SCARANO BOATBUILDING INC.

Robert Henry NA

October 29, 2005

NTSB
Office of Marine Safety (MS-30)
490 L' Enfant Plaza East S.W.
Washington D.C. 20594
Re: DeCHAMPLAIN (sister vessel to ETHAN ALLEN) Inclining.

Dear Mr. Henry,
We submit the following Inclining Report in response to your request for same on October 5, 2005.

The inclining was performed on October 5, 2005 at Lake George NY and necessary vessel Lines and Construction drawings for the report were received in our office on October 21,2005.

The results of the Inclining indicate the following lightship characteristics for subject vessel:

Displacement	6.05 Long Tons
VCG	6.25 Feet Above the Baseline
LCG	23.28 Feet Aft of the Bow

Attached to the Inclining Report are:

1) "Deck Thickness Derivation Sheet". This sheet illustrates how 3" deck thickness was derived from the Construction Drawing. Note that same deck thickness was added by offsetting 3" from vessel sheer line in "fig. X3.3 Stability Test Sketch-Condition 0" and that freeboards in the sketch were taken directly from this line (rather than deducting 3" from freeboards).
2) "Deck Height Above Baseline Derivation Sheet". This sheet places the main deck height for reference of Inclining weights, setups and personnel. As no drawings of vessel were available for the Inclining Experiment the weather deck was used for a temporary height reference baseline on the "ETHAN ALLAN Lightweight Survey" work sheet dated 10 05 05. These height dimensions were adjusted to hydrostatics baseline for use in "Lightweight Survey Sheet Calculations" by adding 6' (since top of deck is determined to be 6' above Baseline by Construction Drawing).
3) "Offsets from Builders Lines" sheet. This sheet shows the offsets with corrections for apparent distortion of the Lines Drawing copy.

Please advise regarding any questions or further requirements that we may be able to provide.

Sincerely,

[redacted]

John Scarano

PORT ROAD PORT OF ALBANY • ALBANY, NEW YORK • 12202
PHONE: 518463-3401 • FAX: 518 463-3403
EMAIL: INFO@SCARANOBOAT.COM

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X3. STABILITY TEST DATA

Stability Test Data

Official Number _____
Gross Tons _____

DESCRIPTION OF VESSEL DeCHAMPLAIN
Type Power Excursion Mono
Builder The Anchorage
Hull Number 7 Date Built July 1964
Hull FRP

Machinery Deisel

Classed By _____ Inspected ☐ Safety Certificate ☐ Load Line ☐
Route: Ocean ☐ Coastwise ☐ Great Lakes ☐ Bays ☐ Rivers ☐
Specify Route, If Limited _____

Owner Shoreline Cruises
Owner's Address Lake George N.Y.

Vessel Inclined At Hall's Boat Yard Lake George
Date 10-5-05 Time 3 PM
Test Requested By NTSB

Plans Furnished By NTSB
Offsets Measured By SBI
Curves of Form Computed By SBI

Test Conducted By SBI
Stability Calculations Made By SBI
Sister Vessels ETHAN ALLEN

FIG. X3.1 Stability Test Data

Stability Test

Principal Dimensions

Length over all		39 ft	3 in.	(39.25 ft)
Length between perpendiculars which are at the extremities of	3' waterline	34 ft	9½ in.	(34.8 ft)
Length between draft marks,	condition	ft	in.	(ft)
Breadth, extreme, at	6.2 feet above base	12 ft	6 in.	(12.5 ft)
Breadth, molded, amidships at	6.1 feet above base	12 ft	3 in.	(12.25 ft)
Breadth at load water line	(mid ship)	9 ft	4.8 in.	(9.4 ft)
Depth amidships, from	underside of deck to Baseline	5 ft	9 in.	(5.75 ft)
Apparent full-load mean draft for stability: molded base		3 ft	4.1 in.	(3.34 ft)
Apparent full-load mean draft for stability: bottom of keel		2 ft	11.4 in.	(2.95 ft)
Displacement, sea water, tons (2240 lb), at above full-load draft		9.49 tons		
Freeboard amidships at above full-load draft		3 ft	.5 in.	(3.04 ft)
Freeboard at low point of sheer (11.0 feet aft of amidships)		2 ft	8.5 in.	(2.71 ft)

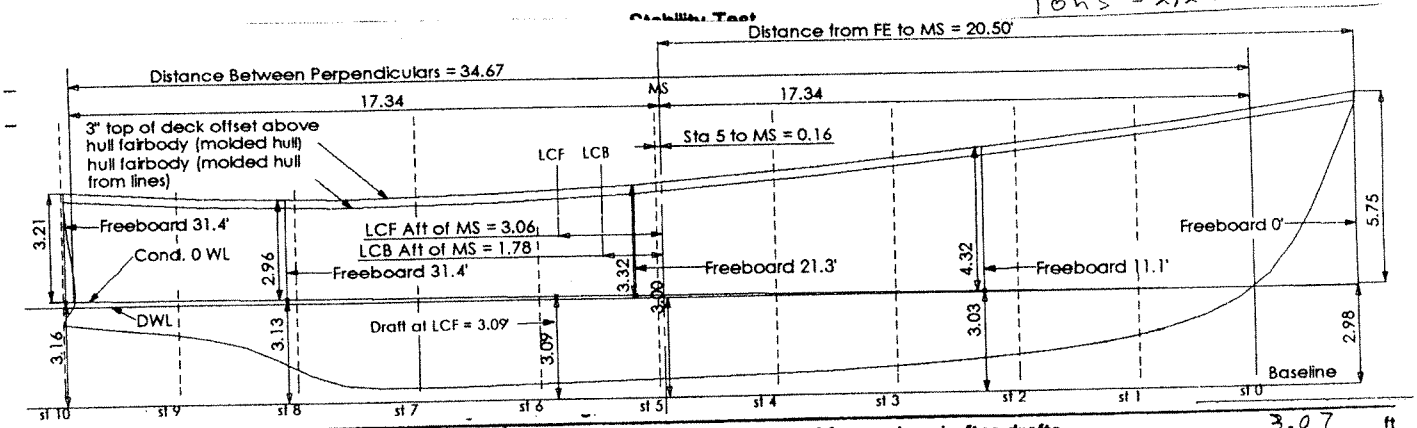
Location of ports, in hull, which may affect stability _____

General Information

Names and duties of official observers: Rob Henry NTSB
Designers represented by
Builders represented by
NTSB ~~Owners~~ represented by: John Scarano
Weather, tide, and mooring conditions: Lt Southerly (From stbd) Slack Moorings
Condition of ship as to completeness and as to water in boilers, machinery, and bilges: Completed, dry bilges, 3/4 Fuel Tankage

FIG. X3.2 Stability Test—Principle Dimensions

Tons = 2,240 lbs



Draft from draft marks when inclined
- Forward 2.98 ft ~ in.
- Aft 3.16 ft ___ in.
- Amidships Port 3.07 ft ~ in.
- Amidships Starboard 3.07 ft ~ in.

Distance between "curves of form" perpendiculars 34.67 ft

Bottom of ~~keel below~~ above base line 4.8 in.

Molded Keel — drafts corrected to "curves of form" perpendiculars for use in calculations
- Forward ___ ft
- Aft ___ ft
- Mean of amidships P and S ___ ft

Mean of forward and after drafts 3.07 ft
Hog or sag ~ ft

Trim forward, (aft) .18 ft
Longitudinal center of floatation forward, (aft) 1.78 ft
Molded Keel — draft at center of flotation 3.09 ft

Molded Keel — draft at L.C.F. corrected for hog or sag 3.09 ft

Total displacement at above draft F.W., (S.W.) 7.25 tons
Specific gravity of water 1.00 equals 35.88 ft³/ton
Total displacement corrected for density 7.06 tons

FIG. X3.3 Stability Test Sketch—Condition 0

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Stability Test

Ship at Time of Stability Test—Condition 0

	From Hydrostatic Curves	From Independen Calculation
Corrected displacement	7.06 tons	tons
Mean virtual metacentric height obtained from plot of inclining moments versus tangents of angles of heel— $\frac{\text{moment}}{\text{displacement} \times \text{tangent}}$	3.30 ft	ft
Correction for free surface	3.31 ft[A]	ft
Mean metacentric height G. M. =	3.31 ft	ft
Transverse metacenter above the base line corresponding to draft at L. C. F. (corrected for hog or sag)	9.46 ft[B]	ft
Transverse metacenter above the base line corrected (for trim, and hog or sag)	9.46 ft	
C. G. above base line	6.15 ft	
Longitudinal metacenter above C. G.	70.3 ft	
Moment to alter trim 1 foot, $\frac{\text{Longi. GM} \times \Delta}{L}$	14.3 ft-tons	
Trim by stem, bow	.18 ft[B]	
Trimming lever = $\frac{\text{Trim} \times \text{moment to trim}}{\text{displacement}}$	.36 ft	
L.C.B. forward, aft of amidships, which is .16 ft forward, aft of ~~frame~~ Sta. No. 5	1.80 ft	
C. G. forward, aft of amidships	2.16 ft	ft (from figure)
Period of complete roll	s	
Apparent radius of gyration of vessel—$k = \frac{T\sqrt{GM}}{1.108}$	ft	
Rolling Constant—$C = \frac{T\sqrt{GM}}{B}$		

Fuel tank FSE = $lb^3/12V$
$= 6'(1.5)^3/12(7.06(35.88))$
$= .06'$

[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 correction should form part of this report.

[B] If the trim is excessive, independent calculations should be made to obtain the positions of the center of buoyancy and transverse metacenter and the position of the center of gravity determined therefrom. These calculations should be incorporated in this booklet.

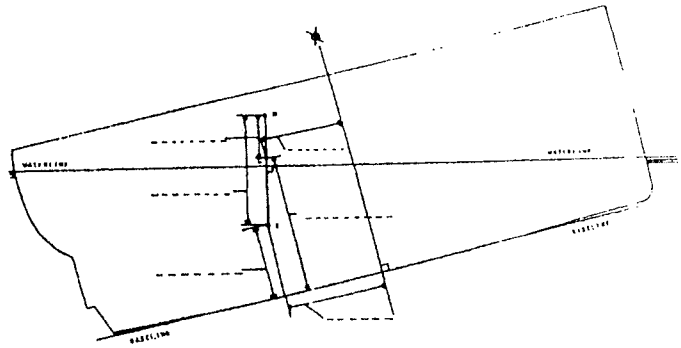


FIG. X3.6 Stability Test Results at Condition 0 from Hydrostatic Curves and Independent Calculation

Stability Test

Data for Tanks				Items	Weight, tons	C. G. Above base		C. G. Above from M. P.			
Liquid	Sounding	Net Inertia of Free Surface	Inertia, ft³-ton			Lever	Vertical Moments, ft-tons	Feet Aft	After Moments, ft-tons	Feet Forward	Forward Moments, ft-tons

FIG. X3.7 Stability Test—Data for Tanks

Stability Test

Ship Light—Condition I

Ship complete in every respect, with water in boilers at steaming level and liquids in machinery and piping, but with all tanks and bunkers empty and no passengers, crew, cargo, stores, or baggage on board.

List of Major Equipment, etc., Included in Condition I as Shown
Ballast, boats, rafts, cargo booms, anchors, guns, armor, etc.

Items	Weight, tons	C.G. Above Base, ft	C.G. from M.P. Feet Forward	Feet Aft
Fixed Ballast				

Items	Displacement and Weight, tons	C. G. Above Base: Lever	C. G. Above Base: Vertical Moments, ft-tons	C.G. Above from M. P.: Feet Aft	C.G. Above from M. P.: After Moments, ft-tons	C.G. Above from M. P.: Feet Forward	C.G. Above from M. P.: Forward Moments, ft-tons
Cond 0	7.06	6.15	43.42	22.66	159.98		
To add	0.00	0.00	0.00	0.00	0.00		
To remove	-1.01	5.54	-5.60	18.93	-19.12		
Lightship Cond 1	6.05	6.25	37.82	23.28	140.86		

Molded Keel—Draft at longitudinal center of flotation corresponding to above displacement for	§ water	2.93 ft
Transverse metacenter above base at L.C.F. draft, uncorrected for trim		9.69 ft
C.G. above base		6.25 ft
Metacentric height, uncorrected for trim, G.M.		3.44 ft
Metacentric height, corrected for G.M.		ft

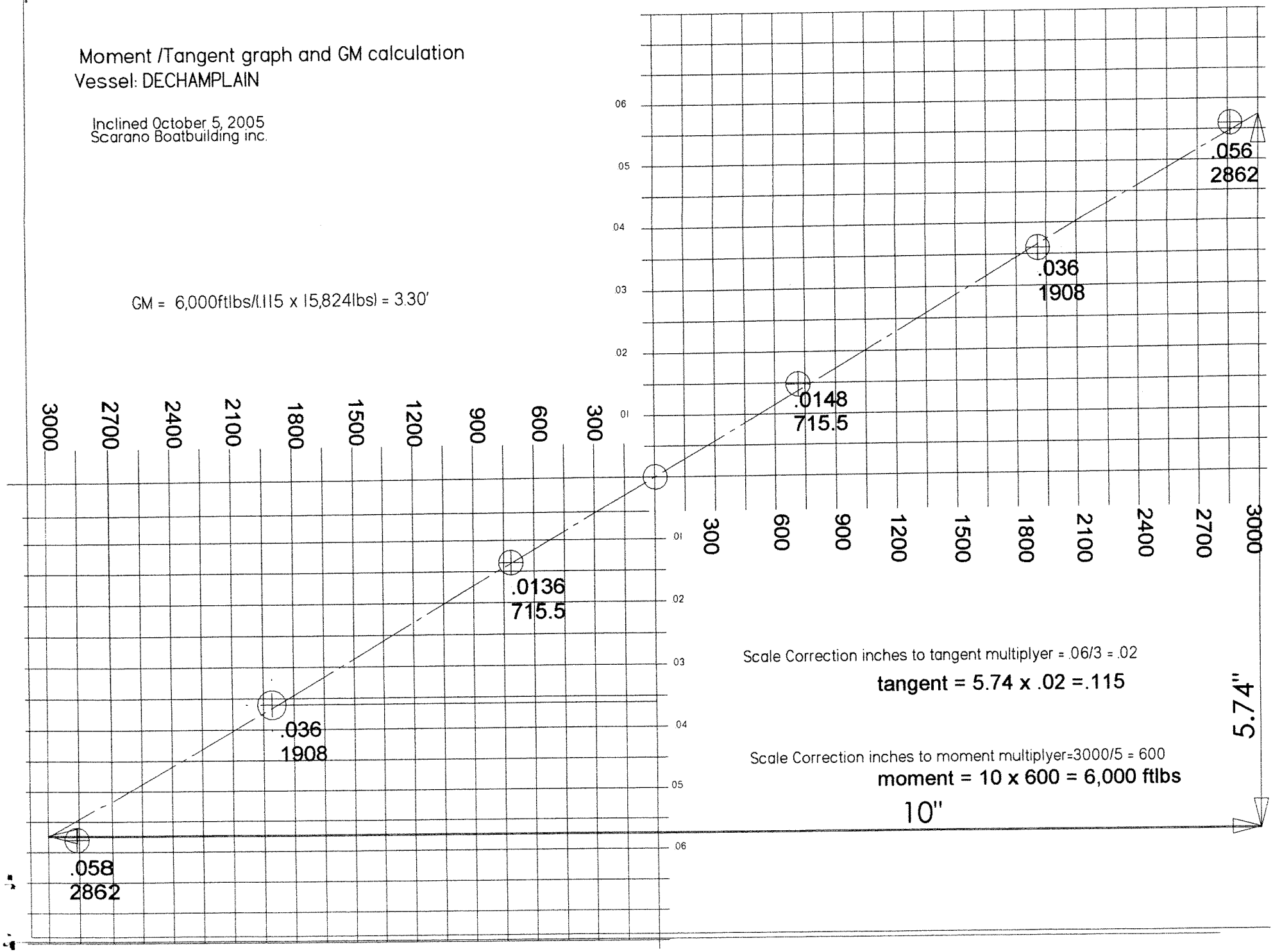
Longitudinal metacenter above C.G. at L.C.F. draft 85.04 − 3.44	81.6 ft	L.C.F. aft, forward of amidships	3-07 ft
Moment to alter trim 1 foot at L.C.F. draft, $\frac{\text{longl GM} \times \Delta}{L}$	14.23 ft-tons	Difference between L.C.F. and amidships draft	.047 ft
C.B. of ship on even keel at L.C.F. draft, aft, forward f ⊕	1.52 ft	Molded draft amidships	2.88 ft
C.G. aft, forward of amidships	2.78 ft	Draft on draft marks, forward	~ ft
Trimming lever	1.26 ft	Draft on draft marks, aft	~ ft
Trim, aft, forward— $\frac{\text{displacement} \times \text{lever}}{\text{moment to trim}}$	.53 ft		

FIG. X3.8 Ship Light—Condition I

Moment /Tangent graph and GM calculation
Vessel: DECHAMPLAIN

Inclined October 5, 2005
Scarano Boatbuilding inc.

GM = 6,000ftlbs/(.115 x 15,824lbs) = 3.30'



Scale Correction inches to tangent multiplyer = .06/3 = .02

tangent = 5.74 x .02 =.115

Scale Correction inches to moment multiplyer=3000/5 = 600

moment = 10 x 600 = 6,000 ftlbs

Friday, October 28, 2005
Hydromax Professional Version 11.11

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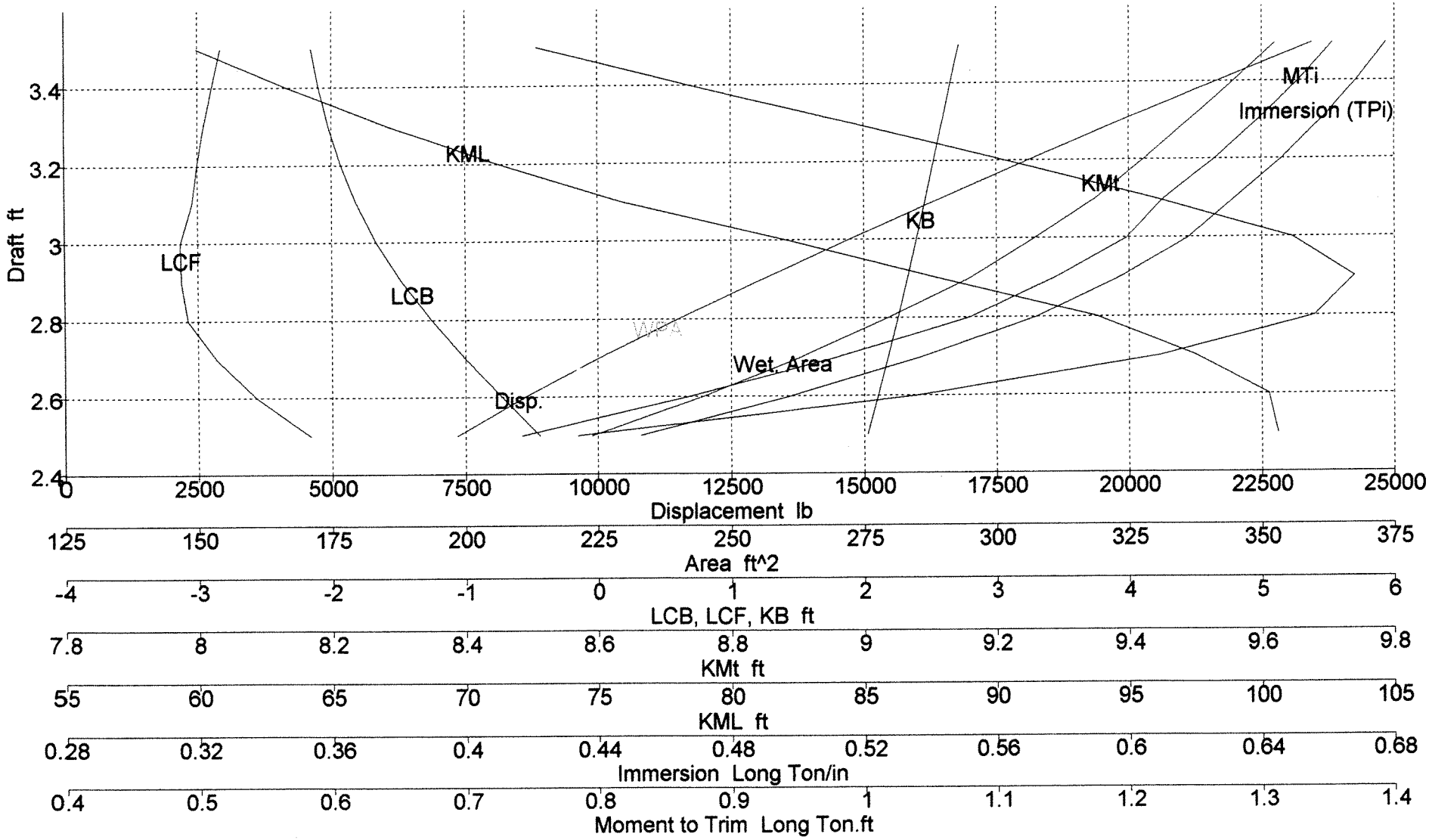
	Draft Amidsh. ft	2.500	2.600	2.700	2.800	2.900	3.000	3.100	3.200	3.300	3.400	3.500
1	Displacement lb	7338	8617	10010	11500	13073	14708	16392	18111	19864	21648	23457
2	Heel to Starboard degrees	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Draft at FP ft	2.500	2.600	2.700	2.800	2.900	3.000	3.100	3.200	3.300	3.400	3.500
4	Draft at AP ft	2.500	2.600	2.700	2.800	2.900	3.000	3.100	3.200	3.300	3.400	3.500
5	Draft at LCF ft	2.500	2.600	2.700	2.800	2.900	3.000	3.100	3.200	3.300	3.400	3.500
6	Trim (+ve by stern) ft	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	WL Length ft	34.178	34.334	34.470	34.581	34.649	34.721	34.792	34.878	34.973	35.076	35.180
8	WL Beam ft	8.188	8.662	9.078	9.447	9.739	9.987	10.202	10.360	10.494	10.602	10.690
9	Wetted Area ft^2	223.905	244.755	263.018	279.487	294.984	307.151	318.601	327.783	336.425	344.651	352.644
10	Waterpl. Area ft^2	190.207	209.191	225.778	240.290	250.836	259.482	265.443	271.375	276.450	280.758	284.551
11	Prismatic Coeff.	0.553	0.571	0.588	0.604	0.619	0.632	0.644	0.653	0.661	0.667	0.672
12	Block Coeff.	0.195	0.206	0.217	0.229	0.242	0.255	0.267	0.280	0.291	0.303	0.314
13	Midship Area Coeff.	0.398	0.409	0.422	0.419	0.433	0.446	0.459	0.459	0.473	0.486	0.499
14	Waterpl. Area Coeff.	0.680	0.703	0.722	0.736	0.743	0.748	0.748	0.751	0.753	0.755	0.757
15	LCB from Amidsh. (+ve fwd) ft	-0.439	-0.726	-1.001	-1.254	-1.477	-1.662	-1.812	-1.927	-2.020	-2.094	-2.153
16	LCF from Amidsh. (+ve fwd) ft	-2.159	-2.569	-2.860	-3.077	-3.126	-3.133	-3.045	-3.005	-2.953	-2.893	-2.831
17	KB ft	2.026	2.104	2.180	2.254	2.326	2.395	2.462	2.528	2.591	2.654	2.715
18	KG ft	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000
19	BMt ft	6.544	6.979	7.266	7.426	7.414	7.252	6.976	6.686	6.387	6.083	5.792
20	BML ft	98.580	98.165	95.340	91.542	85.491	79.739	73.467	68.742	64.487	60.662	57.234
21	GMt ft	2.570	3.082	3.446	3.680	3.740	3.647	3.438	3.214	2.978	2.737	2.507
22	GML ft	94.606	94.269	91.520	87.796	81.817	76.134	69.930	65.270	61.078	57.316	53.950
23	KMt ft	8.570	9.082	9.446	9.680	9.740	9.647	9.438	9.214	8.978	8.737	8.507
24	KML ft	100.606	100.269	97.520	93.796	87.817	82.134	75.930	71.270	67.078	63.316	59.950
25	Immersion (TPi) Long Ton/in	0.453	0.498	0.538	0.572	0.597	0.618	0.632	0.646	0.658	0.668	0.678
26	MTi Long Ton.ft	0.743	0.869	0.980	1.080	1.144	1.198	1.226	1.265	1.298	1.327	1.354
27	RM at 1deg = GMt.Disp.sin(1) lb.ft	329.092	463.574	602.035	738.563	853.320	936.090	983.599	1015.796	1032.455	1033.922	1026.469
28	Max deck inclination deg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	Trim angle (+ve by stern) deg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0


Draft ft
3.4
3.2
3
2.8
2.6
2.4
LCF
LCB
KML
Disp.
WPA
Wet Area
KB
KMt
MTi
Immersion (TPi)
0
2500
5000
7500
10000
12500
15000
17500
20000
22500
25000
Displacement lb
125
150
175
200
225
250
275
300
325
350
375
Area ft^2
-4
-3
-2
-1
0
1
2
3
4
5
6
LCB, LCF, KB ft
7.8
8
8.2
8.4
8.6
8.8
9
9.2
9.4
9.6
9.8
KMt ft
55
60
65
70
75
80
85
90
95
100
105
KML ft
0.28
0.32
0.36
0.4
0.44
0.48
0.52
0.56
0.6
0.64
0.68
Immersion Long Ton/in
0.4
0.5
0.6
0.7
0.8
0.9
1
1.1
1.2
1.3
1.4
Moment to Trim Long Ton.ft

Graph View

Vessel: De CHAMPLAIN (Sister to ETHAN ALLEN)

Date: Oct. 30, 2005

Lightweight Survey Sheet Calculations

(frame spacing = 1.5') LCG in feet from Aft Face of Stem, VCG from Baseline

Items to be removed VCG taken from "Light Weight Survey Sheet" of 10 05 05 are subtracted from 6' deck height above Base

		weight lbs.	VCG (ft.) From Baseline	V Moment	VCG (ft.) From FE	L Moment
	Items to be removed					
1	Liam LaRoe	165.00	4.000	660.00	30.00	4950.00
2	Bob Morris	206.00	4.000	824.00	7.50	1545.00
3	John Scarano	167.00	8.500	1419.50	21.00	3507.00
4	Peter Gionet	189.00	4.000	756.00	18.00	3402.00
5	(3) Pendulum oil box sets	57.00	3.000	171.00	18.50	1054.50
6	(2) Water Barrels	954.00	7.500	7155.00	20.00	19080.00
9	75 gal fuel tankage @7.13 lbs	534.00	3.000	1602.00	17.75	9478.50
	Lbs	2272.00	5.540		18.93	
	Long Tons	1.01				
	Items to be added to complete	weight lbs.	VCG (ft.)	V Moment	LCG from	L Moment
		None				
	Items to be relocated					
	Total	None				

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Freeboard Readings

f = measured freeboard,
t = deck thickness,
D = molded depth from lines drawing,
b = measured bulwark height, and
d = calculated molded draft.

Without Bulwark or Side Shell Coaming
$d = D + t - f$
or
With Bulwark or Side Shell Coaming
$d = D + t + b - f$

D measured from top of deck

Location		f	t	D	b	d
1 Stem	P	69" = 5.75'	0			
	S	69"				
2 -11.1'	P	52" = 4.32'	0	6.59		2.27'
	S	51 3/4"				
3. -21.3'	P	40 1/4" = 3.32'	0	6.00		2.78'
	S	39 1/2"				
4 -31.4'	P	36" = 2.96'	0	5.12		2.16'
	S	35"				
5 Trans	P	38.5" = 3.21	0	4.00		.79'
	S	38				
6.	P					
	S					
7	P					
	S					
8	P					
	S					

Draft Mark Readings

Location	Reading	Location	Reading
	P		P
	S		S
	P		P
	S		S
	P		P
	S		S

FIG. X2.5 Freeboard Readings

Vessel: ETHAN ALLAN

Date: 10-5-05

Lightweight Survey Sheet

Hts measured from main deck cl.

		weight lbs.	VCG	V Moment	LCG from FE	L Moment
	items to be relocated					
	Total	None				
	Items to be removed					
1	Liam LaRue	165	-4'	[redacted]	30'	
2	Bob Morris	206	-4'	[redacted]	7.5'	
3	John Scarano	167	2.5'	[redacted]	21'	
4	Peter Gionet	189	-4'	[redacted]	18'	
5	(3) pendulum, oil box	57	-5'	[redacted]	18.5'	
6	water barrels	954	1.5'		20'	
7						
8						
9	fuel tankage @7.13 lbs (75g)	534	-3'		17.75	
	Lbs.					
	Long Tons					
	Items to be added to complete	weight lbs.	VCG (ft.)	V Moment	LCG from 0	L Moment
1						
2						
3						
8					[redacted]	
10						
	Lbs.					
	Long Tons					

ETHAN ALLAN — Date: 10-5-05

Inclining Experiment

		height [redacted]		height [redacted]		height [redacted]		Weight (lbs.)	dist. (ft.)	Mom.
	pendulum 1	117	pendulum 2	125.5	pendulum 3	117.875				
	Offset	Tang.	Offset	Tang.	Offset	Tang.	Avg			
Port 1	1.7"	.0145	.97"	.0157	.68	.0143	.0148	477	1.5	715.5
2	4.22"	.036	4.42"	.0376	4.2	.0356	.036	477	2.5	1,908
3	6.55"	.056	7.12"	.057	6.59	.056	.056	477	2.0	2,862
4	0		0							
Stbd 5	1.57"	.0134	1.65	.0132	1.60	.0143	.0136	477	1.5	715.5
6	4.29"	.0366	4.46	.036	4.2	.0356	.036	477	2.5	1,908
7	6.85"	.059	7.14	.057	6.97	.059	.058	477	2.0	2,862

Water Temp.: 66° (per published data)

Water Specific Gravity 1.00

Freeboards	port	stbd.
stem	69"	69
-11.6' frame #16	52"	51¾
-21.3' frame #22	40¼"	39.5
-31.4' frame #28	36	35
Trans. frame #38	38.5	38

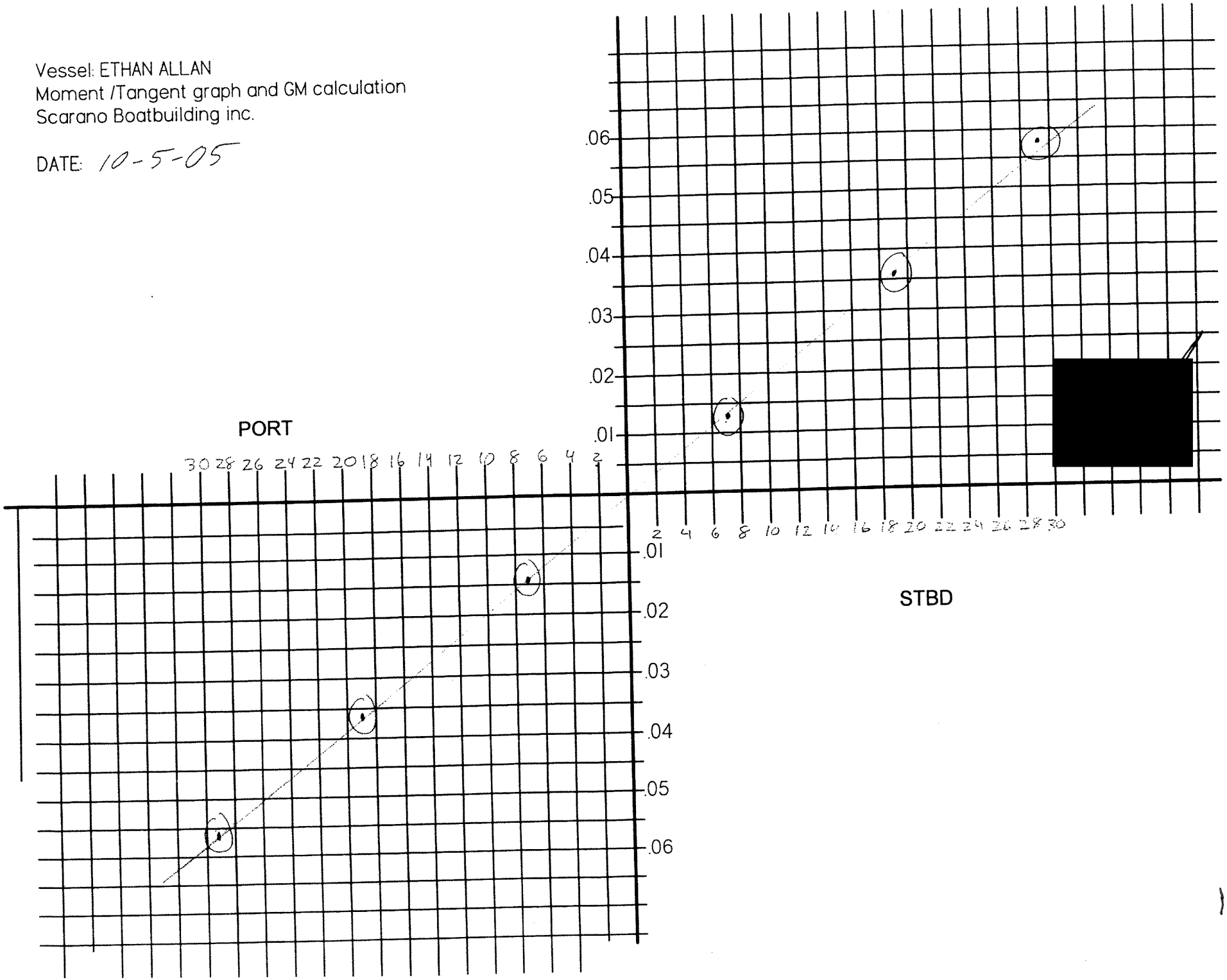
[redacted]

[redacted]

NTSB

Vessel: ETHAN ALLAN
Moment /Tangent graph and GM calculation
Scarano Boatbuilding inc.

DATE: 10-5-05



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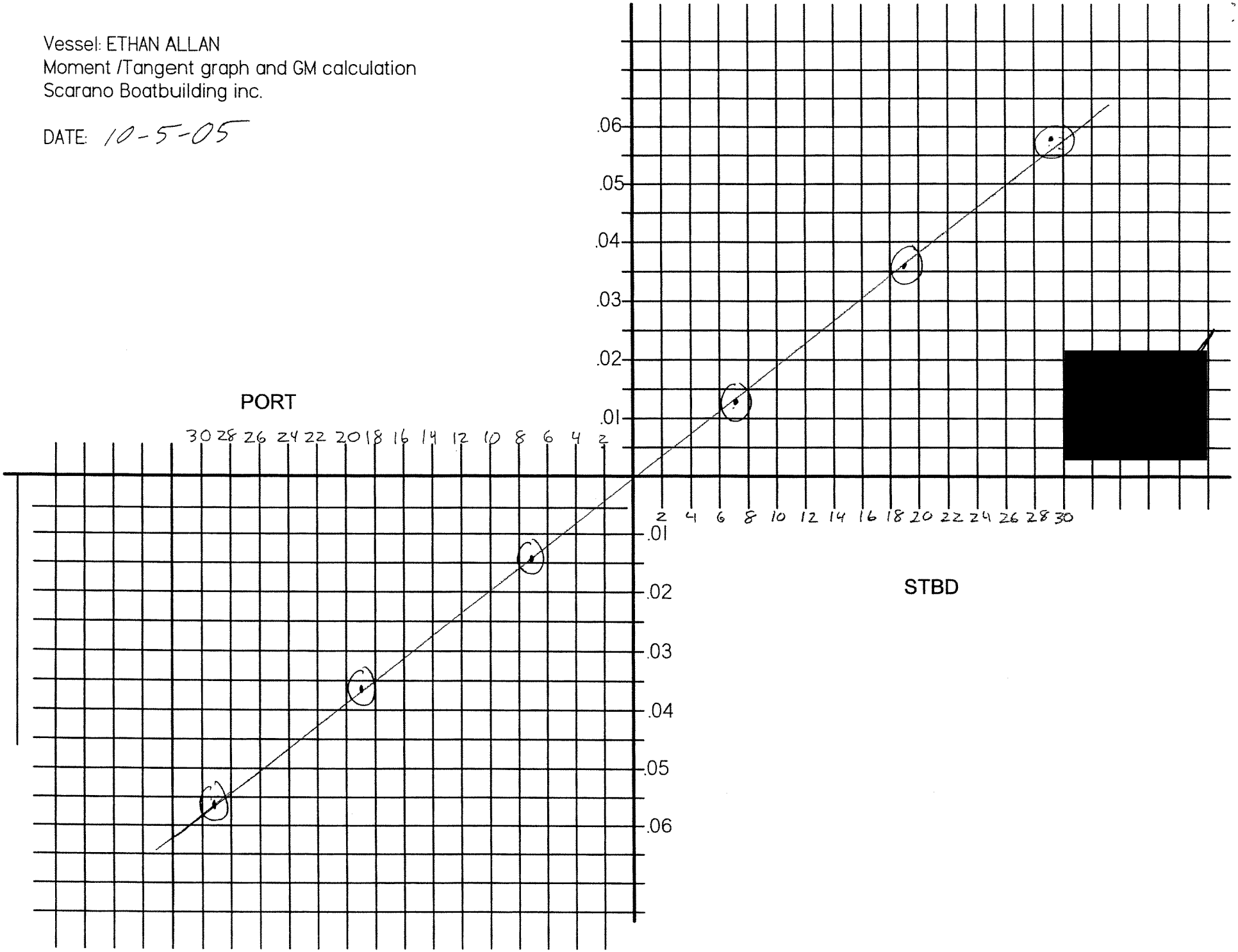
	ETHAN ALLAN		Date:	10-5-05							
	Inclining Experiment										
		height		height		height		Weight (lbs.)	dist. (ft.)	Mom.	
	pendulum 1		pendulum 2		pendulum 3						
	Offset	Tang.	Offset	Tang.	Offset	Tang.	Avg				
Port 1	1.7"	.0145	1.97"	.0157	1.68	.0143	.0148	477	1.5	715.5	
2	4.22"	.036	4.72"	.0376	4.2	.0356	.036	477	2.5	1,908	
3	6.55"	.056	7.12"	.057	6.59	.056	.056	477	2.0	2,862	
4	0		0								
Stbd 5	1.57"	.0134	1.65	.0132	1.69	.0143	.0136	477	1.5	715.5	
6	4.29"	.0366	4.46	.036	4.2	.0356	.036	477	2.5	1,908	
7	6.85"	.059	7.14	.057	6.97	.059	.058	477	2.0	2,862	
	Water Temp.:	66°		(per published data)							
	Water Specific Gravity		1.00								
	Freeboards	port	stbd.								
	stem	69"	69								
	frame #16	52"	51 3/4								
	frame #22	40 1/4"	39.5								
	frame #28	36	35								
	frame #38	38.5	38								

[redacted]

Vessel: ETHAN ALLAN							
Date:	10-5-05						
Lightweight Survey Sheet							
				Hts measured from main deck cl.			
			weight lbs.	VCG	V Moment	LCG from FE	L Moment
		items to be relocated					
		Total	None				
		Items to be removed					
	1	Liam LaRue	165	-4'		30'	
	2	Bob Morris	206	-4'		7.5'	
	3	John Scarano	167	2.5'		21'	
	4	Peter Gionet	189	-4'		18'	
	5	(3) pendulum, oil box	57	-5'		18.5'	
	6	water barrels	954	1.5'		20'	
	7						
	8						
	9	fuel tankage @7.13 lbs (75g)	534	-3'		17.75	
		Lbs.					
		Long Tons					
		Items to be added to complete	weight lbs.	VCG (ft.)	V Moment	LCG from 0	L Moment
	1						
	2						
	3						
	8					[redacted]	
	10						
		Lbs.					
		Long Tons					

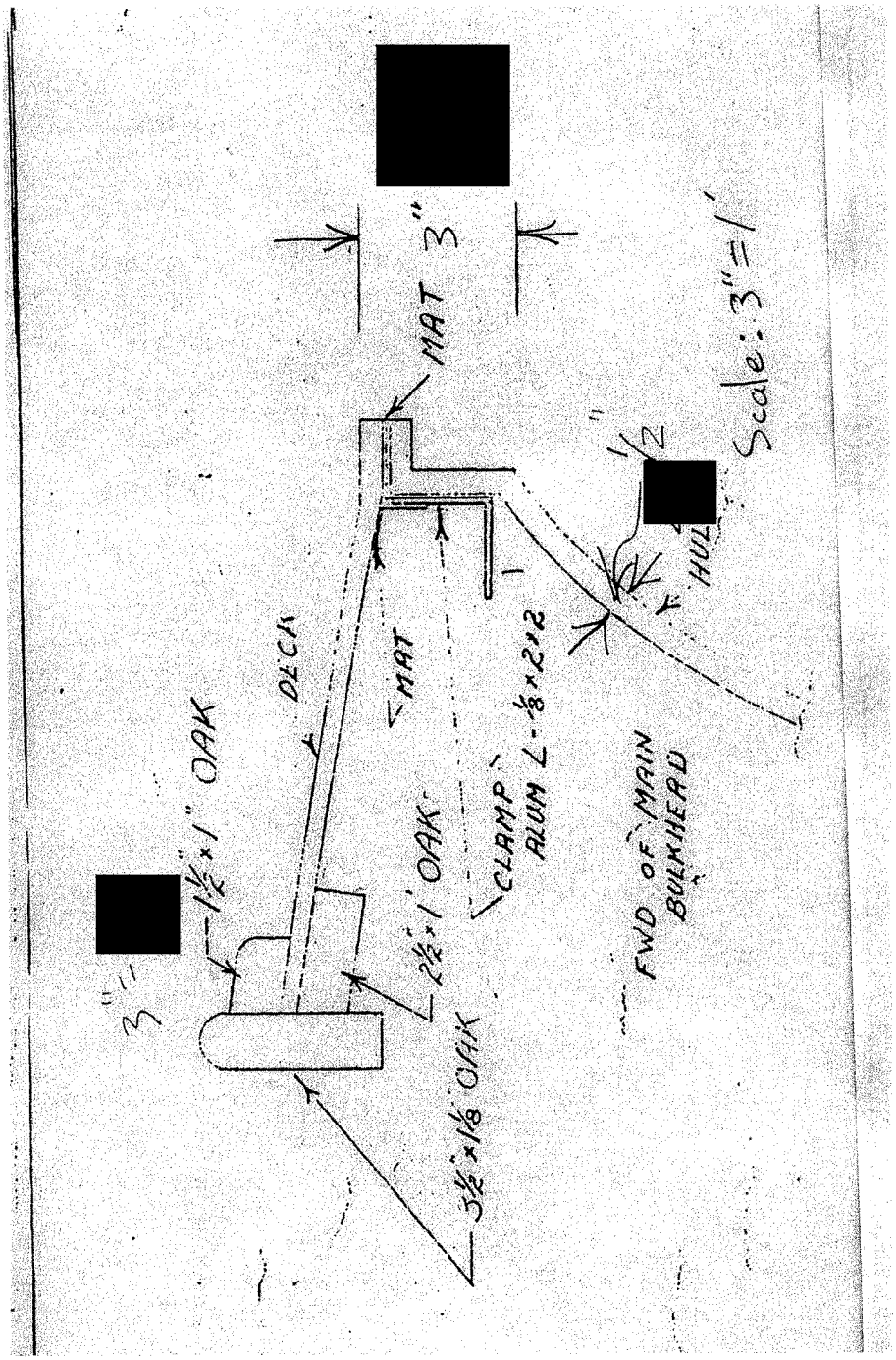
Vessel: ETHAN ALLAN
Moment /Tangent graph and GM calculation
Scarano Boatbuilding inc.

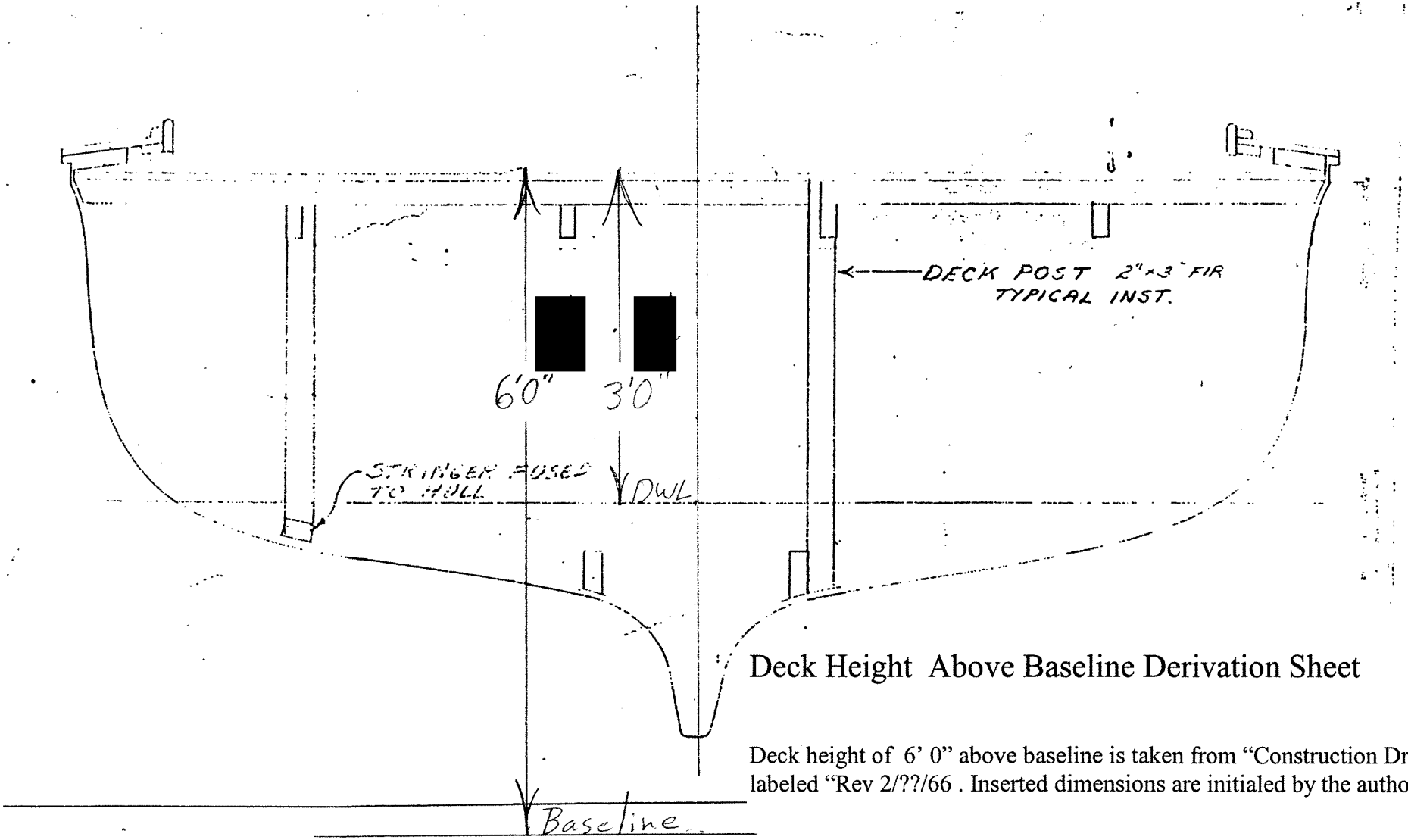
DATE: 10-5-05



Deck Thickness Derivation Sheet

Deck thickness of 3" above molded sheer height as taken from "Construction Drawing" labeled "Rev 2/??/66 To Show Seating, Railings, coaming Details, location of Hardware and Fittings, and Helmsmans Station". Other labeling in Title Block is not legible. Section of drawing showing measured deckedge height above hull fairbody is shown below. Inserted notes and dimensions are initialed by the author of this report.





Deck Height Above Baseline Derivation Sheet

Deck height of 6' 0" above baseline is taken from "Construction Drawing" labeled "Rev 2/??/66 . Inserted dimensions are initialed by the author of this report.

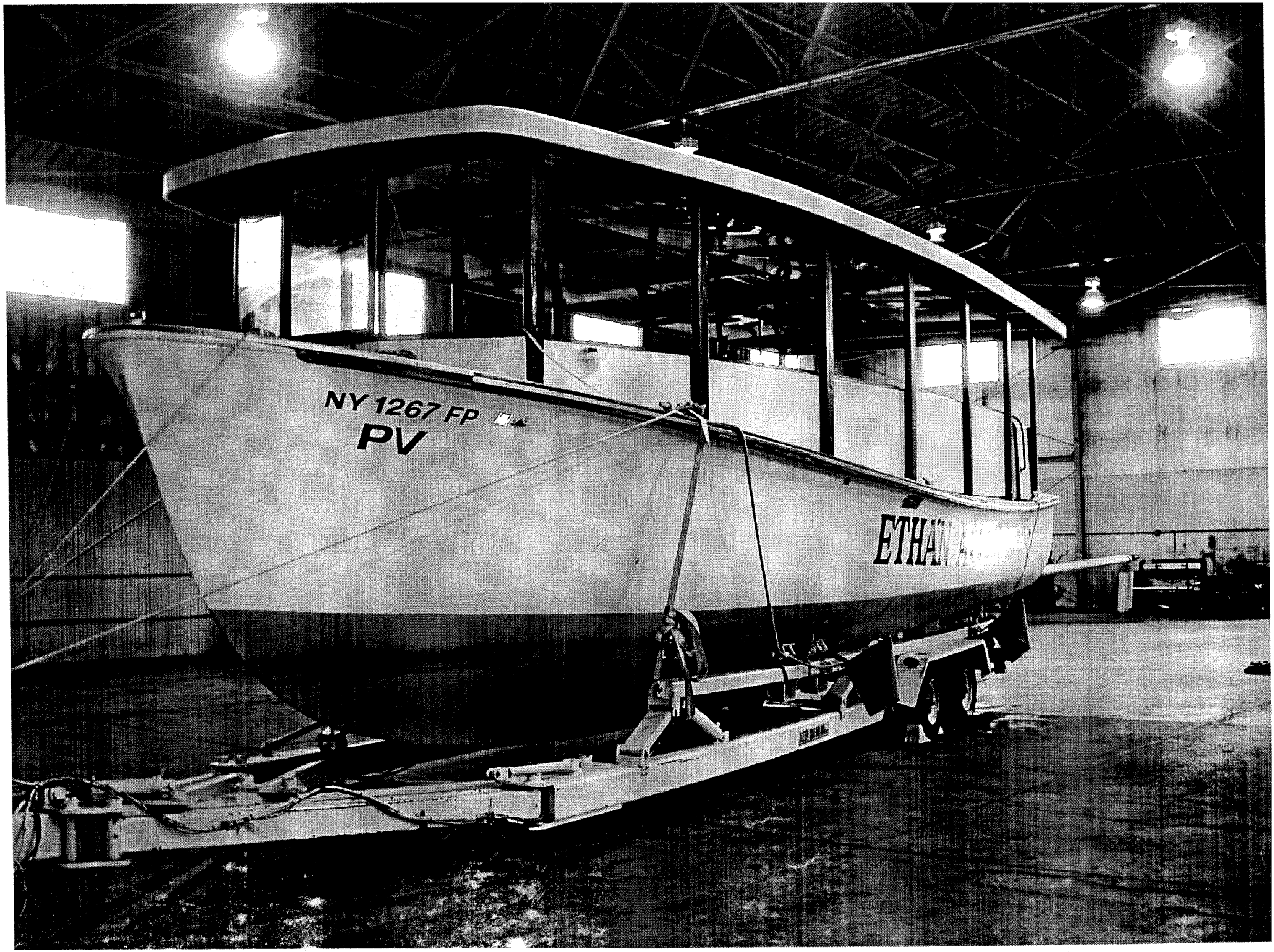
Offsets from Builder's Lines for vessel De Champlain (sister vessel ETHAN ALLEN

As measured from drawing corrected down 2.4% for paper distortion and converted to dec. ft.

		3' DWL HB		5' WL HB		Sheer HB		sheer HT		Keel HT		24" Butt		48" Butt	
			ft		Ft		Ft		Ft		Ft		Ft		Ft
Stem								105	8.75						
Station	0.00	0"				37.00	3.08	99.00	8.25	36.00	3.00	87.00	7.25		0.00
Station	1.00	14.50	1.21	29.50	2.46	54.00	4.50	93.75	7.81	18.50	1.54	49.00	4.08	90.00	7.50
Station	2.00	30.00	2.50		0.00	63.00	5.25	88.50	7.38	1.00	0.08	32.50	2.71		0.00
Station	3.00	42.00	3.50	56.50	4.71	70.50	5.88	83.50	6.96	9.00	0.75	24.00	2.00	44.00	3.67
Station	4.00	50.50	4.21		0.00	72.00	6.00	79.00	6.58	7.50	0.63	21.00	1.75		0.00
Station	5.00	57.00	4.75	67.00	5.58	73.00	6.08	75.50	6.29	6.50	0.54	21.00	1.75	30.50	2.54
Station	6.00	60.00	5.00		0.00	72.50	6.04	73.00	6.08	5.50	0.46	22.50	1.88		0.00
Station	7.00	61.00	5.08	68.00	5.67	71.00	5.92	72.00	6.00	4.50	0.38	25.00	2.08	30.50	2.54
Station	8.00	58.50	4.88		0.00	69.00	5.75	71.50	5.96	11.00	0.92	27.50	2.29		0.00
Station	9.00	55.00	4.58	63.50	5.29	65.50	5.46	73.00	6.08	25.50	2.13	30.00	2.50	34.50	2.88
Station	10.00	49.50	4.13		0.00	62.50	5.21	75.00	6.25	30.00	2.50	33.00	2.75		0.00

Corrected to .976

		3' DWL HB		5' WL HB		Sheer HB		sheer HT		Keel HT		24" Butt		48" Butt	
			ft		Ft		Ft		Ft		Ft		Ft		Ft
Stem								102.48	8.54						
Station	0.00	#######		0.00		36.11	3.01	96.624	8.05	35.14	2.93	84.91	7.08	0.00	0.00
Station	1.00	14.15	1.18	28.79	2.40	52.70	4.39	91.5	7.63	18.06	1.50	47.82	3.99	87.84	7.32
Station	2.00	29.28	2.44	0.00	0.00	61.49	5.12	86.376	7.20	0.98	0.08	31.72	2.64	0.00	0.00
Station	3.00	40.99	3.42	55.14	4.60	68.81	5.73	81.496	6.79	8.78	0.73	23.42	1.95	42.94	3.58
Station	4.00	49.29	4.11	0.00	0.00	70.27	5.86	77.104	6.43	7.32	0.61	20.50	1.71	0.00	0.00
Station	5.00	55.63	4.64	65.39	5.45	71.25	5.94	73.688	6.14	6.34	0.53	20.50	1.71	29.77	2.48
Station	6.00	58.56	4.88	0.00	0.00	70.76	5.90	71.248	5.94	5.37	0.45	21.96	1.83	0.00	0.00
Station	7.00	59.54	4.96	66.37	5.53	69.30	5.77	70.272	5.86	4.39	0.37	24.40	2.03	29.77	2.48
Station	8.00	57.10	4.76	0.00	0.00	67.34	5.61	69.784	5.82	10.74	0.89	26.84	2.24	0.00	0.00
Station	9.00	53.68	4.47	61.98	5.16	63.93	5.33	71.248	5.94	24.89	2.07	29.28	2.44	33.67	2.81
Station	10.00	48.31	4.03	0.00	0.00	61.00	5.08	73.2	6.10	29.28	2.44	32.21	2.68	0.00	0.00


NY 1267 FP
PV