

TAUNTON OFFICE  
128 Dean Street, Front, 1<sup>st</sup> Floor  
Taunton, MA  
Tel: 508-884-5055  
Fax: 508-884-5056

MAINE/NH OFFICE  
400 Commercial St., Suite 4  
Portland, ME 04101-4660  
Tel: 207-775-7933  
Fax: 207-775-7471

## Marine Safety Consultants, Inc.

Tel: (508) 996-4110  
Fax: (508) 990-2094

26 Water Street P.O. Box 615

Fairhaven, MA 02719-0615

### FACSIMILE TRANSMISSION

Date: 7.6.07 Fax No.: 212 809 621-6124

To: MATT McDONOUGH

Subject: M/V ISLANDER Your File No.: \_\_\_\_\_

Our File No.: 07-0674

Message: FINAL REPORT ON ABOVE SUBJ.

PLEASE FEEL FREE TO CALL 508 996 8282  
W/ANY QUESTIONS.

RECEIVED

JUL 09 2007

Turner Construction Co.  
Governor

Sincerely,

Paul B. Santel

Total number of pages, including this one: 26

If you have difficulties with this transmission call 508-996-4110.

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### VESSEL PARTICULARS

VESSEL : M/V ISLANDER  
OFFICIAL NO. : 259789  
LENGTH : 191.7  
BREADTH : 58.1  
DEPTH : 14.8  
GROSS TONS : 855  
NET TONS : 581  
PROPULSION : Twin oil screw  
HORSEPOWER : 1800  
BUILT : 1950 / Baltimore, MD  
CAPACITY : 771 Passengers & 7 Crew

### ULTRA-SONIC GAUGING

In a manner analogous to a shipboard fathometer measuring depth (water thickness), an ultra-sonic gauge determines thickness by the "pulse-echo technique". A precise timing circuit clocks the interval required for a sound pulse to propagate through the test material, reflect from its back wall or inside surface, and return again to the front face of the object. The gauge logic then multiplies this interval by the sound velocity of the test material and converts the total sound path distance into a digital readout of the material thickness in English units. All gauge readings presented in the accompanying sketches are reported as thousandths of an inch (0.001").

The ultra-sonic instrumentation is calibrated for the type of material to be inspected by setting the sound velocity adjustment. This calibration can then be verified with a standard test block or a sample of known dimension. The test material is dabbed with a sound-conducting couplant and the transducer is held firmly in contact with that surface, producing a digital display of the measured thickness.

A satisfactory inspection surface must be prepared before any ultra-sonic measurement by removing marine growth, scale, rust or loose coating. Gauging can be conducted through a tightly bonded paint or epoxy coating and that additional thickness will not be included as part of the total measurement and will therefore not require a compensation factor. In this case, paint coatings were for the most part, ground to bare metal and readings were then taken.

### INSPECTION PROCEDURE

Ultra-sonic measurements were made with a Stresstel III digital thickness gauge. This instrument has a measurement capacity in steel from approximately 0.07" to 15". All readings were made with Ultragel II couplant.

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A standard block was used as a reference and the instrumentation readout adjusted to correspond to the exact measurement. Instrument calibration was continually verified by monitoring this reference standard. No instrument "drift" was detected.

Field work and data reduction were performed under the direction of an experienced surveyor fully qualified as an ultra-sonic technician.

### **INTERPRETATION OF RESULTS**

The original, as-built, plate thickness on the bottom and sides is unknown but appears to be ½" (0.500) inches. Using these as base numbers, it was found that the amount of overall wastage suffered by this steel hull structure is less than 10%.

Although there are no published standards available to use as basis for evaluating this vessel, the usually recognized standards for steel hull vessels published by the American Bureau of Shipping, allows up to 25% wastage on steel vessels.

### **UNDERWATER HULL AND APPENDAGES**

The external hull below the waterline could not be inspected in view of the vessel being afloat during this survey. The vessel was last drydocked in May 2006, where it underwent USCG inspection, with repairs carried out necessary to obtain a new five year certificate.

The hull is framed with spacing of approximately 21" centers. Common frames are 4" x 4" x ¼" and 3" x 5" x ¼" angle depending on the service of the compartment. There are 3" x 4" fore/aft deep frames with angle iron floors welded to the frames to provide structural strength.

All transverse bulkheads are constructed on 5/16" plating on the lower portions with the remaining upper portions constructed of 1/4 " plate.

### **01 DECK AND DECKHOUSE**

1. The overall condition of the 01 deck is fair, with paint coatings at approximately 90%, however areas amid ship show heavy scale and should be de-scaled, re-inspected and given consideration to crop and renew areas of greater than 25% waste.
2. The overall condition of the deckhouse overheads is considered poor, with paint coatings at approximately 25%. Heavy scale, failed paint applications and standing water have deteriorated the overheads to greater than 50% wasted. All overheads should be cropped and renewed for both the fore and aft deck houses and pilothouses.

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**MAIN DECK**

3. The overall condition of the main deck is fair, with paint coatings at approximately 80%. The deck has several areas of deep "dishing" that should be de-scaled, blasted to clean metal and re-inspected and cropped and renewed as necessary. The areas we noted as most problematic are outboard on both the port and starboard sides in the vicinity of ventilation ducts to below decks spaces and around deck fittings open to weather.

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**Main Deck**

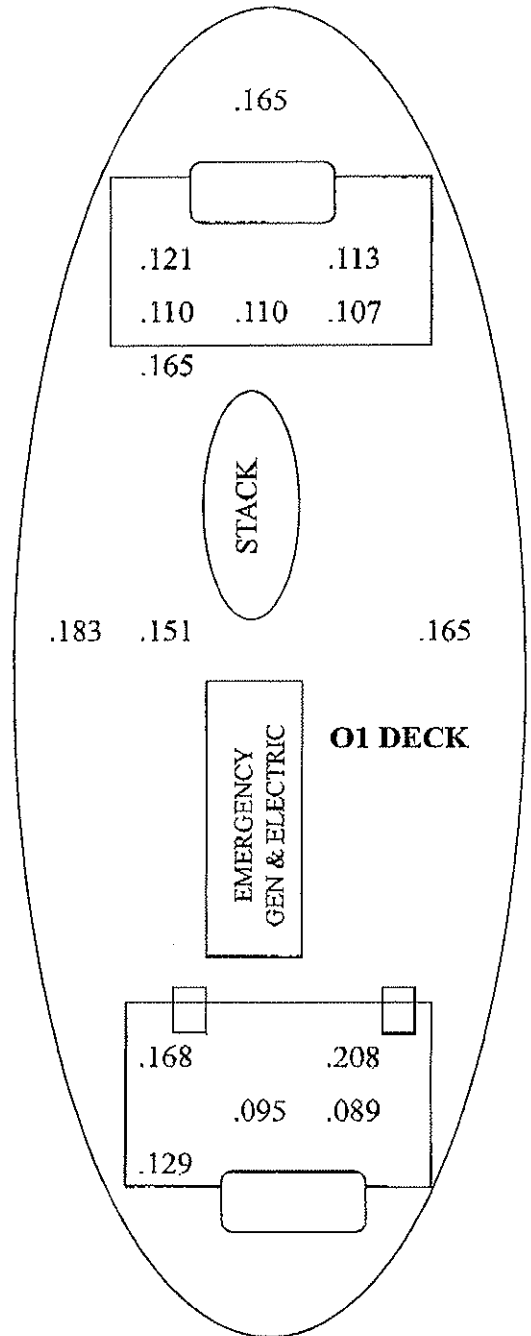
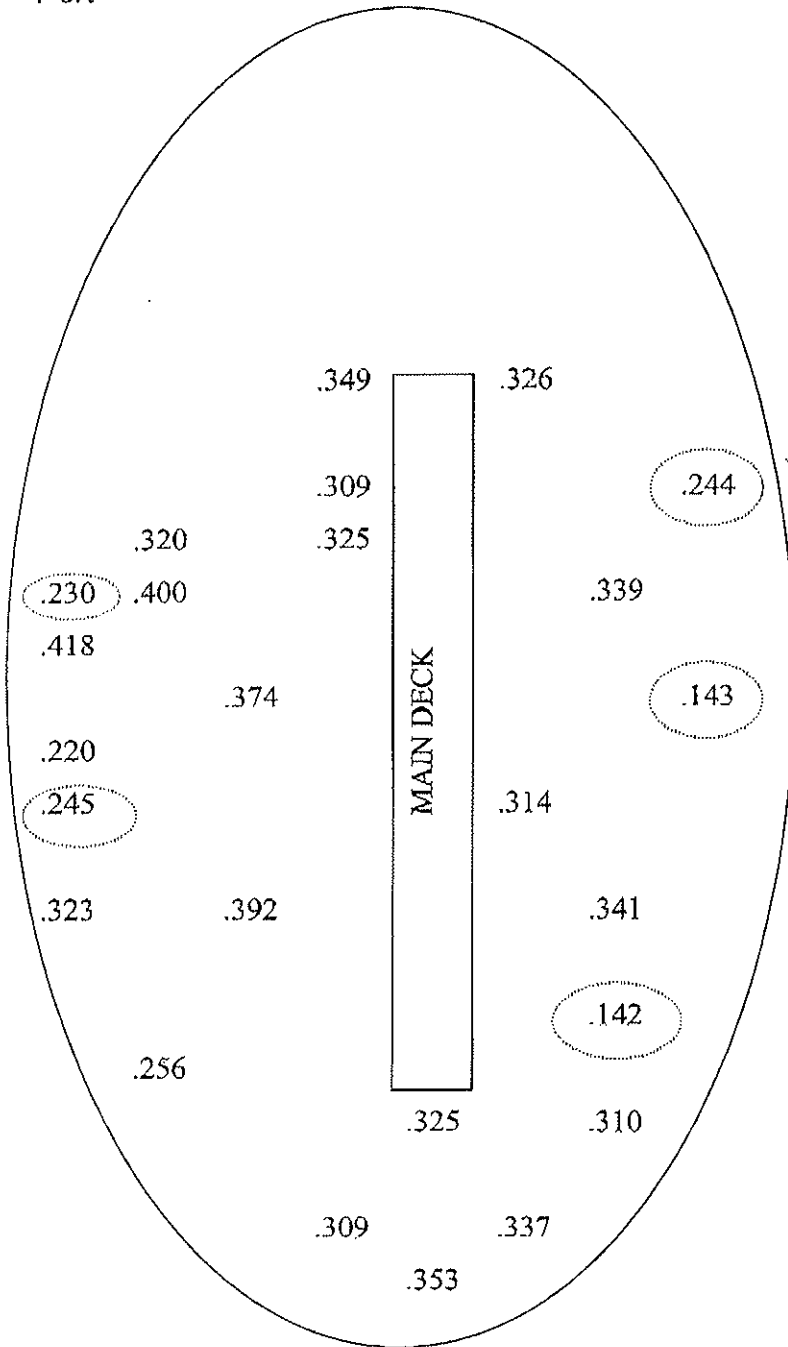
**FORWARD**

Port

Starboard

Port

Starboard



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### FOREPEAK

4. The 10<sup>th</sup> transverse frame is wasted on the first 2' of the inner end. **Crop and renew.**
5. The 11<sup>th</sup> and 12<sup>th</sup> bottom transverse frames are wasted 2' on the # 11 and 6' on the # 12. **Crop and renew.**
6. The aft bulkhead from the keel up 3' and all the way across is wasted more than 25%. **Crop and renew.**
7. Between the 3<sup>rd</sup> and 4<sup>th</sup> vertical frames on the starboard side, the overhead is wasted with noticeable water collecting on the deck. This is a vent area. **Crop and renew.**
8. The starboard side aft, at the vent on the deck, is wasted at the deck level. The upper hull plating in a 2' x 2' area and the transverse frames and stiffeners have heavy scale rust and wastage. **De-scale, re-inspect, crop and renew as necessary.**
9. The port side aft air vent is heavily wasted at the deck and to the lower hull plating and the transverse frames and stiffeners, and wasted on the upper hull above the chine line, is wasted through into the rub rail. **De-scale, crop and renew.**
10. The starboard side longitudinal bulkhead is wasted on the aft lower section, approximately 3' x 5' area. **Crop and renew.**

NOTE: The void is in fair condition with coatings of approximately 50%. This void should be blasted and recoated to preserve the metal structure from further wastage.

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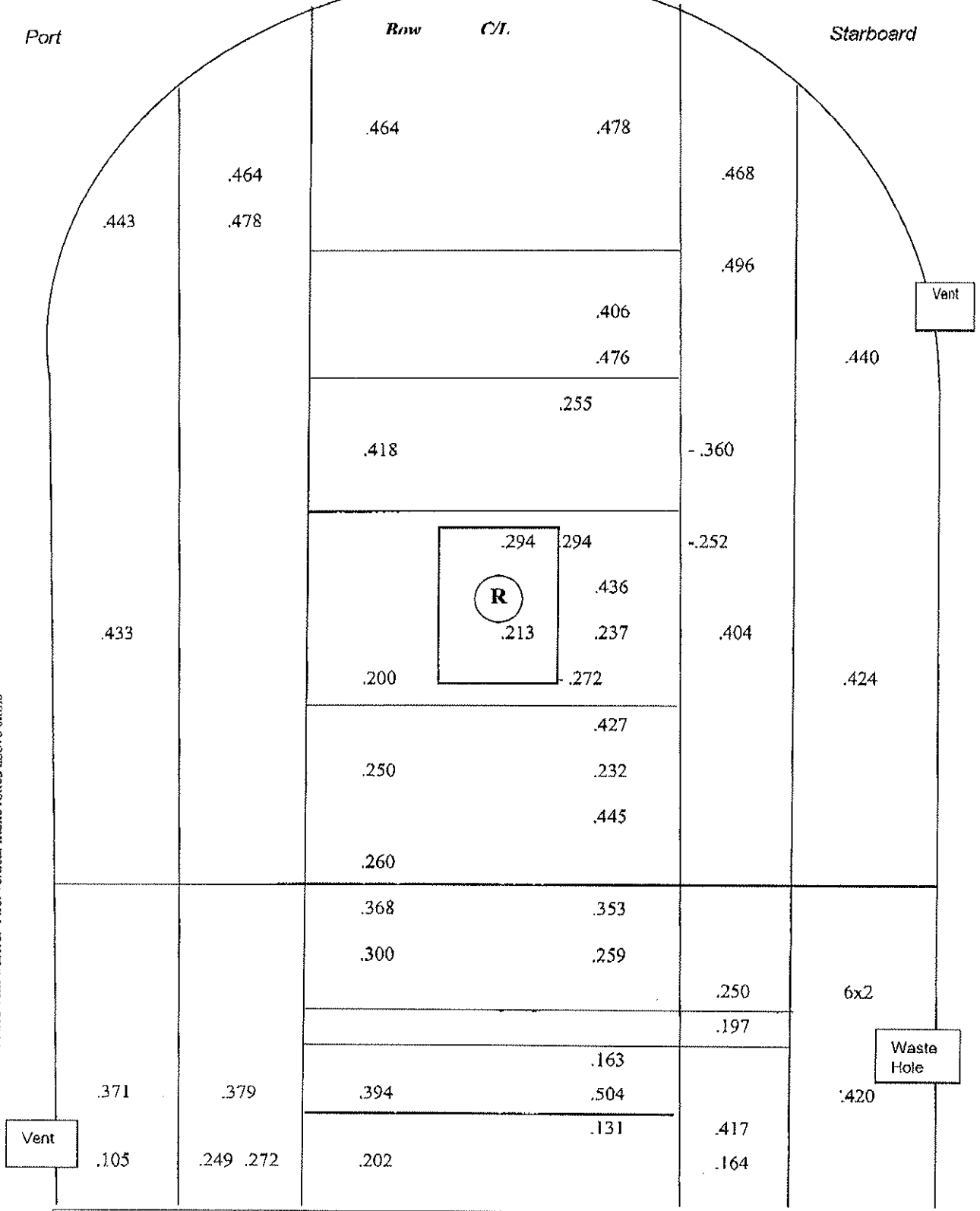
Forepeak

Port

Row C/I.

Starboard

Deck areas around vent wasted. First vertical frame rotted above chline



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**FORWARD SHAFT ALLEY VOID**

11. The # 1 transverse frame in the area of the deck escape hatch on the starboard side is wasted. This frame is wasted from the second longitudinal upwards to the deck hatch. **Crop and renew.**
12. The # 2 transverse frame is wasted between the third longitudinal and in the vicinity of the deck escape hatch on the starboard side. **Crop and renew.**
13. The hull plating from 2" aft of the forward bulkhead to the third transverse frame and from the weld line between the first and second longitudinals, to the weld line between the third longitudinal and the hatch, is an area approximately 6' x 8' is wasted more than 25%. **Crop and renew.**

NOTE: The overall condition of this void is good, with paint coatings at approximately 80%, although there is 3 - 4" of oily waste water mixture at the bottom bilge area. There is also on the port side, an area that has a Cosmeline coating over all surfaces, which is soft and has preserved the metal, but is an oily slick surface.



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*Forward Shaft Alley Void*

	3	2	1	C/L	1	2	3
		.417	.419	.443	.433	.400 .370	
.459					1st .378	.320 25% wastage	
					2nd	6" x 4"	
					3rd	.319	
.396		.422	.422	.390	.417		.426
.401		.421	.423	.431			.430
<b>Aft Bulkhead 1/4"</b>							
.236							.239
	.303	.318	.307	.288 5/16"	.317		
<i>Port</i>	<i>C/L</i>						<i>Starboard</i>

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### UNDER GALLEY - VOID

14. The port side, between the 4<sup>th</sup> transverse bottom frame to the 8<sup>th</sup> bottom transverse frame, and from the # 1 longitudinal to the weld line, an area approximately 4' x 7' is wasted more than 25%. **Crop and renew.**
15. The 1<sup>st</sup> through the 5<sup>th</sup> keel frames, wasted on the lower starboard half, approximately 2' x 4' area, these plates are 3/8" thick. **Crop and renew.**
16. The hull plating in the 1<sup>st</sup> bay, starboard side, from the weld line of the new plate to the keel, an area approximately 4' x 2' x 1/2" should be cropped and renewed.
17. The # 1 longitudinal on the starboard side is wasted between the 6<sup>th</sup> and 10<sup>th</sup> transverse frames, from the bottom to the weld line, approximately 6' long x 1' tall x 5/16" thick. **Crop and renew.**
18. The # 1 starboard bottom transverse frame is wasted on the lower 2' section. **Crop and renew.**
19. The lower hull plating, from the forward bulkhead to the 10<sup>th</sup> frame, is wasted, an area approximately from the keel 6' up and approximately 18' long. **Crop and renew.**
20. The # 1 port section transverse keel frame, an area approximately 2' x 4', should be cropped and renewed.

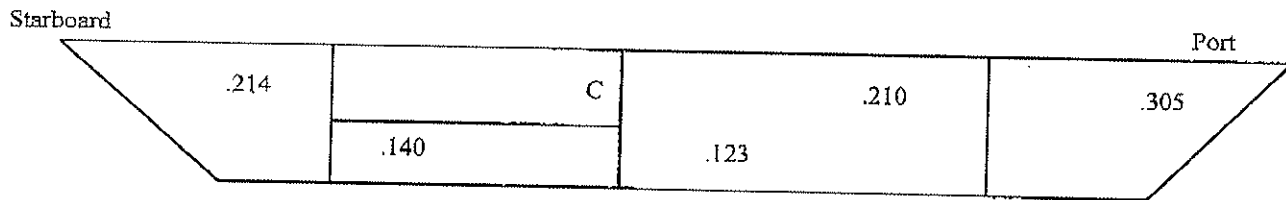
NOTE : The hull plating, where not replaced, shows heavy pitting and rust scale. The coatings are approximately 70% intact. The cutlass water feed line or stripping line for the tank had corrosion at several joints. These joints should be replaced.

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*Under Galley*

<i>Port</i>	<i>C/L</i>		<i>Starboard</i>
.429	.353 <i>wasted</i>	.274	.380
	.329 <i>wasted</i>	.401	New Plate
.431	.366	.366	
.428		.384	.410
	.225	.338	
.464 <i>pitting</i> <i>Heavy scale and rust</i>	.275	<i>Heavy scale and rust</i>	.513 .380 <i>Heavy pitting</i>
.293 .207 .251 .340 .412	.234		.401
.389 .293	.328		.510
.429   .386   X	.353	.457	.378 .238
.447 .386 .362	.326 .332	.425	.500 .368
	.411	.428	.399
		.430	.496
			.500



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**MSD SPACE**

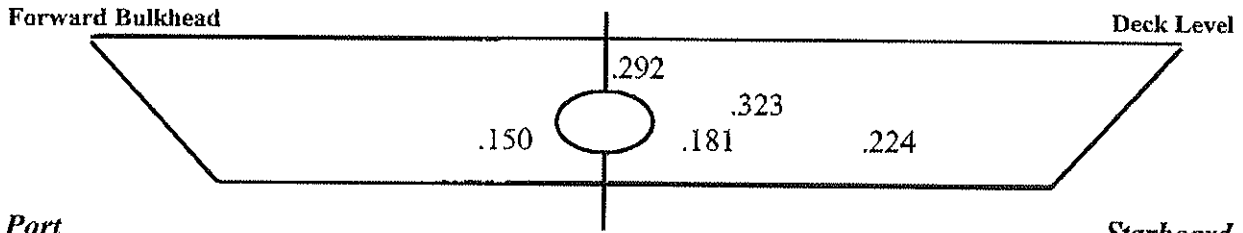
21. Forward bulkhead, port and starboard side of keelson outboard 4' x 3' to 1<sup>st</sup> longitudinal to hull is wasted. **Crop and renew.**
22. 1<sup>st</sup> transverse frame from keelson to longitudinal on both port and starboard sides is wasted in a 4' x 3' area. **Crop and renew.**
23. 2<sup>nd</sup> transverse frame from keelson outboard to 1<sup>st</sup> longitudinal is 4' x 3' wasted area. **Crop and renew.**
24. 3<sup>rd</sup> transverse frame, starboard, from keelson to longitudinal. **Crop and renew.**
25. 1<sup>st</sup> longitudinal starboard side from forward bulkhead to frame 4, 7' x 3'. **Crop and renew.**
26. 1<sup>st</sup> longitudinal port side from bulkhead to 2<sup>nd</sup> frame, 4' x 3'. **Crop and renew.**
27. Forward bulkhead midship, deck level to hull outboard to starboard 12' x 8' centerline, holes and severe wastage. **Crop and renew.**
28. Frames 6 - 10 starboard sides are buckled from keelson outboard to 4', 4' x 3' areas. **Crop and renew.**
29. Frame 3 port, keelson to under tank. **Crop and renew.**
30. Port side forward, 96 sq. ft. bottom. **Crop and renew.**
31. Adjacent to centerline keelson, 84 sq. ft. bottom plate. **Crop and renew.**
32. Adjacent to centerline keelson, four (4) 8' x 3" x 5" angle iron. **Crop and renew.**
33. Adjacent to centerline keelson, one (1) 5' x 24" flange plate. **Crop and renew.**
34. Port side forward, 56 sq. ft. bottom plate. **Crop and renew.**
35. Outboard # 2 longitudinal, two (2) 10' 3" x 5" angle iron. **Crop and renew.**
36. Outboard # 2 longitudinal, 8' x 12" flange plate. **Crop and renew.**

NOTE : The overall condition of this space is poor below the deck. Extensive wasted transverse framing, wasted forward bulkhead from deck level to hull, along with deteriorated hull plating beneath the sewage tanks require crop and renew to approximately 30% of this space. Paint coatings above deck level and outboard of the third longitudinal appear well bonded.

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MSD SPACE FORWARD



Port

Starboard

Frame                      3<sup>rd</sup>                      2<sup>nd</sup>                      1<sup>st</sup> Long.                      C/L                      1<sup>st</sup> Long.                      2<sup>nd</sup>                      3<sup>rd</sup>

1	.336	.418	.344		.313 Wasted	.379		
	.440		.54	.504				
2			.362	.507	.451	.415		
			.364	.384				
3		.406			.443	.403		
			.328			.462		
4				.170				
		.402	.288	X	X	tank		
5	.436		.384	X	X	.248		
	.414		.320	X	X			
6	.322		.286	X <i>ballast</i>	X	Set up		
			.260	X	X			
7			.150	X	X	Set up		
	.436		.318	X	X			
8			.210	X	X			
			.262	X	X			
9			.178	X	X	Set up		
			.316					
10	.198	.338	.346			Set up		
	.320	.360	.448					

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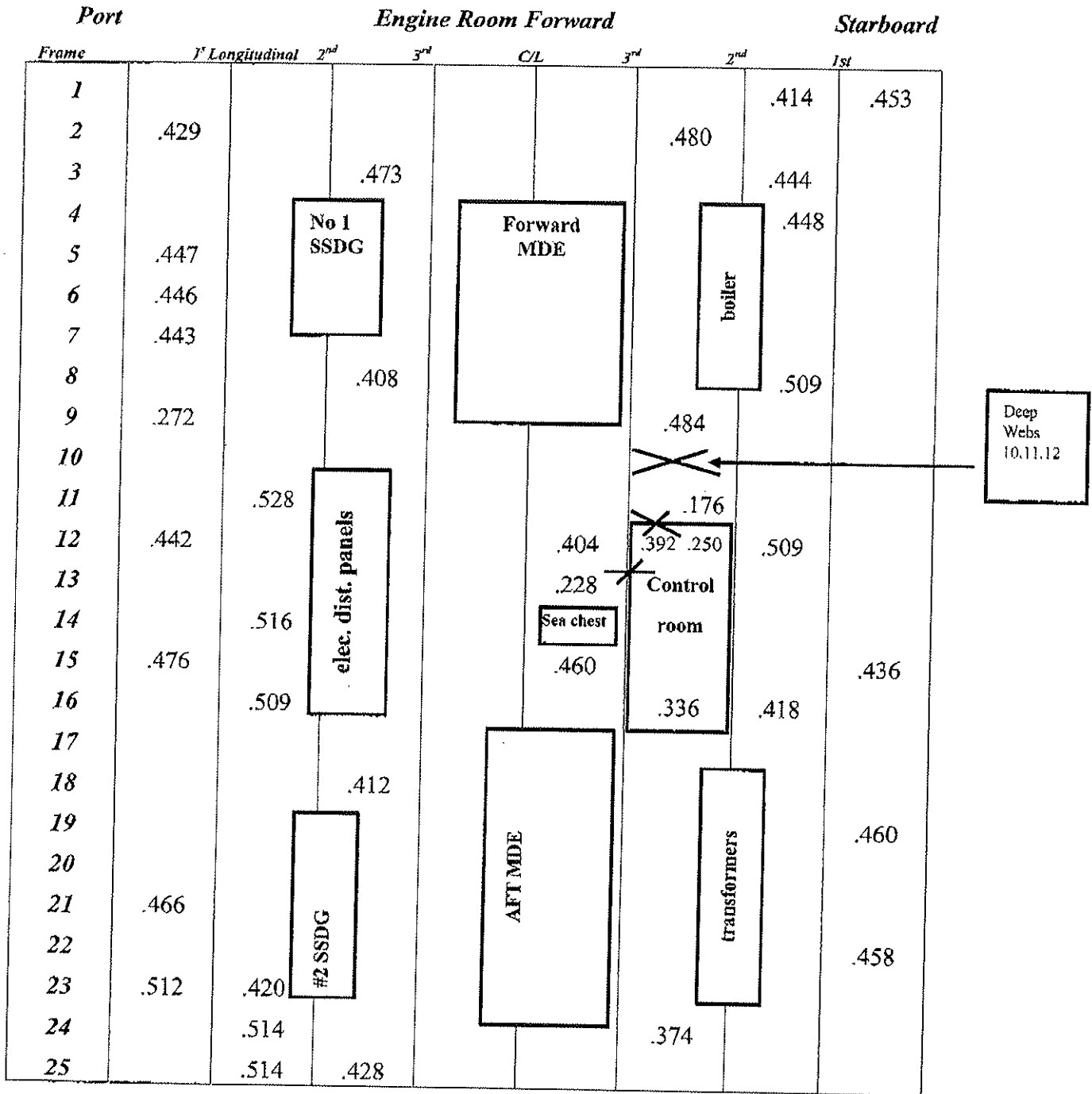
### ENGINE ROOM

37. Starboard sea chest, starboard side, frame 12, ½" plate. **Crop and renew.**
38. Starboard side, below longitudinal # 12, deep webs 10, 11, 12, 13, and 14 at 8' each x 24" flange plate. **Crop and renew.**
39. Bottom plate 20 sq. ft. between frames. **Crop and renew.**
40. Lower frames 11, 12 at 6' each, 3" x 5" angle irons. **Crop and renew.**

NOTE : The overall condition of the Engine Room space is considered good with paint coatings well bonded at approximately 95%. It was reported by the maintenance crews of the Steamship Authority that at the last major dry dock period, hull plating and frames in approximately 50% of the space were renewed. We found the areas around the starboard sea chest to have low readings and recommend a closer inspection to this area by deck plate removal, de-scaling to bare metal and re-gauging to determine the amount of waste incurred. Many areas beneath the deck plates were inaccessible, but were observed visually and appeared to have recent work and well bonded paint coatings.

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### CO2 AND TANK SPACE

#### *Port Side*

41. Wastage to frames # 8, 9 and 10 at 22' each 3 x 5 angle iron. **Crop and renew.**
42. Wastage to # 2 longitudinal 10' x 14' x 5/16" flange plate. **Crop and renew.**

#### *Starboard Side*

43. Wastage to 1' x 1' bottom plate at frames # 3 - 4. **Crop and renew.**
44. Wastage to frames # 1, 2, 3, 4, 7 at 10' each. 3" x 5" angle. Bottom plate 15' x 10' x 1/2", adjacent to centerline. **Crop and renew.**
45. Wastage to four (4) frames at 10' 3" x 5" angle. **Crop and renew.**
46. Wastage to two (2) 12" x 12" gussets, 1' 3' x 5' angle at base of vertical stiffener. **Crop and renew.**

NOTE : The CO2/tank Space void overall condition is fair with paint coatings well bonded and at approximately 95%. There are three (3) transverse frames aft and to port where we recommend crop and renew due to heavy scale and failed paint bonding at the last major overhaul. The starboard side forward transverse frames show wastage and we recommend crop and renewal to those frames and gussets at the base of vertical stiffeners.



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Co2 and Tank Room

	Port			C/L		Starboard		
	.420	.432						
.498	.430	.433	.308		.380		.288	.444
.496	NR	.442	.453		.364	NA	NR	.440
.494	.418	.442	.421		.360	NA .176	.355	.374
.498	.420	.432	.425		.372	.376	.408	
.508	.360	.482	.429		.329 .284	.333	.391	
	.418				.300			
	.356							
.514	.410	.435	.425		.396			
	.354	.173						
.512	.418	.455	.425		.406	.398		
	.324				.296			
.480	.438	.449	.383			.355	.386	
	.314							
.498	.394 .420	.445	.387					
	.354							
.508	.232					.436		

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**VOID BELOW CREW'S QUARTERS**

47. There is heavy pitting on the port side, between transverse frames # 1 and # 2, and the 1<sup>st</sup> and 2<sup>nd</sup> longitudinals. The # 3 transverse frame in this area was found to have low readings and should be re-evaluated for renewing.
48. In the # 4 bay, port side, the hull plating shows signs of heavy pitting and scale rust, with low borderline readings taken. This area should be descaled and considered for renewing if necessary.
49. The garboard area shows signs of borderline readings in numerous areas. The hull plating in this area should be descaled, cleaned and re-evaluated and renewed if necessary.

NOTE: The compartment void is in overall good condition, with paint coatings of approximately 85%. There is scale rust on the lower hull plates and heavy pitting on the hull plating below the weld line, between the 1<sup>st</sup> and 2<sup>nd</sup> longitudinals. This tank should be descaled where scale rust is found and re-evaluated at that point for renewal.

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*Under Crew's Quarters*

AFT

C/L

	.418	.429	.377	.438	
	.438	.432	.360	.436	
	.436	.413	.386	.427	
	.436	.426	.378	.440	
	.435	.456	.444	.436	
	.435	.439	.412	.431	
	.426	.448	.442	.431	
	.450	.375	.429	.376	
	.437	.376	.395	.378	
	.425	.388	.378	.443	
	.438	.436		.358	
	.426	.486			



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**AFTER SHAFT ALLEY VOID**

50. The # 1 transverse frame forward is in fair condition, with readings at approximately 22 - 23% wastage. This is borderline, and should be inspected and a decision made whether to crop and renew.

NOTE : The overall condition of this void is good. The coatings were at approximately 75%. There is approximately 6" of water found in the lower bilge area, with some oil floating on top. This water should be stripped from the tank.

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*Aft Shaft Alley Void Space*

Starboard Aft Port

	.399		.380	.432	.420	.448	.442	.448
vent		.394		.415	.391	.449	.442	.447
.340	.540			.417	.376	.449	.467	LADDER .445
Heavy	.113				.408			
	.444			.427			.472	.446
	.429		.421	.402	.405	.422	.466	.440
	.444			.427			.466	.436
	.434		.423	.413	.410	.429	.454	.463
	.453			.423	.406		.461	.427
	.423		.435	.423	.423	.417	.463	.393
	.451			.424	.460		.460	.505
	.404		.437	.427	.421	.438	.468	.514

**Forward Bulkhead**

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**AFTER PEAK VOID**

51. The aft section of the void between the # 1 port and starboard longitudinal frames, from the aft bulkhead to the # 8 deep transverse frame, shows low readings, between .324 and .368. This plating appears to be in good condition. The paint coatings are at 98%. The cause of the low readings is unknown in this area as this complete tank has been reconditioned, with new hull plating where necessary and all new frames installed. The void itself has been sandblasted and recoated and the aft bulkhead, for the most part, has been replaced. All framing was found to be in good condition.

NOTE : The outer wing areas in several of the bays have a Cosmeline coating to protect and preserve the interior of the tank, the same as the section under the galley.

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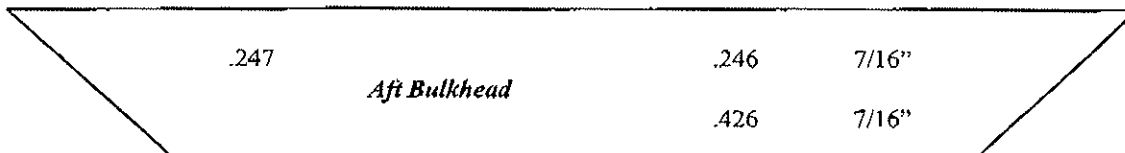
24

*After Peak*

*Starboard*

*Port*

1	2	3	4	5	6
	.480	.480		.438	
			.372		
			.362	.483	
			.477		
	.504	.462		.483	
.435			.422	.484	
	.501		<b>Rudder</b>	.438	.449
.338				.486	
			.414		
.435	.397			.466	.438
				.451	
.433	.464		.418	.402	.401
	.375	.358	.380	.410	
		.330	.360	.412	
.412	.363	.339	.391	.380	.389
	.330	.324	.339	.368	.394



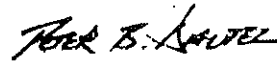


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This report is based on examination of the vessel, and of those parts, spaces and equipment that could be sighted without removals or operation, and is rendered without bias or prejudice. In accepting same, it is agreed that the extent of obligation of this surveyor, with respect thereto, is limited to furnishing a competent survey, and in the making of this report, this surveyor is acting on behalf of the person or firm requesting same and no liability shall attach to this surveyor, for the accuracy, errors and/or omissions therefore.

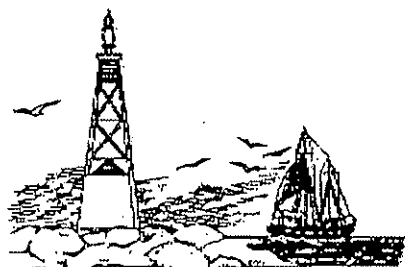
Submitted without prejudice  
MARINE SAFETY CONSULTANTS, INC.



Peter B. Dautel  
Marine Surveyor

PBD/elav

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128 Dean Street, Front, 1<sup>st</sup> Floor  
Taunton, MA  
Tel: 508-884-5055  
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400 Commercial St., Suite 4  
Portland, ME 04101-4660  
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Fax: (508) 990-2094

26 Water Street P.O. Box 615

Fairhaven, MA 02719-0615

July 2, 2007  
File No.: 07-0674

**E - MAILED**  
7.6.07

*INTERNAL and  
ULTRA-SONIC INSPECTION  
REPORT  
on  
M/V ISLANDER*

### INTRODUCTION

Marine Safety Consultants, Inc. has undertaken an ultra-sonic survey of selected points of the steel passenger vessel M/V ISLANDER in accordance with your verbal request of June 27, 2007.