IRON SHIP. (Rec 6/9/79)

No. 4949 Survey held at Glasgow Date, First Survey 10 July 1878 Last Survey 2 September 18

On the S.S. "ORIENT" (Four masted Barque) Master William Frederick [illegible]

TONNAGE under Tonnage Deck	3827.10	~~ONE OR TWO DECKED, THREE~~ FOUR DECKED VESSEL. ~~SPAR, OR AWNING DECKED VESSEL.~~	Feet.	Built at Glasgow
Ditto of Third, Spar, or Awning Deck	1291.27	HALF BREADTH (moulded)	23.0	When built 1879 Launched 5th June 79
Ditto of Poop, or Raised Qr. Dk.	~~211.37~~	DEPTH from upper part of Keel to top of Upper Deck Beams	37.7	By whom built John Elder & Co.
Ditto of House on Deck	267.43	GIRTH of Half Midship Frame (as per Rule)	54.6	Owners The Orient Steam Navigation Co. Limited 112 [illegible] London E.C.
Ditto of Forecastle		1st NUMBER	115.3	Port belonging to Glasgow London
Gross Tonnage	5385.80	1st NUMBER, if a 3-DECKED VESSEL, deduct 7 feet	7	Destined Voyage Melbourne via London
Less Crew Space			108.3	If Surveyed while Building, & Afloat, ~~or in Dry Dock.~~
[illegible] feet	222.61 5163.19	LENGTH	443	under special survey
Less Engine Room	1723.46 1946.07	2nd NUMBER	47.970	
Register Tonnage as cut on Beam	3439.73	PROPORTIONS—Breadths to Length	9.58	
		Depths to Length—Upper Deck to Keel	11.75	
		Main Deck ditto	14.9	

PLANS CARD

LENGTH on deck as per Rule	Feet 443	Inches —	BREADTH—Moulded	Feet 46	Inches -	DEPTH top of Floors to Upper Deck Beams / Do. do. Main Deck Beams	Feet 35	Inches 4	Power of Engines	Horse 1000	N°. of Decks with flat laid FOUR; N°. of Tiers of Beams FOUR.

Dimensions of Ship per Register, length, 445·6 breadth, 46·35 depth, 37·1 / 35·1

	Inches in Ship	Inches per Rule
KEEL, depth and thickness	12 × 8	12 × 3 (and upper [illegible])
STEM, moulding and thickness	12 × 3 & 9 × 2¾	12 × 3 - 9 × 2¾
STERN-POST for Rudder do. do.	12 × 7⅛	12 × 6
" for Propeller	13 × 7⅞	12 × 6
Distance of Frames from moulding edge to moulding edge, all fore and aft	24	24

(Class 100A.)

	Inches In Ship	Inches In Ship	16ths In Ship	Inches per Rule	Inches per Rule	16ths per Rule
FRAMES, Angle Iron, for ¾ length amidships	6	3½	10/16	6	3½	10/16
Do. for ⅛ at each end	6	3½	9/16	6	3½	9/16
REVERSED FRAMES, Angle Iron	4½	3½	9/16	4½	3½	9/16
FLOORS, depth and thickness of Floor Plate at mid line for half length amidships	28	×	10/16	28	×	10/16
" thickness at the ends of vessel		9/16-8/16			9/16-8/16	
" depth at ¾ the half-bdth. as per Rule	AS PER SECTION					
" height extended at the Bilges	TWICE DEPTH					
BEAMS, Upper, ~~Spar or Awning~~ Deck; ~~Single or d'ble Ang. Iron, Plate or~~ Tee Bulb Iron	10	6	9/16	10	6	9/16
~~Single or double Angle Iron on Upper edge~~						
Average space	4 feet			4 feet		
BEAMS, Main, ~~or Middle~~ Deck; ~~Single or d'ble Ang. Iron, Plate or~~ Tee Bulb Iron	11	6½	10/16	11	6½	10/16
~~Single or double Angle Iron on Upper Edge~~						
Average space	4 feet			4 feet		
BEAMS, Lower Deck, ~~[illegible]~~; ~~Single or d'ble Ang. Iron, Plate or~~ Tee Bulb Iron	11	6½	10/16	11	6½	10/16
~~Single or double Angle Iron on Upper Edge~~						
Average space	4 feet			4 feet		
KEELSONS Centre line, single ~~or double~~ plate, ~~box or Intercostal~~, Plates	21 × 11/16; 27 × 14/16; 15 × 14/16			21 × 11/16; 27 × 14/16; 15 × 14/16		
" Rider Plate						
" ~~Bulb Plate to Intercostal Keelson~~						
" Angle Irons	6½	4½	10/16	6½	4½	10/16
" ~~Double Angle Iron Side Keelson~~	18½ × 14/16			17½ × 14/16		
" Side Intercostal Plates	× 10/16			× 10/16		
" do. Angle Irons	6½	4½	10/16	6½	4½	10/16
" Attached to outside plating with angle iron	3½	3½	8/16	3½	3½	8/16
BILGE Angle Irons	6½	4½	10/16	6½	4½	10/16
" do. ~~Bulb~~ Iron Keelson plates	18½ × 14/16			17½ × 14/16		
" do. Intercostal plates riveted to plating for 265 ft length	× 10/16			× 10/16		
	3½	3½	8/16	3½	3½	8/16
BILGE STRINGER Angle Irons	6½	4½	10/16	6½	4½	10/16
Intercostal plates riveted to plating for 265 ft length	20 × 14/16			20 × 14/16		
~~[illegible] Angle Irons~~	3½	3½	8/16	3½	3½	8/16

	Inches In Ship	16ths In Ship	Inches per Rule	16ths per Rule
~~Flat Keel Plates, breadth and thickness~~				
PLATES in Garboard Strakes, breadth and thickness from Garboard to upper part of Bilges	40 ×	14/16	36 ×	14/16
" of doubling at Bilge, or increased thickness, and length applied	12 ×	13/16	12 -	13/16
" fm up part of Bilge to lr. edge of Sh'rstrake				
" Main Sheerstrake, breadth and thickness of d'bling at Sh'rstrake, & length applied (280 feet)	99 × 14/16; 21 × 14/16; 8.10½ - 14/16		40 × 14/16; 21 × 13/16 - 280 ft; see draft	
~~Lowr. Mn. to Upr. or Spar Dk. Sh'rstrake~~				
" ~~Up. or Spar Dk. Sh'rstrake, bredth & thickns~~				
Butt Straps to outside plating, breadth & thickness	11¼ - 19	12.14/16	11¼ - 19	12.14/16
Lengths of Plating	6 spaces		5 spaces	
Shifts of Plating, and Stringers	2 spaces		2 spaces	
Gunwale Plate on ends of ~~Awning, Spar or~~ Upper Deck Beams, breadth and thickness	60 × 10/16		60 × 10/16	
Angle Iron on ditto	4 × 4 × 9/16		4 × 4 × 9/16	
~~Tie Plates fore and aft, outside Hatchways~~	Iron Dk		Iron Dk	
~~Diagonal Tie Plates on Beams No. of Pairs~~	8/16 - 7/16		8/16 - 7/16	
Planksheer material and scantling	Gutter Waterways			
Waterways do. do.				
Flat of Upper Deck do. do.	3 Teak			
How fastened to Beams	Galv Iron Bolts & nuts			
Stringer Plate on ends of Main ~~or Middle~~ Deck Beams, breadth and thickness	60 × 11/16		60 × 11/16	
Is the Stringer Plate attached to the outside plating?	Yes			
Angle Irons on ditto, No. 2	4 × 4 × 9/16		4 × 4 × 9/16	
~~Tie Plates outside Hatchways~~	Iron Dk 7/16		Iron Dk	
~~Diagonal Tie Plates on Beams, No. of pairs~~	[illegible] 7/16 - 6/16		7/16 - 6/16	
Waterways materials and scantlings	[illegible]			
Flat of Middle Deck do. do.	3 Y.P.		3	
How fastened to Beams	Galv Iron Bolts & nuts			
Stringer Plates on ends of Lower Deck, ~~Hold or Orlop~~ Beams	54 × 10/16		54 × 10/16	
Is the Stringer Plate attached to the outside plating?	Yes			
Angle Irons on ditto, No. 2	4 × 4 × 9/16		4 × 4 × 9/16	
Stringer or Tie Plates, outside Hatchways	Iron Dk 7/16 for half length		Iron Dk 7/16 for half length	
Flat of Lower Deck	3 Y.P.			
Ceiling betwixt Decks, thickness and material	Battens 12 apart			
" in hold do. do.	2½		2½	
Main piece of Rudder, diameter at head	10		10	
do. at heel	5		5	

Can the Rudder be unshipped afloat? Yes

Bulkheads No. 5 Thickness of 7/16. 6/16 — 7/16 - 6/16.

" Height up foremost to upper dk, 3 to main dk, next [illegible] plate

" How secured to sides of ship Double frames.

" Size of Vertical Angle Irons 4½ × 3½ × 7/16 and distance apart 30 ins.

" Are the outside Plates doubled two spaces of Frames in length? Yes

Transoms, material. Knight-heads. Hawse Timbers. E. I. Teak

Windlass Patent Steam windlass Pall Bitt —

The **FRAMES** extend in one length from Keel to Gunwale Riveted through plates with 7/8.1 in. Rivets, about 6½. 8 apart.

The **REVERSED ANGLE IRONS** on floors and frames extend from middle line to above Main dk stringer and to Gunwale alternately

KEELSONS. Are the various lengths of Plates and Angle Irons properly connected? Yes And butts properly shifted? Yes.

PLATING. Garboard, double riveted to Keel, with rivets 1⅛/16 in. diameter, averaging 6 ins. from centre to centre.

" **Edges of Garboards** and to upper part of Bilge, worked clencher, double riveted; with rivets 7/8.1 in. diameter, averaging 3¾. 4½ ins. from centre to centre.

" **Butts from Keel to turn of Bilge,** worked carvel, double and treble riveted; with rivets 7/8.1 in. diameter averaging 3¾. 4½ ins. from centre to centre.

" **Butts** of three and outside Strakes at Bilge for Half length, treble riveted with Butt Straps 1/16. thicker than the plates they connect.

" **Edges from bilge to Main Sheerstrake,** worked clencher, double ~~or single~~ riveted; with rivets 7/8 in. diameter, averaging 3¾ ins. from cr. to cr.

" **Butts from Bilge to Main Sheerstrake,** worked carvel, double and treble riveted; with rivets 7/8 in. diameter, averaging 3¾ ins. from cr. to cr.

" **Edges of Main Sheerstrake,** double ~~or single~~ riveted. **Upper Sheerstrake,** double ~~or single~~ riveted.

" **Butts of Main Sheerstrake,** treble riveted for ½ length amidships. Butts of Upper ~~or Spar~~ Sheerstrake, treble riveted ½ length amidships.

" **Butts of Main Stringer Plate,** treble riveted for ½ length amidships. **Butts of Upper ~~or Spar~~ Stringer Plate,** treble riveted for Half length.

" Breadth of laps of plating in double riveting 5¼. 6 Breadth of laps of plating in single riveting —

Butt Straps of Keelsons, Stringer and Tie Plates, treble, double or single Riveted? Double and Treble Riveted.

Waterway, how secured to Beams Gutter Waterways (Explain by Sketch, if necessary.)

Beams of the various Decks, how secured to the sides? Beam Knees Riveted to Frames No. of Breasthooks, 5 Crutches, 4

What description of Iron is used for Frames, Beams, Keelsons, Tie, and Stringer Plates, Outside Plating, &c.? Angles Mossend Bms. Butterley

Manufacturer's name or trade mark, Plates "Mossend." "Consett" "Parkhead" "Clydesdale"

The above is a correct description.

Builder's Signature, John Elder & Co. per Andrew Maclean

Surveyor's Signature, James Pinder

Surveyor to Lloyd's Register of British and Foreign Shipping.

LR-FAF-TBS-124

Workmanship. Are the butts of plating planed or otherwise fitted? Planed where practicable

Do the edges of the carvel work and of the butts fay close together throughout their length without requiring any making good of deficiencies? Yes

Are the fillings between the ribs and plates solid single pieces? Yes

Do the holes for riveting plate to frames, butt straps, or plate to plate, &c., conform well to each other? Yes. 24665 Iron

Are the rivet holes well and sufficiently countersunk in the plate and punched from the faying surfaces? Yes.

Do any rivets break into or through the seams or butts of the plating? Very few and in butts only.

Masts, Bowsprit, Yards, &c., are — in Good. condition, and sufficient in size and length. *If of ~~Iron or~~ Steel give Scantlings of Plating, Angle Irons, &c., and further explain by a Sketch showing how the lower Masts and Bowsprit are constructed, showing the number of Plates and Angle Irons, mode of ~~riveting,~~ quality of Materials, and if stamped with Maker's name.*

State also Length and Diameter of Lower Masts and Bowsprit Lower masts and yards of steel as per approved drawing attached – steel made by Bart of Scotland Steel Cy tested in accordance with Circular. No 392 –

NUMBER for EQUIPMENT 57.077

SAILS. N°.	CABLES, &c.	Fathoms.	Inches.	Test per Certificate.	Inches per Rule.	Machine where Tested & Suprntd t.	ANCHORS.	N°.	Weight. Ex. Stock.	Test per Certificate	W'ght req'd per Rule.	Machine where Tested & Suprntd t
Fore Sails,	Chain	300	2 5/16	96 5/10 / 134 15/20	300 2 5/16	96¼ 134¾	Bower Anchors		45.2.21	39 14/20	46½	40 3/20
	(State Machine where Tested, Date, or No. of Certificate, & Name of Superintendt.) Chester P.H. 13.17.24 March 79 a Jack sup[illegible]						(State Machine where Tested, Date, or No. of Certificate, & Name of Superintendt.)	4	45.1.24	39 11/20	46½	40 3/20
									45.1.14	39 9/20	44½	—
Fore Top Sails,	Iron Str'm Chain	90	1¼	28⅞ 42⅛	90 1 5/16	31.46½			45.1.13	39.9/20	41½	36 10/20
	Ditto do.	120	5 in steel wire				Chester P.H. 7 & 8 May – 6 June 79. a. Jack [illegible]					
Fore Topmast Stay Sails,	Hmpn Strm Cbl	480	3¼ in steel wire		90.12							
	Hawser	400	8		90.12		Stream ...	1	16.0.2	17 7/20	16¾	18
Main Sails,	Towlines ...	500	6		90.9		Kedge ...	2	7.3.21	10 1/20	8½	10 12/20
Main Top Sails, and	Warp	200	5				Ditto ...		3.3.26	6 7/20	4	6 7/20
	quality Good											

(In margin: one lent & spare)

Standing and Running Rigging Wire Hemp. sufficient in size and Good in quality. She has 4 Life ~~Long~~ Boats and two others.

The Windlass is Napier's patent steam Capstan one and Rudder good. Pumps Six 8 in brass chamber and 2 patent [illegible]

Engine Room Skylights.—How constructed? Iron casing to Bridge 3 ft. How secured in ordinary weather? Bolted down.

What arrangements for deadlights in bad weather? Thick glass protected by ~~[illegible]~~ gratings (Iron galvanized) Teak tops

Coal Bunker Openings.—How constructed? Cast Iron frames How are lids secured? Locking lids Height above deck? Flush

Scuppers, &c.—What arrangements for clearing upper deck of water, in case of shipping a sea? Open Bulwarks.

Cargo Hatchways.—How formed? Iron comings.

State size **Main Hatch** 12.0 × 12.0 Forehatch 12.0 × 10.0 Quarterhatch 2 off at sides 12.0 × 7.0

If of extraordinary size, state how framed and secured? Iron decks.

What arrangement for shifting beams? Wood bearers.

Hatches, If strong and efficient? Yes

Order for Special Survey No. 137 Date Augt. 1878	DATES of Surveys held while building as per Section 18. 1st. On the several parts of the frame, when in place, and before the plating was wrought	1878. 10 July – August 12.15.20.23.26. Sept 2.6.10.12.
Order for Ordinary Survey No. —	2nd. On the plating during the process of riveting	19.23.27.30. October 2.5.11.17.19.21.25.29. November 1.4.
Date —	3rd. When the beams were in and fastened, and before the decks were laid....	11.15.18.21.25.28. December 2.5.9.23.26. 1879 Jany 6.9.1
	4th. When the ship was complete, and before the plating was finally coated or cemented...	17.28.27.31. Feb 4.7.10.14.18.21.25.27. March 3.6.10.14.25.28. Apr
No. 224 in builder's yard.	5th. After the ship was launched and equipped	1.4.8.14.16.22.28 May 1.5.8.12.14.19.27.29. June 2.4.7.9.11.14.19.21.28. July 5.7.14.15.17.28. Augt. 2.9.14.16.23.27.30. September 2nd

General Remarks (State quality of workmanship, &c.) She is fitted with Hold Stringer 40 × 10/16 attached to Shell with angles 4 × 4 × 9/16. Beams to alternate frames 8 × 5¼ × 7/16 of I. Bulb covered with 3 inch pitch pine –

Has Water ballast Tanks from abaft Engine Room Bulkhead for a length of 82 feet in two divisions – first of 28 feet by 13 feet in depth and second of 54 feet by about 7.0" in depth. These Tanks tested with head of water equal to Load Line with satisfactory results. 2 June 79.

Has been constructed in accordance with approved drawings attached (five in number) Is well built and worthy in my opinion of the class recommended below – J.P. (See correspondence as to equipment)

Side Houses under Bridge with three 4 ft. openings for coaling and ashes. 113.6 × 7.6 House forming entrance to Saloon Music Room &c. 68.0 × 20.0. House above on Bridge 32.0 × 15.0 After House for third class passengers. 65.0" × 17.0" – Engine House 26.6" × 16.0" –

Boiler casing Galleys & Hospital 91.6 × 16.0 –

State if ~~one, two, or three~~ four decked vessel, ~~or if spar or awning decked, and the lengths of poop, forecastle, or raised quarter deck, and the length of double, or part double bottom.~~

How are the surfaces preserved from oxidation? Inside Cement in Bottom Paint above Outside Paint

I am of opinion this Vessel should be Classed ✠ 100 A.1. (Three decked Rule)

The amount of the Entry Fee ... ...£ 5 : – : – is received by me,

Special ... ...£ 154 : 1 : 6 ~~Augst~~ 1879 } M. 3th

Certificate ... Gratis

(*Travelling Expenses, if any, £* 5.5/–).

James Purdie

Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute 9th September, 1879.

This vessel has been built in accordance with the approved sketches and appears to be eligible to be classed as recommended 100 A.1. With reference to the equipment attached to this report.

Character assigned 100 A 1 Lloyd's MC

TBW 4 decks. 2 Iron [illegible] decks. 4 tiers of beams. 2 iron decks.

~~[illegible]~~ Abbott [illegible] 82