	14.000	.332

NOTE \*\*\*

TANK PERMEABILITY = .9800

VOLUMES AND CAPACITIES ARE CORRECTED FOR PERMEABILITY

C-116 HYDRAULIC OIL TANK

SPECIFIC DENSITY OF LIQUID = 38.000 FT-CU/TON

LOW POINT OF THE TANK IS 4.667 FT.ABL

HIGH POINT OF THE TANK IS 11.750 FT.ABL

SOUNDING TUBE LOCATION 2.50 FT. AFT MIDSHIPS, BTM 5.00 FT. ABL., TOP 11.75 FT. ABL., RAKE= .00 DEG.

WATERLINE ABL	SOUNDING FEET	VOLUME FT. CU.	CAPACITY		KG. ABL	LCG AFT	TCG PORT	FREE SURFACE	
			GALLONS	TONS				FT**4	FT-TONS
4.667	.000	.000	.000	.000	4.667	3.512	4.792	1.000	.026
5.000	.000	.984	7.358	.026	4.834	3.512	4.792	1.000	.026
5.250	.250	1.724	12.896	.045	4.959	3.512	4.792	1.000	.026
5.500	.500	2.465	18.437	.065	5.084	3.512	4.792	1.000	.026
5.750	.750	3.205	23.977	.084	5.209	3.512	4.792	1.000	.026
6.000	1.000	3.946	29.517	.104	5.334	3.512	4.792	1.000	.026
6.250	1.250	4.686	35.057	.123	5.459	3.512	4.792	1.000	.026
6.500	1.500	5.427	40.597	.143	5.584	3.512	4.792	1.000	.026
6.750	1.750	6.167	46.137	.162	5.709	3.512	4.792	1.000	.026
7.000	2.000	6.908	51.677	.182	5.834	3.512	4.792	1.000	.026
7.250	2.250	7.648	57.217	.201	5.959	3.512	4.792	1.000	.026
7.500	2.500	8.389	62.757	.221	6.084	3.512	4.792	1.000	.026
7.750	2.750	9.130	68.298	.240	6.209	3.512	4.791	1.000	.026
8.000	3.000	9.869	73.828	.260	6.334	3.512	4.791	1.000	.026
8.250	3.250	10.607	79.353	.279	6.458	3.512	4.791	1.000	.026
8.500	3.500	11.348	84.894	.299	6.583	3.512	4.791	1.000	.026
8.750	3.750	12.089	90.434	.318	6.708	3.512	4.791	1.000	.026
9.000	4.000	12.829	95.974	.338	6.833	3.512	4.791	1.000	.026
9.250	4.250	13.570	101.514	.357	6.958	3.512	4.791	1.000	.026
9.500	4.500	14.310	107.054	.377	7.083	3.512	4.791	1.000	.026
9.750	4.750	15.051	112.594	.396	7.208	3.512	4.791	1.000	.026
10.000	5.000	15.791	118.134	.416	7.333	3.512	4.791	1.000	.026
10.250	5.250	16.532	123.674	.435	7.458	3.512	4.792	1.000	.026
10.500	5.500	17.272	129.214	.455	7.583	3.512	4.792	1.000	.026
10.750	5.750	18.013	134.754	.474	7.708	3.512	4.792	1.000	.026
11.000	6.000	18.753	140.294	.494	7.833	3.512	4.792	1.000	.026
11.250	6.250	19.494	145.835	.513	7.958	3.512	4.792	1.000	.026
11.500	6.500	20.234	151.369	.532	8.084	3.512	4.792	1.000	.026
11.750	6.750	20.972	156.892	.552	8.209	3.512	4.792	1.000	.026

NOTE \*\*\*

TANK PERMEABILITY = .9800

VOLUMES AND CAPACITIES ARE CORRECTED FOR PERMEABILITY

**INCLINING REPORT  
LIGHTSHIP DETERMINATION**

UNITED STATES COAST GUARD

STABILITY TEST DATA

F/V 'SASHA-LEE'

Official Number: 522950

Gross Tons: 159

Description of vessel: Offshore Fishing Vessel

Type: Fishing Trawler

Builder: New Iberia, LA (Tommy Nguyen Shipyard)

Hull No. 10

Hull Steel Hull - Single Hard Chine

Machinery

Single Screw

Owner: Sasha Lee Inc

Owner's Address New Bedford, MA

Vessel inclined at Homers Wharf, New Bedford, MA

Date: 3/16/02

Test requested by: Owner

Plans furnished by: N/A

Offsets measured by: Garrett Norton

Curves of form computed by: Thomas M Farrell Naval Architects

Classed By: N/A  Inspected  Safety Certificate  Load Line

Route: Ocean  Coastwise  Great Lakes  Bay  Lakes

Specify Route, if limited \_\_\_\_\_

Test conducted by Thomas M Farrell Navel Architects  
Stability calculations made by TMFNA

Duplicate vessels: N/A

STABILITY TEST F/V 'SASHA-LEE'

PRINCIPAL DIMENSIONS

Length overall 86 feet 7.75 inches ( 86.646 ) feet

Length between perpendiculars which are at the extremities of waterline 80 feet 0 inches ( 80.000 ) feet

Length between draft marks 0 feet 0 inches ( 0.000 ) feet

Breadth, extreme at feet inches above baseline 22 feet 7.625 inches ( 22.635 ) feet

Breadth, molded at feet inches above baseline 22 feet 8.375 inches ( 22.698 ) feet

Breadth at load water line 21 feet 0 inches ( 21.000 ) feet

Depth amidship, from to feet inches ( 11.719 ) feet

Apparent full-load mean draft for stability -- molded base 9 feet 2.75 inches ( 9.229 ) feet

-- bottom of keel 9 feet 5.75 inches ( 9.479 ) feet

Displacement, sea water, long tons (2240 lbs), at full load draft 254.93 Long tons

Freeboard amidships at full-load draft 2 feet 6.25 inches ( 2.521 ) feet

Freeboard at low point of sheer 2 feet 6.25 inches ( 2.521 ) feet

Locations of ports, in hull, which may affect stability Engine Room Vent - Main Deck (50" off Deck)

Names and duties of official observers

Garrett Norton, Thomas Farrell, Carlos Rafael , Crane Operator

Designers represented by:

None

Builders represented by:

None

Owners represented by:

Carlos Rafael

Weather, tide, and mooring conditions:

Moored on port side to pier, no current or waves, overcast, very light wind

Condition of ship as to completeness and as to water in the boilers, machinery, and bilges

Joiner work in accommodations area be worked on, some fishing gear missing (see weight to complete)  
Water in E.R. bilge, paravanes in upright stored position.

\*Note - Baseline Parallel with Keel Line

STABILITY TEST F/V 'SASHA-LEE'

SHIP AT TIME OF STABILITY TEST - COND 0

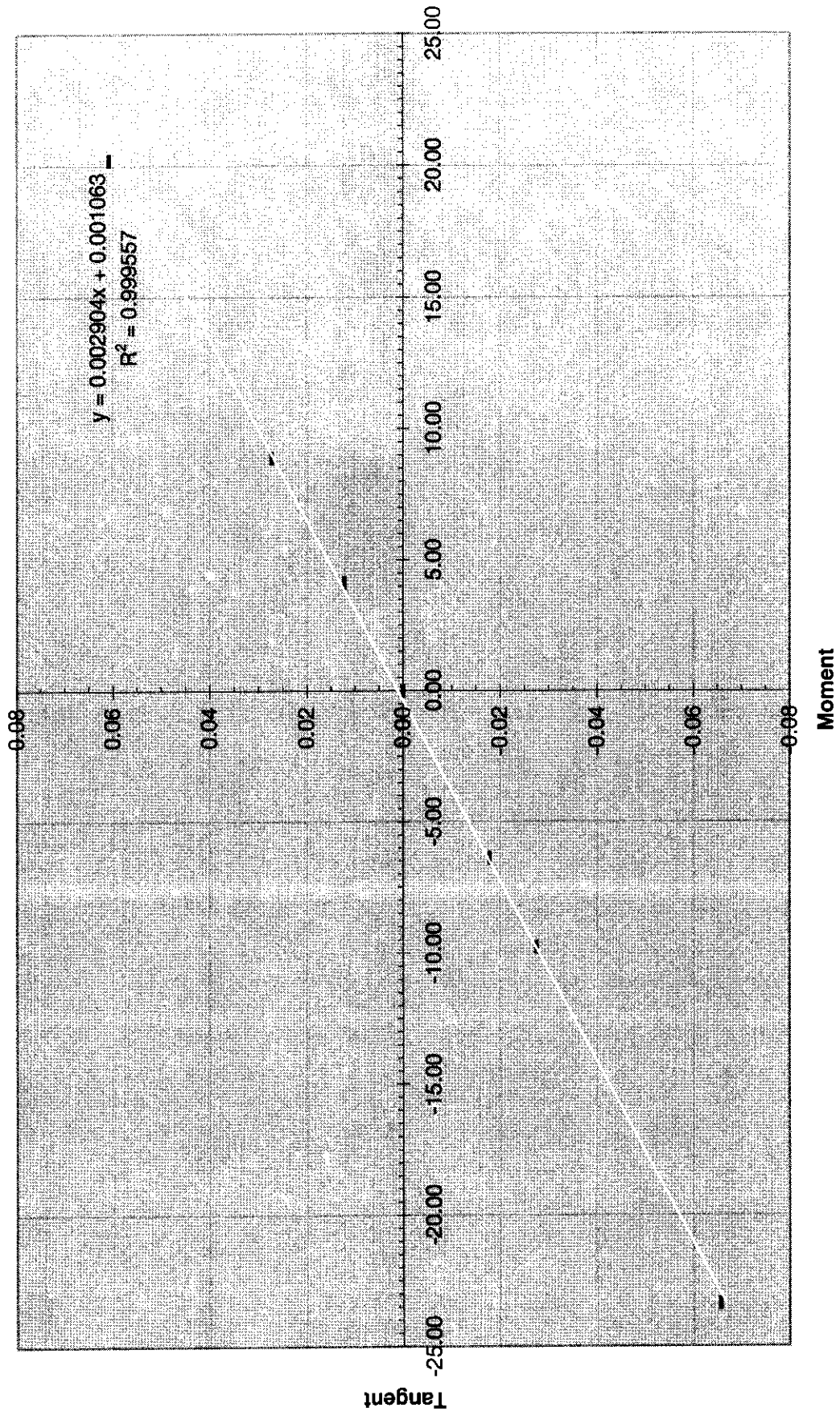
PENDULUMS		No.	Weight	DISTANCE FROM INITIAL POSITION		MOMENT	TOTAL INCLINING MOMENT		PENDULUM DEFLECTION			TANGENT		AVERAGE
No.	Location			PORT	STBD		PORT	STBD	PORT	STBD	No.	PORT	STBD	
1st	Port Side - Off 01 Deck	1	1.763	3.625	-6.392	-6.392			1st	2.120	-0.01768			
									2nd	2.090	-0.01745			-0.01790
									3rd	2.600	-0.01857			
									1st	3.280	-0.02736			
2nd	Stbd Side - Off 01 Deck	1	1.763	5.542	-9.773	-9.773			2nd	3.250	-0.02714			
									3rd	3.900	-0.02786			-0.02745
									1st	7.870	-0.06565			
3rd	Fish Hold	1	1.763	13.250	-23.365	-23.365			2nd	7.800	-0.06514			
									3rd	9.300	-0.06643			-0.06574
									1st					
									2nd					
									3rd					0.00000
									1st	1.450	0.01210			
									2nd	1.480	0.01236			
									3rd	1.700	0.01214			0.01220
									1st	3.250	0.02711			
									2nd	3.280	0.02739			
									3rd	3.800	0.02714			0.02722
									1st	7.310	0.06098			
									2nd	7.350	0.06138			
									3rd	8.400	0.06000			0.06079
									1st					
									2nd					
									3rd					0.00000

Location Aft Deck - Behind Access To Fish Hold

Description 3'x3'x3' Concrete Blocks - w/ Rigging

Weight		Initial Position	
No.	VCG	PORT	STBD
1	1.7634		
2	1.7634		

# Moment vs. Tangent Plot





**FREEBOARDS -79.9' LBP Fishing Vessel - F/V 'Sasha-Lee'**  
**C-116**  
**16-Mar-02**

<b>Position</b>	<b>Length</b>	<b>Freeboards</b>			<b>Ave</b>	<b>Depth</b>	<b>Draft</b>	<b>Port Draft</b>	<b>Stbd Draft</b>
		<b>Port</b>	<b>Stbd</b>						
Stern	40.333	5.021	5.063	5.042	13.853	8.811	8.832	8.790	
10' Fwd	30.333	4.250	4.323	4.286	13.021	8.735			
20' Fwd	20.333	3.458	3.563	3.510	12.201	8.691			
30' Fwd	10.333	3.250	3.271	3.260	11.845	8.585	8.595	8.574	
40' Fwd	0.333	3.208	3.271	3.240	11.720	8.480			
50' Fwd	-9.666	3.458	3.583	3.521	11.729	8.208			
60' Fwd	-19.666	4.042	3.958	4.000	12.075	8.075	8.071	7.904	
70' Fwd	-39.666	4.583	4.750	4.667	12.654	7.987	deeper		

**LWL = 79.000 Ft**  
**BEAM = 22.500 Ft**  
**DECK PLT = 0.313 In.**  
**DRAFT = 8.425 Ft**  
**TRIM = 0.914 Ft (- FWD, + AFT)**  
**HEEL = -0.053 Degs. (+ PORT, - STBD)**

Heel in wrong direction,  
should be 0.056 to Port

**SUMMARY OUTPUT**

<b>Regression Statistics</b>	
Multiple R	0.975087819
R Square	0.950796255
Adjusted R Square	0.942595631
Standard Error	0.075847586
Observations	8

<b>ANOVA</b>					
	<b>df</b>	<b>SS</b>	<b>MS</b>	<b>F</b>	<b>Significance F</b>
Regression	1	0.666997301	0.666997301	115.9419374	3.79337E-05
Residual	6	0.034517138	0.005752856		
Total	7	0.701514439			

	<b>Coefficients</b>	<b>Standard Error</b>	<b>t Stat</b>	<b>P-value</b>	<b>Lower 95%</b>	<b>Upper 95%</b>	<b>Lower 95.0%</b>	<b>Upper 95.0%</b>
Intercept	8.399272515	0.027172418	309.1102327	7.79663E-14	8.332783954	8.465761075	8.332783954	8.465761075
X Variable 1	0.011564521	0.001074008	10.76763379	3.79337E-05	0.008936517	0.014192525	0.008936517	0.014192525

**INCLINING EXPERIMENT      F/V 'SASHA-LEE'**

**SHIP AT TIME OF INCLINING EXPERIMENT - CONDITION 0**

From Independent Calculations

Corrected displacement ..... 216.280 tons

Mean virtual metacentric height obtained from plot of  
 Inclining moments versus tangents of angles of heel .....  $\frac{\text{moment}}{\text{displacement} \times \text{tangent}}$  ..... Slope = 0.002904 ..... 1.592 feet

Correction for free surface ..... Tank ft-ton = 10.625 ..... 0.049 feet\*\*

Mean metacentric height GM = ..... 1.641 feet

Transverse metacenter above center of buoyancy BM ..... 5.985 feet

BG = BM - GM ..... 4.344 feet

C.G. above baseline = BG cos $\theta$  + KB ..... 9.716 feet

BG sin $\theta$  = ..... 0.050 feet

L.C.B., Fwd of midships, which is ..... of frame ..... 0.875 feet

C. G. Fwd of midships (L.C.G. - BG sin $\theta$ ) ..... 0.825 feet

Period of complete roll ..... n/a ..... seconds

Apparent radius of gyration of vessel ..... n/a ..... feet

Rolling constant = ..... C = T(GM)<sup>1/2</sup>/B ..... n/a

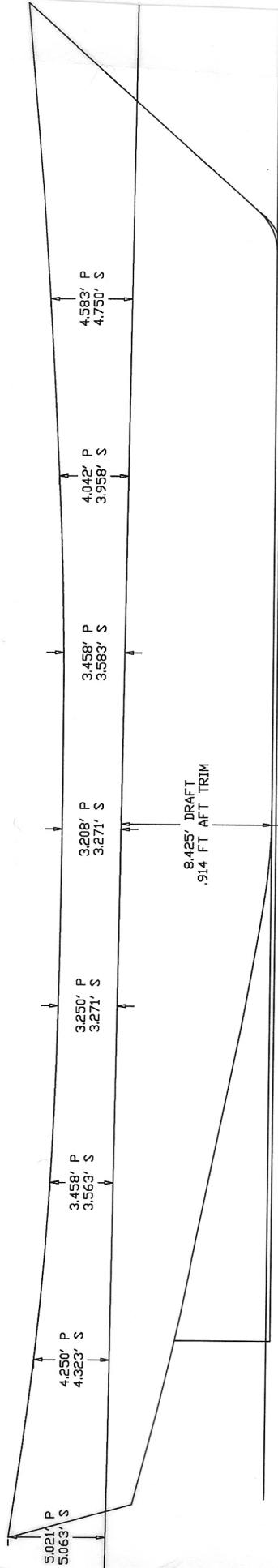
\*\* Water in bilges. The bilges should be entirely free of water, but should this be impossible, correction should be made in the derived GM. The details of this should form part of this report.

STABILITY TEST

F/V 'SASHA-LEE'

All tons used in this calculation are of 2240 pounds

SHIP AT TIME OF STABILITY TEST - CONDITION 0



Forward	.....	feet	n/a	inches	8.425	feet
Aft	.....	feet	n/a	inches	0.000	feet
Amidships	.....	feet	n/a	inches	0.913	feet
Starboard	.....	feet	n/a	inches	2.410	feet
Distance between "curves of form" perpendicular		.....	79.000	feet	.....	.....
Bottom of keel below base line		.....	0.000	inches	.....	.....
drafts corrected to curves of form perpendiculars for use in calculations		Forward	.....	7.968	feet	.....
		Aft	.....	8.882	feet	.....
		Midships	.....	8.425	feet	.....

Mean of forward and aft drafts	.....	8.425	feet
Hog or Sag	.....	0.000	feet
Trim - aft	.....	0.913	feet
Longitudinal center of floatation aft of midships	.....	2.410	feet
Molded Keel draft at center of flotation	.....	8.453	feet
Molded Keel draft at LCF corrected for hog and sag	.....	8.453	feet
Total displacement at above draft S.W.	.....	216.774	tons
Specific gravity of water 1.0249 equals	.....	35.080	cu. Ft/ton
Total displacement corrected for density	.....	216.280	tons



**INCLINING EXPERIMENT F/V 'SASHA-LEE'**

**SHIP AT TIME OF INCLINING EXPERIMENT**

Data For Tanks		ITEMS	Weight	C.G. Above Base			C.G. From M.P.		
Liquid	Sounding			Inertia Feet <sup>3</sup> Ton	Lever	Vertical Moments	Feet For'd	Forward Moments	Feet Aft
		Fresh Water	6.086	10.871	66.161	38.849	236.435		
		Fuel Oil - E.R. Port	14.958	5.732	85.739	7.327	109.597		
		Fuel Oil - E.R. Stbd	15.780	5.904	93.165	7.351	115.999		
		Inclining Weight #1	1.763	14.336	25.274			28.550	50.334
		Inclining Weight #2	1.763	14.156	24.957			24.305	42.850
		Oily Water in Bilge (Engine Room)	0.500	1.500	0.750	2.500	1.250		
		Inclining Personnel (3 Person & Gear)	0.335	10.000	3.348			2.500	0.837
		Galley/Mess - Trash	0.134	13.760	1.843	17.500	2.344		
		Berths - Trash	0.089	13.750	1.224	12.500	1.113		
		Welding Equipment/Supplies on Main Deck	0.335	14.250	4.774			19.833	6.644
		<b>TOTALS FOR DEDUCTION</b>	<b>41.743</b>	<b>7.360</b>	<b>307.235</b>	<b>8.770</b>	<b>366.073</b>		<b>0.000</b>

WEIGHTS TO DEDUCT



**STABILITY TEST**

F/V 'SASHA-LEE'

**SHIP IN CONDITION 1 "LIGHTSHIP"**

DESCRIPTION OF CONDITION	ITEMS	Displacement Weight	C.G. Above Base		C.G. From M.P.			
			Lever	Vertical Moments	Feet For'd	Forward Moments	Feet Aft	After Moments
	Ship in Condition 0 (As inclined)	216.280	9.716	2101.468	0.825	178.386	0.000	
	Weights to Relocate	0.000	0.000		1.763	0.748	0.000	
	Weights to Deduct	-41.743	7.360	-307.235	8.770	-366.073	0.000	
	Weights to Complete	11.149	14.758	164.534	0.000		7.882	87.876
Slack Tanks								
	<b>Total Lightship</b>	<b>185.686</b>	<b>10.549</b>	<b>1958.767</b>		<b>-186.939</b>	<b>1.480</b>	<b>87.876</b>

Molded Keel draft at longitudinal center of floatation corresponding to the above displacement for water \_\_\_\_\_ feet

Transverse metacenter above base at L.C.F. draft, uncorrected for trim \_\_\_\_\_ feet

Transverse metacenter above base correct for trim \_\_\_\_\_ feet

C.G. above base \_\_\_\_\_ feet

Metacentric height, uncorrected for free surface, corrected for trim G.M. \_\_\_\_\_ feet

Metacentric height, corrected for free surface, corrected for trim G.M. \_\_\_\_\_ feet

Correction for Free Surface \_\_\_\_\_

Longitudinal metacenter above C.G. at L.C.F. d \_\_\_\_\_ feet

Moment to alter trim 1 foot at L.C.F. draft Longl GM XΔ \_\_\_\_\_ ft.-tons.

C.B. of ship on even keel at L.C.F. draft aft forward of midship \_\_\_\_\_ feet

C.G. aft forward of midships \_\_\_\_\_ feet

Trimming lever \_\_\_\_\_ feet

Trim, aft forward, Displacement X Lever / Moment to Tri \_\_\_\_\_ feet

Longitudinal center of floatation, aft forward of midships \_\_\_\_\_ feet

Difference between L.C.F. and midships dra \_\_\_\_\_ feet

Molded draft amidships \_\_\_\_\_ feet

Draft on draft marks forward \_\_\_\_\_ feet

Draft on draft marks aft \_\_\_\_\_ feet